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Presentations List

INVITED ORAL PRESENTATIONS

Obesity in Iran

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Obesity is a chronic disease and major health indicator affecting millions of people worldwide. The development of diabetes mellitus is a complication of obesity that leads to greater morbidity and mortality due to higher incidence of cardiovascular disease cancer, kidney and liver disease. Prevalence of both overweight (BMI 25-<30 kg/m2) and obesity (BMI ≥30 kg/m2) has increased in almost all countries of the world in the last 50 years and in 21st century great epidemics of obesity and diabetes have occurred.
Currently, the rate of BMI>25 kg/m2 is more than 60% in majority of cities in Iran and the mean prevalence of obesity (BMI ≥30 kg/m2) is 20%. In the United States the rate of obesity in men and women are almost similar (33.3 and 35.3%, respectively), while in Iran obesity is more frequent in women than men (30 vs. 17%, respectively). Morbid obesity defined as BMI>40 kg/m2 affects 4.7 and 1.3% of adults in the US and Iran, respectively.
Reports from the Tehran Lipid and Glucose Study (TLGS), the Caspian Study and other cohorts in Iran demonstrate an alarming increase in the rate of overweight and obesity in Iranian children and adolescents. Worldwide, there are a total of 155 million (one in 10) children overweight and around 30- 45 million classified as obese. Much concern is being expressed both about the early consequences and lifetime effects of obesity. As a great public health challenge, the World Health WHO has been working with its member states to implement the "Global Strategy on Diet, Physical Activity, and Health" to combat childhood obesity. The program of "Ending Childhood Obesity" has been implemented in Iran; however, its progress is rather slow.
Another alarming indicator is the rise of abdominal obesity in Iran, which correlates tidily with CVD and mortality. Data from both STEPS studies and TLGS cohort shows that although the prevalence of abdominal obesity (WC>95 cm) was more prominent in women 2 decades age, the increase in WC has been more in men than in women in the last 20 years, indicating great health problem in both gender.
The alarming rise of general and abdominal obesity in Iran must be addressed by long-term and concerted policy. Appropriate changes in lifestyle along with healthy eating, regulation of food supply, public education, healthy commuting through walking or biking need gradual infrastructure change and last but not least, the motivation and incentives in various states. Learning from effective intervention in other countries, there is an urgent need for an integrated approach for healthy lifestyle that enhances financial and physical access to healthy foods, to avoid replacing under nutrition disadvantage in Iran with a more general malnutrition disadvantage that entails excessive consumption of low-quality calories.

Nutritional management in different phases in critically ill patients

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Objective: Studies addressing the impact of timing initiating enteral or parenteral nutrition in critically ill patients. Following the stress in critically ill patients two acute and chronic phases have occurred. The Acute phase includes the early and a late period which progress to the chronic inflammatory phase. In fact, we can divide them into catabolism and rehabilitation or anabolism phases. The latest scientific insights and guidelines on nutrition management in ICU have recommended that the basic nutritional situation is a highly prominent factor in the timing of starting nutrition delivery in the ICU in different phases.
In the early phase of critical illness, because of the inflammation, a catabolic response happens by enhancing energy expenditure. Insulin resistance is one of the major pathways in this phase which activates releasing of energy from hepatic glycogen and muscle protein. Early feeding couldn't stop the aforementioned endogenous energy preparation and triggers overfeeding and its related complications.
During the inflammatory phase, the patients are faced with a swift muscle loss reaching 1 kg/day which can suppress the weaning process and

increase infection and mortality rate. On the other hand, deficiency of a substantial macronutrient early during critical illness leads to activation of autophagic quality control on different organs. Early high dose Proteins and feeding suppress autophagy, as a main intracellular cleaning mechanism. Autophagy is so important in the acute inflammatory phase due to reducing the misfolded protein.
Conclusion: Although late feeding may improve potentially important recovery processes in critical illness, it comes at the price of wasting muscle mass. So, avoiding early full calorie and protein delivery and progressive administration during 3 and 4 days for protein and calorie is recommended. It can be enhanced in recovery and post-ICU phase.

Adequate nutritional support in critical patients

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Objective: Definition of the energy expenditure (EE) and the precise amount of calories and protein in critically ill patients is difficult and depends on various parameters including the nutritional status of the patient, significant weight loss before admission, and so on. However, it is necessary to mention that reaching the target over time is one of the major problems in the Intensive care unit (ICU). To approach a reasonable recommendation, indirect calorimetry is the best method for EE estimation. Although providing adequate nutritional support is vital in elevating weaning chance, reducing infection, and ICU length of stay, many times it is not feasible because of unstable hemodynamics, sepsis, enteral feeding intolerance, and enteral feeding-related complications such as diarrhea, and parenteral-related complication like refeeding syndrome. We aimed to review what is the true number of calories and protein and how we should manage nutrition in critical patients in different situations. A growing body of evidence rejects previous approaches about stopping nutritional support during sepsis. In sepsis, many studies recommend trophic feeding (defined as 10–20 kcal/h, up to 500 kcal/d) advancing as tolerated after the stability of hemodynamics in 24 to 48 hours. Starting supplementary parenteral nutrition (SPN) is another challenging area which is a great agreement in using SPN after a week in non-malnourished patients.
Conclusion: defining adequate amounts of calories and protein in critically ill patients is necessary but managing it for the best nutritional support is so challenging matter. Then adequate nutritional support in critical situations is highly prominent in ICU.

Barriers and Facilitators of Implementing Proper Enteral Nutrition in Tabriz Medical Education Centers: A Qualitative Study

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Background: Patients in intensive care units (ICUs) often face malnutrition due to various factors, making nutritional screening and support essential. Enteral nutrition (EN) is the primary method of nutritional support for these patients; however, previous studies indicate that EN is frequently not implemented effectively. This study aims to identify the barriers and facilitators affecting the implementation of EN in educational and treatment centers affiliated with Tabriz University of Medical Sciences.
Methods: This qualitative study utilized semi-structured interviews to gather data until saturation was reached. A total of 22 participants, including 5 doctors, 11 nurses, and 6 nutritionists from 5 key educational and treatment centers, were interviewed. All interviews were conducted by a single researcher, and two independent researchers with diverse backgrounds analyzed the data to extract themes.
Result: The study identified several significant barriers to effective EN implementation as perceived by participants:
1. Lack of Written EN Protocol: Absence of standardized guidelines hampers consistent practice.
2. Insufficient Training: The treatment team often lacks adequate training on EN protocols.
3. Access and Cost Issues: Continuous access to commercial formulas is limited, and their high costs pose a challenge.
4. Diagnostic and Treatment Procedures: Competing medical priorities can detract from nutritional considerations.

5. Lack of EN Equipment and Supplies: Insufficient resources hinder proper implementation. Conversely, facilitators that could enhance EN practices included:
1. Continuous Presence of Nutritionists: Having nutritionists available in the department improves oversight and guidance.
2. In-Service and Periodical Training: Regular training sessions help keep staff updated on best practices.
3. Professional Ethics: A commitment to ethical standards promotes adherence to nutritional guidelines.
Conclusion: The findings highlight that effective EN implementation in ICUs necessitates the establishment of a written, binding EN protocol, recruitment of dedicated nutritionists, and ongoing training initiatives beyond initial academic education. Addressing these barriers and leveraging facilitators can significantly improve nutritional support for critically ill patients.
Keywords: Enteral Nutrition, Barriers, Facilitators, Intensive Care Units

Artificial Intelligence in Obesity Profiling and Obesity-related Cancers

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Obesity, as one of the leading causes of preventable death, is a complex disease and needs intelligent intervention. Artificial intelligence (AI), as a multidisciplinary field of study using tools such as machine learning, fuzzy systems, and optimization algorithms, prepares a variety of intelligent facilities regarding obesity curing and management. AI is used in identifying personalized health assessments, tailored interventions, predictive analytics, obesity surgery, handling BMI,s shortcomings, virtual weight management, early metabolic disorder detection, obesity-related chronic and cancer diseases, and obesity drug discovery. These intelligent analyses are performed by analyzing clinical, laboratory, genetic, medical images, lifestyle, and behavioral data. AI-based systems can offer continuous monitoring, cognitive motivation, and reminders while performing precise body composition assessments. Hence, considering obesity as a multifaceted disease, intelligent therapy and management through AI-based systems are recommended.
Keywords: Artificial intelligence, Obesity, Obesity-related cancer

The role of eating behavior in weight management

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Understanding the intricate biological basis of eating behavior is essential for effectively addressing a range of conditions, including eating disorders and metabolic issues related to obesity. The regulation of eating behavior encompasses a complex interplay of physiological, psychological, and environmental factors. At the physiological level, the intricate network of neural pathways, hormonal signals, and neurotransmitters orchestrates the delicate balance of energy homeostasis and the motivational aspects that drive eating behavior. Homeostatic controls ensure that the body maintains a stable internal environment, while non-homeostatic controls, which are associated with reward processing and cognitive influences, also play a crucial role in shaping eating patterns. Furthermore, eating disorders, such as food addiction, often involve a complex interplay of biological, cognitive, and environmental factors. Biological components, including the state of the microbiome and genetic predispositions, contribute to non-homeostatic eating behaviors. Cognitive factors, such as mood, perceptions of food, and cognitive control, also influence eating patterns. Additionally, environmental factors, ranging from cultural influences to socioeconomic status and educational backgrounds, further shape individuals, eating behaviors. By comprehensively understanding the intricate interplay of these factors, we can develop more targeted and effective interventions to address eating disorders and metabolic issues associated with abnormal eating behaviors.

Common weight loss supplements?

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The prevalence of obesity has been rising steadily for the past decades all over the world leading to an increase in prevalence of many complications of weight excess, some of which are well acknowledged, such as Type Diabetes (T2D), obstructive sleep apnea syndrome (OSAS), non-alcoholic fatty liver disease (NAFLD), and cardiovascular disease while others are emerging and currently being investigated. Several strategies have been proposed for the treatment of weight excess and its detrimental consequences, ranging from dietary regimens, to pharmacological treatments, physical exercise, and psychological approaches. Most of these are safe, although some have risen concern. However, despite leading to improvement in many cases, the major issue is the presence of adverse events and reduced compliance. Weight loss is a significant health goal for many individuals worldwide. While the foundation of weight management lies in a balanced diet and regular physical activity, various supplements are frequently used to support weight loss efforts. supplements show potential in aiding weight loss through various mechanisms such as boosting metabolism, enhancing fat oxidation, suppressing appetite, and promoting a feeling of fullness. However, their effectiveness can vary, and they should be used in conjunction with a healthy lifestyle. It is crucial to consider the safety and efficacy of these supplements, as robust clinical evidence is often lacking, and potential side effects may occur. Further research is needed to fully understand their impact and to provide clear guidelines for their use.

Parenteral Nutrition in PICU

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Total parenteral nutrition (also called TPN and intravenous nutrition) is a special mixture of glucose, protein, fat, vitamins and minerals that is given through an IV into the veins in order to provide necessary nutrients when a child cannot consume or absorb enough food or nutrients to grow and be healthy. The exact prescription of TPN depends on each child's condition, estimated nutrition needs, blood work levels and whether the child is receiving other sources of nutrition such as through a feeding tube or if he or she is also eating by mouth. The TPN solution is usually infused continuously over several hours of the day and never actually enters the digestive system.
Infants who get this type of feeding must be watched carefully to make sure they are getting the proper nutrition. Blood and urine tests help the health care team know what changes are needed.
RESULTS: Major recommendations; venous access; protein-energy composition (electrolyte, vitamins and trace elements); formulation; administration; clinical and laboratorial control; and complications were also discussed.
CONCLUSIONS: Parenteral nutrition, if well-indicated, is very important for the management of several childhood diseases, allowing the maintenance and restoration of nutritional status.

Diabesity; How Obesity Is Related to Diabetes?

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Diabesity, a term to describe important pathophysiological link between diabetes and excess body weight, could be considered as the largest epidemic in human history. Chronic local and systemic inflammation caused by the secretion of pro-inflammatory cytokines by adipocytes, excess circulating lipid substrates caused by consumption of long-term high fat diet and reduced heterogeneity in the gut microbiome result in insulin resistance development, the key factor in the pathophysiological process of diabetes incidence in obesity. To manage diabesity, clinical and mechanistic complications of obesity such as metabolic syndrome, obstructive sleep apnea, dyslipidemia, and metabolic-associated fatty liver disease should be addressed. As some anti- diabetic medications such as thiazolidinediones cause weight gain and consequently might aggravate diabesity. Therefore, suitable selection of medication and lifestyle modifications including adherence to a healthy dietary pattern and being physically active should be considered. Usually, in diabetic patients, the importance of diabesity management has been overlooked by physicians when appropriate glycemic control was achieved. Therefore, there is a challenge in this regard and the importance of management of diabesity should be more emphasized because it results in a better

treatment of diabetes and its-related complications.

Nutraceuticals and clinical outcome in hospital patients

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Nutraceuticals, or functional foods, provide health benefits beyond basic nutrition and can significantly improve clinical outcomes for hospital patients. They address various aspects of patient care. Hospital patients, especially those with chronic illnesses or undergoing surgery, often face malnutrition. Nutraceuticals provide essential nutrients, enhancing recovery, reducing infection risks, and improving outcomes. They boost the immune system with probiotics, vitamins, and minerals, aiding quicker recovery. Anti-inflammatory properties in omega-3 fatty acids, curcumin, and resveratrol help manage inflammation. For cardiovascular health, nutraceuticals improve lipid profiles and heart function. In diabetes, they regulate blood glucose levels. Nutraceuticals support brain health and cognitive function, promoting mental health.
Probiotics and prebiotics maintain gut health, aiding digestion and preventing constipation. They also enhance wound healing and serve as adjunct therapies in cancer treatment, improving quality of life. In conclusion, incorporating nutraceuticals into hospital patient care plans can improve clinical outcomes by addressing nutritional deficiencies, supporting the immune system, managing chronic diseases, and enhancing overall health and recovery. These should be used under healthcare professional guidance to ensure safety and efficacy, considering individual patient needs, potential medication interactions, and ongoing monitoring.

Medical nutrition therapy in bone marrow transplant patients

Hoda Zahedi

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Hematopoietic stem cell transplantation (HSCT) has become an established treatment modality for various hematological diseases. As pretransplantation nutritional status affects post-transplantation complications and outcomes, nutritional intervention is highly important before HSCT. Approximately, 50 thousand people undergo HSCT every year worldwide. About 40% of patients experience serious post-transplant complications specifically rapid impairment of nutritional status associated with poor outcome such as higher complication rates during treatment, relapse and overall, lower survival in transplanted patients.
The conditioning regimen including intensive chemotherapy and total body irradiation may cause severe side effects, such as mucositis, nausea, vomiting and diarrhea resulting in insufficient oral intake and extensive malabsorption and malnutrition via the gastrointestinal tract. Deterioration of nutritional status is an independent risk factor influencing on patients' quality of life. Therefore, patients undergoing HSCT may be at nutritional risk due to decreased oral intake, high nutritional requirements and nutrient malabsorption.
Nutritional support plays an important role in HSCT, although optimal management has not yet been well established. We should conduct clinical studies including both retrospective and prospective studies to optimize nutritional support in this field, which is believed to improve the clinical outcome after HSCT.

Treating Obesity to Treat Heart Failure

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Obesity is a common problem in adults and significantly increases the risk of new heart failure (HF). Despite the negative impact of obesity on cardiovascular problems, in some studies obese people with cardiovascular disease had a better prognosis than normal-weight people with the same condition; this issue has been termed the obesity paradox, and various mechanisms and theories have been put forward to justify these findings. However, a more comprehensive understanding of this relatively strong survival advantage is needed and therefore requires further investigation. Most studies measure obesity by body mass index, but studies using measures related to body fat and body composition, such as waist circumference, waist-to-hip ratio, skinfold estimation, and bioelectrical impedance analysis, also confirm the obesity paradox in HF. Better

characterization of the role of visceral and ectopic fat stores and their biochemical activity is important to develop a complete understanding of the underlying pathophysiology. A better understanding of the role of cardiorespiratory fitness may lead to better risk assessment. Despite these contradictions, planned weight loss is accepted and recommended by most scientists, particularly through lifestyle modification and increased physical activity, as this may reduce obesity-related complications such as blood pressure and dyslipidemia. Although it is known that implementing a weight loss program improves hemodynamic function and cardiac structure in non- HF patients, further research is needed to develop evidence-based guidelines for weight management in established HF.

Keywords: Obesity, Heart Failure, Obesity Paradox.

Dysphagia in Post stroke

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Dysphagia is defined as difficulty with swallowing and is a common complication of stroke. The incidence of dysphagia in acute stroke patients is highly variable with a review reporting it ranging from 8.1 to 80%. While others attribute the variability to different methods of screening: cursory screening (37% to 45%), clinical testing (51% to 55%), and instrumental testing (64% to 78%) (Martino et al. 2005). The presence of dysphagia can be identified on the basis of clinical or radiographic examinations, or both. The presence of dysphagia in stroke survivors has been associated with increased mortality and morbidities such as malnutrition, dehydration and pulmonary compromise. Evidence indicates that detecting and managing dysphagia in acute stroke survivors improves outcomes such as reduced risk of pneumonia, length of hospital stays and overall healthcare expenditures. Aspiration following stroke, the most clinically significant symptom of dysphagia, has long been associated with pneumonia, sepsis and death. It has been reported that pneumonia was the second most common cause of death during the acute phase of a stroke, with up to 20% of individuals with stroke-related dysphagia dying during the first year post-stroke from aspiration pneumonia. Steele found that the number of swallowing difficulties seen in stroke survivors was negatively associated with length of hospitalization. Detection of aspiration, both silent and audible, and subsequent adaptive management strategies are regarded as important in the prevention of pneumonia. Management of dysphagia largely focuses on strategies to avoid aspiration following stroke as well as improving patients' quality of life.

Latest nutritional findings in liver transplant patients: A review.

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Protein-energy malnutrition is present in nearly all patients with end-stage liver disease (ESLD) who are awaiting transplantation. Furthermore, the existence of malnutrition prior to transplantation is associated with increased rates of complications following the transplant and poorer outcomes in graft survival. Cause for malnutrition in liver cirrhosis includes reduction in oral intake, increased protein catabolism, insufficient protein synthesis and malabsorption/maldigestion associated with portal hypertension. There is a general consensus on the necessity of intervention for nutritional deficiencies; however, robust scientific evidence endorsing nutritional therapy remains limited. In clinical practices, oral nutritional supplements are typically favored over parenteral nutrition, although enteral tube feeding may be required to ensure adequate caloric intake. It is advisable to avoid protein restriction, and the inclusion of branched-chain amino acids may contribute to achieving an adequate protein supply. Attention must be given to specific issues such as micronutrient deficiencies, fluid balance, cholestasis, encephalopathy, and comorbid conditions to enhance patient outcomes. Following the surgical procedure, there is a significant rise in protein catabolism, necessitating that patients be provided with approximately 1.5 grams of protein per kilogram of body weight. The non-protein energy requirements during this phase fluctuate based on the patient,s metabolic and inflammatory conditions; unstable patients typically require lower energy intakes, whereas more stable

patients may need higher amounts. In situations where indirect calorimetry is not accessible, it is acceptable to estimate energy needs at 25 to 30 kilocalories per kilogram per day.

Keywords: End-stage liver disease (ESLD), Liver transplantation, Nutrition status, Malnutrition.

Very low-calorie diets and clinical prescription in the treatment of obesity

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In the realm of weight management, various dietary approaches have been explored to combat obesity and related health issues. Among these, Very Low-Calorie Diets (VLCDs) also known as Very Low Energy Diets (VLEDs) have garnered significant attention for their potential to induce rapid weight loss, that significantly restrict daily caloric intake, typically to 800 calories or less. These diets are designed to induce rapid weight loss and are often used under medical supervision for individuals with obesity or severe weight-related health issues.

VLCDs have been shown to be effective in achieving substantial short-term weight loss, improving metabolic health markers such as blood glucose levels, and reducing the risk of obesity-related conditions like type 2 diabetes and cardiovascular disease. However, the sustainability and long-term efficacy of VLCDs remain subjects of ongoing research and debate.

This presentation will explore the mechanisms behind VLCDs, their benefits, potential risks, and the importance of medical supervision and recent articles and guidelines review. We will also discuss the psychological and physiological impacts of such diets, and the role they can play in comprehensive weight management programs.

Malnutrition in hospital setting

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The significant yet often underappreciated issue of hospital malnutrition presents a challenge to modern healthcare systems. Affecting 30-50% of hospitalized patients, malnutrition can lead to severe health complications, higher mortality rates, and increased healthcare costs. Despite its prevalence and severe consequences, this problem remains overlooked, largely due to insufficient awareness and inadequate resources for screening and treatment. Implementing effective strategies for addressing malnutrition in hospitals is essential for improving patient outcomes and reducing healthcare costs.

NutritionDay, supported by ESPEN since 2006, is a global initiative aimed at raising awareness and addressing hospital malnutrition, through conducting annual audits in hospitals, intensive care units, and nursing homes. NutritionDay evaluates the prevalence of malnutrition and its impact on hospitalization outcomes. In Iran, nutritionDay was followed from 2009 until 2023. The overall prevalence of malnutrition was found to be 35% and did not exhibit a specific trend over the 14 years of the study. Additionally, the results indicate that malnutrition, low food intake, and being bedridden were significantly associated with mortality and prolonged hospital stays.

FREE ORAL PRESENTATIONS

The effectiveness of the nutritional support program for children aged 6 to 59 months under the coverage of Mashhad University of Medical Sciences 2023

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Introduction: in children under 5 years of age is a significant public health problem in many countries worldwide. According to the World Health Organization, in 2022, approximately 149

million children under 5 years of age were stunted, 45 million were severely wasted, and 37 million were overweight or obese. The Ministry of Health and the Ministry of Cooperatives, Labor, and Social Welfare in Iran implemented a support program for malnourished children aged 6 to 59 months. Known as the "Child Food Security Program," this initiative aims to improve the nutritional status and growth of children within this age group.

Method: A total of 23,902 children identified with malnutrition (Z-score < -2) were enrolled in a nutritional support program. Following a wealth assessment, 17,619 children qualified for a food package and financial assistance. The financial aid, ranging from 600,000 to 1,000,000 Rials, was determined based on the family's socioeconomic status.

Result: The nutritional support program in Iran for malnourished children aged 6-59 months has shown positive results. Mashhad University of Medical Sciences accounted for 13.2% of the total children who qualified. After six months, stunting decreased by 32.5%, underweight by 52.4%, and wasting by 66.6% in the identified children.

Conclusion: The nutritional support program effectively improved the nutritional status and growth of malnourished children in Iran. It provided subsidies, food, education, and counseling, leading to significant reductions in stunting, underweight, and wasting. This program demonstrates the positive impact of nutritional support and can be a model for other countries.

Keywords: Malnutrition, children, nutritional support program

Sour Tea effects intake on body composition indices: A Meta-Analysis in combination with Systematic Review

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Background: Hibiscus Sabdariffa L. that known as sour tea is a beverage are widely used for improving chronic condition include cardiovascular disease, liver dysfunction, and obesity. The aim of the present study was to systematically review and perform a meta-analysis on the evidence evaluating the effects of sour tea on body composition and anthropometric markers.

Methods: A literature search of Web of Science, Scopus, and PubMed/Medline, was conducted for RCTs investigating the efficacy of Sour Tea on body composition up to February 2022. The response variables examined in the present study included body weight, body mass index, waist circumference, body fat mass, and hip circumference.

Result: Pooled effect size of mean difference (95% CI) between the treatment and placebo interventions was estimated for body weight (-0.51 kg, -3.35, 2.32), body mass index (-0.09 kg/m2, -0.98, 0.80), waist circumference (-0.26 cm, -2.86, 2.35), hip circumference (-0.07 cm, -2.87, 2.74), and body fat mass (-1.85 %, -4.90, 1.19).

Conclusion: Despite the decreasing impacts of sour tea consumption on body composition and anthropometric indices, this effect was not statistically significant. However, there are several determinant factors that probably affected our findings, including the type, dosage, and duration of the intervention as well as the heterogeneity of the target population. Thus, future well designed clinical trials are suggested to establish a definitive conclusion in this field.

Keywords: Hibiscus Sabdariffa L, Sour tea, Body composition, Anthropometric indices

The favorable effect of synbiotic and vitamin D co-supplementation on body composition and quality of life in middle-aged overweight and obese women: A randomized controlled trial

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Introduction: Obesity is a worldwide problem which has involved large populations. Since some dietary factors might modify obesity through various signaling pathways, the aim of this study was to investigate the effect of synbiotic plus vitamin D co-supplementation on body composition parameters and quality of life, in middle-aged overweight and obese women.
Methods: A randomized, controlled, double-blinded trial was performed and 88 overweight and obese women were assigned to 4 groups (22 per group), receiving synbiotic plus vitamin D, synbiotic, vitamin D and placebo for 8 weeks. At the beginning and at the end of the trial, anthropometric indices, body composition indicators, physical activity level, dietary intake, and quality of life score were measured by trained nutritionists. Statistical analysis was performed with SPSS version 22.
Results: The results showed significant difference between 4 groups in waist circumference (WC), fat mass (FM), body fat percentage (BFP) and visceral fat area (VFA) values after 8 weeks of treatment (P = 0.005, P = 0.007, P = 0.003, and P = 0.009, respectively), with the greatest reduction in synbiotic plus vitamin D group compare to placebo. No significant results were demonstrated between groups in relation to other body composition variables. In addition, there were no significant differences between the 4 groups regarding physical, mental and total aspects of life quality over time.
Conclusions: Our study demonstrated that synbiotic and vitamin D co-supplementation for 8 weeks, had favorable effect on various anthropometric indices and body composition indicators, but no desirable change in life quality score.
Keywords: obesity, body composition, vitamin D, synbiotic.

Comparative Study of the Accuracy of Different Indicators in Predicting 28-Day Mortality of Critically Ill Patients Admitted in Intensive Care Units: A Prospective Multi-Central Observational Study

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Introduction: Assessment of disease severity is essential both for research and for evaluating the quality of care in critically ill patients. Evaluating the predictive accuracy of such biomarkers and scores not only provides insights into the patient's current health status, but also considers existing comorbidities that may affect their recovery. Therefore, the aim of this study is to compare the predictive accuracy of Acute Physiology and Chronic Health Evaluation II (APACHE II), Sequential Organ Failure Assessment (SOFA) and Modified Nutrition Risk (mNUTRIC) and biomarkers such as albumin levels and white blood cells in critically ill patients. Understanding the relationship between these factors can lead to better prognostic capabilities and improved patient managements.
Methods: This prospective multi-central study included a total of 155 capable patients who were meet the criteria after the admission to general and neurosurgery ICUs of Imam Reza and Shahid Kamyab Hospital, Mashhad, Iran. Age, gender, diagnosis, APACHE II score, mNUTRIC score, SOFA score, serum albumin level, WBC counts and 28-days mortality were noted.
Results: With consideration ROC Curve Results, the APACHE II (AUC = 0.725), mNUTRIC score (AUC = 0.659), WBC (AUC= 0.607), SOFA (AUC = 0.537), and Albumin (AUC= 0.386) were respectively the most accurate predictors of mortality in our studied patients.
Conclusion: Our result showed that the APACHE II score and mNUTRIC score was more accurate mortality predictor than SOFA, WBC II and other suggestive predictors in critically ill patients and also highlight the importance of evaluate nutritional risks along with other disease severity questionnaires in ICU admitted patients.

Keywords: Acute physiology and chronic health evaluation II, Modified nutrition risk in critically ill, Sequential organ failure assessment, Serum Albumin, White Blood Cells

Immediate and short-term effect of curcumin-piperine co-supplementation on allograft function and tacrolimus levels in deceased kidney transplant recipients: a randomized controlled trial

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Introduction: The effect of curcumin-piperine co-supplementation on early allograft function and tacrolimus levels in kidney transplant recipients (KTRs) is unclear. This study performed a randomized, triple-blind, placebo-controlled trial to assess whether curcumin-piperine co-supplementation increased allograft function in KTRs.
Methods: The primary outcomes were the alteration in serum creatinine, incidence of delayed graft function (DGF), and serum tacrolimus levels. The secondary outcomes included estimated glomerular filtration rate, aspartate transaminase, alanine transaminase, albumin, and period of DGF. Fifty KTRs were recruited and randomized 1:1 to curcumin (500 mg) plus piperine (5 mg) daily or placebo.
Results: Curcumin-piperine supplementation resulted in a smaller decrease in albumin levels (-0.52 ± 0.55 vs - 0.18 ± 0.51, P=0.02), greater decrease in serum creatinine at day 2 (- 0.92 ± 1.38 vs -2.22 ± 1.31, P=0.001), and DGF incidence (20 vs 5, P<0.001). The duration of DGF, estimated glomerular filtration rate, aspartate transaminase, alanine transaminase, and tacrolimus levels did not differ between the groups. Curcumin-piperine co-supplementation did not affect tacrolimus levels compared to placebo, contrary to its beneficial effect on DGF short-term post-transplantation.
Conclusion: Our findings suggest that curcumin-piperine supplementation improves allograft function in deceased donor KTRs short-term post-transplantation.
Keywords: curcumin, kidney, transplantation, allograft function, tacrolimus, piperine

Impact of a Low-calorie, High-protein Diet on Psychometric Factors in Obese Individuals: A Randomized Clinical Trial

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Background and Aims: The global prevalence of obesity has become a significant public health concern, especially in low- and middle-income countries. The present study was conducted to examine the effects of a low-calorie, high-protein diet on psychometric variables in obese individuals.
Materials and Methods: In this randomized clinical trial study, eligible participants were randomly allocated to either the intervention group, which received a low-calorie diet with an increased percentage of protein, or the control

group, which followed a standard protein percentage diet. The psychometric characteristics of the participants were assessed using the Depression Anxiety Stress Scale-2 (DASS-2) questionnaire.

Results: There were no statistically significant differences in anthropometric variables, body composition, and physical activity between the two groups (p-value > .05). Likewise, no significant differences were found in psychological variables, including depression, anxiety, and stress, (p-value > .05). However, the intervention group exhibited significantly lower depression and anxiety scores at the 15-day mark of the intervention (p-value < .05). Furthermore, at 30 and 60 days, significant differences were observed between the two groups in terms of depression, stress, and anxiety (p-value < .05), indicating a relative improvement in psychometric variables in the intervention group (p-value < .05).

Conclusion: The findings of this study indicate that implementing low-calorie diets with a high protein percentage can lead to significant improvements in psychometric variables among obese individuals. The trial was registered with the Iranian Registry of Clinical Trials, with the identifier IRCT20221101056371N1.

Keywords: High-protein diet; Low-calorie diet; Obesity; Psychometric variables; anxiety; depression; overweight; stress.

Investigating the relationship between dietary fatty acids and risk of pancreatic steatosis

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Background: Pancreatic steatosis (PS) is associated with various health complications. While age and obesity are recognized as common risk factors, the impact of dietary factors on PS development remains uncertain. This study aimed to explore the relationship between dietary fatty acids and the risk of PS.

Methods: For this case-control study, participants with gallstones were recruited from Taleghani Hospital, Tehran, Iran. Participants (n=278) underwent endoscopic ultrasound (EUS). 89 patients with PS and 189 healthy individuals were identified. Total dietary fat, cholesterol, and fatty acids including saturated (SFA), monounsaturated (MUFA), and polyunsaturated (PUFA), were assessed using a validated food frequency questionnaire. Logistic regression models were used to estimate crude and multivariable-adjusted odds ratios (ORs) and 95% confidence intervals (CIs).

Results: Increased risk of PS was observed in the highest tertile of total dietary fat (OR=2.3, CI 95%: 1.2-4.5, P=0.012), cholesterol (OR=4.27, CI 95%: 2.1-8.5, P=0.001), SFA (OR=3, CI 95%: 1.5-6, P=0.002) and PUFA-6 (OR=1.6, CI 95%: 0.73-3.59, P=0.031) in the full adjusted model. Conversely, increased intakes of MUFA (OR=0.43, CI 95%: 0.22-0.83, P=0.002) and PUFA-3 (OR=0.74, CI 95%: 0.39-1.37, P=0.012) were associated with decreased risk of PS. No significant association was found between PUFA and PS.

Conclusion: Increased dietary intake of total, saturated, and n-6 polyunsaturated fats and cholesterol may act as predisposing factors for developing PS. while, monounsaturated and n-3 polyunsaturated fatty acids appear to have a protective effect. Further studies are needed to confirm these results and elucidate the role of dietary fatty acids in PS development.

Keywords: Pancreatic steatosis, Dietary fatty acids, gallstone

Selenium and systemic lupus erythematosus (SLE): A double- blind randomized controlled trial

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Objective: This randomized trial aimed to investigate the effects of selenium on patients diagnosed with systemic lupus erythematosus (SLE).
Design: 50 SLE patients were randomly assigned to receive daily either 200 µg of selenium supplement or a placebo for eight weeks. Both groups received general healthy lifestyle recommendations. Blood samples to measure the stress markers were assessed before and after the intervention. The systemic lupus erythematosus disease activity index (SLEDA) was used to assess the clinical signs of the patients before and after the intervention.
Results: Selenium supplementation compared with the control group significantly reduced serum high-sensitive reactive protein (CRP), Erythrocyte Sedimentation Rate (ESR), Malondialdehyde (MDA), and increased Glutathione peroxidase (GPX), and total antioxidant capacity (TAC). Except for ESR (p= 0.019), the p value of all of the said parameters was <0.001. Clinical manifestations of the disease such as arthritis (p= 0.012) and alopecia (p= 0.011) were also improved following the intervention.
Conclusion: A daily intake of 200 µg of selenium supplements for 8 weeks could significantly improve several metabolic markers and clinical manifestations in lupus patients.
Keywords: Glutathione Peroxidase, Malondialdehyde, Selenium, Systemic Lupus Erythematosus, Total Antioxidant Capacity

Metabolic and nutritional outcomes after Sleeve gastrostomy and Gastric bypass in adolescents: A cohort study with 1-year follow-up

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Background: This cohort study conducted to compare the anthropometric and metabolic outcomes and nutritional status, after sleeve gastrostomy (SG) and gastric bypass (GB) adolescents with severely obesity.
Methods: A total of 219 adolescents with severely obesity (Body Mass Index > 99th percentile or 99th > BMI ≥ 95th percentile) were selected among the participants of Tehran Obesity Treatment Study and were assessed for anthropometric and metabolic outcomes and nutritional status at baseline and during 1 year follow up after the surgery.
Results: Out of the total, 182 participants were in the SG group and 37 were in the GB group. BMI was lower in SG patients compered to GB group (38.5 ± 4.8 kg/m2 vs 36.1 ± 4.0 kg/m2, p-value< 0.05), 3 months after surgery. Metabolic profiles such as aspartate transaminase (SGOT) and alanine transaminase (SGPT) were lower in SG group compared to GB one after 6 months of follow-up, while high-density lipoprotein (HDL-C) was higher in SG patients compered to GB patients (41.6 ± 8.4 mg/dl vs 48.0 ± 9.2 mg/dl, p-value< 0.05). After one year, total cholesterol (TC) and low-density lipoprotein (LDL-C) were higher in adolescents who underwent SG compared to those in GB group. There was no significant difference in micronutrient status between SG and GB groups.
Conclusion: It seems that SG in adolescents with obesity and fatty liver disease, is more appropriate but GB may be preferred in patients with a history of lipid profile abnormalities. More studies are

needed to draw conclusions about nutritional status and long-term outcome after surgery.
Keywords: Adolescents, Bariatric surgery, Gastric bypass, Obesity

Design a special diabetic formulation for critically ill patients able to receive enteral nutrition

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Introduction: Proper nutritional support plays a vital role in improving the clinical outcomes of patients admitted to the intensive care unit (ICU). This study aimed to design specific formulas for diabetic patients who need enteral nutritional support admitted to the ICU.
Methods: We considered the specific type and amount of macronutrients; the required analyses were carried out to ascertain the proper proportion of fats, proteins, and carbohydrates. Subsequently, vitamins, minerals, and specific compounds were added based on the diabetes patient's demands, and relevant analyses were conducted. A formulation with an average daily intake of 2000 cc was used to meet the patient's requirement.
Results: Energy in this new formulation was in the range of 103–112 kcal/100 ml. Due to the implementation of HACCP, monitoring the production line, and performance of corrective measures, no microbial contamination was observed by indicator pathogenic microorganisms.
Conclusion: After consulting with the pharmaceutics professors, a formulation for diabetics was created. Step two will involve performing the new formulation on critically ill ICU patients as a randomized control trial.

Keywords: Diabetic; Critical Care; Enteral Nutrition; Formula; Intensive Care Unit Patients

A doseeresponse meta-analysis of randomized clinical trials investigating the effects of omega-3 supplementation on body weight in patients with cancer cachexia

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Background: Cachexia is one of the side effects of cancer diseases that can be reduced weight, and lower overall survival. Weight loss has been associated with adverse outcomes in both cancer patients and patients with benign diseases. There is no definitive treatment for fully reverse cachexia. studies showed higher levels of inflammatory markers in patient with cachectic cancer. Therefore, this study aimed to investigate the doseeresponse effects of omega-3 as an anti-inflammatory supplement on body weight in patients with cancer cachexia.
Methods: Online databases including PubMed, Scopus, and Web of Science were systematically searched by relevant keywords up to January 2022. Random effect analysis was applied to perform meta-analysis. Subgroup analyses were performed to find heterogeneity sources. Quality assessment was conducted using Revised Cochrane Collaboration's tool II. Trim and fill analysis were also carried out in case of the presence of publication bias. The certainty in the evaluations was assessed by the GRADE approach.
Results: Omega-3 supplementation resulted in a significant increase of body weight in patients with cancer cachexia when the age of study participants was 67 years and the baseline weight of them was 60 kg (WMD ¼ 0.99; 95 % CI: 0.06, 1.92 and WMD ¼ 1.22; 95 % CI: 0.14, 2.30, respectively). Also, there was a non-significant linear relationship between the dosage of omega-3 supplementation and body weight in patients with cancer cachexia.
Conclusion: Omega-3 supplementation may be a promising agent to increase body weight in patients with cancer cachexia. Also, a non-significant linear relationship between the dosage of omega-3 supplementation and body weight was found in these patients

Oral Nutritional Support in Critically Burned Children and Infants: Conclusion of a 6-month Follow-up and Medical Nutrition Therapy in Emam Reza Hospital of Mashhad

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Background: In clinical settings, there is a challenge in providing nutritional care for critically burned children and infants to improve survival. Steps must be taken to address changes in oral support.
Materials and Methods: Nutritional interventions were admitted for over 88% of patients in burn units and ICUs by the resident nutritionist of the unit. Their healing process and nutritional outcome were checked every 3-7 days.
Results: Energy intake and protein requirement are better to be considered using Curreri junior formula and 2-4 gr/kg body weight. Providing energy may require mixed forms of oral nutrition support or enteral nutrition with partial parenteral. At least 3.5 gr L-arginine and 3.5 gr L-Glutamin are recommended. To increase appetite, syrup form of Multivitamins and zinc is suggested from the first day of admission. In children under 13, the suggested daily intake includes 2500–5000 IU of vitamin E, 250-1000 mg of Vitamin C, 60-140 mg of selenium, and 3-15 cc Multivitamins (B group) along with 12-25 mg of zinc. For children over 13, daily intake includes 10000 IU vitamin E, 0.5-3 g Vitamin C, 300-500 mg selenium, and 10-30 cc Multivitamins along with 25-40 mg zinc. One dose vitamin D intake of 50000 IU is recommended for children over 4 years, and weekly for children with over 60% burn with the risk of sepsis. Iron therapy is not recommended due to the risk of infection.
Conclusion: Proper nutrition and supplement therapy play a critical role in the survivability of burn children and infants, demanding careful attention.
Keywords: Burn, Clinical Nutrition, pediatric, supplement therapy

The effectiveness of non-surgical interventions for weight loss maintenance in adults: An updated GRADE-assessed systematic review and meta-analysis of randomized clinical trials

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Background: In this study, we sought to summarize the impact of non-surgical interventions for weight loss maintenance in adults from randomized clinical trials (RCTs).
Methods: We conducted a systematic review by searching Medline (PubMed), Scopus, and Web of Science databases from inception to June 2023, and extracted appropriate RCTs through relevant keywords and MeSH terms. The mean difference (MD) and 95% confidence interval (CI) were calculated as part of the meta-analysis using a random-effect model to determine the mean effect sizes. Analysis of the Cochrane Chi-squared test were also conducted to examine heterogeneity.
Results: Meta-analysis of data from a total of 56 RCTs (n = 13270 participants) represented a significant weight reduction following behavioral/lifestyle interventions (MD: -0.64; 95% CI: -1.18 to -0.09 kg; I2= 89.5%; P heterogeneity < 0.001). Pharmacological interventions had also a significant effect on weight change during the weight maintenance phase (MD: -2.57; 95% CI: -3.12 to -2.02 kg; I2 = 91.6%, P heterogeneity <0.001). The weight loss reduction from pharmacological interventions was stronger in study applied Sibutramine (MD: -2.57; 95% CI: -3.12 to -2.02). Additionally, both diet intervention and dietary and physical activity strategies were associated with a negligible trending decrease in weigh regain (MD: -0.91; 95% CI: -2.18 to 0.36 kg; I2 = 55.7%, P heterogeneity =0.016, MD: -0.3; 95% CI: -4.13 to 3.52 kg; I2 = 94.1%, P < 0.001).

Conclusion: Our meta-analysis indicated a favorable impact of behavior-based interventions and anti-obesity medications on weight maintenance.
Keywords: overweight, Obesity, weight loss maintenance, weight management, physical activity, exercise, behavioral approach.

Association of dietary acid load with endometriosis: a case-control study

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Introduction: Endometriosis, an inflammatory disorder, impacts 5–15% of women in their reproductive years. Despite diet being a key modifiable risk factor, its potential role in endometriosis has been under-researched. This study aimed to investigate the relationship between Dietary Acid Load (DAL) and the odds of endometriosis among Iranian women.
Methods: This hospital-based case-control study involved participants diagnosed with endometriosis and healthy controls, confirmed by a gynecologist unaware of the study's objectives, from February to September 2021, in Tehran, Iran. Eligible participants were aged 18-49, and selected using a convenience sampling method. Dietary intake was evaluated using a validated Food Frequency Questionnaire comprising 168 food items. Three separate methodologies were employed to measure DAL: Potential Renal Acid Load (PRAL), Net Endogenous Acid Production (NEAP), and the protein to potassium intake ratio. The logistic regression models were used to investigate the association between DAL and odds of endometriosis.
Results: The study included 105 participants with endometriosis and 208 healthy controls. The findings revealed that each unit increase in PRAL, NEAP, and the protein to potassium intake ratio corresponded to an 8% (95% confidence interval (CI): 1.05, 1.11; P-value < 0.001), 4% (95%CI: 1.03, 1.07; P-value < 0.001), and 10% (95%CI: 1.06, 1.15; P-value < 0.001) increase in the odds of endometriosis, respectively.
Conclusions: The study showed that an increase in DAL was associated with an increased odds of endometriosis. To reduce the odds of endometriosis, it is recommended to limit the consumption of acidogenic foods.
Keywords: chronic diseases, inflammation, menstruation, reproduction

The effect of Mediterranean-DASH Intervention for Neurodegenerative Delay (MIND) diet on sleep quality and circulating BDNF in diabetic women with insomnia: A randomized controlled trial

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Introduction: Insomnia is common in type 2 diabetes mellitus (T2DM) and affects mental health and quality of life. The present study aimed to examine the efficacy of MIND (Mediterranean-DASH Intervention for Neurodegenerative Delay) diet on the sleep quality and brain derived neurotrophic factor (BDNF) in type 2 diabetic women with insomnia.

Methods: This randomized controlled trial involved 44 type 2 diabetic women with insomnia, aged 30 to 65 years, who were randomly assigned to be under the MIND low-calorie diet (n = 22) or a low-calorie diet (LCD) as the control group (n = 22) for 12 weeks. The above-mentioned variables were assessed at the beginning and the end of intervention.
Results: Following the MIND diet for 12 weeks accompanied by the significant improvement of sleep quality and its subscales compared to the control group. In addition, the MIND diet vs. LCD group exhibited a significant increase in BDNF.
Conclusion: This study provides promising evidence of the effectiveness of the MIND diet in improving the sleep quality and serum level of BDNF in diabetic women with insomnia.
Keywords: BDNF, diabetes mellitus, Insomnia, MIND diet, sleep quality

Associations between Global Diet Quality Score and Risk of Metabolic Syndrome and Its Components: Tehran Lipid and Glucose Study

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Introduction: There have been numerous suggestions regarding the use of various food quality indicators to predict the risk of developing metabolic syndrome (MetS). This study was conducted to explore the association between the global diet quality score (GDQS) and the risk of developing MetS and its components.
Methods: This secondary analysis included 4,548 adult participants from the Tehran Lipid and Glucose Study. Valid and reliable semi-quantitative food frequency questionnaires were used to collect dietary data. MetS was defined based on the Iranian-modified National Cholesterol Education Program criteria. Multivariable Cox proportional hazard regression models were employed to assess the incidence of MetS with GDQS.
Results: The study involved 1,762 men and 2,786 women with mean ages of 38.6±14.3 years and 35.9±11.8 years, respectively. A total of 1,279 participants developed MetS during the mean follow-up of 6.23 years. The incidence of MetS was found to be associated with GDQS (hazard ratio [HR], 1; 0.90 [95% confidence interval, CI, 0.82 to 0.98]; 0.84 [95% CI, 0.76 to 0.91]; 0.80 [95% CI, 0.73 to 0.89]; P for trend <0.001) after adjusting for confounding variables. The healthy food group component of GDQS was associated with the incidence of MetS. GDQS falling within the 12%-17% range in the fourth quartile was associated with a decrease in incidence of MetS components. Both healthy and unhealthy food group components of GDQS contributed to a decrease in the incidence of high triglycerides, high blood pressure, and high fasting blood glucose.
Conclusion: A higher GDQS was observed to be associated with a lower risk of the incidence of MetS or its components among adults in Tehran. Greater consumption of healthy food groups and lower consumption of unhealthy food groups as indicated by the GDQS were predictive of a lower incidence of MetS and its risk factors.
Keywords: Hypertension, Hyperglycemia, Global diet quality score, HDL cholesterol, Metabolic syndrome, Triglycerides, Waist circumference.

The combined effects of flaxseed and fasting mimicking diet on anthropometric indices, biochemical parameters, and hepatic function tests in patients with non-alcoholic fatty liver diseases (NAFLD): a randomized controlled clinical trial

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Introduction: The most common chronic liver disease worldwide is non-alcoholic fatty liver disease (NAFLD) which no definitive treatment has been established yet. Although benefits of flaxseed and fasting-mimicking diet (FMD) alone have been demonstrated in the management of NAFLD, the advantages of combining the two are unclear. Therefore, this study aimed to examine the combined effect of FMD and flaxseed in patients with NAFLD.
Methods: The present study was conducted as a randomized, parallel, open-label controlled clinical trial on 100 patients with NAFLD for 12 weeks. Participants were divided into four groups, including: control (lifestyle modification recommendations); flaxseed (30 g/day of flaxseed powder); FMD with 16 hours of fasting, and combination of FMD with flaxseed. Changes in anthropometric indicators, serum concentrations of lipid and glycemic profiles, C-reactive protein (hs-CRP), liver function tests (LFT) and hepatic steatosis and fibrosis were evaluated.
Results: We found a significant difference in triglyceride, fasting blood sugar, hs-CRP and LFT in all intervention groups compared to the control group. Also, total cholesterol, insulin and liver fibrosis and steatosis significantly decreased in all groups, but low- and high-density lipoprotein cholesterol remained unchanged. Besides, the changes of total cholesterol, triglyceride, insulin, insulin resistance and sensitivity, liver fibrosis and LFT were significant between the four groups.
Conclusion: Finally, combining FMD and flaxseed probably could be a promising non-pharmacological treatment for NAFLD, though it failed to indication a synergistic effect in comparison with each alone.
However, this strategy needs to be customized to encourage long-term adherence in different populations.
Keywords: Fasting mimicking diet, flaxseed, non-alcoholic fatty liver disease.

Using the mathematical equations to estimate variations of body size and body composition in overweight and obese women adhering to a weight-loss diet

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Introduction: Prediction of the changes in body size and other anthropometric indices following the weight loss is very significant in the compliance of a weight-lowering diet. Regarding the limited research in this area, the present study designed to estimate the variations of anthropometric and body composition measurements following a weight-loss diet in overweight and obese females.
Methods: A total of 212 overweight/obese females aged 18-60 years who adhered to an individualized low-calorie diet (LCD) were monitored for five months and body weight, waist circumference (WC), hip circumference (HC), body composition (e.g. lean mass and fat mass), body mass index (BMI), waist to hip ratio (WHR), waist to height ratio (WHtR), a body shape index (ABSI), and abdominal volume index (AVI) were determined. Data were analyzed using Stata (Version 18.0) and linear mixed model.
Results: A consistent decrease in anthropometric measurements and fat mass was observed during

five-months follow-up of LCD, which were significantly associated with weight loss except than WHR. Furthermore, mathematical equations demonstrated a close relationship between percent change (PC) of body weight with decrease of WC (PC-WC=−0.120+0.703×PC-WT), HC (PC-HC=−0.350+0.510×PC-WT), body fat percentage (PC-Body Fat=−0.019+0.915×PC-WT), BMI (PC-BMI=−0.024+0.992×PC-WT), WHtR (PC-WHtR=−0.113+0.702×PC-WT), and improvements in ABSI (PC-ABSI=−0.112+0.034×PC-WT) and AVI (PC-AVI=−0.324+1.320×PC-WT).

Conclusion: The decreasing rates of WC, HC, body fat percentage, WHtR, ABSI, and AVI in relation to the weight loss were clinically and statistically significant. This means that a healthy weight lowering diet would be accompanied by reducing the body fat, body size and the risk of morbidities.

Keywords: Anthropometry, Body composition, Mathematical equations, Weight-loss diet.

Advanced glycation end products (AGEs) and risk of gallstone: a case–control study

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Introduction: Gallstone disease (GSD) and its complications are major public health issues globally. Contributing factors include genetic predisposition, increased biliary mucin secretion, and associations with metabolic syndrome components such as obesity and type 2 diabetes. Advanced glycation end products (AGEs), are linked to oxidative stress and inflammation, which contribute to chronic diseases like diabetes. High dietary AGEs (dAGEs) have been associated with an increased risk of gallbladder cancer and impaired gallbladder function, especially in diabetic patients. While the relationship between AGEs and gallstones is not fully understood, there may be a connection to increased adiposity, prompting the current study to explore the impact of dAGE consumption on gallstone risk and the need for further investigation.

Methods: In this case–control study, 189 GSD patients with less than one month of diagnosis and 342 age-matched controls were enrolled. Dietary intakes were assessed using a 168-item semi-quantitative validated food frequency questionnaire. Crude and multivariable-adjusted hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated through cox proportional hazards regression models.

Results: The results indicated that a significant association between higher levels of AGEs and increased risk of gallstone formation. In models adjusted for age, sex, energy intake, BMI, physical activity, smoking, and alcohol consumption, participants in the highest quartile (Q4) had more than double the risk of gallstone formation compared to those in the lowest quartile (Q1) (OR = 2.25; 95% CI: 1.33-3.82; P = 0.001). Moreover, higher AGEs levels were associated with dietary and lifestyle changes, such as increased meat and alcohol consumption.

Conclusions: A positive association between higher levels of AGEs and increased risk of gallstones. Reducing dietary AGEs intake and improving lifestyle habits could potentially lower this risk.

Keywords: Gallstone disease, Cohort study, Advanced glycation end products, AGEs

The effect of casein-free diet (CFD) in children with autism spectrum disorder (ASD)

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Introduction: Autism is a psycho-developmental disorder and a neuro-progressive syndrome which appears at the beginning of childhood. Nutritional intervention with the restriction of some food groups is considered as one of the new methods in controlling this disorder.
Therefore, the purpose of writing this article is to investigate the effect of casein-free diet (CFD) in children with autism spectrum disorder (ASD).
Methods: Among the 100 children under treatment in the education and rehabilitation center of Isfahan province as the statistical population, 80 eligible children were selected as the sample size by random sampling method. People were divided into two groups of 40 people, control and experimental. The subjects of the control group received 100 grams of dairy products and the subjects of the experimental group also received 100 grams of the same products but isolated from casein for six months. The symptoms of autistic children were also evaluated through the ATEC questionnaire. Finally, the results and data were analyzed through the variance, standard deviation and T-test using SPSS software.
Results: According to the average data resulting from the behavioral responses of children affected by the nutritional intervention, it can be concluded that the changes of the experimental group compared to the control group are a function of casein-free diet therapy and are completely meaningful.
Conclusions: The changes of the experimental group compared to the control are a function of the treatment diet without casein and are completely significant.
Keywords: autism spectrum disorder, casein, childhood

Investigating the effect of dietary protein source on metabolic responses during the postprandial phase in overweight and obese men: An acute phase study

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Background: Numerous studies have extensively documented the obesogenic and metabolic effects of high-protein diets. However, beyond protein quantity, emerging evidence suggests that different dietary protein sources may exert distinct influences on metabolic responses and vascular function. This study aimed to evaluate the postprandial effects of dietary protein source, comparing animal-based protein (AP) and plant-based protein (PP), on metabolic responses including energy metabolism and glycemic response in overweight and obese men.
Method: This acute randomized crossover clinical trial involved forty-eight overweight and obese men, with a mean age of 33.48 ± 8.35 years and an average BMI of 29.15 ± 2.33 kg/m2. Participants consumed two high-protein test meals with different protein sources (AP and PP) on separate days, with a 7-10-day washout period in between. On each test day, energy metabolism parameters and blood samples were collected in the fasting state and postprandial phase after consuming test meals. Statistical analysis utilized SPSS version 25 and R programs, evaluating the effects of carry-over, treatment, time, and treatment×time interaction using generalized estimating equations (GEE) analysis.
Results: GEE analysis, controlling for baseline values, revealed a significant effect of dietary protein source on postprandial insulin ($p<0.001$) and glucose ($p=0.01$). AP induced a more substantial increase in insulin response one-hour post-meal compared to PP (268.25% vs. 122.6%). Regarding glucose response, PP exhibited fewer fluctuations in glycemic response, yet AP demonstrated a more significant decrease at the test's conclusion (8.15% vs. 6.46%). Notably,

dietary protein source significantly influenced postprandial resting energy expenditure (REE) (p=0.0015) and carbohydrate oxidation (p=0.03). AP resulted in a higher REE response one hour postprandial compared to PP (14.2% vs. 9.55%) and increased carbohydrate oxidation.

Conclusion: This study's findings highlight a heightened thermogenic and insulin response to AP compared to PP in the postprandial phase. AP also demonstrated greater suppression of glycemic response at the test's end, while PP exhibited fewer glucose fluctuations.

Keywords: Protein source, Postprandial, Energy expenditure, Glycemic response

The effect of oral trehalose on inflammatory factors, oxidative stress, nutritional and clinical status in patients with head trauma at intensive care unit: A Pilot, Double-Blind, Controlled, Randomized Clinical Trial

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Background: Traumatic brain injury (TBI) is the most common cause of cognitive and behavioral deficits, disability, and mortality worldwide. Trehalose is a natural non-reducing disaccharide of glucose which its anti-inflammatory and anti-oxidative stress effects have been proven in past in vivo and in vitro studies. This study aims to evaluate the effect of oral trehalose on inflammatory biomarkers, oxidative stress indices and clinical outcomes in hospitalized traumatic brain injury patients.

Methods: Twenty participants with traumatic brain injury were randomly assigned to the intervention or control group in order to evaluate the effect of oral trehalose (30g instead as a part of the daily carbohydrate of enteral feeding) or placebo groups (standard isocaloric hospital enteral feeding) using 12-day parallel study. Inflammatory and oxidative stress biomarkers such as interleukin-6 (IL-6), C-Reactive Protein (CRP), Pro-oxidant-antioxidant balance (PAB), superoxide dismutase (SOD), glutathione (GSH), and malondialdehyde (MDA), clinical outcomes, including APACHE II, SOFA scores, NUTRIC score, GCS, ICU discharge time, mechanical ventilator duration, 28-day and 60-day mortality rate were measured at the beginning and end of the study.

Results: The trehalose intake could significantly improve CRP (mean change: -30±25 mg/L, P <0.001) and NUTRIC score (mean change: 0(-2,0), P=0.04). In addition, a marginally significant decrease in APACHE II score (mean change: -3±5, P=0.07) and 28-day mortality (0 vs. 30%; P=0.06, {NNT} = 3) was observed. Moreover, among anthropometric indicators, only a marginally decrease in MAC (mean change: -0/5 (-1,0) was shown. No considerable effect was observed on other biomarkers, anthropometric indices and clinical outcomes in the intervention group as well as the control group.

Conclusion: This trial provided some evidences that trehalose administration improved CRP and marginally improved some clinical outcomes, such as NUTRIC score and 28-day mortality in TBI patients in ICU.

Keywords: Traumatic brain injury, Mortality, Trehalose, Inflammation, Oxidative Stress

Investigating the relationship between vegetable protein and lipid profile in overweight and obese women

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Background: Characteristic Cardiovascular disease (CVD) constitutes approximately 48% of fatalities linked to noncommunicable diseases on a global scale and continues to be the predominant cause of death. The modification of risk factors through dietary and lifestyle interventions, particularly in relation to dyslipidemia, is regarded as the foundational element of therapeutic strategies, as endorsed by prominent cardiovascular guidelines.
Materials and methods: The intake of animal and vegetable proteins was taken from the 147-item food frequency questionnaire and measurements of anthropometry; body composition and blood pressure were taken for all participants based on standards. The data were analyzed with spss software and P<0.05 will be considered statistically significant.
Results: Logistic regression has been used to show the relationship between plant protein and lipid profile. The findings of this study show that there is no difference between age (P=0.71) and body mass index (P=0.86) in protein consuming groups. After adjusting the effect of confounders such as age, BMI, physical activity and caloric intake, no difference was observed (P<0.05). BMI and TG decreased significantly with protein consumption, and this significance was maintained after adjusting for confounders. (p<0.05)
Conclusion: This study showed a significant relationship between plant protein consumption and lipid profile.
Keywords: lipid profile, protein, plant protein, obese women

Investigating the role of the food insulin index, glycemic index and glycemic load as potential predictors of metabolic syndrome: explore how the FII correlates with components of metabolic syndrome, including insulin resistance, obesity, and dyslipidemia.

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The food insulin index (FII) is gaining recognition as a crucial tool for assessing insulin responses associated with carbohydrates, proteins, and fats, that play a critical role in postprandial blood glucose levels and overall health, in dietary patterns. This scoping review aims to synthesize existing research on the application of the FII in the context of insulin resistance and diabetes management and assess the relationship between dietary glycemic index (GI) and glycemic load (GL) with chronic disease risk. A total of 25 articles were analyzed, revealing three primary themes: the relationship between FII and metabolic syndrome, a comparison of FII and carbohydrate counting (CC) in predicting postprandial insulin response, and the influence of metabolic status on FII outcomes. The review notes both dietary GI and GL influence chronic disease risks, including type 2 diabetes (T2D), cardiovascular disease (CVD), and certain cancers. The analysis revealed significant positive associations between higher dietary GI and increased risks of CHD, T2D, gallbladder disease, and colorectal, breast, and bladder cancers. Similarly, higher dietary GL was associated with increased risks of T2D, CHD, gallbladder disease, and stroke. This review underscores the potential health implications of high-GI and GL diets and calls for further well-designed studies to elucidate these associations, particularly regarding cancer risk. Taken together, these findings suggest that FII and related dietary metrics could be pivotal in informing strategies for managing obesity and associated metabolic disorders, warranting further research to refine their applications in clinical practice. Future research must focus on the dose-response relationships and explore potential confounding factors such as sex and geographical dietary patterns to establish clearer associations between dietary glycemic properties and health outcomes.
Keywords: food insulin index, glycemic index, glycemic load, diabetes

Comparison of Canola and Soybean Oils on Serum Lipid and Glucose Profiles and Anthropometric Parameters in overweight and Obese Type 2 Diabetes Mellitus Patients: A Randomized Clinical Trial

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Introduction: No earlier human study compared influences of canola and soybean oils on patients with type 2 diabetes (T2D). Current study aimed to investigate effects of canola and soya oils on blood and anthropometric parameters in overweight and obese Iranian diabetic (II) patients.
Methods: A total of sixty-six T2D subjects were randomly allocated to three groups. Canola oil (CO; n 23, received 30g canola oil); Soya oil (SO; n 19, received 30g soya oil) and control group (n 24, their usual intake of dietary oils) for 8 weeks. Lipid and glycemic profiles as well as anthropometric indicators were evaluated before and after the intervention.
Results: Repeated-measures ANOVA was used to evaluate time×group interactions for the outcome variables followed by a t test (significance level, $p < 0.05$). After 8 weeks, serum total cholesterol (-21.3 and -36.4v. -2.2 mg/dl; P=0·007), low density lipoprotein (-6.6 and -15.9v. +3.0 mg/dl; P=0·013), fasting blood sugar (-39.6 and -30.5v. +11.7 mg/dl; P<0.001) significantly decreased and high density lipoprotein (+3.0 and +3.5v. +2.4 mg/dl; P=0.038) significantly increased in CO and SO groups compared with controls. Changes in lipid profiles were more considerable in the soybean oil group than the canola oil group. The mean changes of waist circumference (WC; −4.1 v. -1.4 and -1.3 cm; P=0·031) and weight (−3.1 v. -0.3 and +0.5 kg; P=0·048) significantly decreased in canola group comparing to the two other groups.
Conclusion: Current study showed that daily consumption of canola and soybean oil for 8 weeks improved serum levels of fasting blood sugar, total cholesterol, low density lipoprotein and high density lipoprotein in T2D patients. Changes were more considerable in those consumed soybean oil. Canola oil decreased central obesity indices (waist circumference and weight) in T2D patients. Further studies are needed to shed light on this issue.
Keywords: Diabetes mellitus; Canola oil; Soya oil; Obesity

The effect of curcumin and zinc supplementation on improving anthropometric indexes in prediabetic people: A randomized Double-blind placebo-controlled phase 2 clinical trial

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Introduction: Prediabetes is the period before the onset of diabetes, which is shown by impaired fasting blood sugar (100-125 mg/dL) and HbA1c levels of 5.7-6.4%. Type 2 diabetes is the most common metabolic disease that is continuously increasing. The effects of curcumin on the improvement of metabolic syndrome and obesity have been proven. Also, Zinc supplements as an antioxidant are effective in improving blood sugar. This trial aimed to evaluate the effect of curcumin and zinc co-supplementation along with a loss weight diet on anthropometry measurements in overweight or obese prediabetes.
Methods: Eighty-four prediabetes were randomly assigned to 4 groups: curcumin (500 mg daily), zinc (30 mg daily), curcumin and zinc, and placebo for 90 days and their body mass index was measured before and after the intervention. Physical activity and dietary intake were determined pre and post-intervention. This randomized double-blind placebo-controlled clinical trial was conducted in the diabetes research clinic of Shahid Sadoughi University of Medical Sciences, Yazd.

Results: The weight loss and BMI significantly improved in the group with zinc and curcumin co-supplement compared to the other groups (p-

value=0.004, p-value=0.004). The significant improvement in hip circumference was not revealed in the zinc and curcumin co-supplement group than in other groups (p-value=0.08). Regarding changes in waist circumference, the significant changes weren't observed in the zinc and curcumin supplement compared to other groups (p-value= 0.154).

Conclusion: The curcumin and zinc co-supplementation along with lifestyle recommendations and a weight loss diet improved weight and BMI.

Keywords: Curcumin, zinc, supplementation, anthropometric indexes, prediabetes

Comparing the effects of 5-minute Premature Infant Oral Motor Intervention (PIOMI) with 15 minute Fucile treatment in term infants with feeding difficulties: A multi-arm randomised clinical trial

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Introduction: To evaluate the effect of the 5-minute premature infant oral motor intervention (PIOMI) and a 15 minute Fucile treatment on term infants with feeding problems.

Method: Stable term infants (N = 51) born between 37 and 41 weeks gestational age with feeding problems were randomly assigned into two intervention groups and a control group. Two intervention groups received the PIOMI or Fucile treatment once daily for 7 consecutive days and the control group received routine care only (Counseling to the mother by a nurse in Nicu). The volume of milk intake, weight increased and length of hospital stay were compared in three groups. All statistical analysis were performed using R 4.0.2 and the significance level was set at 0.05 and were performed using SPSS software version 23.0.

Result: The Fucile group had a significantly higher volume of milk intake and weight gain compared to both controls and PIOMI groups after treatment (p.value < 0.05). Length of hospital stay was not significantly different between the two intervention groups or controls (p.value=0.106)

Conclusion: Both interventions increased volume of milk intake and weight gain during feeding in infants. However, the longer oral motor therapy can be tolerated in term infants and had a greater effect over shorter therapy in term infants.

Keywords: Premature Infant Oral Motor Intervention; feeding problems; oral motor therapy; Intensive Care Units; term infants.

The effect of purslane supplementation on clinical outcomes in patients with rheumatoid arthritis: A parallel double-blinded randomized controlled clinical trial

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Background: Rheumatoid arthritis (RA) is an autoimmune disorder that results in joint dysfunction, inflammation, and increased mortality. The aim of this study was to evaluate the efficacy of purslane supplements on clinical outcomes in patients with RA.

Methods: In this 12-week double-blinded randomized controlled clinical trial, 86 participants aged between 20 and 79 were divided into two groups. The intervention group (n=43) received a 500mg purslane capsule twice a day, while the control group (n=43) received a placebo capsule of the same shape and dosage.

Results: Seventy-seven patients (37 from the control group and 40 from the purslane group) completed the study. Purslane capsule intake significantly declined visual analog scale (53.38 ± 23.81 vs. 26.25 ± 17.27, $p \leq .001$), swollen joint count (4.42 ± 3.36 vs. 1.60 ± 1.64, $p \leq .001$), tender joint count (8.20 ± 5.93 vs. 2.78± 2.15, $p \leq .001$), disease activity score (DAS28) (5.17 ± 1.30 vs. 3.48 ± 1.20, $p \leq .001$) changes. Furthermore, Morning stiffness (p=.002) and Physician Global Assessment ($p = .026$) significantly decreased in the purslane group compared to the placebo group at the end of the trial.

Conclusion: Therefore, supplementation with purslane could lead to improved clinical outcomes in RA patients.

Keywords: Rheumatoid arthritis, Purslane, Inflammation, Antioxidant

POSTER PRESENTATION

Is the megestrol acetate supplement effective on body weight and appetite in cancer patients with anorexia-cachexia syndrome?

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Introduction: There is inconsistent evidence relating to the effects of megestrol acetate (MA) supplementation on cancer patients suffering from anorexia-cachexia syndrome. This review aimed to examine the dose-response effect of MA supplementation in patients with cancer-associated anorexia/cachexia.

Methods: Relevant keywords were searched in PubMed, Scopus, and ISI from inception to June 2023 for randomized controlled trials (RCTs) examining the effect of MA on pathologies in patients with cancer-associated cachexia.
Results: Thirteen trials comprising 1229 participants were identified. The results of our highest vs. lowest analysis revealed that MA supplementation was not associated with any increase in body weight (MD: 0.64 kg, 95%CI: -0.11 to 1.38, P= 0.093, I2= 69.1%; GRADE=very low certainty). Twelve trials, including 14 effect sizes derived from 1369 patients (intervention = 689, control = 680), provided data on the effect of MA on body weight. Subgroup analyses showed a significant increase in body weight following short-term intervention (≤8 weeks) and a combination of radiation/chemotherapy as concurrent treatment. A linear dose-response meta-analysis indicated that each 200 mg/day increment in MA consumption had a significant increase in weight gain (MD: 0.44; 95%CI: 0.13, 0.74, P= 0.005; I2= 97.1%); however, the magnitude of the effect was small. However, no significant impact of MA supplementation was observed on appetite (MD: 0.29, 95%CI; -0.05 to 0.64, P=0.096, I2= 18.3%; n=3 RCTs including 163 patients; GRADE=very low certainty).
Conclusions: With minimal certainty of the evidence, MA supplementation may not significantly increase weight gain and appetite.
Keywords: Megestrol acetate, Appetite, Cancer Cachexia

The association between dietary fat intake with risk of gestational diabetes mellitus: a dose-response systematic review and meta-analysis

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Introduction: Gestational diabetes mellitus (GDM) is a commonly observed medical complication in pregnancy. Dietary total fat and fatty acids associated with GDM risk have been examined in several epidemiological studies. The present systematic review and dose-response meta-analysis were conducted to investigate the association between dietary total fat and fatty acids with the risk of GDM.
Method: Research on dietary fat intake and the risk of GDM was conducted through systematic searches of PubMed, Scopus, and Web of Science for articles until August 19, 2023. An investigation of associations between dietary intake of total fat and fatty acids and the risk of GDM was performed using prospective cohort study designs.
Results: Twenty-one prospective cohort studies were considered eligible. Findings indicated that higher intake of total fat (relative risk [RR]: 1.08; 95% confidence interval [CI]: 1.02, 1.14), animal fat (RR: 1.56; 95% CI: 1.34, 1.89), vegetable fat (RR: 1.23; 95% CI: 1.05, 1.45), dietary cholesterol (RR: 1.48; 95% CI: 1.10, 2.00), and omega-3 fatty acid (W3) (RR: 1.11; 95% CI: 1.02, 1.20) are associated with a greater risk of GDM. Dose-response meta-analyses suggested every 10% increment in total energy intake from total fat, 5% from animal fat, 5% from vegetable fat, and 100 mg from cholesterol was related to 15%, 12%, 7%, 14%, and 20% higher GDM risk, respectively.
Conclusions: Overall, total fat, animal fat, vegetable fat, dietary cholesterol, and W3 consumption are associated with a small but statistically significant increase in GDM risk.
Keywords: Dietary Fat, Gestational Diabetes Mellitus, Meta-Analysis

Association between physical activity and obesity: Iranian national obesity registry (IRNOR)

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Background: Obesity is an increasing global health problem which can leads to serious health problems including diabetes, cardiovascular disease, hypertension and several cancers. Eating habits, sedentary lifestyle, age and genetic risk factors contribute to development of obesity. We aimed to assess the association of physical activity and obesity in Iranian National Obesity Registry.
Method: Total of 2324 individuals with body mass index (BMI) ≥ 25 and over 18 aged entered in Iranian National Obesity Registry. Individuals separated according to BMI (overweight and obesity) and gender. Physical activity level was determined by three levels walking, moderate, severe and without physical activity. Multivariable logistic regression used to assess the correlation between physical activity level.
Result: Our results showed that there was a significant relationship between physical activity and obesity. Physical activity in moderate intensity had lower odds for obesity (OR= 0.41; 95%CI= 0.21-0.79) in males compared to females.
Conclusion: There was a significant correlation between physical activity in moderate intensity and lower risk of obesity in males in Iranian national obesity registry population.
Keywords: obesity, physical activity, overweight

Effect of Mediterranean diet on irritable bowel syndrome

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Introduction: irritable bowel syndrome (IBS) is a common digestive disorder in different age groups. This disorder is associated with long-term digestive discomfort. The Mediterranean diet is a good source of fiber and has anti-inflammatory properties. It seems that the Mediterranean diet It has beneficial effects on chronic diseases, including irritable bowel syndrome.
Methods: We used the words Mediterranean diet, irritable bowel syndrome and intestinal microbiome to search. we searched for related articles using advanced search methods by PubMed, Scopus, and Google Scholar search engine. Non-related ones were removed.
Results: With a Mediterranean diet (MD) an increase in the abundance of beneficial intestinal bacteria and a decrease in harmful bacteria were observed In some evidence .those who adhered to this type of diet compared to those who had a normal diet, a significant improvement in the course of the disease was seen. Also, some symptoms of the disease such as constipation were improved, but there was no effect on bloating and abdominal pain.
Conclusion: A standard MD for patients with IBS has been shown to be safe and has a positive effect on the healing process of the disease. Also, due to the different effects on the symptoms of each person, it should be recommended in a personalized way. Due to the presence of fibro, it has anti-inflammatory properties that affect the intestinal microbiome and the health of the intestinal function. Considering the wide range of food items in this diet, we need more research in this field
keywords: Fibers, IBS, Intestinal microbiome,MD

Determination of the optimal cut-off point of new anthropometric and cardio-metabolic indices to predict the risk of metabolic syndrome in Iranian adult population with type 2 diabetes mellitus: a cross-sectional-analytical study

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Background: Which of the new anthropometric or cardio-metabolic indices can better identify the risk of metabolic syndrome (MetS) in Iranian adult population with type 2 diabetes mellitus (T2DM) needs further research. Therefore, this study was carried out with the aim of determining the appropriate cut-off of these indices in predicting the risk of MetS in T2DM.
Methods: In this cross-sectional study, convenient sampling was applied to select four hundred subjects with T2DM from the Endocrinology and Metabolism clinic of Golestan Hospital of Ahvaz city in 2023. The metabolic factors such as FBS, lipid profile, and blood pressure, old anthropometric indices including weight, body mass index (BMI), waist circumference (WC), hip circumference (HC), and waist-to-hip ratio (WHR), new anthropometric indices including waist-to-height ratio (WHtR), body roundness index (BRI), visceral adiposity index (AVI), conicity, weight-adjusted waist index (WWI), triponderal mass index (TMI), body adiposity index (BAI), visceral adiposity index (VAI), and relative fat mass (RFM), and cardio-metabolic indices including lipoprotein combine index (LCI), cholesterol index (CHOL index), cardio-metabolic index (CMI), atherogenic coefficient (AC), atherogenic index (AI), coronary risk index (CRI), lipid accumulation product (LAP), and atherogenic index of plasma (AIP) were evaluated. The MetS was calculated according to the IDF criteria. To evaluate the risk of MetS according to cut-off point of indices, logistic regression was applied along with adjusting confounding factors in 3 models. Also, the receiver operating characteristic (ROC) curve, the area under the curve (AUC), AUC p-value, and cut off point were calculated for each of the indices in both genders. The closer the number is to 1 and the more significant the p-value is, the more accurate the test is.

Results: The prevalence of MetS was 63.3 % in this study. All old and new anthropometric indices and cardio-metabolic indices significantly increased the risk of MetS in all subjects before and after adjustment ($p < 0.001$ for all).

The RFM showed the highest Odds ratios for risk of MetS among the anthropometric indices (total cut off: 42.21, OR: 28.22, 95% CI: 13.01-61.13). Also, the LAP presented the highest Odds ratios for risk of MetS among the cardio-metabolic indices (total cut off: 66.84, OR: 56.28, 95% CI: 26.10-121.34).

The AVI index exhibited the largest total AUCs in anthropometric indices (0.86), while the LAP demonstrated the largest total AUCs in cardio-metabolic indices (0.90). The AVI had the highest sensitivity in predicting the risk of MetS among the total indices (total sen = 0.91).

Conclusion: All old and new anthropometric and cardio-metabolic indices could predict MetS in patients with T2DM.

Keywords: cut-off point, anthropometric indices, cardio-metabolic indices, metabolic syndrome, type 2 diabetes mellitus

The Prevalence of Eating disorders, body image dissatisfaction and their relationship with gluten-free diet adherence among patients with celiac disease

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Introduction: Considering the higher prevalence of psychological problems in patients with Celiac disease (CD), the current study aims to assess the prevalence of eating disorders (EDs) and body image disturbance in patients with CD and examine the possible correlation between EDs, body image dissatisfaction, and gluten-free diet (GFD) adherence in these patients.
Methods: In this cross-sectional study, 217 patients with CD (18–55 years old) were recruited randomly from the CD registry database. EDs and body image issues were assessed using the 26-item Eating Attitude Test (EAT-26) and Stunkard Figure Rating Scale (FRS), respectively. Adherence to GFD was

evaluated by the Celiac Dietary Adherence Test (CDAT) questionnaire.
Results: The prevalence of EDs was 43.5%. Furthermore, the prevalence of body dissatisfaction and was 65.9%. The logistic regression demonstrated a significant negative association between adherence to the GFD and EDs (OR = 2.09, 95% CI: 1.11–3.91, *P* = 0.022). However, there was no significant association between following GFD and body image dissatisfaction (OR = 1.70, CI: 0.92–3.17, *P* = 0.090).
Conclusion: Considering the high prevalence of EDs in patients with CD and owing to the inverse association between EDs and GFD adherence, nutritionists should consider the psychological barriers in adhering to a GFD when consulting patients with CD.
Keywords: Celiac disease, Eating disorders, Body image dissatisfaction, Gluten-free diet

Schizophrenia, Curcumin and Reduction Side Effects of Antipsychotic Drugs

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Introduction: Schizophrenia is a mental disorder characterized by episodes of psychosis. The major symptoms include hallucinations, delusions, and disorganized thinking. Recent theories focus on specific disorders of interneurons, dysfunctions in the immune system, abnormalities in the formation of myelin, and increased oxidative stress, which result in alterations in brain structure.
Methods: It is believed that decreased dopaminergic activity and increased phospholipid metabolism in the prefrontal cortex may be involved in schizophrenia. Antipsychotic drugs used to treat schizophrenia have many side effects. However, alternative therapy such as curcumin (CUR) can reduce the severity of symptoms without significant side effects. CUR has important therapeutic properties such as antioxidant, anti-mutagenic, anti-inflammatory, and antimicrobial functions, as well as the ability to protect the nervous system. Its ability to cross the blood–brain barrier offers hope for neuroprotection. CUR can improve and prevent further probable neurological and behavioral disorders in patients with schizophrenia.
Results: It decreases the side effects of neuroleptics and maintains lipid homeostasis. CUR increases the level of brain-derived neurotrophic factor and improves hyperkinetic movement disorders. CUR may act as an additional counteraction mechanism to maintain cell integrity and defense against free radical injury.
Conclusion: Therefore, it appears to have therapeutic potential for the improvement of schizophrenia. In this study, we review several properties of CUR and its ability to improve schizophrenia and decrease the side effects of antipsychotic drugs. We also explore the underlying mechanisms by which CUR affects schizophrenia and its symptoms.
Keywords: Curcumin, Cognitive functions, Schizophrenia, Antipsychotics

Food Safety and Food Security Challenges for Hospital Catering: A Review

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Introduction: Food safety and security are critical concerns in hospital catering, where patients are vulnerable to foodborne illnesses. The provision of nutritious and safe meals is essential for patient recovery, but hospitals face numerous challenges in maintaining food safety and security. This review aims to summarize the key challenges facing hospital catering services and their implications for patient outcomes.
Method: A systematic search of major databases, including PubMed, Scopus, and Web of Science, was conducted to identify studies, reviews, and guidelines published in the last 10 years. Keywords used included "hospital catering," "food safety," "food security," "patient outcomes," and "food handling practices." A total of 25 studies were included in the review.
Results: The review identified several key challenges facing hospital catering services,

including inadequate food handling practices, poor environmental hygiene, inadequate training for staff, and lack of adequate food storage facilities. These challenges can lead to food contamination, allergic reactions, and other adverse patient outcomes.

Conclusion: Ensuring food safety and security in hospital catering services is crucial for maintaining patient trust and well-being. To address these challenges, hospitals should prioritize staff training, implement effective food handling practices, and maintain a clean and hygienic environment. Additionally, hospitals should invest in food safety monitoring systems and develop policies to ensure compliance with regulatory guidelines.

Keyword: Food safety, Food security, Hospital catering

Changes in specialized pro-resolving mediators (SPMs) and the effect of omega-3 intake on them in obese subjects: a systematic review

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Introduction: Obesity, driven by factors such as improper diet, is a rapidly increasing global issue. A Western and unhealthy diet can lead to severe inflammation, ultimately resulting in conditions such as obesity. Omega-3 fatty acid intake can have beneficial health effects. Omega-3 fatty acids produce specialized pro-resolving mediators (SPMs), which have strong anti-inflammatory activities and can assist in inflammation management. Therefore, this review aims to investigate changes in SPM levels and the effect of omega-3 intake in obese cases.

Methods: A comprehensive literature search was conducted in the PubMed, SCOPUS, and Web of Science databases using the keywords obesity, inflammation, omega-3, SPMs, resolvins, protectins, and maresins. Initially, 574 articles were reviewed, and titles and abstracts were evaluated to eliminate duplicate and review articles. Finally, a thorough review of the studies resulted in the selection of 16 studies (7 human and 9 animal studies).

Results: In most human and animal studies related to SPM levels changes in obesity, reductions in plasma, tissues, and cellular levels of multiple SPMs, particularly D and E series of resolvins, were observed ($p<0.05$). In the majority of human and experimental studies, the results indicated that omega-3 intake significantly increased plasma, tissue, and cellular SPM levels in the samples examined ($p<0.05$), through mechanisms such as enhanced synthesis or reduced degradation of SPMs, and increased expression of enzymes involved in their synthesis pathways (lipoxygenases and cyclooxygenases).

Conclusion: Obesity in adults and animals leads to a decrease in various SPM levels. Omega-3 intake is effective as a therapeutic approach for managing obesity-induced inflammation.

Keywords: Inflammation, Obesity, Omega-3, Protectins, Resolvins, Specialized pro-resolving mediators.

Effect of genetic-based personalized nutrition or lifestyle interventions on the anthropometric parameters: A systematic review and meta-analysis

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Introduction: The large variability of individuals' responses to lifestyle components provided the basis for developing a personalized lifestyle approach. Personalized lifestyle provides a diet plan and lifestyle advice for

individuals with respect to their dietary intake, phenotype features, and genotypic information. The aim of this systematic review and meta-analysis was to summarize available clinical trials investigating the effect of genetic-based personalized diet/lifestyle advice on some anthropometric parameters.

Methods: The electronic databases PubMed, Scopus, Web of Science, and Google Scholar were systematically searched from inception to August 2024 using relevant keywords. The weighted mean differences (WMD) and corresponding 95% confidence intervals (CI) were calculated as effect sizes and analyzed using the random-effects method.

Results: A total of 5074 records were found, of which 7 clinical trials were eligible. This meta-analysis demonstrated a significant beneficial effect of genetic-based personalized diet/lifestyle on body mass index (BMI) (WMD= – 0.30 Kg/m^2, 95% CI: – 0.43, – 0.16, P<0.001) with no significant changes in body weight (WMD= – 0.51 Kg, 95% CI: – 1.09, 0.07, P=0.257) or body fat percent (WMD= 0.16%, 95% CI: – 1.30, 1.62, P=0.830). Subgroup analysis based on participants' BMI and age and intervention duration could not change the results.

Conclusions: The results show that genetic-based personalized lifestyle interventions may provide greater benefits to weight management compared with the conventional lifestyle interventions. Nevertheless, the application of nutrigenetics in the medicine is premature and needs more clinical trials of high quality to determine its health benefits and cost effectiveness.

Keywords: Personalized nutrition, Personalized lifestyle, Nutrigenetics, anthropometric parameters.

Dietary acid load and the risk of all-cause mortality: a systematic review and meta-analysis

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Introduction: Various dietary patterns have different dietary acid load (DAL) and may affect the body's acidity, initiate compensatory mechanisms, cause chronic low-grade metabolic acidosis over time, and thereby develop metabolic alterations. This systematic review and meta-analysis focused on the association between DAL, as measured by the potential renal acid load (PRAL) and net endogenous acid production (NEAP), and mortality risk.

Methods: PubMed, Scopus, and Web of Science were systematically searched to find relevant studies published up to March 2024. Risk estimates were pooled using random-effect model.

Results: Six observational studies were included in this meta-analysis. A positive association was observed between the PRAL score and all-cause mortality, with non-significant heterogeneity (OR per 10 mEq/d increase = 1.03, 95% CI: 1.01-1.05, P-value= 0.002, I2= 48.4%). The NEAP score had no significant association with all-cause mortality, and there was substantial heterogeneity between studies (OR per 10 mEq/d increase = 1.00, 95% CI: 0.96-1.05, P-value= 0.834).

Conclusion: Our results support the positive association between DAL and all-cause mortality risk, such that per 10 mEq/d increment in PRAL score, the risk of mortality increased up to 3%. Well-designed interventional studies are warranted to verify this association.

Keywords: Dietary acid load, PRAL, NEAP, Mortality

Intervesting The Effect of Carnitine on Polycystic Ovary Syndrome (PCOS) Syndrome: A Systematic Review

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Background: Polycystic ovary syndrome is a common endocrine disorder that presents with symptoms of hyperandrogenism, polycystic ovaries, and oligo or anovulation. The lack of proper treatment has made treatment based on lifestyle, diet and supplements to be used. Carnitines play a significant role in the metabolic pathways of the body and can be effective in the treatment of chronic fatigue, Alzheimer's, etc. So this systematic review has been conducted to check the effects of carnitine on PCOS.
Method and Materials: We searched for studies on the association between Carnitine, PCOS and metabolism in original articles from Web of Science, Scopus, and PubMed. A total of 167 articles were identified from the search of the main electronic databases, which was reduced to 32 articles after deduplication. Of the 32 references screened by title and abstract, 8 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that Carnitine increases energy production and protects mitochondria (increasing respiratory capacity and maintaining acetyl CoA/CoA ratio), reducing apoptosis, improving maturation, ovulation rate and quality of oocyte (cumulus-oocyte pathway and expression CPT-II), enhancing reproduction (modulating the GABA system), improving Hypothalamic amenorrhea (modulating levels of glucose-acetyl-CoA sensor), improving antioxidant system (improving glutathione activity, regulation of SIRT1-SOD2 axis), control of dietary ROS production (effect on NPY and POMC), improvement of lipid profile and BMI.
Conclusion: Based on conducted searches Carnitine reduces pcos-related disorders and improves organ activity. Further research is required to determine the exact dose of supplements and their frequency.
Keywords: Polycystic ovary syndrome (PCSO), Carnitine, metabolism

Investigating The Effect of Butyrate on Obesity: A Systematic Review

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Background: Obesity and accumulation of fat mass result from the imbalance between food intake and energy consumption, which is the cause of many diseases and disorders. Butyrate is one of the indigestible carbohydrate fermentation products produced by microbiomes, which plays a significant role in regulating the energy homeostasis of the body. So this systematic review has been conducted to check the effects of butyrate on obesity.
Methods and Materials: We searched for studies on the association between obesity, butyrate and treatment in original articles from the Web of Science, Scopus, and PubMed. A total of 340 articles were identified from the search of the main electronic databases, which was reduced to 64 articles after deduplication. Of the 64 references screened by title and abstract, 5 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted studies on clinical and preclinical cases show that butyrate can reduce obesity and fat mass by increasing the thermogenic effect of brown adipose tissue (upregulation of UCP1, PPAR, and PGC-1α), increasing lipogenesis (stimulating the UCP2-AMPK-ACC pathway and negative regulation of PPARγ), inhibiting lipid synthesis (inducing the p-AMPK/p-ACC pathway), stimulating lipid lipolysis (phosphorylation of ATGL), increasing WAT oxidation (activation UCP2-AMPK-ACC pathway), reducing fat accumulation (regulating liver mitochondrial function), and increasing satiety and reducing appetite (improving GLP1 and PPY).
Conclusion: Based on conducted searches, butyrate can play a key role in regulating energy, homeostasis, and metabolism and have an effect on treatment of obesity. Further research is required to determine the exact dose of supplements and their frequency.
Key words: Butyrate, Obesity, Treatment

Investigating The Effect of Tryptophan on Sleep Quality in Individuals with Irregular Sleep Patterns: A Systematic Review

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Background: Regular and sufficient sleep has an important regulatory role in maintaining metabolic homeostasis, cellular function, and behavioral function. Tryptophan is an amino acid that is a precursor to sleep-regulating factors and plays an important role in controlling mood and anxiety. It is expected to be effective in improving the duration and quality of sleep. In this systematic review, the effect of tryptophan on sleep quality in individuals with irregular sleep patterns is discussed.
Methods and Materials: We searched for studies on the association between sleep, sleep patterns and tryptophan in original articles from Web of Science, Scopus, and PubMed. A total of 167 articles were identified from the search of the main electronic databases, which was reduced to 37 articles after deduplication. Of the 37 references screened by title and abstract, 6 were selected for inclusion and exclusion criteria by reading the full text.
Results: Studies conducted on clinical and preclinical evidence showed that tryptophan is converted to 5-hydroxytryptophan through the activity of tryptophan hydroxylase enzyme L-amino acid decarboxylase and then to serotonin in the presence of 5-hydroxytryptophan-1-alpha receptor. Melatonin, a key hormone in regulating sleep patterns, is synthesized by 5-hydroxyindole methyltransferase.
Conclusion: Based on the researches, maintaining tryptophan as a substrate in the right amount can be effective in improving the quality of sleep in people with irregular sleep patterns. Therefore, it is recommended to take tryptophan supplements or increase the consumption of its sources, but the exact amount, type and frequency of their consumption are still unknown and more research is needed.

Key words: Tryptophan, Sleep, Sleep patterns

Investigating The Effect of Melatonin on Non-alcoholic fatty liver disease (NAFLD): A Systematic Review

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Aims and Background: Non-alcoholic fatty liver disease (NAFLD) is a chronic liver disorder induced by metabolic stress. NAFLD covers a variety of diseases from more simple forms like steatosis to more complex form cirrhosis. Melatonin is an important pineal hormone with tremendous antioxidant and anti-inflammatory properties. So, this systemic review has been conducted to determine the effects of melatonin on NAFLD and its treatment.
Methods and Materials: We searched for studies on the association between NAFLD, Melatonin and treatment in original articles from Web of Science, Scopus, and PubMed. A total of 210 articles were identified from the search of the main electronic databases, which was reduced to 43 articles after deduplication. Of the 43 references screened by title and abstract, 6 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on clinical and preclinical cases of NAFLD show that Melatonin treatment observably restored the levels of T-AOC, GSH-px, SOD, and HO-1. The process by which it counteracts hepatic lipid peroxidation is relatively well understood since it is a powerful free radical scavenger and antioxidant. Melatonin controls pAMPKα and PPARγ pathway which responsible for lipid homeostasis and lipogenesis. Melatonin reduces mitochondrial dysfunction by effecting ATF4,Cox7b and Pgc-1α. also it Ameliorates Hepatic Ferroptosis in NAFLD by Inhibiting ER Stress via the MT2/cAMP/PKA/IRE1 Signaling Pathway and increases level of SLC7A11.
Conclusion: Based on conducted studies Melatonin therapy could be an effective

treatment for NAFLD and related ferroptosis but further studies are needed to determine the exact and tolerable dosage and related pharmacological factors

Key words: Melatonin, Non-alcoholic fatty liver disease (NAFLD), Treatment

Investigating The Effect of FGF21 on Obesity: A Systematic Review

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Background: Obesity creates a significant and escalating challenge in contemporary society, increasing the risk of developing various metabolic disorders such as dyslipidemia, cardiovascular diseases, non-alcoholic fatty liver disease (NAFLD), type 2 diabetes, and certain types of cancer. Studies have demonstrated that FGF21 is a stress sensor in the liver and possibly, several other endocrine and metabolic tissues. Hepatic FGF21 plays a crucial role in regulating metabolic processes, including glucose and lipid metabolism. In this systematic review, the effect of FGF21 on individuals with obesity is discussed.
Methods and Materials: We searched for studies on the association between FGF21, Obesity and treatment in original articles from Web of Science, Scopus, and PubMed. A total of 190 articles were identified from the search of the main electronic databases, which was reduced to 28 articles after deduplication. Of the 28 references screened by title and abstract, 5 were selected for inclusion and exclusion criteria by reading the full text.
Results: Results: Studies indicate that FGF21 acts as a key regulator of energy homeostasis, promoting weight loss and improving metabolic health in obese individuals. FGF21 enhances insulin sensitivity, reduces hepatic glucose production, and increases lipid oxidation. Moreover, FGF21 has been shown to influence appetite regulation and thermogenesis, contributing to its anti-obesity effects. However, resistance to FGF21 action has been observed in some cases of obesity, which may diminish its efficacy as a treatment.
Conclusion: Conclusion: FGF21 holds promise as a therapeutic agent for obesity due to its ability to regulate critical aspects of metabolism. Future studies should aim to overcome the challenges of FGF21 resistance and to explore the long-term effects of FGF21-based treatments on obesity and related metabolic disorders.

Key words: FGF21, Obesity, Treatment

Interesting the effect of calcium on obesity; A systematic review

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Background: Obesity is excessive body accumulation caused by energy imbalance which is related to many diseases. Due to the lack of treatment, a healthy lifestyle and the use of nutritional supplements can be used to control obesity. Calcium is the most mineral in the body, which affects many mechanisms and biological processes. so this systematic review has been conducted to check the effects of calcium on obesity and its treatment.
Methods and Materials: We searched for studies on the association between calcium, obesity and treatment in original articles from the Web of Science, Scopus, and PubMed. A total of 139 articles were identified from the search of the main electronic databases, which was reduced to 31 articles after deduplication. Of the 31 references screened by title and abstract, 5 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted studies on clinical and preclinical cases show that calcium by regulating adipogenesis of mesenchymal cells and adipocytes**,** Modulation of fat metabolism by decreasing the amount of lipogenesis and increasing lipolysis, Increased thrombogenesis with increased WAT browning and increased BAT activation, Suppressing fat absorption and increasing fat excretion from feces, Regulation of

fat cell apoptosis and activation of autophagy pathway and Change in gut microbiome would affect fat cells and their amount.

Conclusion: Based on conducted research Calcium affects weight loss and obesity management through mechanisms such as reducing lipogenesis, changing nutrient absorption, increasing lipogenesis, etc. But further research is required to determine other mechanisms and the exact, tolerable, and effective dosage for treatment

Key words: Calcium, Obesity, Treatment

Intervesting the effect if obesity on asthema:A systematic review

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Background and aims: Asthma is a common disease characterized by airway obstruction and shortness of breath. Obesity is a chronic and inflammatory disease that affects many body processes Considering the role of obesity in the occurrence of various diseases , in this systematic review study, the effect of obesity on the occurrence of Asthma in people is discussed.

Methods and Materials:We searched for studies on the association between obesity, asthma and mechanics in original articles from Web of Science, Scopus, and PubMed. A total of 239 articles were identified from the search of the main electronic databases, which was reduced to 16 articles after deduplication. Of the 16 references screened by title and abstract, 7 were selected for inclusion and exclusion criteria by reading the full text.

Results: Based on the searches conducted on 3786 clinical and paraclinical models, it showed that Obesity with reduced lung compliance and reduced chest wall circulation (reduced types of respiratory capacity such as FCV, RV, etc.), intensification of inflammatory responses (increased interleukin 5 and 13 levels, decreased CD+4T cell response, increased leptin secretion) Changes in the secretion of sex hormones (changes in the regulation of NO secretion), increase in the incidence of metabolic syndrome and intestinal microbiome are effective.

Conclusion: Based on researches Obesity is effective on the prevalence rate and control of disease symptoms by affecting the mechanisms of the immune and hormonal systems.Considering that obesity plays a role in the occurrence of goutagon disease, obesity control can play an effective role in asthma control.However, more studies should be done to identify the exact mechanisms of obesity on the control and prevention of asthma.

Key words: Asthma, Obesity,Control

Effects of oral nutritional supplementation with beta-hydroxy beta-methylbutyrate (HMB) in malnourished patients or at risk of malnutrition: A systematic review

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Introduction: Malnutrition plays a major role in the development of sarcopenia, with muscle loss now considered an important characteristic of malnutrition and has been included in the recent consensus definition of malnutrition. Oral nutritional supplementation with beta-hydroxy beta-methylbutyrate (HMB) has garnered attention for its potential to support malnourished patients or those at risk of malnutrition. HMB is a metabolite of the amino acid leucine, known for its role in promoting muscle protein synthesis and reducing muscle breakdown.

Method: PubMed database was searched until March 2024 with related keywords. The present review included experimental clinical trials that used HMB-enriched oral nutritional supplements for malnourished individuals or those at risk of malnutrition, conducted in hospitals, nursing homes, or home settings.

Result: We included eight articles reporting on clinical trials involving patients with liver cirrhosis, cardiovascular and pulmonary disease, chronic obstructive pulmonary disease (COPD), hospitalized individuals, sarcopenia, and the elderly. A total of 2,624 malnourished patients were included, of whom 1,382 received HMB-

enriched ONS for 84 to 180 days. The daily intake of HMB ranged from 1.48 to 3 g/d. Supplementation with HMB was associated with a significantly decreased mortality risk, as well as improvements in handgrip strength, body weight, nutritional biomarkers, and overall recovery. Additionally, in malnourished cirrhotic patients, there was a downward trend in minimal hepatic encephalopathy in the HMB group.
Conclusion: HMB-enriched ONS offers multiple benefits for malnourished patients or those at risk of malnutrition. It helps improve body weight, nutritional status, recovery and overall quality of life.
Keywords: HMB, malnutrition, oral nutritional supplementation, ONS

A Review of the Role of Gut Microbiota in Obesity

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Introduction: This review article aims to discuss current findings on the role of gut microbiota in the pathogenesis of obesity.
Methods: We explore the mechanisms by which gut microorganisms affect host metabolism. Furthermore, we discuss the impact of dietary patterns on microbial diversity and function and the potential of probiotics and prebiotics as therapeutic strategies for obesity management.
Results: Numerous studies have identified significant differences in the gut microbiota profiles of obese individuals compared to lean individuals, with a higher prevalence of Firmicutes and a lower prevalence of Bacteroidetes. Specific gut bacteria are capable of breaking down complex carbohydrates into short-chain fatty acids, which can be absorbed and used for energy, contributing to increased fat storage. Gut microbiota can influence the secretion of hormones related to appetite regulation, such as increased levels of ghrelin and decreased levels of leptin, which can promote weight gain. Dysbiosis has been linked to systemic inflammation and metabolic disorders commonly associated with obesity, like insulin resistance. Diet significantly affects gut microbiota composition, with a high-fiber diet promoting microbial diversity and the growth of beneficial bacteria, while a high-fat, high-sugar diet tends to reduce diversity and promote obesity-related microbial profiles. Studies suggest that probiotic and prebiotic supplementation can lead to weight loss and improvement in metabolic markers, highlighting potential therapeutic strategies targeting gut health for obesity management.
Conclusion: These results emphasize the critical role of gut microbiota in the development of obesity and underline the potential for microbiota-based interventions in obesity treatment and prevention strategies.
Keywords: Gut Microbiota, obesity, short-chain fatty acids, inflammation, probiotic, prebiotic

Systematic Review of the Effects of Prebiotic Dietary Fibers, Probiotic, and synbiotic on Gut Permeability and Immunity

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Introduction: The present systematic review aimed to investigate more up-to-date and detailed effects of prebiotic dietary fibers, probiotics, and synbiotics as a proposed strategy for intestinal permeability and immunity.
Methods: A systematic literature search of the Embase, PubMed, Web of Science, and Scopus electronic databases and a hand-searched reference list was conducted from the inception of databases up to May 2024. About 36 studies were included for review.
Results: According to the evidence presented in this study, prebiotic whole foods or food enriched with prebiotics, probiotics, and synbiotics may have favorable effects on serum levels of zonulin as a measure of intestinal permeability. The effects on glucagon-like peptide-2gut microbiota and their metabolites such as long and short-chain fatty acids (LCFA/SCFA) and bile acids were contradictory and inconclusive. The increases in the levels of Bifidobacterium and increases in the levels of SCFA with an intake of prebiotic supplements or food products enriched with prebiotics have been indicated in some studies. Fecal calprotectin as an important marker of local gut inflammation, tumor necrosis factor-α, and high-sensitivity C-reactive protein were not affected in most studies.
Conclusion: The non-replication of the results of the studies makes it difficult to conclude the

effects of prebiotics, probiotics, and synbiotics on gut-related health and immunity. So, further evidence is required before definitive recommendations can be made.
Keywords: Prebiotic, probiotic, synbiotic, zonulin, inflammatory markers

A review of the association between levels of short-chain fatty acids produced by the gut microbiome and sleep and related disorders

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Introduction: Short-chain fatty acids (SCFA) are the main metabolites of microbial fermentation of dietary fibers in the large intestine by numerous bacteria. Studies show that SCFAs can act as mediators linking gut bacteria and brain sleep-related mechanisms. Therefore, this review investigated the relationship between SCFA levels with sleep and sleep-related disorders.
Methods: PubMed, Embase, Web of Science, and Google search engine databases were searched with the keywords of sleep disorders, SCFA, and gut microbiome without a time limit. After applying the inclusion and exclusion criteria, 9 eligible articles were reviewed.
Results: SCFA can play a role in the integrity of the intestine, and the decrease in its production leads to intestinal barrier dysfunction. Two studies on patients with obstructive sleep apnea (OSA) revealed changes in the gut microbiome and a reduction in SCFA-producing bacteria. Adults with symptoms of insomnia also showed a decrease in the number of SCFA-producing bacteria. a decrease in SCFA absorption was also seen; A higher concentration of SCFA in feces was associated with an increase in sleep onset latency (SOL) and a decrease in sleep efficiency (SE). Shorter sleep is associated with disruption of gut microbiota composition and reduced SCFA production. SCFAs produced by the gut microbiome may improve sleep duration by modulating GABA and serotonin activity in the brain.
Conclusion: Targeting the gut microbiome in the context of sleep disorders can be considered as a new diagnostic and therapeutic approach.
Keywords: Gut microbiome, Insomnia, OSA. Sleep, SCFA

A review of the investigation into the effects of probiotics on wound healing in relation to malnutrition

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Introduction: Severe malnutrition leads to immune system dysfunction, negatively affecting wound healing. Considering that the gut microbiome has a vital role in mucosal and systemic immunity; In this study, we are looking for the effect of using probiotics on wound healing and its relationship with malnutrition.
Methods: To conduct this review, the following databases - PubMed, EMBASE, and Google - were searched using the keywords malnutrition, probiotics, and wound healing. After applying the inclusion and exclusion criteria, 7 studies were reviewed. Studies that dealt with diabetic foot ulcer repair were excluded from this review.
Results: We summarized the effect of probiotics in three parts: In two studies, the consumption of probiotics led to the restoration of the mature microbiome and coordinated and improved metabolism by producing more products such as butyrate, tryptophan, and carnitine. In four studies, using probiotics by increasing the absorption of micronutrients and improving the production path of micronutrients and enzyme cofactors involved in tissue repair could cause faster wound healing. Also, in two studies, oral treatment with probiotics increased the absorption of lymphocytes to the damaged tissue and more rapid deposition of collagen at the wound site.
Conclusion: Our results show that using probiotics is a new approach for healing wounds and normalizing dysbiosis in people suffering from malnutrition, which does not lead to side effects such as increased wound healing time. Considering the wide range of studied strains

and the small number of studies that have focused on the oral consumption of probiotics; We need to do more research in this field.

Keywords: Gut microbiome, Malnutrition, Wound healing

Association of high protein and high fiber dietary pattern and COVID-19 in a large sample of Iranian adults

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Introduction: The COVID-19 pandemic has caused significant mortality and morbidity worldwide. However, the role of dietary patterns as a potential risk factor for COVID-19 has not been well established, especially in studies with large samples. Therefore, we aimed to identify and evaluate the association between major dietary patterns and COVID-19 among adults from Iran.
Methods: In this cross-sectional study, we included 9189 participants aged 20-70 who participated in the Yazd Health Study (YaHS) and Taghzieh Mardom-e-Yazd study (TAMIZ). We used factor analysis to extract dietary patterns based on a food frequency questionnaire (FFQ). Then, we assessed the relationship between these dietary patterns and the odds of COVID-19. It was approved by the ethics committee of Shahid Sadoughi University of Medical Sciences. The ethical approval code is IR.SSU.SPH.REC.1400.093.
Results: We identified two major dietary patterns: "High protein and high fiber" and "Transitional". Participants in the highest tertile of the "High protein and high fiber" dietary pattern, which included vegetables, fruits, dairy, and various kinds of meats such as red meat, fish, and poultry, had a lower odds of COVID-19 compared with those in the lowest tertile. However, the "transitional" dietary pattern did not affect the risk of COVID-19.
Conclusion: In conclusion, a "high-protein, high-fiber" diet may lower the odds of COVID-19. This study suggests that dietary patterns may influence the severity and spread of future similar pandemics.

Keywords: Dietary pattern, COVID-19, Transitional dietary pattern, High-protein diet

Is there any association between Fruits and Vegetables consumption and the risk of COVID-19?

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Introduction: COVID-19 has caused a high health burden worldwide and increased the need for identifying factors that affect its risk. Fruits and vegetables are essential for a healthy diet and immune system function. This study aimed to investigate the associations between fruit and vegetable intake and COVID-19 incidence in a large sample of Iranian adults.
Methods In this cross-sectional study, we used data from 9189 participants of Yazd Health Study (YaHS) and Taghzieh Mardom-e-Yazd (TAMIZ) study aged 20 to 70 years. Dietary intakes were assessed using a validated food frequency questionnaire (FFQ). The ethics committee of Shahid Sadoughi University of Medical Sciences approved the study protocol. (Ethical approval code: IR.NIMAD.REC.1395.001, Date: July 8, 2014).
Results: After adjusting for confounding variables, we found that higher intake of total fruit (OR: 0.42, CI: 0.20–0.83,P-trend =0.05), fresh fruit (OR: 0.46, CI: 0.23– 0.92, P-trend

=0.04), green leafy vegetables (OR: 0.48, CI: 0.24–0.96, P-trend =0.08), and vitamin C (OR: 0.38, CI: 0.17– 0.81, P-trend =0.02) were associated with lower odds of COVID-19. No significant associations were observed for fruit juice, dried fruit, fruit compote, cruciferous vegetables, yellow vegetables, total vegetables and dietary fiber intake.

Conclusion: Our study suggests that higher consumption of fresh fruit, total fruit, green leafy vegetables, and dietary vitamin C may reduce the risk of COVID-19. Further studies are needed to confirm these findings and provide evidence-based nutritional recommendations. Furthermore, the findings of the current study could be important for future similar pandemics.

Keywords: Fruit, Vegetable, Vitamin C, Fiber, COVID-19.

The association between macronutrient intake and the metabolic syndrome in Yazdian adult population

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Introduction: Metabolic syndrome (MetS) is a collection of metabolic disorders including abdominal obesity, dyslipidemia, high glucose levels, and high blood pressure. The macronutrients such as carbohydrates, proteins, and fats are the effective factors in the occurrence of MetS. This study aimed to determine the association between the macronutrient's intake and MetS in 20-69-year-old adult population of Yazd Greater Area, Iran.

Methods: This study used Yazd Health Study (YaHS) recruitment phase data. The YaHS was a prospective cohort conducted on a random sample of 10,000 Yazdian adults aged 20-69 years. To conduct this study data from TaMeZ (Taghzieh Mardom-e-Yazd) or Yazd Nutrition Study, which was a nutrition study associated with YaHS were also used. MetS was defined according to the ATP III criteria. Dietary intake was evaluated using Food Frequency Questionnaire (FFQ). To evaluate the relationship between macronutrients and MetS, multivariate logistic regression analysis was used.

Results: The odds ratio for the incidence of MetS was significantly higher in individuals who consumed higher amounts of carbohydrates. However, fat and protein intake did not have any significant relationship with odds of the developing MetS. Individuals with higher intake of carbohydrates had significantly higher odds of abdominal obesity (OR: 1.89, CI: 1.06-3.34); whereas, the probability of abdominal obesity decreased significantly in the highest quintile of protein intake (OR: 0.45, CI: 0.25-0.79).

Conclusion: High intakes of carbohydrate increased the odds of getting to MetS and abdominal obesity. However, high levels of protein reduced the odds of abdominal obesity. No association was found between fat intake and the odds of the MetS. More prospective studies are needed to determine the role of macronutrients in MetS.

Keywords: Metabolic syndrome, Macronutrient, Carbohydrate, Protein, Fat

The association between dietary approaches to stop hypertension diet and mediterranean diet with metabolic syndrome in a large sample of Iranian adults: YaHS and TAMYZ Studies

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Introduction: Dietary patterns are considered as a modifiable risk factor for metabolic syndrome (MetS). Therefore, the present study aimed to evaluate the association between the Dietary Approaches to Stop Hypertension (DASH) and Mediterranean (MED) dietary patterns and MetS.
Methods: This cross-sectional study was conducted on the data from recruitment phase of prospective studies on Iranian adults known as Yazd Health Study (YaHS) and Yazd Nutrition Study (TAMYZ). MetS was diagnosed among 2,221 adults based on the Adult Treatment Panel III criteria. The participants' dietary intake was assessed by a validated food frequency questionnaire. According to the predefined methods, DASH and MED scores were calculated. Multivariate logistic regression was used to evaluate the relationship of DASH and MED dietary patterns with MetS.
Results: The prevalence of MetS was 28.8% in the present study. Women who were in the highest quintile of DASH in comparison with those who were in the first quintile tended to decrease the odds of MetS after adjusting for the potential confounders (OR: 0.50, CI: 0.27–0.95). There was a significant decreasing trend in the odds of MetS across increasing quintiles of the DASH in women (*p*-trend = .006). Also, the highest adherence to DASH reduced the odds of abdominal obesity (OR: 0.34, CI: 0.15–0.77) in women. Although adherence to MED dietary pattern had no significant relationship with MetS, moderate adherence to this dietary pattern could decrease the odds of fasting blood glucose levels (OR: 0.57, CI: 0.33–0.97) and abdominal obesity (OR: 0.42, CI: 0.20–0.87) in women.
Conclusion: We found evidence indicating a significant protective association between DASH and METs and its component in women. Hence, more prospective studies are needed to confirm our findings in other populations.
Keywords: Dietary approaches to stop hypertension, Mediterranean dietary pattern, Metabolic syndrome

Western Dietary Pattern Reduced Male Fertility: A Systematic review and Meta-analysis of Observational Studies

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Introduction: Previous studies have investigated the associations between dietary patterns and male infertility, but found contradictory results. So, this meta-analysis was conducted to examine the association between dietary patterns and male infertility.
Methods An electronic search on PubMed, Web of Science, Scopus, and Google Scholar databases was conducted to identify the studies over association between dietary patterns and male infertility. The western and healthy dietary patterns were selected in this regard. The random-effect model was used to compute the summary risk estimates. I^2 and Q statistic was used to evaluate the statistical heterogeneity among studies
Results: We found eight articles, of which five (n = 7679 participants) were included in our meta-analysis. This meta-analysis determined that the western dietary patterns containing high levels of processed, meat, high-fat dairy, and low levels of vegetables, fruit, and whole grains could significantly reduce the sperm concentration (MD = -0.07, *P* = 0.01). However, no significant relationship was observed between this dietary pattern and the sperm motility and morphology (MD = 0.01, *P* = 0.71, MD = 0.2, *P* = 0.39, respectively). Moreover, regarding the healthy dietary pattern, which contains high level of fruit, vegetables, whole grain, low-fat dairy, as well as low level of red meat and processed food, no significant relationship was observed (sperm concentration: MD = 0.11, *P* = 0.11, morphology: MD = -0.02, *P* = 0.42 and motility: MD = 0.35, *P* = 0.09).
Conclusion: Findings of our meta-analysis suggested that the western dietary patterns could decrease the sperm concentration and reduce male fertility. Further prospective studies are required to confirm this result.
Keywords: Infertility; Dietary pattern; Semen quality; Meta-analysis; Systematic review

Body weight Fluctuation is associated with dementia, but not cognitive decline: GRADE-assessed systematic review and meta-analysis of cohort studies

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Background: The global increase in elderly populations has escalated dementia rates, including early-onset cases, impacting patients and caregivers. While midlife obesity is a known risk factor, the link between pattern of weight change and both dementia and cognition are debated. This study will systematically review and analyze the association between weight fluctuation and the risk of dementia, including Alzheimer's, vascular dementia, and cognitive decline.
Methods: A systematic search was conducted in four electronic databases (PubMed, Scopus, and Web of Science, Psych Info), along with manual search, up to July 2024. We conducted pairwise analysis to estimate the risk of weight fluctuation, as well as subgroup analysis to identify the source of heterogeneity. Also, the quality of the included studies and the certainty of the evidence evaluated by "Risk of Bias in Non-randomized Studies - of Interventions" (ROBINS-I) tool and GRADE Tool, respectively.
Results: In total, 16 articles were included in the current systematic review and meta-analysis. Our findings revealed that the highest level of weight fluctuation versus the lowest significantly increased the risk of all-cause dementia (HR: 1.40, 95% CI: 1.29-1.52), Alzheimer's disease (HR: 1.33, 95% CI: 1.21-1.45), and vascular dementia (HR: 1.39, 95% CI: 1.16-1.67), but no significant results observed for cognitive decline. Source of heterogeneity didn't detect.
Conclusion: We concluded that there is a positive association between high body weight fluctuation and an increased risk of dementia. However, further research is needed to confirm and expand upon these findings.

Keyword: Weight Fluctuation, Dementia, Cognition, meta-analysis

Food groups and the risk of prostate cancer: a GRADE-assessed systematic review and dose-response meta-analysis of cohort studies

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Introduction: Prostate cancer (PC) is a leading cause of cancer-related death in men, and diet plays a critical role in its progression and the severity. Therefore, we are investigating the relationship between prostate cancer risk and the consumption of various food groups.
Methods: We conducted a comprehensive search of PubMed, Scopus, and Web of Science up to June 2024 to identify relevant prospective studies. In addition to linear and nonlinear dose-dependent analyses, we performed a pairwise analysis. The GRADE tool was used to determine the certainty of evidence, and the ROBINS-I tool (Cochrane Risk of Bias in Non-randomized Studies of Interventions) was employed to assess the quality of the included studies.
Results: This meta-analysis included 63 studies with a total of 2,833,736 men. Our results showed a statistically significant increase in the risk of prostate cancer with the highest consumption of dairy products (HR:1.06, 95 % Confidence interval (CI):1.01- 1.11, I^2: 37.8, GRADE: High), milk (HR:1.07, 95 % CI:1.01- 1.12, I^2: 47.4 percent, GRADE: Moderate), and whole grains (HR: 1.11, 95 % CI: 1.03-1.19, I^2: 0, GRADE: Moderate). Notably, a nonlinear dose-response relationship was observed between PC risk and the consumption of 12.5 g of dairy products per day.
Conclusion: The consumption of dairy products and whole grains should be carefully considered due to their potential impact on prostate cancer risk. However, where the effects remain uncertain, further research is necessary.

Keywords: food groups, dairy products, whole grains, legumes, prostate cancer, meta-analysis

Association between smoking and obesity: Iranian national obesity registry (IRNOR)

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Background: Smoking and obesity are major global health issue. The prevalence of both are increasing and causing mortality and morbidity such as type 2 diabetes, cardiovascular and respiratory disease, hypertension and several cancers. Since biological, environmental and behavioral factors contribute to development of obesity, we aimed to evaluate the association of smoking status and obesity in Iranian National Obesity Registry.
Method: Total of 1980 adults with body mass index (BMI) ≥ 25 and over 18 aged entered in Iranian National Obesity Registry. Individuals were categorized based on BMI (overweight and obesity). Smoking status was divided into three categories current, smoking cessation and non-smoking. Multivariable logistic regression used to assess the correlation between smoking and obesity.
Result: Our results showed that there was a significant correlation between smoking and obesity. Current smoking compared to non-smoking, had higher odds for obesity (OR= 1.80; 95%CI= 1.07-3.01).
Conclusion: There was a significant correlation between current smoking and higher risk of obesity in Iranian national obesity registry population.

Natural compounds with anti-cancer properties: A comprehensive overview

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Introduction: Cancer, as one of the most important non-infectious diseases in the 21st century, occurs as a result of the abnormal and uncontrolled growth of cells under the influence of both environmental and genetic factors. According to the statistics of 2022, approximately 609,360 persons were dead globally because of cancer. Hence, there is a need for researching on treatment/prevention methods and finding several effective platforms for their delivery. Cancer treatment strategies are divided into traditional (resectional surgery, radiotherapy, and chemotherapy), and advanced (hormone therapy, anti-angiogenic, stem cell therapies, and dendritic cell-based immunotherapy) categories. Because of severe side effects and inefficacy of previous methods, researching for natural products is a valuable approach for cancer treatment.
Methods: The following databases were searched for published studies in the English language: PubMed, Scopus, and Web of Science up to August 2024.
Results: Natural compounds with strong anticancer activity include resveratrol, betulinic acid, rutin, epigallocatechin gallate, ginseng, quercetin, etc. These compounds provide therapeutic advantages such as fewer side effects. Preventing of metastasis/angiogenesis, inducing apoptosis, stopping cell cycle, regulation of the tumor microenvironment, reversal of drug resistance, antioxidant and anti-inflammatory activity are recognized as their mechanisms of actions.
Conclusion: Research aimed at exploring other natural compounds with anticancer potential and understanding their mechanisms and possible applications is still ongoing. Future research are likely to be directed toward optimizing the use of these compounds in connection with standard cancer treatment and paving the way for more promising therapeutic strategies.
Keywords: Anti-cancer, Natural compounds, Resveratrol

Associations between the Global Diet Quality Score and risk of Type 2 Diabetes: Tehran Lipid and Glucose Study

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Introduction: Previous research has shown that a healthy diet is important in preventing and developing Type 2 Diabetes. This study aims to investigate the association between the innovative index, the Global Diet Quality Score (GDQS), and the risk of Type 2 Diabetes.
Methods: In this secondary analysis, we included elective adult participants (n=5948) from the Tehran Lipid and Glucose Study. Participants had an average follow-up of 6.65 years. Dietary data was collected by expert nutritionists by a semi-quantitative food frequency questionnaire which was valid and reliable. Dietary scores were calculated for the GDQS. Biochemical and anthropometric characteristics were assessed during the first and follow-up surveys. Multivariable Cox proportional hazards regression models were used for estimating the progression of T2D in association with the GDQS.
Results: This study was implemented on 2,688 men and 3,260 women, respectively with the mean(SD) age of 41.5(14.1) and 39.3(13.02) years. A total of 524 subjects were found with T2D incidence. The healthy component of GDQS was conversely associated with T2D incidence [HR: 1, 0.91 (0.84-0.98), 0.91 (0.84-0.98), 0.84 (0.77-0.92) P trend= <0.001] in an adjusted model.
The total unhealthy component of GDQS were conversely related to T2D incidence in an adjusted model [HR: 1, 0.86 (0.80-0.92), 0.93 (0.86-1.01), 0.89 (0.81-0.98) P trend= 0.009).
Conclusions: The results of this study suggested that higher adherence to healthy components of GDQS and lower intake of unhealthy in excessive amount components of GDQS are related to the lower risk of T2D incidence.
Keywords: GDQS, Dietary assessment, Diet quality, Diabetes Mellitus Type 2

Effect of Coenzyme Q10 Supplementation on vascular endothelial function: A systematic review and meta-analysis of randomized controlled trials

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Introduction: Coenzyme Q10 has been identified as a potential therapeutic agent for enhancing endothelial function. However, previous randomized clinical trials examining the effects of CoQ10 supplementation on endothelial function have produced conflicting results. Thus, this systematic review and meta-analysis aimed to assess the influence of CoQ10 supplementation on endothelial factors.
Methods: We conducted an extensive search across multiple databases up to July 19th, 2023. We performed quantitative data synthesis using a random-effects model, reporting weight mean difference (WMD) and 95% confidence intervals (CI). Standard methods were used for evaluating heterogeneity, conducting meta-regression, sensitivity analysis, and assessing publication bias.
Results: Our meta-analysis included 12 studies totaling 489 subjects. The results revealed notable increases in Flow-mediated dilation (FMD) following CoQ10 supplementation (WMD: 1.45; 95% CI: 0.55 to 2.36; $p < 0.02$). However, there were no significant increases in Vascular cell adhesion protein (VCAM) and Intercellular adhesion molecule (ICAM) after CoQ10 supplementation (VCAM: SMD: − 0.34; 95% CI: − 0.74 to − 0.06; $p < 0.10$) (ICAM: SMD: − 0.18; 95% CI: − 0.82 to 0.46; $p < 0.57$). The sensitivity analysis confirmed the robustness of the effect size for FMD and VCAM. The meta-regression analysis revealed that changes in FMD percent were linked to the dose of supplementation (slope: 0.01; 95% CI: 0.004 to 0.03; $p = 0.006$).
Conclusions: Our findings suggest that CoQ10 supplementation positively impacts FMD in a dose-dependent manner, as we observed increased FMD after 8 weeks of consumption. Further research is needed to clarify this relationship.

Keywords: CoQ10, Endothelial function, Flow-mediated dilation, Vascular cell adhesion protein, Intercellular adhesion molecule, Meta-analysis

Investigating The Effect of Curcumin on Alzheimer's Disease: A Systematic Review

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Background: Alzheimer's disease is an age-related neurodegenerative disease which characteristic by deposition of beta-amyloid plaques and tau hyper phosphorylated neurofibrillary tangles. Due to the lack of a definitive solution for the treatment and prevention, healthy life and bioactive compounds are referred to as ways to treat the disease. Curcumin is a type of bioactive compound that is effective in promoting health, improving organ function, and curing diseases. So this systematic review has been conducted to check the effect of Curcumin on Alzheimer's Disease.
Method and Materials: We searched for studies on the association between Curcumin, and Alzheimer in original articles from Web of Science, Scopus, and PubMed. A total of 415 articles were identified from the search of the main electronic databases, which was reduced to 12 articles after deduplication. Of the 120 references screened by title and abstract, 5 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models of Alzheimer's Disease patients show that Curcumin by affecting Aβ plugs (Inhabit Aβ aggregation, Enhance Aβ uptake), Glial Cells (TLR4/MyD88/NF-κB signaling pathway, promoting M2 polarization Ligand generation 2 regulates), Taw protein (preventing the activity of glycogen synthase kinase 3-β and homologous pathway of phosphate and tensin/protein kinase B, Reducing of oxidative stress, mitochondrial-dependent/independent apoptosis and microbiome.
Conclusion: Based on conducted searches, Curcumin is effective in Alzheimer's disease prevention and treatment with various mechanisms. However, in order to determine the appropriate dose and form to control the disease, additional clinical trials are needed to confirm the effect.
Keywords: Alzheimer's Disease, Curcumin, neurodegenerative, mechanism

Efficacy of Probiotics and Synbiotics Supplementation on Length of Hospital Stay and Risk of Postoperative Mortality in Patients Undergoing Surgery: An Umbrella Review of Systematic Reviews and Meta-Analyses of Randomized Clinical Trials

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Introduction: This umbrella review was conducted to access the certainty and validity of all available meta-analyses for intervention trials regarding the impact of any synbiotic and probiotic interventions on hospaital and Intensive Care Unit (ICU) stay duration, and postoperative mortality risk among patients undergoing surgery.
Methods: A comprehensive systematic search was done applying Web of Science, PubMed/MEDLINE, and Scopus, until July 03, 2024. Meta-analyses evaluated the effect of synbiotic and probiotic interventions among hospital and ICU stay duration, and postoperative mortality risk patients undergoing surgery. Effect sizes of synbiotic and probiotic interventions were recalculated by using a random effects model. GRADE tool was used to determine evidence certainty.
Results: Forty clinical trials (with 5,436 participants: intervention=2,712, placebo= 2724) in twenty-six meta-analyses were included. The outcomes indicated that probiotics supplementations (vs. placebo) significantly decreased length of hospital stay (standardized mean differences [SMD]: -1.00 days, 95%CI: -1.36, -0.63, I^2=58.9%; p< 0.001; n=16) among patients undergoing surgery. Although, synbiotic supplementations has more efficacy on decreasing length of hospital stay (SMD: -3.00

days, 95%CI: -5.16, -0.83, I^2=82.0%; p=0.007; n=16). Moreover, the results suggested that synbiotic supplementations did not effect on length of ICU stay. Besides, the results indicated that the risk of postoperative mortality probiotics did not significantly change after probiotics or synbiotics supplementations (vs. placebo) among patients undergoing surgery.

Conclusion: The current review supports efficacy of synbiotic and probiotic supplementations on decreasing length of hospital stay in patients undergoing surgery.

Keywords: Probiotic, Synbiotic, Length of hospital stay, Postoperative Mortality, Surgery, Meta-Analyses

Efficacy of Probiotic and Synbiotic Supplementation on Antibiotic Use Duration and Risk of Postoperative Infection in Patients Undergoing Surgery: An Umbrella Review of Systematic Reviews and Meta-Analyses of Randomized Clinical Trials

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Introduction: This umbrella review was conducted to access the certainty and validity of all available meta-analyses for intervention trials regarding the impact of any synbiotic and probiotic interventions on antibiotic use duration and postoperative infection risk in patients undergoing surgery.

Methods: A comprehensive systematic search was done applying Web of Science, PubMed/MEDLINE, and Scopus, until July 03, 2024. Meta-analyses evaluated the effect of synbiotic and probiotic interventions on antibiotic use duration and postoperative infection risk in patients undergoing surgery. Effect sizes of synbiotic and probiotic interventions were recalculated by using a random effects model. GRADE tool was used to determine evidence certainty.

Results: Fifty-two clinical trials (with 4,101 participants: intervention = 2007, placebo = 2094) in thirty-four meta-analyses were selected to report the impact of synbiotic and probiotic interventions on antibiotic use duration and postoperative infection risk. The results revealed that probiotic supplementations (vs. placebo) significantly decreased antibiotic use duration (standardized mean differences [SMD]: -1.77 days, 95% CI: -3.15, -0.40, I^2 = 98.0%; moderate evidence certainty; p = 0.011) and postoperative infection (relative risk [RR]: 0.51, 95% CI: 0.40, 0.64, I^2 = 0.0%; high evidence certainty; p < 0.001) among patients undergoing surgery. Moreover, the outcomes indicated that synbiotic supplementation (vs. placebo) significantly decreased antibiotic use duration (SMD: -3.56 days, 95% CI: -5.17, -1.95, I^2 = 90.9%; low evidence certainty; p < 0.001) and risk of postoperative infection (RR: 0.64, 95% CI: 0.49, 0.83, I^2 = 45.2%; moderate evidence certainty; p = 0.001) among patients undergoing surgery.

Conclusion: The current review supports efficacy of synbiotic and probiotic supplementations on antibiotic use duration and postoperative infection risk in patients undergoing surgery.

Keywords: Probiotic, Synbiotic, Antibiotic, Postoperative Infection, Surgery, Meta-Analyses

The Effect of Vitamin C supplementation on Lipid Profile in Cardiovascular Disease: A Systematic Review of Randomized Clinical Trials

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Introduction: the main cause of death is cardiovascular disease (CVD). The principal cause of CVD is atherosclerosis which is indicated by lipid profile disorders resulting in oxidative stress. Although many research have been conducted to determine the impact of vitamin C supplementation on CVD, there has not been a comprehensive study to compile the evidence in this regard. Hence, we navigated a systematic review study to summarize the results of the effect of vitamin C supplementation on lipid profile outcomes in CVD patients.
Methods: We conducted a comprehensive and strategical search of PubMed, Scopus, Embase, and ProQuest, databases using related keywords including "vitamin C", "Ascorbic Acid", "Dehydroascorbic Acid", "cardiovascular disease", "Cardiovascular abnormalities" and "clinical trial" from inception to April 2024. The inclusion criteria were all randomized clinical trials (RCT) in English-language journals on CVD patients who were supplemented with vitamin C. We applied the Critical Appraisal Skills Program (CASP) checklist to assess the quality of the included articles.
Results: Out of 68 articles found in this research, 9 studies had the eligible criteria. Investigations demonstrated that vitamin C supplementation was associated with a significant reduction of the triglyceride serum level. However, no improvement was observed in the serum level of TC, LDL, and high-density lipoprotein (HDL). The ascorbic acid potentiates nitric oxide (NO) synthesis in cultured human endothelial cells, identified as the mechanism that can preserve vessels from altered myogenic tone, atherosclerosis, and coagulation abnormalities.
Conclusions: Study declared the effectiveness of vitamin C supplementation in patients suffering from hypertriglyceridemia rather than dyslipidemia.
Keywords: cardiovascular disease, lipid profile, systematic review, vitamin C supplementation.

The Relationship between Maternal Vitamin B12 and Risk of Low Birth Weight: A Systematic Review:

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Introduction: Globally, low birth weight (LBW) causes more than a third of the 2.9 million neonatal deaths each year, and prevention of these events is an important component of reducing the mortality rate in children under 5 years of age.
Low birth weight is influenced by a variety of factors, including maternal nutritional status. Numerous studies have investigated the association between vitamin B12 deficiency and low birth weight, but the results are inconsistent. Therefore, this systematic review was conducted to do a comprehensive review of the current evidence on the relationship between B12 status and low birth weight.
Methods: PubMed, Scopus, and ISI Web of Science databases were searched up to May 2024. The search was conducted by using the search terms including: "Vitamin B12" OR "Cobalamin"and "Pregnancy " and "low birth weight".
Results: Finally, 25 studies with a total sample size of 11993 participants, were included. A meaningful association was reported in 14 studies. In the remaining 11 studies, the evidence was weak. In mothers who have B12 deficiency (<148 pmol/L), a higher risk of low birth weight in newborns was observed.
Conclusion: In conclusion, the study's findings indicate a positive association between maternal vitamin B12 deficiency and low birth weight. However, more studies are needed to evaluate this relationship due to the lack of adjustment of confounding factors such as maternal age, BMI, and diet during pregnancy.
Keywords: Low birth weight, Pregnancy, Vitamin B12,Vitamin deficiency

Investigating the Impact of Gluten-Free Diets on Gut Microbiome Health and Immune system Function in Non-Celiac Populations: A Systematic Review of Challenges and Opportunities

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Introduction: Nowadays,gluten-free diets have gained popularity due to claims of improved gut health and well-being, even among non-celiac individuals. Celiac disease is an autoimmune disorder triggered by gluten, which leads to intestinal damage.This systematic review aimed to evaluate the effects of gluten-free diets on gut microbiome health and immune function in large non-celiac populations.
Methods: A systematic search of PubMed, Google Scholar, and Web of Science databases was conducted using keywords such as "gluten-free diet," "gut microbiome," "immune system," "large populations," and "non-celiac."A total of 250 articles were screened using the JBI tool, and duplicate titles were removed using EndNote. Finally, 50 articles were selected for analysis.
Results: Eliminating gluten led to significant changes in gut microbiome composition in 60% of individuals. About 30% experienced reduced microbial diversity, possibly impairing immune function. Inflammatory markers like IL-6 and CRP decreased in 25% of participants, and gastrointestinal symptoms improved in 35%. However, consuming processed gluten-free products resulted in nutritional deficiencies in over half of the participants, including reduced intake of fiber, iron, calcium, and vitamin D.
Conclusion: According to the results obtained, gluten-free diets can have both positive and negative impacts on gut microbiome health and immune function in non-celiac individuals. Given the growing popularity of these diets, more research is needed to assess long-term effects and develop appropriate nutritional strategies,highlighting the need for further research.
Keywords: Gluten-free diet, gut microbiome, immune system, large populations, non-celiac.

Effect of Garlic Extract Supplementation on Anthropometric Indices and Depression status in Obesity and Major Depressive Disorder: a systematic review

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Introduction: Obesity is one of the most important health problems and major depressive disorder (MDD) is one of the most common mental illnesses in the world. One of the major side effects of drugs used to treat MDD is weight gain. Oxidative stress plays an important role in this pathology due to excessive production of free radicals. Allicin, derived from garlic, can freely penetrate through the blood-brain barrier and has significant neuroprotective effects.
Methods: We performed a strategic search of PubMed, Scopus, Embase, ProQuest, and Google Scholar databases using relevant keywords including "depression," and "obesity" or "overweight," and "garlic," or "Allium sativum.", or "Allicin" we did. and "clinical trial" from the beginning to January 2024. Inclusion criteria were all randomized clinical trials (RCT), cohort study, descriptive study in English and Farsi language journals or conference proceedings on obese humans and animals that received garlic.
Result: Studies show that antioxidant, anti-inflammatory effects, increase in brain-derived neurotrophic factor, increase in superoxide dismutase activity in the brain, reduction in BMI and anthropometric indices are factors that suggest garlic as an adjunctive treatment in depression and obesity.
Conclusion: Allicin ameliorated depressive-like behaviors by ameliorating neuroinflammation, aberrant iron accumulation, oxidative stress, and neuronal apoptosis through inhibiting the NLRP3 pathway in the hippocampus. By inhibiting NF-κB, garlic can prevent the transcription of cytokines IL-6, IL-8, IL-12 and α-TNF, which are the most important factors of pro-inflammatory reactions.
Keywords: Allicin, Allium satium, depression, garlic, obesity, overweight

The Relationship between Dietary Inflammatory Indicators and Mortality in Cirrhotic Patients: a Cohort Based Study

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Introduction. Food intake has a vital role in the development and progress in addition to the prevention and treatment of cirrhosis. The aim of this study was investigating the association of dietary inflammatory indices and mortality in patients with cirrhosis.
Methods. In this cohort study a total of 166 outpatients with cirrhosis who were diagnosed in the last six months were followed up for 48 months. A 168-question valid food frequency questionnaire was used to assess the diet. Based on this, Dietary Inflammatory Index (DII), Experimental Dietary Inflammatory Pattern (EDIP) and Dietary Inflammatory Score (DIS) were analysed. By using Cox proportional hazards regression models, multivariate-adjusted hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated for the relationship of three dietary inflammatory indices and cirrhosis mortality.
Results. After full adjustment for confounders, the results showed that risk of mortality augmented significantly by increasing dietary inflammatory indicators. The mortality risk of cirrhosis was associated with 4.8 times increase in the third tertile of DII (HR = 4.8, 95% CI = 1.1-19.8, p trend = 0.029), 3.3 times in the third tertile of EDIP (HR = 3.3, 95% CI = 1.3-8, p trend = 0.004), and 2.2 times increased in the third tertile of DIS (HR = 2.2, 95% CI = 1-4.7, p trend = 0.032) in comparison with the first tertile
Conclusions. The results of the present study showed a significant relationship between dietary inflammatory indices and mortality in patients with cirrhosis. Additional studies are necessary to approve our findings.
Keywords. Cirrhosis; dietary inflammatory index; DII; DIS; EDIP; Mortality.

Association of new and traditional anthropometric indices with premature menopause

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Introduction: Premature menopause, also known as premature ovarian failure, is a condition in which menstruation stops before the age of 40. Since PM is related to chronic diseases such as type 2 diabetes; evaluating anthropometric indices as markers of insulin resistance can be effective. The purpose of this study is to examine the correlation between new and traditional anthropometric indices and premature menopause.
Methods: This is a cross-sectional study among the phase1 of the MASHAD (Mashhad Stroke and Heart Atherosclerotic Disorder) 10-year follow-up cohort study. The participants were divided into two groups based on PM criteria, which includes stopping menstruation before the age of 40, absence of menstruation for 12 consecutive months, and a FSH serum level higher than 40 IU/L. These groups consisted of normal age menopausal women and women with PM.
Results: Analysis of data from a study of 3519 menopausal women showed that individuals with PM had significantly shorter height, lower body surface area (BSA), and a higher demi-span to height ratio compared to healthy individuals (P-value < 0.001). The AUC for the demi-span to height ratio was reported as 0.57 (0.51-0.64), while the AUC for BSA was 0.43 (0.36-0.49). The results also indicated that every one centimeter increase in height, correlated with a 5% decrease in PM, and every one unit increase in BSA, is related to a 75% decrease in PM.
Conclusions: The results indicate an inverse correlation between height and BSA and a direct correlation between the demi-span to height ratio and PM.
Keywords: Premature Menopause, Height, Body Surface Area, demi-span to height ratio

The predictive ability of stature ratio and BMI in the 10-year incidence of metabolic syndrome

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Introduction.: Metabolic syndrome (MetS) is a chronic non-infective syndrome associated with various metabolic disorders. Anthropometric indices are linked to metabolic abnormalities and insulin resistance. The objective of this study is to evaluate the effectiveness of the stature ratio (SR) and BMI in predicting the 10 year incidence of MetS in both sexes.

Methods: This retrospective cohort study was conducted among participants of the MASHAD (Mashhad Stroke and Heart Atherosclerotic Disorder) 10-year cohort study. BMI was obtained by dividing weight (kg) by the square of height (meters) and SR was obtained by dividing hip circumference by height. The study included two groups: healthy individuals and those who were diagnosed with MetS during the 10-year follow-up.

Results: The study, which included 5,475 participants, found that individuals who were diagnosed with MetS in phase 2 had significantly higher BMI and SR levels in phase 1 compared to healthy individuals (P-value < 0.001). Cox-regression analysis revealed that for every 10-unit increase in SR, the likelihood of developing MetS increased by 32% in women and 88% in men. The AUCs for SR were 0.85 (0.56-0.60) and 0.66 (0.64-0.68) for women and men, respectively, while the AUCs for BMI were 0.61 (0.59-0.63) and 0.73 (0.71-0.75) for women and men, respectively.

Conclusions: There is a positive and significant relationship between BMI and SR with the incidence of MetS in both sexes. The SR in men is a stronger predictor for the 10-year occurrence of MetS than in women.

Keywords: Body Mass Index, Metabolic Syndrome, Stature Ratio

Infant feeding practices in critical conditions

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Introduction: For proper growth, an infant must obtain an adequate amount of essential nutrients by consuming appropriate quantities and types of foods. Amongst the population groups most vulnerable to emergencies are infants. Since human milk provides fluids and nutrients for infants, it is crucial to promote breastfeeding. This article examines the strategies associated with infant feeding in high-risk environments, such as conflict zones, natural disasters, and health crises.

Material and Method: This review article was performed within articles published at Google scholar, PubMed, Science Direct until August 2024. The keywords were Infant, Newborn, Neonate Nutrition in crisis, Emergency situation. 8 articles were selected under the inclusion criteria.

Results: breastfeeding is the safest and most effective method for feeding infants as it provides essential nutrients and immune protection. However, the prevalence of breastfeeding often declines in crisis situations due to various factors, including maternal stress, lack of support, and inadequate access to healthcare services. There are some strategies to support breastfeeding during emergencies: Encourage mothers to breastfeed whenever and wherever they want in the shelter, while providing private spaces for those who prefer more privacy Offer peer counseling, breastfeeding support groups, and access to lactation experts to assist mothers experiencing difficulties Encourage skin-to-skin contact to keep babies calm, promote milk supply, and facilitate on-demand feeding Never routinely distribute or donate formula to families, as this can undermine breastfeeding efforts If formula is needed, provide guidance on safe preparation and storage, and ensure access to clean water When a mother was unable to provide her own milk, the optimal alternative was pasteurized donor human milk.

Conclusion By implementing these strategies, emergency responders and communities can effectively support breastfeeding mothers and ensure the health of infants during critical situations.

Keywords: Breastfeeding, Emergency situation, Infant

Anti-obesity effects of capsaicin as the major bioactive component in red chili peppers

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Introduction: Obesity is known as a global issue that increases the risk of many non-communicable disease such as cardiovascular disease, diabetes, and dyslipidemia. Therefore, finding solutions to deal with this problem is important. Several anti-obesity drugs have been introduced, which sometimes have side effects such as fatigue, dizziness, insomnia, dry mouth, headache, and digestive problems. Thus, using natural compounds with anti-obesity properties has been considered. This study aimed to investigate the effect of capsaicin, a main active ingredient in red pepper, on obesity along with mechanisms involved.
Methods: The following databases were searched for published studies in the English language: PubMed, Scopus, and Web of Science. The following terms were used to generate a search: capsaicin, red pepper, anti-obesity and weight loss. Both experimental and observational studies were included to assess the impact of capsaicin on weight management and metabolic health.
Result: Based on previous studies, capsaicin leads to a significant reduction in BMI and have beneficial effects on weight management by various mechanisms including increased energy expenditure and fat oxidation, decreased appetite and the size of adipocyte cells, activation of TRPV1 channels and brown adipose tissue activity. Human trials corroborate these findings, showing modest but consistent effects of capsaicin on weight loss and metabolic parameters.
Conclusion: Our investigations indicates that capsaicin is promising for managing obesity through diet. However, further research is needed to confirm long-term efficacy, effective dose and safety in diverse populations. These findings support the inclusion of capsaicin as a complementary approach in obesity prevention/treatment strategies.

Keywords: Capsaicin, Red pepper, Anti-obesity, Weight loss

The effects of Purslane consumption on cardiovascular risk factors: A systematic review of randomized controlled trials

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Introduction: Even though purslane, Portulaca oleracea, is often labeled as a weed in various societies, it is actually a highly nutritious leafy green vegetable which packed with beneficial plant compounds. Therefore, the aim of this study is to explore the connection between the intake of purslane and its impact on cardiometabolic risk factors.
Methods: We searched several databases until 2024, including Scopus, PubMed and Web of Science. We used a combination of MeSH and non-MeSH terms. Studies were qualified if they met the following criteria: employing a randomized controlled trial (RCT) design and investigating the impact of Purslane consumption on cardiometabolic risk factors including fasting blood sugar(FBS), lipid profile, blood pressure and anthropometric indices. We assessed the quality level of the eligible studies utilizing the Cochran scoring methodology.
Results: we reviewed and assessed twelve studies. The impact of the purslane intervention on systolic blood pressure(SBP) was examined in a total of five trials and a decrease in SBP was observed. The effects of consumption on lipid profile were assessed in eleven studies. We found that it can decrease total cholesterol and Triglyceride levels and increase High density lipoprotein. Also, consumption reduced body weight, waist circumference and body mass

index. In six studies, a significant decrease in FBS was observed.
Conclusions: This systematic review showed that purslane consumption has positive impact on cardiometabolic risk factors. However, additional studies are required to offer more conclusive proof.
Keywords: "Purslane", "Portulaca oleracea", "Cardiovascular Biomarkers" "Systematic Review"

Mediterranean diet and digestive system cancers: A systematic review

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Introduction: Lifestyle is a key modulator of cancer risk. Diet is a principal component of lifestyle, and most of the available evidence is centered on the Mediterranean diet(MD). We aimed to systematically evaluate the effects of Mediterranean diet on digestive system cancers risk.

Methods: This study was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. We searched PubMed, Web of Science, and Scopus for eligible publications, up to 2024 using key search terms such as "Mediterranean diet" and "cancer". Additionally, available reviews were screened, and selected studies were added. We assessed the quality level of studies utilizing the JBI checklists.
Results: we assessed 30 studies. The risk of colorectal cancer was reduced. Five studies found an inverse association between the MD and the risk of pancreatic cancer. The inverse association between MD and upper gastrointestinal cancer risk can be found in observational studies. In addition, individuals who were former aspirin users but adhere to MD can reduce their risk of gastric distal adenocarcinoma. liver cancer risk in three cohorts and one case–control study was assessed and the risk was reduced. The inverse association between the MD and cancer is due to the high contents of antioxidants and anti-inflammatory nutrients contained in many foods of MD, which have a protective effect in fighting cell degeneration and proliferation of cancer cells.
Conclusion: The results provide evidence of an inverse association between adherence to MD and the risk of digestive system cancers.
Keywords: "Mediterranean diet", " digestive system cancers ", "systematic review"

Effect of legumes in energy reduced dietary approaches to stop hypertension (DASH) diet on glycemic indices and lipid profiles among overweight and obese type 2 diabetic patients: a randomized controlled trial

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Introduction: This randomized controlled trial aimed to investigate whether changes in individual dietary food groups in the dietary approaches to stop hypertension (DASH) diet or legume-based DASH diet contribute to on glycemic indices and lipid profiles over 16 weeks in overweight and obese individuals with type 2 diabetes.
Methods: Participants were randomized to the traditional DASH diet (n = 150) or the legume-based DASH diet (n = 150). Glycemic indices and lipid profiles were measured at baseline and after 16-week interventions. An intention-to-treat approach with multiple imputations of missing data was applied. The restricted cubic spline (RCS) was applied to assess the linearity and explore the shape of the relationship between the changes in food groups and measurements in the two intervention groups.
Results: A reduction in FPG, HOMA-IR, TG, TC, LDL-C was observed at week 16 in both dietary interventions, and this reduction was more significant in the legume-based DASH diet, than in the DASH diet. In the legume-based DASH diet, FPG and HOMA-IR decreased with the legume intake of more than 95.8, and 90.6 g/day, respectively (P nonlinear <0.001). Also, lipid profiles decreased with legume intake between 114 to 130 g/day. The multivariable RCS analysis

showed a U-shaped relationship of grains, an L-shaped relationship of vegetables, and a linear relationship of fruits, sweet, energy, sodium and intake with FPG.
Conclusions: The DASH diet, enrich in legumes, could improve the cardiometabolic risk factors in patients with type 2 diabetes.
Keywords: Legumes, Type 2 diabetes, glycemic indices, lipid profiles

The association between ultra-processed food consumption and health-related quality of life differs across lifestyle and socioeconomic strata

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Background: The aim of this prospective study was to examine the association between ultra-processed foods and health-related quality of life (HRQoL) and to evaluate the effect of lifestyle and socioeconomic factors on this association.
Methods: This study included 1766 adults (aged 18 to 78, 54.3% women), who took part in the Tehran Lipid and Glucose study. The Short-Form 12-Item Health Survey version 2 was used to determine HRQoL, which includes the physical component summary (PCS) and mental component summary (MCS) scores. Ultra-processed food consumption was assessed using a validated semi-quantitative food frequency questionnaire. Lifestyle (physical activity and smoking status) and socioeconomic factors (education level and employment status) were also determined.
Results: The median consumption of ultra-processed foods was 11.9 % (IQR: 8.2 to 16.8) of total energy intake. There was a significant inverse association between ultra-processed foods consumption and PCS, but not MCS, after adjustment for confounding factors. Significant interactions were observed between ultra-processed food consumption, sex, and occupation on PCS score (all *P* values <0.001). As ultra-processed food consumption increased, the PCS score significantly decreased in women, low physical active subjects, smokers, and lower-educated individuals. Non-employed individuals with higher ultra-processed food intake showed a decline in their PCS and MCS scores. While there was no significant difference in MCS score among different strata of lifestyle and socioeconomic status across tertiles of ultra-processed foods.
Conclusions: Higher intake of ultra-processed foods was associated with poorer physical health, particularly among women, those with unhealthy lifestyles, and low socioeconomic conditions.

Keywords: ultra-processed foods; Health-related quality of life; Lifestyle factors; Socioeconomic status

The association between dietary insulin index and insulin load and nonalcoholic fatty liver disease (NAFLD) onset; new findings from an incident case-control study

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Introduction: Non-alcoholic fatty liver disease (NAFLD) has emerged as a predominant cause of chronic liver disease globally, with an increasing prevalence that mirrors the rising incidence of obesity and type 2 diabetes mellitus (T2DM). The insulin index (II) and insulin load (IL) are relatively novel metrics that quantify the postprandial insulin response to food intake. This study aimed to evaluate the association between dietary II and IL with NAFLD as a case-control study
Method: This case-control study included 310 patients with NAFLD and 650 controls. The dietary intake of the patients was evaluated using a semi-quantitative food frequency questionnaire that has been established as both valid and reliable. DII and DIL were calculated based on standard formulas using food insulin index values published earlier. Logistic

regression analysis was used to determine the association of DII and DIL with NAFLD.
Results: Compared to the control group, individuals with NAFLD were significantly older and exhibited elevated levels of body mass index, fasting blood glucose, triglycerides, low-density lipoprotein cholesterol, total cholesterol, and alanine transaminase. Additionally, they were more likely to be smokers. In the full adjusted model, participants in the higher quartile of dietary insulin index had higher odds of NAFLD compared to the control group (OR=1.89, 95%CI: 1.23 to 2.19; P<0.001). Also, we found a liner association between dietary insulin load score and NAFLD risk (OR=1.64, 95%CI:1.08 to 1.89; P<0.001).
Conclusion: Our study indicates that a higher dietary insulinaemic potential is associated with an increased risk of NAFLD.
Keywords: Case-control; Dietary insulin index; Dietary insulin load; NAFLD.

Serum 25-Hydroxyvitamin D associated with pre diabetes, type 2 diabetes mellitus (T2DM), and insulin resistance in children: A systematic review and dose-response meta-analysis of epidemiologic studies

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Background: Although there are several investigations on the relation of serum vitamin D with pre-diabetes and type 2 diabetes mellitus (T2DM) in children and adolescents, their findings are inconsistent. Therefore, we conducted a systematic review and dose-response meta-analysis to summarize this subject.
Methods: Electronic databases of Web of Science, Scopus, PubMed and motor engineering of Google Scholar were comprehensively searched up to May 2023. Epidemiologic studies which investigated the risk of hyperglycemia and insulin resistance in relation to serum 25-hydroxy vitamin D in children and adolescents were included.
Results: Twenty-two investigations with 38,622 participants were systematically reviewed. Meta-analysis on 15 studies (32,720 participants) showed that subjects with the highest serum vitamin D had 42% lower odds of hyperglycemia, compared with those in the lowest category of serum vitamin D (OR=0.58; 95%CI: 0.48, 0.71). Moreover, pooling 8 studies (10,465 subjects) illustrated that highest vs. lowest serum vitamin D was related to 44% lower odds of insulin resistance (OR=0.56; 95%CI: 0.37, 0.83). Based on linear dose-response analysis, each 10 nmol/L increase in serum 25-hydroxy vitamin D was associated to 6% decreased odds of hyperglycemia and insulin resistance in children. Furthermore, non-linear dose-response analysis revealed that increasing serum vitamin D from 40 nmol/L to normal values was along with a decreasing trend in hyperglycemia and insulin resistance.
Conclusion: This meta-analysis revealed an inverse association between serum vitamin D and hyperglycemia and insulin resistance in children and adolescents, in a dose-response manner. Increasing serum vitamin D from 40 nmol/L to normal values was along with a decreasing trend in hyperglycemia and insulin resistance odds.
KEYWORDS: Serum 25-hydroxy vitamin D; Type 2 diabetes mellitus (T2DM); Insulin resistance; Meta-analysis; Children; Adolescents.

The association between serum vitamin D levels and abnormal lipid profiles in pediatrics: A GRADE-assessed systematic review and dose-response meta-analysis of epidemiologic studies

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Background: Several studies investigated serum vitamin D-dyslipidemia relation in children and adolescents, but findings were contradictory. We evaluated this association in children and adolescents by a systematic review and dose-response meta-analysis.
Methods: All published articles were searched using electronic databases up to December 2022. Observational studies which investigated odds of dyslipidemia in categories of serum vitamin D levels in children were included.
Results: Pooling 17 effect sizes from 15 studies (39,342 participants) showed that subjects with higher serum vitamin D had 27% lower odds of hypertriglyceridemia (OR=0.73; 95%CI: 0.60, 0.88). A meta-analysis on 18 effect sizes from 16 studies (39,718 participants) illustrated that highest vs. lowest serum vitamin D was related to 22% lower odds of low high-density lipoprotein cholesterol (HDL-c) (OR=0.78; 95%CI: 0.66, 0.91). We also found non-linear associations between serum vitamin D and odds of abnormal lipid profile. Such that, elevating values of 25-hydroxyvitamin D from 35 to 55 nmol/L was along with a decreasing trend in odds of hypertriglyceridemia, hyper low-density lipoprotein (LDL) cholesterolemia, hypercholesterolemia, and hypo HDL-cholesterolemia. However, no significant linear association was observed. Based on the Grading of Recommendations, Assessment, Development and Evaluations (GRADE), the certainty of all evidences was rated as high.
Conclusion: This meta-analysis revealed that 25-hydroxyvitamin D was inversely related to odds of abnormal serum triglyceride (TG) and HDL-c in children and adolescents. Increasing serum vitamin D from 35 to 55 nmol/L was along with a decreasing trend in odds of abnormal serum TG, HDL-c, LDL-c and total cholesterol in children.
KEYWORDS: Serum 25-hydroxy vitamin D; Low-density lipoprotein; Triglyceride; Epidemiologic studies; Total cholesterol; Meta-analysis; High-density lipoprotein; Children.

The relation of dietary protein intake before and during the pregnancy with gestational diabetes mellitus (GDM): A GRADE-assessed systematic review and dose-response meta-analysis of epidemiologic studies

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Introduction: The burden of gestational diabetes mellitus (GDM) varies from 5.4% in the Europe up to 11.5% in the Asia. Many factors influence the risk of GDM such as genetic, lifestyle and macronutrient intakes including fat, carbohydrate and protein. The findings on the relationship between protein intake and risk of GDM are limited and inconsistent. Therefore, we aimed to summarize this association, through a comprehensive systematic review and dose-response meta-analysis.
Search Strategy: Medline (PubMed), ISI Web of Science, Scopus, and motor engineering of google scholar were comprehensively searched, by using the concepts of protein intake, GDM and related keywords, up to April 2023. Observational studies were included if reported dietary protein intake as exposure and GDM as an outcome in adults, with relative risks (RRs), odds ratios (ORs), or hazard ratios (HRs) and 95% confidence intervals (CIs) for the relation of dietary protein intake and GDM. Analyses were conducted using the random effect model. Additionally, publication bias, sensitivity analysis, met-regression and dose-response analysis were conducted. All analyses were conducted through the use of STATA version 14.0.
Results: Overall, 13 studies including 31,005 participants with 3451 cases of GDM were included in the current study. Comparing the highest and lowest intakes of total, animal, and plant proteins revealed the summary RRs of 1.82 (95% CI: 1.42, 2.33), 1.79 (95% CI: 1.50, 2.14), and 0.98 (95% CI: 0.81, 1.20), respectively, indicating a significant positive association between total and animal protein intake and GDM. Based on linear dose-response analysis, each 5% increment of energy from total protein was associated to 20% higher risk of GDM (RR=1.20; 95 %CI: 1.09, 1.33). Moreover, non-linear dose-response analysis revealed an inverse U-shaped relationship between animal protein intake and risk of GDM (P for non-linearity<0.001). Such that, there was an increasing trend between zero to 10% of energy intake from animal proteins; nevertheless, after

10% E of animal protein, a risk reduction was seen. However, no non-linear relationship between plant protein intake and risk of GDM was seen.
Conclusion: There was a straight relationship between total protein intake and risk of GDM. Nevertheless, a dose-dependent association between animal protein intake and risk of GDM was seen.
Keywords: Protein intake; Gestational diabetes mellitus; Meta-analysis; GRADE

Higher blood Zinc concentration is related to a higher risk of metabolic syndrome (MetS) in adults: A systematic review and dose-response meta-analysis of epidemiologic studies

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Introduction : Metabolic syndrome (MetS) is a group of metabolic disorders known as mortality cause. Metabolic syndrome has multifactorial causes such as genetics, age, and the most important ones are lifestyle changes such as nutrients status. Although the relation between zinc and MetS was previously investigated, the findings were inconsistent. Therefore, we performed a systematic review and dose-response meta-analysis to summarize the relationship between blood zinc and MetS in adults .
Search Strategy: ISI Web of Science, Medline (PubMed), Scopus, and motor engineering of Google Scholar were systematically searched, by using the concepts of zinc, MetS, and related keywords, up to November 2023. Observational studies were included if reported blood zinc as exposure and MetS as an outcome in adults, with relative risks (RRs), odds ratios (ORs), or hazard ratios (HRs) and 95% confidence intervals (CIs) for the relation of blood selenium and MetS. Analyses were conducted using the random effect model. Additionally, sensitivity analysis, met-regression, and dose-response analysis were conducted. All analyses were conducted through the use of STATA version 14.0
Results: The current systematic review and meta-analysis included 20,740 participants and 6,003 cases with MetS from 8 cross-sectional, 3 case-control, and 2 cohort studies. The highest versus lowest levels of circulating zinc were related to 40% higher odds of MetS (95%CI: 1.12, 1.75). Considering the significant between-study heterogeneity (I^2=75.5% P<0.001), subgroup analysis was conducted based on potential confounders. In the non-Asian countries, this relationship was also significant and heterogeneity disappeared. Nevertheless, in the Asian countries, there was not any significant association and heterogeneity remained significant. Moreover, the linear dose-response analysis indicated that each 200 µg/L increment in circulating zinc was along with 12% higher odds of MetS (95%CI: 1.06- 1.19).
Conclusion: The current analysis revealed a straight association between blood zinc and risk of MetS in adults, in a dose-response manner. More prospective investigations are required to confirm these findings .
Keywords: Zinc, Metabolic Syndrome, Meta-analysis, Adults, Dose-response

Association of Child Health-Related Quality of Life and Household Food Security

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Introduction: Food insecurity has adverse effects on the quality of life. Few studies have compared the Health-related quality of life (HRQoL) of children from food-secure and insecure families; and there is no study in Iran. This study aimed to compare HRQoL among food-secure and insecure families in Rey province of Tehran.

Methods: This cross-sectional study was conducted among ٤٢٧ children (١٠–12 years) who were recruited via cluster-random sampling method in Rey province from 2023 to 2024 in governmental elementary schools. HRQoL was assessed using the Iranian version of the PedsQoL questionnaire. We assessed the household food security status by the 18-item United States Department of Agriculture questionnaire. The independent sample T-test was used for analysis by SPSS version 21.

Results: Mean self-reported HRQoL total scores were 85.82 ± 12.76 and 88.13 ± 11.12 in girls and boys respectively and this difference was statistically significant (pvalue= 0=046). This difference was related to the physical and emotional items of PedsQol. Of the totals, 43.6 % of participants were girls (n=186) and 56.4 (n=241) were boys. The socioeconomic status of families was poor, moderate, and well (31.4, 52.7, and 15.9 %). From the total families, 64.6 % (n=276) were food secure and 35.4 % (n=151) were food insecure. There was no significant difference between HRQoL total scores based on the food security status of families.

Conclusion: There was no significant association between household food security status and children's health-related quality of life, however, HRQoL was lower in girls and empowerment of girls seems necessary.

Keywords: Food-security, Health-related quality of life, Children, Iran.

Do Obese children have lower Health-Related Quality of Life?

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Introduction: children and adolescents with overweight and obesity have an impaired health-related quality of life (HRQoL). However, it is unclear which of these children are most affected in their physical, psychological, and social functioning. Therefore, this study aimed to evaluate HRQoL in school-aged children in Tehran, Rey.

Methods: This cross-sectional study was conducted among 540 children (١٠–12 years) who were recruited via cluster-random sampling method in Rey province from 2023 to 2024 in governmental elementary schools. HRQoL was assessed using the Iranian version of the PedsQoL questionnaire. Weight and height were examined by valid measurements and BMI (Body Mass Index) was calculated. The independent sample T-test and Pearson correlation coefficient were used for analysis by SPSS version 21. Anthroplus software was used to calculate the Zscore of BMI.

Results: Mean self-reported HRQoL total scores were 88.32 ± 11.64 and 85.53 ± 12.13 in normal and overweight/obese children respectively. In all of the HRQoL domains including physical, emotional, social, and school, overweight/obese children had lower scores. The prevalence of underweight, normal, overweight, and obese children were 4.3, 50.2, 24.6, and 20.9% respectively. Of the total, ٤٦,٣% (n=250) and 53.7 (n=290) were girls and boys respectively. Of

the totals, 43.6 % of participants were girls (n=186) and 56.4 (n=241) were boys. There was an indirect significant association between BMI for age Z scores and HRQoL scores (r=-0.16, p-value <0.001).
Conclusion: Obese children reported poorer HRQoL compared to their healthy counterparts. Thereby designing, planning, and implementing health promotion programs for prevention and treatment of childhood obesity is necessary.
Keywords: Health-related quality of life, Children, Overweight, Obesity, Iran.

Assessment of dietary fat intake in metastatic colorectal cancer patients with KRAS mutation status: A case-control study

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Introduction: Epidemiological data supports a connection between dietary factors and the KRAS mutation (Kirsten rat sarcoma virus) that contributes to the development of colorectal cancer. This study aims to investigate the relationship between dietary fat intake and metastatic colorectal cancer (mCRC) patients with KRAS mutation status.
Methods: This hospital-based case-control study involved 90 patients (45 with wild-type mutations and 45 with mutant mutations) from October 2023 to May 2024. The analysis of KRAS gene mutations was conducted using the Real-Time PCR apparatus with the Easy-KRAS status kit. Dietary intake data were collected from participants using a validated food frequency questionnaire (FFQ) consisting of 147 items. The difference in average fat intake between groups was assessed through multivariate analysis.
Results: A statistically significant difference in average trans fat intake was observed between the groups. Trans fat intake was significantly higher in the wild-type group [0.0018 (0.004)] compared to the mutant group [0.0004 (0.0007)].
Conclusions: The study revealed that patients in the mutant group had lower trans fat intake. These findings suggest that reducing trans fat consumption may be linked to a decreased likelihood of genetic mutations in patients with metastatic colorectal cancer. Therefore, monitoring the types of fats consumed in the diets of these patients can have a positive impact on disease management and treatment outcomes.
Keywords: Fat intake, KRAS mutation status, mCRC

Investigating the effect of daily consumption of flaxseed on the reproductive endocrine profile in women with Polycystic Ovary Syndrome: An Open-Labeled Randomized Controlled Clinical Trial

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Introduction: Polycystic ovary syndrome is a complex endocrine and reproduction disorder in women. Flaxseed has phytoestrogen and is recommended for the treatment of endocrine disorder and regulation of female sex hormones. So, this study aimed to evaluate the effect of flaxseed intake on the reproductive endocrine profile in women with PCOs.
Methods: Participants (n=70) were randomly assigned to 2groups (intervention: consumed 30grams of brown milled flaxseed daily in conjunction with lifestyle modifications, control: received lifestyle modifications). For biochemical evaluations, 10cc of fasting blood were taken. Daily measurements of FSH, LH, and estradiol and AMH, androstenedione, and DHEAS were determined on a weekly basis. These sex hormone levels were quantified using an ELISA.

Statistical analyses were performed using SPSS25.
Results: The baseline levels of FSH in the flaxseed and control groups were 9.72±11.95 µU/mL and 9.88±12.45 µU/mL, respectively (P=86). At the end of the study and in the intention-to-treat (ITT) analysis, we found significant effects of flaxseed supplementation on FSH levels (mean treatment effect 0.87, 95% CI 0.086 to1.75,p=0.027). These significant results were also confirmed in the per-protocol (PP) analysis (mean treatment effect 0.91,95%CI 0.087 to 1.84,p=0.02). We observed a significant effect of flaxseed supplementation on the LH/FSH ratio (mean treatment effect -0.341,95%CI -0.63 to -0.08,p=0.031). However, in terms of others, sex hormones didn't find any significant effects following flaxseed supplementation (P>0.05).
Conclusion: Our study indicates that daily consumption of 30grams of flaxseed in women with PCOs can have a positive effect on the level of some sex hormones, including FSH.
Keywords: Flaxseed: FSH: LH: Polycystic Ovary Syndrome (PCOs): Sex Hormones.

Assessing diet sustainability through comparison of indices based on EAT-Lancet: A cross-sectional Study

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Introduction: It can be challenging to measure adherence and compliance based on EAT-Lancet's recommendations for healthy and sustainable diets, leading to a variety of approaches and a lack of agreement on standardized metrics. In order to, this study aims to assessing diet sustainability through comparison of indicators based on EAT-Lancet, namely the EAT Lancet Index, EAT-Lancet Diet score, EAT-Lancet Healthy Reference Diet score (EAT-HRD), Healthy Reference Diet (HRD) score, Planetary Health Diet Index (PHDI), World Index for Sustainability and Health (WISH).
Methods: The cross-sectional current study was conducted in Mashhad's PERSIAN cohort, which included 12000 employees of Mashhad University of Medical Sciences (MUMS). Dietary intakes were measured using a validated 168 items semi-quantitative food frequency questionnaire (FFQ). The EAT-Lancet Diet Score defined based on 14 food items according to the eight food groups (whole grains, tubers and starchy vegetables, vegetables, fruits, dairy foods, protein sources, added fats, and added sugar).
Results: After controlling for potential confounders, there was significant associations between EAT-Lancet Index, EAT-HRD score, and PHDI with nutrient rich foods (NRF), carbon footprint (CF), and water footprint (WF) (P-value < 0,05). Also there was negative significant associations between EAT-Lancet score and HRD-score with CF (P-value = 0.001).
Conclusions: The EAT-Lancet Index, having significant relationships with food groups, NRF, CF, and WF, is introduced as a suitable index of diet sustainability.
Keywords: Healthy Reference Diet Score, Planetary Health Diet Index, Sustainable diet, World Index for Sustainability and Health.

Multidisciplinary Approaches in Managing Childhood Obesity: Prevention, Treatment, and Emerging Therapies

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Introduction: Childhood obesity is a critical global health challenge, linked to severe long-term complications such as metabolic disorders, cardiovascular dysfunctions, and psychosocial issues. Effective management requires a multidisciplinary approach, including nutritional adjustments, physical activity, behavioral therapy, and in severe cases, pharmacotherapy. Emerging treatments, such as novel pharmacological agents, show promise in severe pediatric obesity.
Methods: This review analyzed 127 peer-reviewed articles published between 2016 and 2024. Databases such as PubMed, Google Scholar, and Scopus were searched using keywords including "childhood obesity," "treatment," and "behavioral therapy."

Results: The review indicates a significant rise in childhood obesity, with effective management requiring a combination of diet, exercise, and behavioral therapy. Recent studies highlight the potential of new drugs, such as GLP-1 receptor agonists, in managing severe cases. Family and community involvement are crucial in sustaining healthy lifestyle changes.

Conclusion: A comprehensive approach to childhood obesity is essential, integrating lifestyle changes with emerging pharmacotherapies. Early intervention can mitigate long-term health risks, suggesting that future research should focus on refining these strategies and exploring their long-term efficacy.

Keywords: behavioral therapy, Childhood obesity, multidisciplinary treatment, pharmacotherapy

Investigating the Effects of Sucralose and Saccharin on Inflammatory Bowel Disease and Gut Microbiota:A Systematic Review

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Introduction: Inflammatory bowel disease (IBD), encompassing ulcerative colitis (UC) and Crohn's disease (CD), has seen a sharp rise in incidence over the last hundred years. Artificial sweeteners like saccharin and sucralose, commonly found in sugar-free drinks, candies, and low-calorie snacks, might exacerbate gut inflammation by disrupting the gut microbiota. This systematic review delves into the effects of these sweeteners on IBD.

Methods: A systematic review was conducted using PubMed, Scopus, and Google Scholar databases, covering studies from 2000 to 2024. Keywords included "artificial sweeteners," "gut microbiota," "inflammatory bowel disease," "saccharin," "sucralose," and "ulcerative colitis." From 64 identified studies, 20 were selected for full-text review, and 16 were included in the final analysis.Study quality was assessed using the JBI tool, and EndNote managed references.

Results: Both sucralose and saccharin affect gut microbiota, though sucralose appears to have a more significant impact. It compromises gut barrier function and deactivates digestive proteases, thereby aggravating IBD symptoms. On the other hand, saccharin, while altering gut microbiota and inducing glucose intolerance, did not significantly impair the gut barrier. Instead, saccharin consumption led to a reduction in fecal bacterial load and changes in microbiome composition, which seemed to reduce colitis severity in animal models. Despite their differing effects, both sweeteners have been linked to broader metabolic disturbances, highlighting important health implications.

Conclusions: Artificial sweeteners, especially sucralose and saccharin, may play a role in the progression of IBD by disrupting gut microbiota. Further research is needed to fully understand their long-term effects on IBD patients and public health.

Keywords: Artificial sweeteners, Gut microbiota, Inflammatory bowel disease, Saccharin, Sucralose, Ulcerative colitis

Investigating the association between the Prime Diet Quality Score and Mediterranean diet with polycystic ovary syndrome (PCOs)

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Introduction: PCOs is a reproductive disorder in women. The composition of the optimal diet for PCOs is not yet known. However, the level of inflammation is high in PCOs. So, a Mediterranean diet is recommended for these people. Therefore, the purpose of this study is to investigate the association between the PDQS and Med-Diet with PCOs.

Methods: The present study was a case-control study conducted among the 472women with/without PCOs. Dietary intake was assessed by FFQ(147items) and was computed using the Nutritionist IV. The overall Med-Diet score ranged from 0to9 points. The PDQS is a validated food-based DQI and was calculated by the intake frequency of every food that was in the healthy/unhealthy group (ranged from 0to42 points), with a higher PDQS score indicating a healthier diet.

Results: This result showed that a higher adherence from PDQS was correlated with 43%lower odds of PCOs (OR=0.57, 95%CI=0.44to0.68; P for trend=0.029). We found that subjects in the higher quartile of the Med-Diet score experienced 41%lower odds of PCOS in the crude model (OR=0.59, 95%CI:0.48to0.67;P for trend=0.01) and 32%lower odds of PCOS in the full adjusted model (OR=0.68, 95%CI=0.57to0.79; P for trend=0.027).
Conclusion:The present study showed that participants in the higher quartile of the PDQS and Med-Diet score consumed significantly higher amounts of energy, protein, carbohydrate, total fat, low-fat dairy products, fiber, fruits, vegetables, legumes, whole grains, fish, shrimp, and nuts, and lower amounts of high-fat dairy products, refined grains, red and processed meats, and fast foods, and they are less likely to suffer from PCOs.
Keywords: Dietary Intake: Diet: Mediterranean diet: Polycystic Ovary Syndrome (PCOs)

Association between Dietary Acid Load (DAL) and cardiovascular diseases (CVD) risk factors: a cross-sectional study of patients undergoing coronary angiography

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Introduction: Diet composition can influence acid-base balance, with high-protein foods increasing acid (dietary acid load) and fruits and vegetables increasing alkalis. This study investigates the relationship between dietary acid load, based on potential renal acid load (PRAL), and various health metrics in angiography patients.

Methods: The study included 720 angiography patients (aged 35-75) at Afshar Hospital, Yazd, Iran. Nutrient intake was assessed using a 178-item food frequency questionnaire (FFQ). Evaluation tools included BMI, waist circumference, body composition, fasting serum triglycerides, total cholesterol, HDL-C, LDL-C, fasting blood sugar (FBS), creatinine, and blood pressure, all measured using validated methods. Statistical analysis was performed using analysis of covariance (ANCOVA).
Results: A total of 653 participants (mean age 56.68 ± 9.79) were analyzed. The crude model showed that individuals in the third tertile of PRAL had significantly higher LDL-C than those in the first tertile, but this significance disappeared after adjusting for confounders (P=0.03). No significant associations were found between PRAL and total cholesterol, triglycerides, HDL-C, body composition, anthropometric indicators, blood pressure, or FBS in either crude or adjusted models (P>0.05 for all).
Conclusion: The study found no significant association between PRAL and cardiovascular disease risk factors, including lipid profile, FBS, blood pressure, and body composition. Further research is needed to validate these findings.
Key words: Lipid profile, body composition, blood pressure, Dietary Acid Load, PRAL

Plasma Nitrate, Dietary Nitrate, Blood Pressure, and Vascular Health Biomarkers: A GRADE-Assessed Systematic Review and Dose-Response Meta-Analysis of Randomized Controlled Trials

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Introduction: We aimed to clarify the impact of dietary nitrate on plasma nitrate concentrations and to explore the relationship between varying dietary nitrate doses and their effects on blood pressure (BP) as well as indicators of vascular health.
Method: a comprehensive search conducted through PubMed, Scopus, and Web of Science until February 2024 to identify eligible randomized controlled trials. The random effects model was used to calculate the weighted mean difference (WMD) and 95% confidence interval (CI), along with conducting a dose-response analysis and assessing publication bias. The Cochrane quality assessment and GRADE tool also used to evaluate studies quality and outcomes certainty of the evidence.
Result: In our study of 1,823 participants, we found that each millimole (mmol) increase in nitrate supplementation was associated with a significant rise in plasma nitrate levels, both in the acute (WMD:32.7µmol/L; 95%CI: 26.1, 39.4) and chronic-term (WMD:19.6µmol/L; 95%CI: 9.95, 29.3), in addition to a reduction in systolic blood pressure across different timeframes: acute (WMD:-0.28mmHg; 95%CI: -0.40, -0.17), short-term (WMD:-0.24mmHg; 95%CI: -0.40, -0.07), and medium-term (WMD:-0.48mmHg; 95%CI: -0.71, -0.25). A similar trend was observed for diastolic blood pressure in the acute phase (WMD: -0.12 mmHg; 95% CI: -0.21, -0.03). Additionally, a linear dose-response relationship was evident between nitrate intake and medium-term improvements in vascular health markers.
Conclusion: We noted that dietary nitrate supplementation led to dose-dependent increases in plasma nitrate and nitrite levels, which were accompanied by corresponding reductions in blood pressure and improvements in vascular health.
Keywords: Nitrates; Hypertension; Vascular Stiffness; Cardiometabolic Risk Factors; Controlled Clinical Trial; Preventive Cardiology.

Associations between Spice or Pepper (Capsicum annuum) Consumption and Diabetes or Metabolic Syndrome Incidence

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Introduction: This study aimed to investigate the association between spice or pepper consumption and the incidence of metabolic syndrome (MetS), its components, or type 2 diabetes (T2D).
Methods: We included eligible adults with a median follow-up of 5.8 years among the Tehran lipid and glucose study participants. Baseline and follow-up examinations assessed dietary, biochemical, and anthropometric variables. Multivariable Cox proportional hazard regression models were used to determine the association between spice or pepper intakes and hazard ratios of T2D, MetS or its components.
Results: The analysis was performed on 2303 men and 3037 women (n=5340), with a mean age of 39.9±13.4 and 406 incident cases of T2D. Also, 4353 participants, including 1694 men and 2659 women, were included for MetS analysis with 1211 incident cases of MetS. After adjusting for confounding factors, spice and pepper intakes were not associated with the incidence of T2D or MetS. Further, in the upper quartile of spice intake, the hazard ratio of high triglyceride (TG) increased [HR Q4: 1.19 (CI: 1.05-1.35)]. Also, spice intake increased the incidence of high blood pressure (BP) [HR: 1, 1.03 (0.93-1.14), 1.06 (0.96-1.17), 1.16 (1.04-1.30), P-trend=0.007]. The risk of low high-density lipoprotein cholesterol (HDL-C) appeared to decrease in the third quartile of pepper consumption (HR: 1, 0.97, 0.87, 1.03, P-trend=0.008).
Conclusions: Our results indicated that spice and pepper intakes had no association with the incidence of T2D and MetS. The high TG and high BP incidence were elevated in the upper quartiles of spice intake. Lower consumption of pepper decreased the incidence of low HDL-C.
Keywords: Blood Pressure, HDL-C, Incidence, Triglyceride.

The association between dietary patterns derived by reduced-rank regression in association with migraine headache severity and duration among women

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Introduction: Migraine is a common disorder, with attacks causing neurological dysfunction and pain. Many foods are involved in reducing the severity of migraine attacks. This study aimed to assess the association between dietary patterns (DPs) derived by reduced-rank regression with migraine headache severity and duration among women.
Methods: A cross-sectional study carried out among 340 patients with migraine that referred to a headache clinic for the first time. A semi-quantitative food frequency questionnaire evaluated dietary intake. Two DPs were derived using RRR with 28 food groups. Visual analog scale (VAS) and migraine disability assessment (MIDAS) questionnaires were used by a neurologist for assessing migraine disability and pain severity, respectively. Multinomial and binary logistic regression were used to assess the relationship of DPs with migraine headache severity and duration.
Results: Two primary DPs were derived, which explained 89.40 of the totals explained variance in participants' dietary intake. After adjustment for potential confounders, higher tendency to healthy DP (high in fruits, fruit juices, and dried fruits, vegetables, whole grains, liquid oil, brains, beans, low-fat dairy, and white meat) was correlated with a lower VAS score after adjusting for confounding factors (OR = 1.93, 95% CI = 1.15 - 2.44, P-trend < 0.001). However, we couldn't find any significant correlation between healthy and unhealthy dietary patterns with MIDAS before and after controlling for confounding variables.
Conclusion: This research indicates that following a healthy dietary regimen can lessen the intensity of migraine pain. Nevertheless, additional investigations are required to examine this association.
Keywords: Cross sectional, Dietary Pattern, Migraine, Reduced-rank regression.

The effectiveness of acupressure and acupuncture on nutritional disorders: anorexia nervosa and bulimia nervosa; systematic review

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Introduction: Anorexia and bulimia nervosa are serious diseases with dangerous complications . Various pharmacological and psychological interventions are used to manage eating disorders; which alone are not effective enough. Today, in addition to existing treatment methods, auxiliary treatments that lead to improvement of nutritional status and mental health are also used in these patients. This Systematic review was conducted with the aim of The effectiveness of acupressure and acupuncture on anorexia nervosa and bulimia nervosa.
Methods: This Systematic review covers keywords acupuncture, acupressure, nutritional disorders, anorexia nervosa, bulimia nervosa in SID, Scopus, PubMed, Google Scholar databases. Studies between 2015-2024 were included. 60 articles were selected. After removing duplicate articles, articles with keywords in the title or abstract of the article and the full article file was available (14 articles) were evaluated using the PRISMA check list.
Results: Evidence shows that acupuncture and acupressure by affecting the endogenous opioid system and releasing oxytocin, like sedative drugs, lead to a sense of peace and security in people. In such a way that patients describe their current state as a sense of unusual relaxation and meditation. . The results of the reviewed articles showed that creating a sense of relaxation in the treatment of people with eating disorders (anorexia nervosa and bulimia nervosa) who usually suffer from numerous physical and psychological disorders; It is very effective. According to the reviewed results of acupressure and acupuncture in cases where the symptoms of nutritional disorders are severe (severe anxiety and depression, low self-esteem, bad mental image, severe anorexia or uncontrollable overeating) and drug treatments have a

moderate effect; They play an important role in the treatment process and improving the quality of life of these patients.
Conclusions: Considering the effective role of acupuncture and acupressure in improving the symptoms of patients with nutritional disorders, it is suggested health centers and mass media familiarize patients with these complementary treatment methods.
Keywords: acupuncture, acupressure, nutritional disorders, anorexia nervosa, bulimia nervosa

Are spexin levels associated with metabolic syndrome, dietary intakes and body composition in children?

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Introduction: The aim of the present study was to investigate whether circulating levels of spexin is related to metabolic syndrome, some dietary intakes (Total energy intake, Macronutrient intakes) and body composition in children.
Methods: 90 children were recruited in the present cross sectional study. Anthropometric measures, body composition, blood pressure, dietary intakes, resting metabolic rate, physical activity level, appetite status, pubertal stage, serum spexin, fasting blood glucose, high-sensitivity C-reactive protein, insulin and lipid profile were measured using standard techniques.
Results: 14 children met the criteria for metabolic syndrome. Median (IQR) of spexin levels were significantly lower in children with high fat mass and children with higher systolic blood pressure (SBP), compared to children with normal fat mass and normal SBP: ($P < 0.05$). A protective independent effect was detected for the highest tertile of serum spexin on metabolic syndrome in adjusted models; Crude OR (CI): 0.23(0.04–1.2), P-trend = 0.08; Model 1: OR (CI): 0.15(0.02–1.01), P-trend = 0.05; Model 2: OR (CI): 0.10 (0.01–0.90), P-trend = 0.03. There was a significant negative association between spexin and total dietary fat intake ($r= -0.21$; $P < 0.04$).
Conclusion: This findings can further highlight the importance of the relationship between spexin, adipose tissueand adipose tissue metabolism.
Keywords: Children; Insulin Resistance; Metabolic Syndrome; Obesity; Spexin

The association between the MIND diet and lipid profile in adults: a systematic review of observational and randomized control trials.

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Introduction: Owing to the high prevalence of metabolic disorders, detecting their risk factors are needed and one of the mainstays of metabolic disorders is to improve dyslipidemia. Accordingly, this study aimed to review and summarize evidence to illustrate the efficacy of MIND-diet in dyslipidemia.
Methods: A comprehensive literature search was conducted in the electronic databases of PubMed, SCOPUS and Web of Science systematically up to 2024. Studies were included if they investigated the effects of MIND-diet on dyslipidemia.
Results: A total of 609studies were identified through electronic search, of which, 9 studies met our specified inclusion criteria. The relationship between the MIND-diet and dyslipidemia was investigated in 8 observational and one RCT studies. Three cross-sectional studies illustrated a positive association between MIND-diet and HDL-C and a negative association with total-cholesterol:HDL-C ratio. While, two studies failed to show significant association between a higher adherence to MIND diet and the odds of high serum triglyceride. In addition, adults with dominant allele of dyslipidemia and higher adherence to MIND-diet showed lower odds of dyslipidemia. Similarly, hazard ratio reported in

cohort study revealed that higher score of MIND-diet would be associated with lower risk of metabolically unhealthy phenotypes. Also, the included RCT demonstrated a significant decrease in total-cholesterol, LDL-C and triglyceride in MIND-diet group.

Conclusions: Accordingly, MIND diet tended to show favorable effects on dyslipidemia as a predictor of metabolic disorders in adults. Further studies are warranted to clarify the effect of MIND-diet in dyslipidemia to estimate the risk of metabolic disorders more specifically.

Keywords: MIND diet, lipid profile, triglyceride, cholesterol, systematic review

Comparison of Dietary Intake of Vitamin A in Children with Autism Spectrum Disorders with Healthy Children in Gorgan City in 2021: A Case-control Study

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Background: Autism spectrum disorder (ASD) is influenced by both genetic and environmental factors, including nutrition. Recently, the role of nutrients, particularly vitamin A, in the pathophysiology and treatment of ASD has gained increasing interest. Additionally, ASD can impact dietary patterns, potentially leading to inadequate nutrient intake. This study aimed to compare the intake of various forms of vitamin A between children with ASD and healthy children in Gorgan City, Northeast Iran.

Materials and Methods: In this case-control study, 35 children with ASD, aged 6 to 12 years, were compared with 70 age- and gender-matched healthy controls. Dietary intake was recorded using a semi-quantitative food frequency questionnaire (FFQ), and vitamin A intake was calculated using ShaFA software.

Results: There was no significant age difference between the groups (P=0.27). The control group had a significantly higher total intake of vitamin A compared to the ASD group. Specifically, retinol, alpha-carotene, beta-carotene, beta-cryptoxanthin, and lycopene intake were all higher in the control group. No significant difference was found in lutein and zeaxanthin intake between the two groups.

Conclusion: Although both groups' vitamin A intake exceeded recommended levels, the lower intake of vitamin A-rich foods in the ASD group highlights the need for careful dietary attention, as ASD may directly or indirectly influence eating habits and nutritional patterns.

Polycystic Ovary Syndrome and Ketogenic Diet: news and findings

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Introduction: Polycystic ovary syndrome (PCOS) is a common multi-factorial endocrinopathy occurring in reproductive-age women. Obesity plays a pivotal role in PCOS which may increase the risk of metabolic syndrome or leads to infertility. According to the significant increase in the global prevalence of PCOS among women of reproductive age which is estimated about 6-20%, the impact of food and nutritional transition, and the relationship between diet and obesity, this research is aimed to determine the association between PCOS and Ketogenic Diet (KD) in overweight women with PCOS.

Methods: A comprehensive search was conducted using keywords related to KD and PCOS in pubmed, Scopus and WOS. Among the articles, related ones were reviewed.

Result: Lifestyle and diet affect PCOS which is associated with complications such as Insulin resistance, hyperinsulinemia, irregular menses, and obesity. The dietary pattern has a crucial role in the control of PCOS. KD, a type of diet including low carbohydrate and high fat, is mentioned as an appropriate diet for some diseases of the endocrine system mainly through lowering energy intake. Additionally, during ketogenesis androgen levels is decreased, sex hormone-binding globulin is increased, and insulin sensitivity is improved which consequently, may improve the dysfunction of the endocrine system related to PCOS pathogenesis.

Conclusion: The reviewed data supported that a low-calorie KD might be considered a valuable non-pharmacological treatment for PCOS.

Keywords: ketogenic diet and polycystic ovary syndrome, polycystic ovary syndrome, ketogenic diet

Design a special diabetic formulation for critically ill patients able to receive enteral nutrition

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Introduction: Proper nutritional support plays a vital role in improving the clinical outcomes of patients admitted to the intensive care unit (ICU). This study aimed to design specific formulas for diabetic patients who need enteral nutritional support admitted to the ICU.
Methods: We considered the specific type and amount of macronutrients; the required analyses were carried out to ascertain the proper proportion of fats, proteins, and carbohydrates. Subsequently, vitamins, minerals, and specific compounds were added based on the diabetes patient's demands, and relevant analyses were conducted. A formulation with an average daily intake of 2000 cc was used to meet the patient's requirement.
Results: Energy in this new formulation was in the range of 103–112 kcal/100 ml. Due to the implementation of HACCP, monitoring the production line, and performance of corrective measures, no microbial contamination was observed by indicator pathogenic microorganisms.
Conclusion: After consulting with the pharmaceutics professors, a formulation for diabetics was created. Step two will involve performing the new formulation on critically ill ICU patients as a randomized control trial.
Keywords: Diabetic; Critical Care; Enteral Nutrition; Formula; Intensive Care Unit Patients

Effect of Caffeine on Glycogen Recovery in male adults, a systematic review and meta-analysis

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Background: This meta-analysis aims to analyze the effects of caffeine on glycogen recovery. In this study, we evaluated the available evidence regarding caffeine and its effect on glycogen recovery.
Method: in this meta-analysis, studies were selected using the PubMed database focusing on articles published from 2000 to 2024. The search utilized keywords and mesh terms such as "caffeine", "coffee" and "glycogen". Specifically randomized clinical trial articles that investigated the caffeine use as an intervention for athlete workouts were included.
Results: the research initially encompassed 118 articles containing 65 file attachments, identifying 12 final studies, in these RCTs 109 athletes have participated in conducted in Canada, Denmark, Australia, Brazil, etc. The studies reported using caffeine as an intervention with a mean dosage of ≈6.7mg/kg. Blood and skeleton muscle metabolites that we extracted lactate, glucose, and glycogen. Lactate serum has been measured in 6 studies and showed a significant effect (Effect size(ES); 0.674 mmol/kg, p≈0.001) and a considerable impact on blood glucose(Effect size;0.455 mmol/kg, p=0.035) in 5 studies have measured blood glucose. 4 studies evaluated glycogen level (Effect size; 0.962 mmol/kg, p≈0.001) which is a significant effect in studies that used caffeine as a pre-workout intervention. Three studies that used caffeine as a post-workout intervention respectively showed no significant effect in glycogen (Effect size; 0.025, p=.937) and lactate(Effect size; 0.252, p=0.433)
Conclusion: This meta-analysis showed that caffeine supplementation could be a beneficial pre-workout intervention for glycogen recovery. Using caffeine as a post-workout intervention showed no significant effect however further research is needed to complete our view of this field.

Keywords: Caffeine, Glycogen Recovery, Male, Adults, Meta-Analysis, Lactate

Beneficial effects of ginger on prevention of obesity through modulation of gut microbiota: A systematic review

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Introduction: Worldwide, obesity poses a serious threat to public health and leads to higher costs and diseases. New research has shown that gut microbiota have a significant impact on how obesity and other metabolic problems are treated. Ginger is used as a spice and dietary supplement. It reduces inflammation and oxidative stress in the body and may have potential for treating obesity. The aim of the study was to investigate the beneficial effects of ginger in preventing obesity through the regulation of gut microbiota.

Method: This review was conducted by searching databases including PubMed, Web of Science, Scopus, and Google Scholar. The keywords "obesity," "Gut-microbiota," and "Ginger" were examined without time limitation. English-language studies that investigated the Beneficial effects of ginger on prevention of obesity through modulation of gut microbiota met the study inclusion criteria.

Findings: A total of 753 articles were obtained, out of which 14 related articles were entered for review. In 9 studies (64%), the beneficial role of ginger in preventing obesity through regulating gut microbes was mentioned. In 5 articles (35%), the direct effect of ginger in weight reduction and improvement of obesity-related diseases was also highlighted, and it was concluded the use of ginger supplement has a therapeutic effect.

Conclusion: Although the impact of ginger on gut microbiota for preventing obesity still requires further investigation, the positive effects in the studied articles show incorporating ginger into weight loss and obesity treatment regimens can be beneficial.

Keywords: Ginger, Gut-microbiota, Obesity

Association between fish consumption and risk of chronic kidney disease: A dose-response meta-analysis of prospective cohort studies

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Background: Previous research has not clearly established the association between fish intake and the probability of developing chronic kidney disease (CKD). Therefore, the present dose-dependent meta-analysis was conducted to clarify this relationship**.**

Methods: PubMed, Web of Science, and Google Scholar databases were searched until May 2024. We included all prospective cohort studies investigating the association between fish consumption and CKD risk in healthy adult populations. In the end, 7 studies met the eligibility criteria.

Results: The pooled analysis of the highest compared with the lowest analysis showed that consuming fish in the diet was significantly associated with a decreased risk of CKD (RR: 0.88; 95% CI: 0.80, 0.97; n = 7). Moreover, a reduction in the risk of CKD was observed with every 15 g/d increment in dietary fish consumption (RR: 0.94; 95% CI: 0.92, 0.96; n = 5). The non-linear dose-response meta-analysis results indicated a negative linear association between fish intake and risk of CKD (P = 0.870 for nonlinearity; P dose-response: < 0.001). Furthermore, there was no indication of publication bias in our outcome based on the results of both Egger's and Begg's tests. The GRADE scoring system indicated a moderate certainty level for the assessed evidence.

Conclusion: Higher fish consumption in a dose-dependent linear manner may reduce the risk of developing CKD. Further well-designed prospective cohort studies with a long enough follow-up period are recommended to validate our findings.

Keywords: chronic kidney disease, fish, meta-analysis.

Management of nutrition in crisis based on artificial intelligence

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Introduction: A crisis is the result of natural or human disasters that can affect the health of a country. Therefore, managing the crisis as quickly and efficiently as possible has become a kind of goal; A goal that can be approached more with the help of artificial intelligence. In this research, one of the common scenarios in the crisis, i.e. lack of food, and how to manage it with the help of artificial intelligence have been investigated.
Methods: In the present study, the keywords Nutrition, Artificial Intelligence, Disaster Management, Natural Disaster, and Nutrition Surveys were searched in PubMed, Google Scholar, and Scopus in the time range of 2014 to 2024.
Results: One of the most important issues in the crisis is the management of nutritional needs. According to the experiences that have been made in this field so far; Different methods of management style can be implemented, one of the most recent of which is management based on artificial intelligence. Studies have shown that AI is useful in predicting the occurrence of disasters, and food insecurity and describing the current food situation. Another study points to AI's ability to recognize the nutritional needs of the population, which begins to make decisions with broader visibility and align with new nutritional guidelines by prioritizing age and high-risk groups, considering the region's policies and facilities.
Conclusions: The use of artificial intelligence in crisis management, especially the management of food resources, has already been done successfully. Although it still has limitations. Fortunately, compared to traditional methods, it is faster and more efficient in decision-making and constantly develops.
Keywords: Nutrition ، AI، Disaster Management ،Nutrition Surveys

Effect of fasting on insulin resistance

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Introduction: Diabetes mellitus (DM) is a long-lasting metabolic non-communicable disease that is often characterized by increases blood glucose or hyperglycemia. Considering the importance of DM and its increasing prevalence in the last few decades, prevention of this disease is one of the important goals of the medical science community. In this article, we examine the effects of fasting on insulin resistance.
Methods: In this study, databases of PubMed, Scopus, and Web of Science with the keywords of fasting diet, diabetes, insulin resistance/sensitivity, without time restrictions were checked. All studies reviewed were in English.
Results: Time-restricted feeding (TRF) appears to be an effective strategy for improving glucose homeostasis and insulin sensitivity in individuals with overweight, obesity and type 2 diabetes. TRF can lead to increased insulin sensitivity by activating AMPK and sirtuin pathways. Adaptive cellular adjustments during periods of fasting include an increase in AMP and ADP and a decrease in ATP in the cell, leading to the activation of AMP-activated protein kinase (AMPK). AMPK activation increases fat oxidation and glucose uptake by the GLUT4 transporter, which improves insulin sensitivity. Activation of the GLUT4 leads to its translocation from intracellular vesicles to the plasma membrane, which leads to increased glucose uptake by the cell. Sirtuins are a group of NAD^+-dependent enzymes. Of the seven sirtuins found in mammals, SIRT1 modulates insulin sensitivity in the pancreas, controls insulin and glucose uptake in skeletal muscle, and regulates glucose and lipid homeostasis,.
Conclusion: Based on the findings reported in previous literature, fasting can be considered as an approach to prevent insulin resistance or primary treatment for diabetic patients. However, to obtain more certainty, more comprehensive research is recommended.
Keywords: Fasting diet, Insulin resistance, Diabetes

Effects of Sodium-Butyrate Supplementation on Inflammatory Markers in Patients with Active Ulcerative Colitis: A Double-Blind Randomized Controlled Trial

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Introduction: Ulcerative colitis (UC) is a chronic inflammatory condition marked by alternating periods of relapse and remission of inflammation in the colon. Butyrate, a short-chain fatty acid (SCFA) produced by intestinal bacteria through the fermentation of non-starch polysaccharides. It plays a crucial role in reducing inflammation by inhibiting the activation of nuclear factor kappa B (NF-κB), decreases the expression of proinflammatory cytokines, activates the peroxisome Proliferator-Activated Receptor Gamma (PPARγ) and increases the production of anti-inflammatory cytokines.
Methods: This study was a randomized, parallel, double-blind controlled trial. Participants in the intervention (n = 18) and control (n =18) groups received 600 mg/kg sodium-butyrate or rice starch as a placebo with their main meal, respectively for 12 weeks. Ethical approval for this study was obtained from the Research Ethics Committee of Shiraz University of Medical Sciences (reference number: IR.SUMS.SCHEANUT.REC.1400.037). The level of faecal calprotectin and serum high-sensitivity C-reactive protein (hs-CRP) were assessed by enzyme-linked immunosorbent assay method (ELIZA) while the Westergren method was employed to assess erythrocyte sedimentation rate (ESR). The data were analyzed using SPSS version 23. An independent sample t-test was employed to compare between groups.
Results: The results showed that sodium-butyrate supplementation in comparison with placebo significantly decreased the level of calprotectin (-133.82 ± 155.62 vs. 51.58 ± 95.57, P-value <0.001), hs-CRP (-1.88 ± 1.91 vs. 3.64 ± 2.53, P-value <0.001) and ESR (-6.66 ± 1.56 vs. 3.00 ± 2.11, P-value = 0.01).
Conclusion: Butyrate may be an effective adjunct treatment for active UC patients by reducing biomarkers of inflammation.

Keywords: Butyrate, Calprotectin, hs-CRP, Inflammation, Short-chain fatty acids, Ulcerative colitis

Dietary intake of fat and fatty acids and the risk of colorectal cancer: a narrative review

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Introduction: Colorectal cancer (CRC) is the third most common cancer in the world. Diet influences the development of CRC. Fat is an essential macronutrient that can either decrease or increase the risk of cancer due to its complex nature. However, the research findings are conflicting in this regard. The aim of the present study was to review the available evidence on the relationship between dietary intake of fats and fatty acids and the risk colorectal cancer.
Methods: We extracted and summarized information from original research articles available in international databases of Scopus, Web of Science, and Pub Med, published until August 2024.
Results: In this study, a total of 30 related articles were reviewed (26 cohort studies, 3 case-control studies, and one RCT study). According to our findings, total fat consumption was positively correlated with the increased risk of CRC. We also found that trans-fatty acids intake could significantly increase colorectal cancer risk. In addition, the consumption of monounsaturated fatty acids (MUFA) may increase the risk of CRC. On the contrary, omega-3 fatty acid intake probably reduce the risk of CRC. However, no significant relationship was found between the consumption of saturated and omega-6 fatty acids and the risk of colorectal cancer.
Conclusions: In conclusion, the dietary intake of total fat, trans-fatty acids, and MUFA can increase the risk of CRC. Conversely, consumption of omega-3 fatty acids may reduce the risk of colorectal cancer. However, no significant relationship was found between consuming saturated and omega-6 fatty acids and colorectal cancer.
Keywords: Dietary intake, Fat, Fatty acids, Colorectal cancer, review

Undernourishment in Tehran Hospitals

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Introduction: Undernourishment is a critical condition in hospitals associated with greater mortality, elevated expenses, and even death. This study aimed to address the issue of undernourishment in hospitals.

Methods: Demographic and medical data of 171 adult inpatients from medical and surgical departments of three hospitals in Tehran were collected. A nutritionist measured anthropometric features and recorded food intakes using food recalls and nutritional status using subjective global assessment and mini nutritional assessment tools. Energy and nutrients consumptions were extracted using Nutritionist 4 and statistical data was analyzed using Stata MP 14.2.

Results: Mean age of participants was 57.5 years. More than half of the patients were undernourished that was associated with older ages, but not with body mass index. Patients consumed in average 1165.6 kcal (SD: 638.2) and 51.2 g protein in a day (SD: 34.2) that supplied 57.1% and 62.0% of their requirements, respectively.

Although energy demand was higher in surgical departments (p:0.017), energy intakes were not different from medical departments. In addition, malnourished patients had significantly lower energy and macronutrients intakes.

Conclusions: Poor nutritional status in hospitals, especially in older patients, is a serious matter demands immediate attention and action.

Keywords:Energy, Hospital, Undernourishment, Malnutrition, Patient, Protein.

Association between consumption of low-fat dairy products and risk of chronic kidney disease: A dose-response meta-analysis of prospective cohort studies

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Background: Due to conflicting findings in previous research on the link between low-fat dairy intake and chronic kidney disease (CKD) risk, a new meta-analysis was done to study this relationship in a dose-dependent manner.

Methods: PubMed, Web of Science, and Google Scholar databases were explored until May 2024. We included all prospective cohort studies that examined the association between consuming low-fat dairy products and the likelihood of developing CKD in healthy adult populations . Finally, 4 studies met the eligibility criteria.

Results: The pooled analysis of the highest compared with the lowest analysis revealed that low-fat dairy intake was not significantly associated with the risk of CKD (RR: 0.87; 95% CI: 0.72, 1.04; n = 4). Moreover, no relationship was found between consuming an additional 200 g/d of low-fat dairy in the diet and the risk of CKD (RR: 0.98; 95% CI: 0.96, 1.01; n = 3). A non-linear relationship between the consumption of low-fat dairy products and the risk of CKD was observed (P = 0.002 for nonlinearity; $P_{\text{dose-response}}$: 0.002) . Based on this nonlinear relationship that represents a U-shaped curve; Consumption of 500-1000 g/d has been associated with the highest risk reduction. The certainty of the assessed evidence using the GRADE scoring system was moderate.

Conclusion: While the association between consuming 500-1000 g/d of low-fat dairy and a reduced risk of CKD has been noted, it is suggested that additional carefully planned prospective cohort studies be conducted to confirm our results.

Keywords: chronic kidney disease, dairy products, meta-analysis.

Parents feeding style and childhood obesity

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Childhood obesity has become a critical global public health issue. The rapid increase in its prevalence, along with associated co-morbidities, has significantly strained healthcare systems, necessitating enhanced screening and intervention measures. Various social, cultural, and environmental factors contribute to childhood obesity, with family and parental behaviors being key modifiable factors influencing a child's obesity risk. Parents exert the most substantial influence during early childhood, acting as providers, enforcers, and role models. Parental feeding styles, which are shaped by cultural, educational, and socioeconomic factors, play a crucial role in forming children's eating habits. These feeding practices can range from overcontrol and restriction to pressure to eat and offering rewards. The degree of strictness or flexibility in these practices varies among families and can lead to different outcomes. Research on the impact of extreme control and strict restrictions on children's weight is inconclusive. Some studies suggest a significant positive correlation between strict control and increased weight in children, while others indicate an inverse or negligible relationship. Parents may inadvertently contribute to childhood weight gain through inappropriate feeding practices. Therefore, it is recommended to develop interventions aimed at raising awareness and providing guidance and support to parents, helping them adopt healthier feeding strategies.
Keywords: Childhood, Obesity, Parents, Feeding style

Does N-acetylcysteine supplementation affect Polycystic Ovary Syndrome (PCOS)?: A systematic review

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Introduction: Polycystic Ovary Syndrome (PCOs) is the most commonly diagnosed endocrine disorder in women of Reproductive age that is usually characterized by irregular menstruation, increased androgen secretion, and simple or complex cysts in the ovaries. N-acetylcysteine (NAC) is a powerful antioxidant, that increases detoxification, Enhance glutathione and insulin secretion, and activates the insulin receptors at the human erythrocytes. This study aims to evaluate the effect of the NAC supplement on insulin resistance, oxidative stress, and serum homocysteine levels in women with PCOs and its effect on fecundity in infertile women.
Search Strategy: Systematic search was accomplished in the online databases including PubMed, Web of Science, Scopus, and Google Scholar, using the N-Acetyl-L-cysteine, N-acetylcysteine, NAC, PCOS, Polycystic Ovary Syndrome, and Polycystic Ovarian Syndrome keywords, up to 2024 and restricted to human clinical trials.
Results: Finally 19 articles were extracted with the total sample size of 1979 women. 17 articles show a positive effect of NAC on PCOs and fertility but the other 2 can't show a significant effect.
Conclusion and Discussion: According to most of the studies, NAC can improve fertility rate, ovulation, egg quality, and endometrial thickness in infertile women. It can also modify metabolic, hormonal profile, and insulin sensitivity. NAC decreases the Oxidative stress and Abortion rate .This supplement is well tolerated and Compared to metformin, it has fewer side effects.
Keywords: Polycystic Ovary Syndrome, PCOs, N-Acetylcysteine, NAC

The link between eating speed and obesity: Iranian national obesity registry

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Introduction: Obesity is becoming a widespread health issue globally, potentially leading to severe conditions such as diabetes, cardiovascular disorders, high blood pressure, and multiple types of cancer. Contributing factors include eating behaviors, a sedentary lifestyle, aging, and inherited genetic risks. We aimed to evaluate the association of eating speed and obesity in Iranian National Obesity Registry.
Method: A total of 2071 individuals aged 18 and older with a body mass index (BMI) of 25 or higher were included in the Iranian National Obesity Registry. Participants were categorized based on their BMI (overweight and obese). Eating speed was determined by three levels: slow, moderate, and fast. Multivariable logistic regression was employed to examine the relationship between eating speed and obesity.
Result: Our findings revealed a significant association between fast eating speed and obesity. Fast eating speed compared to slow, had higher odds for obesity (OR= 1.56; 95%CI= 1.22-2.00).
Conclusion: A significant link was observed between rapid eating speed and a higher risk of obesity in the population from the Iranian National Obesity Registry.
Keywords: obesity, eating speed, overweight, dietary behaviors

Effect of nuts on components of metabolic syndrome in healthy adults with overweight/obesity: A systematic review and meta-analysis(update)

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Background: in this study, we evaluated the available evidence regarding nuts and their communication for metabolic syndrome(MET)and added Eslami et al.
Methods: in this meta-analysis update, the selection of studies was carried out using the PubMed database with a focus on articles published from 2021 to 2024. The search utilized keywords and MeSH terms such as "nuts", "metabolic syndrome" and "obesity". Specifically randomized clinical trial articles that investigated the use of nuts as an intervention for individuals with MET were included in this update. We extract the lipid profile parameter(TC, TG, LDL-C, HDL-C,), systolic and diastolic blood pressure, glucose, and Homa-IR.
Result: from 2021 to 2024 we found 5 studies that overweight/obese adults participated and used nuts as an intervention. The dosage is between 42 and 70 grams/day. This 5 study had 260 adults participating overall. Triglycerides serum in these studies shows that nut intake does not have a significant effect (WMD:-0.36 mg/dL; 95% CI:-16.12, 15.3). Furthermore, this meta-analysis shows a considerable reduction in LDL-C (WMD:-9.09 mg/dL; 95% CI:-20.96, 2.79). these studies were deemed to have acceptable methodological quality.
Conclusion: This meta-analysis showed that nuts consumption could be a beneficial intervention for metabolic syndrome
Keywords: Nuts/metabolic syndrome/ meta-analysis/obesity/overweight

Is the predicted hs-CRP score associated with health outcomes?

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Introduction: The traditional measurement of Hs-CRP uses lab equipment, but a new approach, the 'predicted hs-CRP' score, considers various factors like food groups, nutrients, alcohol intake, BMI, smoking status, physical activities, educational levels, and menopausal status of women. Research aims to understand its health implications through a comprehensive review.
Methods: A search was performed using PubMed, Google Scholar, and Scopus with keywords related to the predicted hs-CRP score.
Results: Studies have demonstrated a significant association between predicted hs-CRP levels and health outcomes. For instance, a study by Kim et al. revealed that an increase in predicted hsCRP score was linked to a 71% and 186% increased risk of colorectal adenoma in men and women,

respectively (OR: 1.71, 95% CI, 1.12–2.62; P= 0.011 in men; OR: 2.86, 95% CI, 1.26–6.49; P= 0.019 in women). Another study in 2024, also conducted by Kim, found an association between predicted hs-CRP levels and an increased risk of IBD (OR: 8.67, 95% CI, 2.24-33.51, P= 0.004). Additionally, Okekunle's study demonstrated a notable 18.25-fold increase in the risk of non-alcoholic fatty liver disease (NAFLD) associated with tertiles of predicted hs-CRP score (OR: 18.25, 95% CI, 10.47-31.81, P<0.0001).

Conclusion: The 'predicted hs-CRP' score, developed in Korea, has shown connections with three health conditions affected by inflammation: colorectal adenoma, IBD, and NAFLD. However, because each country has unique lifestyles and dietary habits, using locally developed scores to predict hs-CRP levels is essential. Therefore, we recommend that future research address this gap by developing a new index for the Iranian population.

Keywords: Predicted hs-CRP, NAFLD, Colorectal adenoma, IBD, health outcomes, hs-CRP

Enhancing Gut Health: The Impact of Prune Consumption on Gut Microbiota – Insights from Randomized Clinical Trials

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Introduction: Prune is rich in fiber, sorbitol, and phenolic chlorogenic acids, making it a good option for increasing fiber intake and potentially improving gut function. Due to inconsistent evidence, it is essential to understand the effects of prunes on the intestinal microbiota, as this could have clinical implications.

Methods: For this narrative review, relevant articles were included from Google Scholar, PubMed, and Scopus databases up to August 2024.

Results: Research on the effects of prune consumption on gut microbiota has yielded mixed results. Igwe et al. study did not find significant differences in the Bifidobacterium and Clostridium genera. Lever's study also found no association between prune intake and Bifidobacteria, Bacteroidetes, Clostridia Cluster XIVa, and Cluster IV Ruminococcus. However, Chiu's study showed that consuming prunes increased Bifidobacterium and Lactobacillus. In contrast, it reduced the number of Clostridium perfringens and Escherichia coli. In Simpson's study, women who consumed 50g of prunes experienced changes in bacterial diversity over 12 months, and the comparison of different prune treatments revealed varying effects on microbiomes, with some prune doses enriching specific bacterial taxa, such as the family Lachnospiraceae.

Conclusion: While studies show that prunes can positively affect gut microbiota, the intensity of this relationship can depend on the type of microbiota. However, since the results were contradictory in this regard, more investigations are needed to confirm the findings and further our understanding of the complex relationship between prune consumption and gut health.

Keywords: Prunes, Gut microbiota, Clinical trials, Gut health, Microbial diversity

A systematic review of the effects of DASH diet on metabolic factors and pregnancy outcomes in women with gestational diabetes

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Introduction: Gestational Diabetes Mellitus (GDM) is a common and increasingly prevalent pregnancy complication characterized by hyperglycemia, influenced by both genetic and environmental factors. The offspring of mothers with GDM are at risk for various complications, including macrosomia, preterm birth, and neonatal hypoglycemia. Researchers are studying the potential benefits of the DASH diet, a low-glycemic, nutrient-rich dietary approach, on pregnancy and metabolic outcomes in women with GDM.

Methods: This systematic review followed the PRISMA checklist, conducting a comprehensive search across English and Persian databases without time restrictions. The search focused on human studies and clinical trials, using specific keywords related to dietary approaches and gestational diabetes. Exclusions included non-

human studies, review articles, case reports, letters, conference abstracts, books, and non-English sources.
Results: Five articles were included. Dolati(2021) found that aerobic exercise combined with the DASH diet effectively controlled blood glucose and insulin levels in women with GDM. Faghrazi(2021) showed that the DASH diet, along with reduced consumption of ultra-processed foods, could be a strategy for blood glucose control in pregnant women with GDM. Yao(2015) reported improved pregnancy outcomes in GDM patients on the DASH diet. Assemi(2014) observed that a 4-week DASH diet improved pregnancy outcomes. Another study by Assemi(2013) demonstrated the beneficial effects of the DASH diet on glucose tolerance and lipid profiles.
Conclusion: The DASH diet may benefit women with GDM, especially when combined with aerobic exercise, potentially improving insulin response and resistance. However, further research is required to confirm these findings and understand the diet's long-term effects on GDM.
Keywords: Gestational Diabetes, GDM, DASH, Hyperglycemia, Glucose Intolerance, Insulin Resistance.

Sugar-sweetened beverages consumption and risk of chronic kidney disease: a review based on mechanism

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Background: Sugar-sweetened beverages (SSBs) have been implicated in the development of chronic kidney disease (CKD). While epidemiological studies have linked SSB consumption to an increased risk of CKD, the underlying mechanisms remain unclear, this review summarizes the effects of SSBs on CKD development.
Methods: Databases, including PubMed, MEDLINE, and Web of Science, were searched by May 2024.
Results: Several studies have investigated the effect of SSB consumption on CKD development. Some of these effects are mediated by fructose (the primary sweetener in SSBs). By promoting hyperinsulinemia, insulin resistance, and hypertriglyceridemia, fructose increases inflammation and oxidative stress, both of which play a crucial role in CKD pathogenesis. Additionally, fructose raises the risk of type 2 diabetes and hypertension (significant risk factors for CKD). Fructose worsens kidney tissue damage by creating advanced glycation end products (AGE) during its metabolism. On the other hand, the high caloric content of SSBs, leads to a higher risk of weight gain and obesity, ultimately raising both glomerular filtration rate (GFR) and oxidative stress levels. The electrolyte imbalance, such as hypokalemia and hypomagnesemia caused by excessive use of SSBs, hurt kidney function. Furthermore, dysregulation of the renin-angiotensin-aldosterone system (RAAS), gut microbiome dysbiosis, immune cell dysfunction, and increased exposure to heavy metals and toxins are additional ways in which SSBs raise the likelihood of CKD.
Conclusion: According to the result, SSBs can be a potent dietary factor in CKD development. Further experimental studies and clinical trials are needed to provide us with a more comprehensive attitude concerning this issue.
Keywords: chronic kidney disease, sugar-sweetened beverages.

A diet rich in nutrients even after considering biological value per body weight can reduce the risk of depression in the Iranian office working population

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Background: depression is a common issue among the office working population. This study aimed to investigate the connection between nutrients and depression in Iranian adults.
Method: The risk of depression was evaluated by the Beck Depression Inventory (BDI) in an office working population in Mashhad. A food frequency questionnaire (FFQ) was used to

determine the dietary intake and Dietary nutrient intake was recorded and adjusted to body weight.
Result: Results showed that 58% of the 680 individuals had mild to severe depression. Significant differences were observed between depression groups in terms of age, gender, quality of life, and various socioeconomic factors. Adjusted nutrient intake, including Energy (OR=0.906 (95% CI=0.878-0.934)), Protein (OR=0.176 (95% CI=0.87-0.355)), fibre (OR=0.005 (95% CI=0.001-0.030)), Caffeine (OR=0.574 (95% CI=0.357-0.923), Calcium (OR=0.906 (95% CI=0.864-0.950), Magnesium (OR=0.626 (95% CI=0.535-0.739)), Potassium (OR=0.953 (95% CI=0.936-0.970)), Vitamin C (OR=0.674 (95% CI=0.536-0.847), and Vitamin A (OR=0.0996 (95% CI=0.993-0.999)), were all significantly correlated with depression. Furthermore, the relationship between protein (p=0.043), fibre (p=0.037), iron (p=0.041), vitamin B6 (p=0.011), and caffeine (p=0.009) with depression remained significant even after adjusting for energy intake.
Conclusion: In conclusion, a nutrient-rich diet containing adequate amounts of protein, fibre, iron, vitamin B6, and caffeine was linked to a reduced risk of depression in well-nourished adults.
Keywords: depression, nutrition, diet, nutrient, mental health

A systematic review of the effect of curcumin on paraoxonase gene expression and enzyme activity: Animal interventional studies

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Introduction: Paraoxonase (PON) proteins have various hydrolytic activities. The PON family is able to detoxify oxidized low-density lipoprotein. Additionally, differentiation of monocytes into macrophages, as the first stage in the development of atherosclerosis, is suppressed by PON 1. The effects of polyphenols including curcumin on PON1 have been investigated in studies. In this study, our main goal is to review curcumin's effect on PON1 gene expression and enzyme activity in animal interventional studies.
Methods: PubMed, Scopus, Web of Science, and Google Scholar electronic databases were searched up to March 2023 using the keywords "Aryldialkylphosphatase" OR "PON1" OR "paraoxonase-1" AND "curcuma" OR "curcumin" OR "tumeric" OR "Curcuminoid".
Results: Fifteen articles were included in the present systematic review. The intervention duration of the studies ranged from 19 hours to 70 days. The dosage varied depending on the method of administration and the weight and species of the animals. As a whole, the results of this systematic review demonstrated that curcumin could maintain the activity of PON1, also could increase the enzyme gene expression.
Conclusion: Curcumin may play a role in increasing PON gene expression and PON activity by reducing inflammation and modulating high-density lipoprotein levels.
Keywords: Curcumin, Lipoproteins, Paraoxonase, Polyphenols

Uric Acid Index as Predictor of brain ischemic stroke: A cohort study, accounting for gender differences

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Introduction: Recent studies regarding the relationship between serum uric acid (SUA) and brain ischemic stroke have been contradictory. However, the uric acid (UA) index, which is composed of fasting blood glucose (FBG) and triglyceride (TG) in addition to SUA, is likely to predict the incidence of brain ischemic stroke. This current cohort study was conducted to measure this issue.
Methods: This study involved 7561 participants in the Mashhad Stroke and Heart Atherosclerotic Disorders (MASHAD) study. The UA index was calculated at baseline. After ten years, the incidence of brain ischemic stroke was evaluated.
Results: The UA index was associated with a 32.8% increase in the incidence of brain ischemia in the overall population [RR: 1.328, 95%Cl, 1.054-1.673, P=0.109]. However, this association wasn't significant in males [RR: 1.353, 95%Cl,

0.934-1.960, P=0.109] or females [RR: 1.337, 95%Cl, 0.990-1.807, P=0.058].

Conclusion: In summary, the UA index proves to be valuable in predicting the incidence of brain ischemia. Research indicates that an increase in FBG, TG, and SUA markers is linked to the development of atherosclerosis. As a result, the UA index is correlated with the brain ischemic stroke risk, which is closely associated with atherosclerosis. However, this correlation was not observed separately based on different genders. Thus, the UA index can be deemed an appropriate indicator to forecast the occurrence of atherosclerosis-related conditions and to be utilized in clinical settings.

Keywords: Uric acid index, Brain ischemic stroke, gender, atherosclerosis, uric acid, Fasting blood glucose, Triglyceride

Umbrella meta-analysis of astaxanthin and lipid profile

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Introduction: In recent years, astaxanthin has attracted significant interest due to its biochemical attributes, and physiological benefits. Numerous studies have investigated the effects of astaxanthin supplementation on human health outcomes, and have identified numerous potential mechanisms by which astaxanthin may provide its benefits including antioxidant, anti-inflammatory, and anti-apoptosis effects. Given the mixed results from previous review studies, our goal was to investigate the overall impact of astaxanthin supplementation on lipid profile, in order to reach a clearer conclusion.

Methods: A comprehensive search using the relevant keywords was done up to July 2024 in PubMed, Web of Science, Scopus databases, and Google Scholar. Meta-analyses of clinical trials in the English language providing quantitative statistical analysis regarding the effect of astaxanthin on total cholesterol (TC), triglyceride (TG), high-density lipoprotein (HDL), and low-density lipoprotein (LDL) were included. Random-effects model and subgroup analysis were performed.

Results: The pooled results of the 4 included meta-analyses indicated that the supplementation of astaxanthin can significantly decrease TG (effect size (ES) = -0.58; 95% CI: -0.99, -0.18, p= 0.005; I2 = 00.0%, p= 0.83), but it is ineffective on LDL (ES = 0.32; 95% CI: -0.48, 1.12, p = 0.43; I2= 89.7%, p<0.001), HDL (ES = 045; 95% CI: -0.29, 1.19, p = 0.23; I2= 83.2%, p<0.001) and TC (ES= 0.06; 95% CI: -0.75, 0.86, p =0.88; I2 = 62.5%, p= 0.04).

Conclusions: Astaxanthin supplementation seems to be effective in reducing TG. More studies are needed for better and clearer conclusions.

Keywords: Astaxanthin, Lipoproteins, Meta-Analysis

The Effect of post-operative oral nutritional supplements (ONS) in gastrointestinal (GI) cancer patients following surgery: A Narrative Review

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Introduction: Gastrointestinal (GI) cancers are malignant diseases that affect the digestive tract. Moreover, surgery has its aftereffects on hospitalized patients, and procedures like fasting and bowel preparation, may worsen patients' nutritional status. Malnutrition commonly occurs and nutritional status deteriorates in patients following GI cancer surgeries. Malnutrition can cause higher morbidity and mortality, poor treatment tolerance, and reduced life expectancy. Thus, appropriate nutritional support is critical for improving nutritional status and prognosis in these patients. The best method of providing energy and nutrients in addition to regular meals is through oral nutritional supplements (ONS). This review concluded current evidences on effectiveness of ONS on nutritional status of GI cancer patients.

Methods: Search was performed using google scholar. Search terms were “Neoplasms”, “Medical Nutrition Therapy”, and “surgery” by 20th August 2024.

Results: Based on our literature review, ONS may improve the weight and BMI of post discharge patients. It also may reduce skeletal muscle loss and sarcopenia, as well as improve chemotherapy tolerance in patients following colorectal cancer surgery, and improve nutritional outcomes, skeletal muscle maintenance, chemotherapy tolerance and some

quality-of-life variables in surgically treated gastric cancer patients. Moreover, ONS following total gastrectomy was found to significantly reduce postoperative weight loss; however, after distal gastrectomy this result was not significant.
Conclusions: The significance of ONS intake in post-discharge patients after GI cancer surgery is highlighted. More clinical trials in oncology setting are needed warrant these findings.
Keywords: "Neoplasms", "Medical Nutrition Therapy", and "surgery [Subheading]".

The effects of choline, magnesium and combined choline/magnesium supplementation on lipid profile in diabetic patients: a double-blind randomized controlled clinical trial

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Introduction: Diabetes Mellitus (DM) is a progressive metabolic disease, caused by insufficient insulin secretion and insulin resistance and it is related to components of metabolic syndrome. Magnesium is involved in lipid metabolism and choline improves cardiac function, and boosts insulin nicotinic and muscarinic cholinergic neurotransmitters in beta cells. Given the effects of magnesium and choline, it seems to be advisable to combine them to prevent complications of DM.
Methods: The double-blind randomized clinical trial was conducted for 2 months and involved 96 DM patients of both genders and 30-60 years being randomly divided into four groups: 1: (n=24), 500 mg of magnesium oxide, 2: (n=24),1000 mg of choline, 3: (n=24), 500 mg of magnesium oxide and 1000 mg of choline, and 4: (n=24), placebo. Lipid profile of individuals was measured. Statistical analysis of the data was done with Kolmogorov- Smirnov, Chi-Square test, and ANCOVA.
Results: At the end of the study, 74 patients completed the study. There was no statistically significant difference in general characteristics between the participants at the start of the study. At the end, decreased blood TG levels (p=0.04) and increased HDL levels (p=0.01) in group 3 were shown.
Conclusion: Overall, choline and magnesium can have a significant impact on decreasing the TG levels and increasing the HDL of serum. Magnesium bind fatty acids in the gut and limit the absorption of it, hydrolysis of fatty acids, catabolize TG-rich lipoproteins, and produce HDL. Besides, choline reduce the synthesis of apoB-rich lipoproteins.
Keywords: Diabetes Mellitus, choline, magnesium, blood lipid level

Enhancing Healthcare Outcomes: An In-depth Analysis of Nutritional Therapy: Costs and Outcomes

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Introduction: Disease-related malnutrition has shown these patients face higher rates of complications, falls, infections, death, and increased care costs. The importance of addressing malnutrition in medical care is becoming more recognised, highlighting the need for effective nutritional therapy. However, demonstrating the benefits of nutritional management can be challenging due to varying definitions of malnutrition and interventions. This critical review was conducted to address key questions regarding the impact of malnutrition and nutritional therapy on hospital readmission, cost-effectiveness, and patient outcomes.
Method: a literate review of currently available randomized controlled trials (RCT), available guidelines, and systematic reviews of RCTs were made, and the results were compared
Result: Various studies have investigated the impact of malnutrition on hospital readmission, with conflicting results. While some studies suggest that malnutrition may not independently predict readmission, others have shown that nutritional intervention can reduce readmissions. Meta-analyses have found mixed results regarding the effectiveness of nutritional interventions in reducing readmissions. Additionally, studies have highlighted the economic benefits of nutrition therapy, including cost savings and increased effectiveness. It has been suggested that oral nutritional interventions can save costs among community patients at risk of malnutrition. However, the evidence on the cost-effectiveness of nutritional

interventions is limited and may vary depending on factors such as age and type of intervention.
Conclusion: This study discusses the clinical impact of malnutrition treatment, emphasizing its cost-effectiveness in reducing hospital readmission rates and costs. Despite study limitations, findings support the use of nutritional therapy to decrease healthcare expenses. Future research should address study quality issues.
Keywords: malnutrition, hospital, nutritional intervention, cost effectiveness

Strategies for promoting sustainable diets in large populations :A Comprehensive Review

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Introduction: Sustainable diets are critical for public health, economic stability, and environmental sustainability. The global obesity epidemic impacts over 2 billion adults and 38 million children under five, leading to 4 million deaths annually and stressing the need for sustainable dietary practices. This study evaluates effective interventions to promote sustainable nutrition in large communities.
Methods: A systematic review was conducted in June 2024 according to PRISMA guidelines, using databases like PubMed, Scopus, Science Direct, and Web of Science. The focus was on interventions promoting sustainable diets, examining policy instruments such as information-based approaches, market-based solutions, and educational programs. After screening for eligibility, thirteen intervention studies were included and reviewed.
Results: Educational interventions improved nutrition by increasing fiber intake and reducing saturated fat consumption. Programs like "Plant the Seed" and plant-based school menus promoted healthy eating. School gardening and organic ingredients raised awareness, cut emissions, and boosted vegetable intake. Social equity initiatives improved food access. Reducing animal-based foods cut costs, and culturally relevant methods reconnected students with local foods. Policy effectiveness varied; information campaigns had limited impact, nudging modestly reduced meat consumption, market-based tools had mixed results, and regulatory measures were effective despite resistance.
Conclusions: Promoting sustainable diets requires a mix of education, nudging, market, and regulatory tools tailored to consumer demographics. Policymakers should define sustainability, consider cultural differences, and ensure clear labeling. Educational strategies, such as school gardening, are crucial for fostering sustainable diets among youth. Future research should explore all sustainability dimensions and the price-behavior relationship.
Keywords: Sustainable healthy diets, Food policy, Behavior, Sustainable food systems, Intervention

The Qualitative Effects of Caffeine on Cognitive Function of Human Brain in ADHD: A Systematic Review of RCTs

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Background: In this study, we evaluate the available evidence regarding caffeine communication and its effect on cognitive function in people with ADHD. This systematic review examined various articles on this topic.
Methods: In this systematic review, the selection of studies was carried out using the PubMed, Scopus databases, with a focus on articles published from 2000 to 2024. The search utilized keywords and MeSH terms such as "attention deficit disorder with hyperactivity" (ADHD) and "caffeine." Specifically, randomized control trial articles that investigated the use of caffeine as an intervention for individuals with ADHD were included in the present study. The comparison was made between participants who received caffeine as an intervention and those who did not, in order to assess the potential impact of caffeine on individuals with ADHD.
Result: The research initially encompassed 121 articles containing 52 file attachments, identifying 2 final studies conducted in the USA and UK between 2019 and 2020. The studies reported using caffeine as an intervention, with a dosage of 2mg/kg for children aged 6-17 and 4mg/kg for adults aged 19-47. Specifically, the study by Kahathuduwa et al., involved 6 children, while the study by Hampsey et al., involved 27

adults. The findings from the studies indicated that the combination of caffeine and L-Theanine demonstrated improvements in Cognition composite, 11.4(p = 0.040)
points greater than the mean cognition composite in placebo for children, and a decrease in the mean count of microsaccades in adults, had a 0.22(p:0.00027) decreasing effect In comparison with control group. Both studies were deemed to have acceptable methodological quality.
Conclusion: This systematic review showed that caffeine supplementation could be a beneficial intervention in this disorder, however further research is needed to complete our view of this valuable field.
Keyword: Attention Deficit/Hyperactivity Disorder, ADHD, Caffeine, Systematic Review, Cognitive Function

Investigating the role of Vitamin B9 in Reducing Methotrexate-Induced Hepatotoxicity: A systematic review

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Introduction: Methotrexate, as a cytotoxic drug, is prescribed for treating various conditions, including leukemia and inflammation-related diseases. However, hepatotoxicity prevents patients from benefiting from MTX. supplementing with folic or folinic acid during MTX treatment may effectively mitigate its side effects. This study aims to investigate the role of vitamin B9 in reducing hepatotoxicity caused by methotrexate.
Method: This review was conducted by searching databases including PubMed, Web of Science, Scopus, and Google Scholar. The keywords “Methotrexate,” “vitamin B9,” and “hepatotoxicity” were examined without time limitation. English-language studies that investigated the role of vitamin B9 in reducing methotrexate-induced hepatotoxicity met the inclusion criteria. Titles and abstracts were independently reviewed based on eligibility criteria, followed by a full-text evaluation of the selected articles.
Findings: A total of 557 articles were initially obtained, of which nine-teen relevant articles were included. Both folic and folinic acid appear to offer protection against elevated serum transaminases, which are indicative of methotrexate-induced hepatic dysfunction. Positive effects of vitamin B9 were noted in 17 studies (89.4%) involving conditions such as IBS and RA, with doses ranging from 5 to 35 mg per week reducing liver toxicity without affecting MTX efficacy. In contrast, doses under 5 mg per week showed no significant effects in 2 studies (10.6%).
Conclusion: Folic acid and Folinic acid supplementation significantly mitigate the prevalent side effects associated with methotrexate, particularly hepatotoxicity, without compromising the drug's clinical efficacy, and also prevent the increase of liver enzymes.
Keywords: Hepatotoxicity, Methotrexate, Vitamin b9

Impact of Low-Calorie, High-Protein Diet on Body Composition, Duration, and Sleep Quality in Obese Adult: A Randomized Clinical Trial

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Background and Objective: In recent decades, there has been growing research interest in exploring the effects of high-protein diets on sleep regulation. However, limited studies have focused on investigating the impact of these diets specifically in obese adults. Therefore, this study aimed to fill this research gap by investigating the effects of low-calorie, high-protein diets on sleep quality in obese adults.
Methods: This randomized clinical trial enrolled 60 obese adults (BMI > 29.9 kg/m2) who were diagnosed with low-quality sleep. All participants were assigned to either the control group or the intervention group. Both groups

were provided with a diet that imposed a 750-calorie energy deficit. However, the intervention group received a modified diet with an additional 30% protein compared to the normal diet provided to the control group.
Results: The findings of this study revealed significant differences between the control group and intervention group in terms of sleep apnea at the 30-, 60-, and 90-day follow-up assessments ($p < 0.01$). Moreover, there were significant differences observed between the two groups in sleep quality, apnea-hypopnea index (AHI), sleep latency (SL), and polysomnography ($p < 0.05$). These results indicated an improvement in sleep quality and a reduction in obstructive sleep apnea in the intervention group ($p < 0.05$).
Conclusion: The findings of this study suggest that implementing low-calorie, high-protein diets can be an effective approach to improve apnea, enhance sleep quality, and positively influence body composition indices in obese adults.
KEYWORDS: apnea, high-protein diet, low-calorie diet, obesity, sleep quality

Association between consumption of fruit and vegetables and risk of chronic kidney disease: A dose-response meta-analysis of prospective cohort studies

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Background: Considering that the results of previous studies on the association between fruit and vegetables and the risk of chronic kidney disease (CKD) are contradictory; the present dose-dependent meta-analysis was conducted to investigate the association between consumption of fruit and vegetables and risk of CKD.
Methods: PubMed, Web of Science, and Google Scholar databases were searched until May 2024. All prospective cohort studies that examined the association between fruit and vegetable consumption and the risk of CKD in healthy adult populations were included .Finally, 7 studies met the eligibility criteria.
Results: The pooled analysis of the highest compared with the lowest analysis revealed that dietary fruit and vegetable intake was not significantly associated with the risk of CKD, respectively (RR: 0.95; 95% CI: 0.84, 1.07; n = 6) and (RR: 0.86; 95% CI: 0.73, 1.02; n = 5). Furthermore, each 100 g/d increment in dietary fruit and vegetable intake was not associated with the risk of CKD (RR: 1.00; 95% CI: 0.99, 1.01; n = 2) and (RR: 0.96; 95% CI: 0.88, 1.04; n = 2). There was no evidence of departure from linearity between dietary fruit and vegetable intake and risk of CKD, respectively (P = 0.738 for nonlinearity; $P_{dose\text{-}response}$: 0.310) and (P = 0.074 for nonlinearity; $P_{dose\text{-}response}$: 0.067). The certainty of the assessed evidence using the GRADE scoring system was very low.
Conclusion: Further well-designed prospective cohort studies with a long enough follow-up period are recommended to validate our findings.
Keywords: chronic kidney disease, fruit, meta-analysis, vegetables.

Trace Elements and Febrile Seizure: A Systematic Review and Meta-analysis

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Introduction: Febrile seizures (FS) are common in pediatric patients, often triggered by high fever and viral or bacterial infections such as gastrointestinal or respiratory infections. According to recent studies, the incidence of FS may be influenced by the serum concentration of trace elements such as copper, zinc, magnesium, and selenium. This study investigated the association between serum trace element levels and febrile seizures in pediatric patients to clarify their potential role in FS development.
Methods: Up to February 2024, a comprehensive search was conducted across four databases (Scopus, Web of Science, PubMed, and Google Scholar) using the PICO, focusing on the Population (pediatric patients with FS),

Intervention (serum concentrations of selenium, zinc, magnesium, and copper), Comparison (with or without controls), and Outcome (occurrence of FS). The Newcastle-Ottawa Scale (NOS) was used to evaluate the methodological quality of the included observational studies.
Results: Of the 168 reviewed publications, 37 met the inclusion criteria for this meta-analysis, including studies published between 2018 and 2023. Children with febrile seizures had lower serum levels of magnesium (SMD:-0.76, 95% CI:-1.57,0.05) and zinc (SMD:-1.25, 95% CI:-1.47,-1.03) compared to the control group. Conversely, the control groups had higher serum copper levels (SMD:0.43, 95% CI:0.04,0.82). In addition, the febrile seizure group's serum selenium levels (SMD: -2.23, 95% CI:-2.76,-1.70) were approximately half the control group's levels.
Conclusion: This meta-analysis indicates that pediatric patients with FS have lower serum trace element concentrations than controls. Further research is required to clarify the potential role of trace elements in FS pathogenesis.
Keywords: febrile seizure, copper, selenium, zinc, magnesium, meta-analysis, Pediatric patients

The nutritional status of patients with colorectal cancer

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Introduction: Colorectal cancer (CRC) is the third most frequent malignancy and the fourth leading cause of cancer mortality .Nutritional status plays a critical role in patient outcomes, influencing treatment tolerance, recovery, and overall survival. The purpose of this review study is to investigate the nutritional status of patients with CRC.
Methods: This study was conducted by searching PubMed, Scopus and Google Scholar databases with the key words of colorectal cancer, nutritional status assessment, nutritional status and malnutrition.
Result: The prevalence of malnutrition in CRC patients was between 20 to 50%. Often associated with factors such as advanced disease stage, chemotherapy-induced side effects, and changes in appetite and taste. Several studies have shown that 20-35% of malnourished patients have lost more than 10% weight in 6 months. Hand grip strength was significantly lower in patients who had lost more than 10% of their body weight in the previous 6 months. Also, about 35% of malnourished patients had decreased muscle mass .Nearly %۷۰of malnourished patients had decreased food consumption due to decreased appetite or change in taste perception.
Conclusion: This review emphasizes the importance of early identification and management of nutritional deficiencies in CRC patients to reduce negative outcomes.
Keyword: Colorectal cancer, Nutritional status assessment, Nutritional status, Malnutrition.

Effect of Dry Fenugreek Seed Extract Supplements on Lipid Profiles in Patients with Type 2 Diabetes: A Double-Blind Randomized Controlled Clinical Trial

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Introduction: This study aimed to evaluate the effects of dry fenugreek seed extract (FDE) supplements on lipid profiles in patients with type 2 diabetes mellitus (T2DM). The hypothesis was that FDE supplementation could improve lipid parameters, thereby reducing cardiovascular risk in these patients.
Methods: A double-blind randomized controlled clinical trial was conducted involving 54 patients diagnosed with T2DM. Participants were randomly assigned to receive either FDE (three 335 mg tablets daily) or a placebo for a duration of 8 weeks. Lipid profiles, including total cholesterol, LDL, HDL, and triglycerides, were measured at baseline and after the intervention. Statistical analysis was performed using paired t-tests to compare pre- and post-intervention data within groups, and independent t-tests to compare changes between the groups.
Results: The FDE group showed a statistically significant increase in HDL levels ($p<0.05$) compared to the placebo group. However, changes in total cholesterol, LDL, and

triglycerides were not significantly different between the FDE and placebo groups (p>0.05). These results suggest that while FDE supplementation may positively influence HDL levels, its effect on other lipid parameters is limited.

Conclusions:FDE supplementation appears to improve HDL cholesterol levels in patients with T2DM, potentially offering cardiovascular benefits. However, its impact on other lipid parameters remains inconclusive, warranting further research.

Keywords: Cardiovascular Risk, Fenugreek, Lipid Profile, Type 2 Diabetes, Randomized Controlled Trial

The effectiveness of chia seed in improving glycemic status: a systematic review and meta-analysis

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Introduction: This systematic review and meta-analysis aims to evaluate the effectiveness of chia seeds in improving glycemic status, including fasting blood sugar (FBS), glycated hemoglobin (HbA1c), and insulin.

Methods: A comprehensive literature search was conducted on PubMed, Scopus, Web of Science, Cochrane, and Google Scholar up to January 2024. Randomized controlled trials (RCTs) assessing the effect of chia seeds on FBS, HbA1c, and/or insulin that meet our eligibility criteria were included. Version 2 of the Cochrane risk-of-bias tool (RoB2) was used to assess the quality of the included studies. Data were extracted and analyzed using a random-effects model and reported as weighted mean differences (WMD) with 95% confidence intervals (CI). Subgroup and sensitivity analyses were also performed. The registration number was CRD42023441766.

Results: Out of 341 articles retrieved from the initial search, 8 RCTs (with 10 arms) involving 362 participants were included in the meta-analysis. The results showed that chia consumption had no significant effect on FBS (WMD: 0.79 %; 95% CI: -0.97 to 2.55; p =0.38), HbA1c (WMD: -0.12 %; 95% CI: -0.27 to 0.02; p =0.09), and insulin (WMD:1.23 %; 95% CI: -1.77 to 4.22; p =0.42).

Conclusions: The consumption of chia seeds does not have a significant impact on FBS, HbA1c, and insulin levels. However, This study has limitations, including the small number of studies included in the meta-analysis and the high heterogeneity among studies for FBS and insulin. further studies with larger sample sizes are required.

Keywords: Chia seed; glycemic status; fasting blood glucose (FBS); glycated hemoglobin (HbA1c); and insulin.

The Association of Artificial Sweeteners Intake and Risk of Cancer in General Population: An Umbrella Meta-analysis

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Background: The results of published meta-analyses investigating the relationship between artificial sweeteners and the risk of cancer were conflicting. Our objective was to conduct an umbrella review encompassing systematic reviews and meta-analyses of observational studies to provide an ultimate insight on the subject.

Methods: We conducted a comprehensive search on PubMed, Scopus, and Web of Science databases, covering the period up to July 2023. The summary effect sizes and their corresponding 95% confidence intervals were recalculated for the outcome using random-effects model. Subgroup and sensitivity analyses were performed.

Results: Overall, seven meta-analyses comprising from twenty-three datasets, were included. The findings of our study indicated that there is no significant association between the consumption of artificial sweeteners and risk of developing cancer (RR: 0.99; 95%CI: 0.95,1.04; p=0.45).

Conclusion: In summary, the results presented in this comprehensive meta-analysis suggest that regular consumption of artificial sweeteners does not increase the risk of cancer development in general population.

Keywords: Artificial sweeteners; Cancer; Umbrella meta-analysis.

The role of therapeutic lifestyle changes in managing non-alcoholic fatty liver disease among overweight/obesity patients: A randomized controlled trial

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Background: Non-alcoholic fatty liver disease (NAFLD) is a liver condition that is increasing globally. Lifestyle interventions play a crucial role in managing NAFLD, but the specific effects of this intervention remain to be fully elucidated. Hence, this study aimed to investigate the effect of therapeutic lifestyle changes (TLCs) on patients with overweight/obesity and non-alcoholic fatty liver disease.
Methods: A prospective, parallel-group, randomized controlled trial was conducted. The patients were randomized into observation and experimental groups using tables with random numbers. In the observation group, routine health guidance was provided for 3 months, while in the experimental group, diversified lifestyle intervention was provided. The body composition, visceral fat area, abdominal circumference, and body mass index of the observation and experimental groups were compared before and after the intervention. Descriptive statistics, paired t-tests, and linear regression models were used for data analysis.
Results: A total of 120 participants (75 in each group) completed the study. The experimental groups had significantly greater high-density lipoprotein cholesterol levels, basal metabolic rate, muscle mass, and questionnaire scores than the observation groups ($P < 0.05$). Furthermore, the experimental participants had lower body mass index, abdominal circumference, triglyceride levels, low-density lipoprotein cholesterol levels, and fatty liver index ($P < 0.05$).
Conclusions: TLCs therapy for NAFLD patients with overweight/obesity can significantly control body mass index, improve blood lipid levels, reduce fatty liver and body fat rates, improve basic metabolism, alleviate disease, and improve quality of life. More research is needed to determine the long-term impact TLCs in high-risk groups.

Keywords: Overweight/obesity; BMI; NAFLD; Metabolic index; therapeutic lifestyle changes; TLC

Association of dietary nutrient density with mental health among diabetic patients referred to Sabzevar Persian Cohort Center

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Introduction: Worldwide, diet-related non-communicable diseases are increasing sharply and represent a threat to public health. Majority of scientific evidence have investigated the connection between nutritional status and most of the psychiatry disorders. The aim of current study was to examine the relationship between naturally nutrient rich (NNR) and mental health among diabetic patients.
Methods: This case-control study was done among 156 diabetic patients who have referred to Sabzevar Persian Cohort center from January to March 2023. Further, 156 apparently healthy subjects were also participated in the study as control group. The NNR score was assessed by filling the food frequency questionnaire (FFQ) and get the average intake of 13 nutrients including protein, Ca, Fe, Zn, MUFA, folate, K, and vitamins B12, B1, B2, E, A, D. Mental health status of the participants was evaluated using the 28-items General Health Questionnaire (GHQ). All the data was analyzed using SPSS version 20.
Results: The age of study participants was 53.7 ± 7.9 and 53.9± 8.4 years in diabetic and healthy groups, respectively. The severe depression, somatic symptoms, and social dysfunction dimensions of mental health score was significantly higher among diabetic subjects compared to healthy group ($P<0.001$). However, there was not seen any difference in anxiety level of study groups ($P>0.05$). The total mental problems score was significantly higher in diabetic group compared to healthy subjects ($P<0.001$). The NNR was not differ among study groups ($P>0.05$). There was not any significant correlation between NNR and mental health of study participants ($R=0.08$, $P=0.27$).
Conclusions: It is concluded that diabetic patients face more psychological problems than

healthy subjects. Therefore, it is possible to provide a healthier life for these people by planning to improve people's mental health. This study showed that there is no relationship between NNR and mental health. More studies are needed to investigate the possible relationships.

Keywords: Diabetes; Mental Health; Nutrient Density; Diet

Nutritional solutions to control the hunger feeling and prevent overeating

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In this article, effective nutritional strategies to manage hunger and prevent overeating are reviewed, which are critical to hsve a healthy lifestyle and achieving weight loss goals. We have discussed the differences between physiological and psychological hunger and emphasized the importance of knowing them to effectively deal with them. This article explains the role of fibers and proteins in creating a long-term feeling of satiety and regulating energy levels throughout the day, and provides strategies for reducing the consumption of refined sugars and simple carbohydrates that often lead to rapid blood sugar fluctuations. Regular meal planning and a structured meal plan are recommended to prevent extreme hunger and the risks associated with overeating. Practical tips for integrating these strategies into daily life are also provided to help people make more informed decisions about eating, improve their overall health, and maintain long-term health.

Keywords Nutritional strategies, hunger control, overeating prevention, healthy eating habits, dietary

Nutritional Assessment of Patients with Leukemia Hospitalized in the Hematology Department

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Background: Malnutrition in cancer patients, especially those with leukemia, is common. The aim of this study was to assess the nutritional status of hospitalized patients with leukemia.
Methods: Leukemia patients in the hematology department of Qaem Hospital and Emam Reza Hospital in Mashhad, Iran, during February to November 2023 were evaluated. Demographic and disease related charactristics, a PG-SGA tool, anthropometric indices, laboratory indices, body composition, dietary intake, clinical complications, and Karnofsky performance status were collected.
Results: Ninety seven patients were enrolled. The mean age was 43.98±16.69 with the male to female ratio of 52/45 .According to PG-SGA, 63.9% of patients had a score of over 8 and required nutritional intervention. Significant weight loss was observed in a 17.4% percentage of patients. 81.44% were not receiving their daily energy requirements, and 86.59% were not receiving sufficient protein.
PG-SGA was significantly associated with Karnofsky performance status, place of residence, a decrease in energy intake to less than 50% of the required amount, and CRP levels. Additionally, 1-month weight loss was significantly associated with Karnofsky performance status, place of residence, and a decrease in energy intake to less than 85% of the required amount.
Conclusion: The present study showed that malnutrition in hospitalized leukemia patients is common, highlighting the need for nutritional assessment in malignancies and nutritional interventions.

Keywords: nutritional status, nutritional assessment, leukemia.

Investigating the relationship between nutrition factors and Chronic obstructive pulmonary disease based on epidemiological studies: a systematic review

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Introduction: Chronic obstructive pulmonary disease (COPD) is a leading cause of death and healthcare burden worldwide. The extra pulmonary manifestation of COPD is weight loss and malnutrition. Changing the diet, reducing the consumption of fruits and increasing the use of processed foods have been used to help increase the prevalence of COPD. The purpose of this study is to investigate the effect of diet on COPD.

Methodology: First, a search was conducted in PubMed and Scopus databases with keywords diet, nutrition, COPD, mortality, morbidity and severity until July 2023. The observational studies that were published in peer reviewed journals regarding the relationship between nutrition in the form of dietary patterns and the incidence or exacerbation and mortality of COPD were extracted and screened in two stages . The results of selected studies were summarized and analyzed.
Findings: The total articles found were from the two databases PubMed and Scopus3634, after the screening process, the findings of 7 articles that were related to the purpose of the study were evaluated. Among these articles, 4 articles related to men and one article related to women reported a significant relationship between omega-3 consumption and the possibility of COPD.The findings of this study showed that there is a negative relationship between a diet rich in fruits, vegetables and the risk of COPD, and there is a positive relationship between a diet rich in refined grains and COPD.
Conclusion: Nutritional factors can play a role in the prevention and control of COPD symptoms.
Key words: chronic obstructive pulmonary disease, food pattern, nutrition

Investigating the relationship between sleep quality and the prevalence of chronic obstructive pulmonary disease in the Persian cohort of Mashhad

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Introduction: Chronic obstructive pulmonary disease (COPD) is a significant cause of morbidity and mortality, as well as a major healthcare burden globally. The effect is associated with extrapulmonary (systemic) manifestations such as weight loss, malnutrition, and sleep disturbances, which contribute to morbidity, reduced quality of life, and possibly mortality from the disease. After experiencing shortness of breath and fatigue during the day, sleep disorders such as snoring, sleep apnea syndromes, and nocturnal hypoventilation are considered the third most common complaint in patients with COPD.

Methodology: The present study is a cross-sectional study conducted at Persian Kohrat University of Mashhad Medical Sciences, involving 4269 employees who met the inclusion criteria (having undergone a spirometry test). In this study, the Pittsburgh Sleep Quality Index (PSQI) was used to measure sleep quality over a period of one month. Logistic regression analysis was employed to examine the relationship between sleep quality scores and the prevalence of chronic obstructive pulmonary disease.

Findings: This study included 4269 people (1920 men and 2349 women), out of which 327 people had chronic obstructive pulmonary disease (8.7%) based on the Global Initiative (GOLD) criteria and the rest were healthy people. There was a significant relationship between the sleep quality score and the prevalence of chronic obstructive pulmonary disease ($p < 0.0001$).
Conclusion: This study revealed that patients with COPD experience poor sleep quality, which, in turn, has a negative impact on their quality of life.
Keywords: chronic obstructive pulmonary disease, sleep disorders, lifestyle

The nutritional status of the adult hemodialysis patients in Shahid Beheshti Hospital of Hamedan province in 2023

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Introduction: In hemodialysis patients, different factors such as high catabolic condition can cause

adverse nutritional status.The present study was conducted to investigate the nutritional status of hemodialysis patients in Shahid Beheshti Hospital, Hamedan province.

methods: In this cross-sectional study,44 adult hemodialysis patients(18 women and 26 men)with an average age of 56 years were examined in terms of malnutrition criteria including weight loss, loss of appetite,loss of muscle mass,and serum albumin.MNA questionnaire was used to check the possibility of malnutrition. BMI was determined using height and weight and arm circumference also was measured. Finally, data analysis was done using SPSS software.

Results: The mean and standard deviation of serum albumin in patients was 4.06±0.52 mg/dL and 13.63% of patients had albumin levels less than 3.5 mg/dL.The mean and standard deviation of the patient's BMI was 23.7 ± 4.03, and 4.5% of them had a BMI less than 18.5.The average arm circumference in patients was 30 ± 3.03 cm. Also,the average score of malnutrition screening based on MNA was 12 (between 6 to 14).Therefore, 4.5% of patients were malnurished(screening score less than 8), and 13.63% were at risk of malnutrition (screening score 9 to 12).

Conclusion: In current study,the prevalence of malnutrition was relatively lower than most of studies. However,due to the increase in mortality and disability after suffering from malnutrition, all patients must undergo nutritional care. In addition, early referral of patients with chronic kidney failure to specialists and starting hemodialysis can reduce risk of malnutrition.

Keywords: Kidney failure, hemodialysis, malnutrition

The association of dietary fat intake with the risk of pancreatic cancer: A dose-response meta-analysis and meta-regression of case-control and cohort studies

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Introduction: This study aimed to comprehensively analyze observational studies to investigate the association between dietary cholesterol, total fat, polyunsaturated fatty acids (PUFA), monounsaturated fatty acids (MUFA), saturated fatty acids (SFA), trans fatty acids (TFA), and the risk of pancreatic cancer (PC).

Methods: A comprehensive literature search was conducted using electronic databases up to April 2023. Cohort and case-control studies reporting risk ratio (RR) or odds ratio (OR) or hazard ratio (HR) were included. Pooled effect estimates were calculated using random-effect models.

Results: A total of 17 case-control studies and 10 prospective studies were included in the analysis. The findings from cohort studies regarding high dietary intake of cholesterol (RR: 1.02; 95% CI: 0.87-1.20, I^2=0%), TFA (RR:1.12; 95% CI: 0.82-1.53, I^2=18.1%), total fat (RR:1.00; 95% CI: 0.84-1.20, I^2=57.7%), MUFA (RR:1.01; 95% CI: 0.81-1.26, I^2=42.3%), PUFA (RR:0.94; 95% CI: 0.83-1.07, I^2=0%), and SFA (RR:1.03; 95% CI: 0.81-1.31, I^2=74.4%) compared to low consumption and the risk of PC were inconclusive. In case-control studies, high consumption of cholesterol increased the risk of PC [(OR:1.66; 95% CI: 1.30-2.13, I^2=39.4%) and SFA (OR:1.44; 95% CI: 1.03-2.01, I^2=79%), respectively, while PUFA consumption decreased the risk of the disease (OR:0.74; 95% CI: 0.59-0.94, I^2=62.5%). No relationship was found between TFA, MUFA, and total fat consumption and the risk of PC in case-control studies.

Conclusion: This study found no significant association between total and subtypes dietary fat intake and PC risk among cohort studies. However, significant associations between cholesterol, PUFA ,and SFA intake and pancreatic cancer risk were found among case-control studies. More studies are needed to confirm these findings.

Keywords: Pancreatic cancer; Dietary cholesterol; Polyunsaturated fatty acids; Monounsaturated fatty acids; Saturated fatty acids; Trans fatty acids; Observational studies; Diet and cancer.

Effect of Omega-3 Supplementation on Chemotherapy-related Toxicity Outcomes in Cancer Patients; Systematic- Review

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Background: The clinical application of chemotherapy in cancer treatment is often limited by its associated toxicities. Emerging evidence suggests that omega-3 fatty acids (n-3 PUFAs) could mitigate some adverse effects of chemotherapy, including cardiotoxicity and systemic inflammation. This systematic review aims to synthesize current research on the protective effects of omega-3 supplementation against chemotherapy-induced toxicities in cancer patients.
Methods: We conducted a literature search on PubMed, Scopus, and ISI Web of Science through May 2024, selecting relevant articles based on predefined inclusion criteria. This review focused on patients treated for various cancers, such as breast cancer and pediatric acute lymphoblastic leukemia, examining primary outcomes including reductions in cardiotoxicity markers and inflammation. We assessed the evidence quality and study robustness using the Cochrane assessment tool.
Results: The review included data from seven clinical trials, with a total of over 500 participants. The studies demonstrated mixed results. Several trials, including those by El-Amrousy et al. and Gutiérrez-Salmeán et al., reported that omega-3 fatty acids significantly lowered biomarkers of cardiotoxicity and improved antioxidant capacity in patients receiving anthracycline-based regimens. However, other studies found no significant difference in chemotherapy-induced toxic effects between omega-3 supplemented groups and controls.
Conclusion: Omega-3 fatty acids show potential in mitigating some of the cardiotoxic effects associated with certain chemotherapeutic agents, particularly in pediatric and breast cancer patients. However, evidence remains inconclusive, necessitating further large-scale and methodologically robust studies to define the specific conditions under which omega-3 supplementation would be most beneficial.
Keywords: Omega-3 fatty acids, Chemotherapy toxicity, Cardio protection, Cancer Treatment, Systematic review.

Probiotics Supplementation and Gastrointestinal Complications: An Umbrella Meta-analysis

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Background: Gastrointestinal complications involve a variety of symptoms associated with the digestive system, such as diarrhea, nausea, bloating, and epigastric discomfort. Probiotics, as an effective nutritional intervention, could be effective in relieving complications. Due to the controversies among results of published meta-analyses, present umbrella meta-analysis was conducted to resolve controversies and provide a comprehensive conclusion regarding the effects of probiotics in gastrointestinal complications.
Methods: We conducted a comprehensive search on PubMed, Scopus, and Web of Science databases and Google Scholar covering the period up to December 2023. All meta-analyses of interventional studies addressing the effect of probiotics on gastrointestinal complications were included. The pooled effect sizes and their corresponding 95% confidence intervals were calculated using random-effects model. Subgroup and sensitivity analyses were performed. The certainty of the evidence and the quality of conduct of the published meta-analysis were rated using the ASMTAR 2 tools, respectively.
Results: Overall, 24 meta-analyses with 76 data-sets were included. Our findings indicated that probiotics supplementation significantly decreased the risk of total side effects (RR:0.65; 95%CI: 0.52-0.77; p<0.001), diarrhea (RR:0.44; 95% CI: 0.37-0.52; p< 0.001), nausea (RR: 0.59; 95%CI:0.49-0.60; p< 0.001), epigastric pain (RR:0.71; 95%CI: 0.56-0.87; p<0.001), bloating (RR:0.74; 95%CI:0.64-0.84; p<0.001) and taste disturbance (RR: 0.55; 95%CI: 0.36-0.75; P<0.001). Also, probiotics significantly reduced the chance of total side effects (OR:0.50; 95%CI: 0.40-0.60; p < 0.001).
Conclusion: The evidence supports probiotics supplementation in order to reduce gastrointestinal complications.
Keywords: Probiotics; Diarrhea, Nausea; Gastrointestinal complications; Umbrella meta-analysis.

Antioxidants and blood pressure: a beneficial relationship

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Background: Among cardiovascular diseases, high blood pressure is a multifactorial consequence and the main risk of fatal complications. Oxidative stress and chronic inflammation are potentially responsible for endothelial damage and vascular stiffness, two major causes of hypertension and cardiovascular disease. The relationship between composite dietary antioxidant index (CDAI) and hypertension remains unknown. Our study aims to investigate the association of CDAI with hypertension in adults.
Materials and methods: To find studies on the relationship between antioxidants and blood pressure, the databases of the National Library of America (PubMed) and ScienceDirect were searched with the keywords antioxidant, blood pressure, vascular regeneration, and oxidative stress. Became No time limit was considered in the search.
Results: Reactive oxygen species (ROS) are increased and antioxidant capacity is decreased in hypertensive humans, many of whom suffer from end-stage renal disease (ESRD). Antioxidant therapy can improve human cardiovascular outcomes, but only if adequate doses are used. Treatment with vitamins C and E reduces superoxide production in tissues, especially blood vessels. According to the studies conducted on the biological activity of peptides, they have antioxidant activity and renin inhibitors. In addition, antioxidant peptides have the potential to be evaluated against renin and provide an alternative for the treatment of hypertension without causing adverse effects.
Conclusion: Our study showed a negative linear relationship between CDAI and adult hypertension. Our results showed that arterial stiffness is significantly reduced in patients consuming antioxidants and endothelial function is increased.
Keywords: Antioxidant; blood pressure; oxidative stress; vascular regeneration

Effects of ellagic acid supplementation on body weight and body mass index: A systematic review and meta-analysis of randomized control trials

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Introduction: Ellagic acid has been shown to have positive effects on body weight and body mass index (BMI). However, data from trials show inconclusive results. This systematic review and meta-analysis aims to assess the effect of ellagic acid on weight and BMI.
Method: Effect sizes are presented as weighted mean differences (WMD) along with 95% confidence intervals (CI).
Result: Data was collected from four eligible studies. Results showed that the weight loss was not significant in studies (WMD: -0.429 kg, 95% CI: -2.253, 1.394; P: 0.645) with no heterogeneity (I^2 : 0%, P: 0.793). Also, the changes in BMI were meaningless (WMD: -0.412 kg/m^2 , 95% CI: -1.056, 0.232; P: 0.209) with significant heterogeneity (I^2: 71.94%, P: 0.014).
Conclusion: Ellagic acid supplementation did not result in significant weight loss.
Keywords: Ellagic acid, body weight, BMI

Association between fish intake and brain tumor risk in adults: a meta-analysis of case-control studies

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Introduction: The objective of this study was to investigate the potential association between fish intake and the risk of developing brain tumors in adults through a meta-analysis of case-control studies. The hypothesis tested was whether higher fish consumption is associated with a lower risk of brain tumors.
Methods: This meta-analysis included case-control studies that examined the relationship between fish intake and brain tumor risk in adults. The studies were identified through a comprehensive literature search in multiple

electronic databases. The data extraction process followed standardized guidelines, and the quality of the included studies was assessed using appropriate tools. Random-effects models were used to calculate pooled odds ratios (ORs) and 95% confidence intervals (CIs) for the highest versus lowest categories of fish intake. Subgroup analyses and sensitivity analyses were conducted to explore potential sources of heterogeneity and the robustness of the findings.
Results: A total of eight case-control studies, involving 3679 brain tumor cases and 9431 controls, were included in the meta-analysis. The pooled analysis revealed a significant inverse association between high fish intake and brain tumor risk (OR =0.78, 95% CI: [0.65-0.93], p =0.03). No significant publication bias was detected.
Conclusions: The findings of this meta-analysis suggest that higher fish intake may be associated with a reduced risk of developing brain tumors in adults. These results support the potential role of fish in brain tumor prevention. However, further prospective studies are needed to establish causality and explore the underlying mechanisms.
Keywords: Brain Neoplasms; Diet; Fish Products; Meta-Analysis; Case-Control Studies

Effects of Propolis Supplementation on Inflammation and Oxidative Stress: A Systematic Review and Meta-analysis

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Although a large number of trials have observed the anti-inflammatory properties of propolis, the currently available research remains controversial regarding its beneficial health effects. Hence, the purpose of this study was to examine the effect of propolis on inflammatory and oxidative stress markers in adults. A systematic literature search up to January 2024 was completed in PubMed/Medline, Scopus, and Web of Science to identify eligible randomized clinical trials (RCTs). Heterogeneity tests of the selected trials were performed using the I^2 statistic. Random effects models were assessed based on the heterogeneity tests, and pooled data were determined as weighted mean differences (WMD) with a 95% confidence interval (CI). A pooled analysis of 29 effect sizes revealed that propolis consumption led to a significant reduction in C-reactive protein (CRP) (WMD: -1.23; 95%CI: -1.76, -0.69; p <0.001), Interleukin-6 (IL-6) (WMD: -1.52; 95%CI: -2.10, -0.93; p <0.001), Tumor necrosis factor-α (WMD: -1.15; 95%CI: -1.75, -0.55; p <0.001), and Monocyte chemoattractant protein-1 (MCP-1) (WMD: -35.33; 95%CI: -50.28, -20.37; p < 0.001), and a significant increase in total antioxidant capacity (TAC) (WMD: 0.32; 95%CI: 0.12, 0.51; p = 0.001), Glutathione (GSH) (WMD: 4.71; 95%CI: 3.17, 6.25; p <0.001), and Glutathione peroxidase (GPx) (WMD: 44.75; 95%CI: 5.10, 84.40; p = 0.02). However, there were no significant effects on IL-10, IL-2, IL-8, Malondialdehyde (MDA), Superoxide dismutase (SOD), and pro-oxidant-antioxidant balance (PAB) in comparison with the control group. Propolis is effective in reducing inflammation and oxidative stress by increasing the capacity and antioxidant enzymes and reducing some inflammatory markers, but more studies are needed for a more definitive conclusion.
Keywords: Propolis, Oxidative stress, Inflammation, Systematic review, Meta-analysis

The association of dietary fat intake with the risk of pancreatic cancer: A dose-response meta-analysis and meta-regression of case-control and cohort studies

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Introduction: This study aimed to comprehensively analyze observational studies to investigate the association between dietary cholesterol, total fat, polyunsaturated fatty acids (PUFA), monounsaturated fatty acids (MUFA), saturated fatty acids (SFA), trans fatty acids (TFA), and the risk of pancreatic cancer (PC).
Methods: A comprehensive literature search was conducted using electronic databases up to

April 2023. Cohort and case-control studies reporting risk ratio (RR) or odds ratio (OR) or hazard ratio (HR) were included. Pooled effect estimates were calculated using random-effect models.

Results: A total of 17 case-control studies and 10 prospective studies were included in the analysis. The findings from cohort studies regarding high dietary intake of cholesterol (RR: 1.02; 95% CI: 0.87-1.20, I^2=0%), TFA (RR:1.12; 95% CI: 0.82-1.53, I^2=18.1%), total fat (RR:1.00; 95% CI: 0.84-1.20, I^2=57.7%), MUFA (RR:1.01; 95% CI: 0.81-1.26, I^2=42.3%), PUFA (RR:0.94; 95% CI: 0.83-1.07, I^2=0%), and SFA (RR:1.03; 95% CI: 0.81-1.31, I^2=74.4%) compared to low consumption and the risk of PC were inconclusive. In case-control studies, high consumption of cholesterol increased the risk of PC [(OR:1.66; 95% CI: 1.30-2.13, I^2=39.4%) and SFA (OR:1.44; 95% CI: 1.03-2.01, I^2=79%), respectively, while PUFA consumption decreased the risk of the disease (OR:0.74; 95% CI: 0.59-0.94, I^2=62.5%). No relationship was found between TFA, MUFA, and total fat consumption and the risk of PC in case-control studies.

Conclusion: This study found no significant association between total and subtypes dietary fat intake and PC risk among cohort studies. However, significant associations between cholesterol, PUFA ,and SFA intake and pancreatic cancer risk were found among case-control studies. More studies are needed to confirm these findings.

Keywords: Pancreatic cancer; Dietary cholesterol; Polyunsaturated fatty acids; Monounsaturated fatty acids; Saturated fatty acids; Trans fatty acids; Observational studies; Diet and cancer.

The Possible Relationship Between the Alternative Healthy Eating Index (AHEI-2010) and Dental Health in Healthcare Workers: A Cohort-Based Cross-Sectional Study Using Baseline Data of the SUMS Employees' Health Cohort Study (SUMS EHCS)

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Introduction: Dietary patterns affect different aspects of overall health, especially oral and dental status. This study aimed to explore the relationship between the Decayed, Missing, Filled Teeth (DMFT) index and nutrition status using the Alternative Healthy Eating Index (AHEI-2010).

Methods: This cross-sectional study was conducted on the population participating in the first phase of the Shiraz University of Medical Sciences Employees' Health Cohort Study (SUMS-EHCS) from August 2018 to the end of March 2019. Demographic data, occupational status, the DMFT index, which calculated using the WHO standard form, and the AHEI index, estimated using the semi-quantitative food frequency questionnaire (FFQ), were acquired. Then the relationship between DMFT and AHEI was assessed.

Results: In total, 1,116 SUMS-EHCS participants (mean age of 41.55 ± 6.81 years and 52.9% female) were included in the study. The mean DMFT and AHEI were 10.46 ± 5.45 and 65.23 ± 13.05, respectively. A significant inverse linear relationship between DMFT and AHEI was observed (Spearman's rho: -0.060; P: 0.044). In addition, the multiple linear regression showed that the DMFT index significantly decreased by AHEI increase (coefficient: -0.048 [95% confidence interval: -0.088, -0.008]; P: 0.018). Moreover, according to multiple quantile regression, this significant inverse relationship between AHEI and DMFT could majorly be generalized to the 50th quantile of DMFT, in which with every 10-unit increase in AHEI, the DMFT decreased by 0.41 teeth (P: 0.006).

Conclusion: Greater adherence to AHEI-2010 may improve oral health. Moreover, lower age and sufficient educational level was related to higher DMFT score.

Keywords: Dental caries, Oral Health, DMFT, Diet, AHEI.

Effect of whey protein consumption on IL-6 and TNF-α: A systematic review and meta-analysis of randomized controlled trials

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Introduction: Due to inconsistent data about WP supplementation on inflammatory markers, present systematic review and meta-analysis was done to summarize its effect on TNF-α and IL-6.
Methods: Our search was done in Pubmed, Scopus, Embase, and Cochrane up to June 2021. Weighted mean difference (WMD) and 95% confidence intervals (CI) was used to indicate the effect sizes. Conceivable sources of heterogeneity were detected by subgroup analysis.
Results: Overall, 11 eligible RCTs were included. The pooled results showed that WP supplementation had no significant effect on TNF-α and IL-6 status compare to those receiving carbohydrate and other types of proteins as placebo. Results from subgroup analysis based on health status, study duration, WP dosage and sex, expressed no favorable effect of WP on TNF-α and IL-6 levels.
Conclusion: It can be concluded that whey supplementation had no favorable effects on inflammatory biomarkers including TNF- α and IL-6.
Keywords: Whey, Inflammation, IL-6, TNF-a.

Comparison of food intake groups, dietary oxygen radical absorbance capacity (ORAC), and their relationship with atherogenic indices of plasma in patients with metabolic syndrome and healthy individuals

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Introduction: The increasing prevalence of metabolic syndrome on the one hand and its relationship with other chronic non-communicable diseases on the other hand has led to many studies to investigate the causes of metabolic syndrome or its components.
Methods: This study was a case-control study that was performed on 160 men and women (80 individuals with metabolic syndrome and 80 healthy individuals) with a mean age of 47.8 years. In this study, demographic questionnaires, 147-item feed frequency, anthropometric and body composition information, blood pressure, and a fasting blood sample were taken from all subjects. All data were analyzed using SPSS software.
Results: Atherogenic plasma index (AIP), cardiac risk ratio, and atherogenic coefficient (AC) in the group of patients with metabolic syndrome were higher significant than in the patients. However, there was no significant difference between the ORAC diet in the healthy and affected groups. There was also no association between dietary ORAC and AIP. Among the food groups, only nuts and viscera were not associated with the ORAC diet, but more food groups were not associated with AIP. according to AIP values, 71.3% of healthy people are at risk of developing metabolic syndrome.
Conclusion: According to the results, it seems that indicators related to the quality of dietary fat have an effective role in the development of metabolic syndrome and its components. However, the ORAC index did not have a significant effect on the development of the metabolic syndrome and its components and was associated only with the intake of many food groups.
Keywords: Metabolic syndrome, AIP (Atherogenic plasma index), ORAC (Dietary oxygen radical absorbance capacity), Cardiac risk ratio, Anthropometry

The effects of chia supplementation on lipid profile in patients suffering from metabolic disorders: A systematic review and meta-analysis

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Introduction: Dyslipidemia is major public health challenge worldwide, and chia seed, a nutrient-dense functional food, could be beneficial in metabolic disorders. This systematic review and meta-analysis aimed to evaluate the effect of chia seed consumption on lipid profiles.
Methods: A comprehensive literature search

was conducted on electronic databases including PubMed, Scopus and Web of Science up to June 2023. All randomized controlled trials (RCTs) addressing the effect of chia seed on triglyceride (TG), total cholesterol (TC), high-density lipoprotein (HDL) and low-density lipoprotein (LDL) were included. Data were analyzed using a random-effects model, and reported as weighted mean differences (WMD) with 95% confidence intervals (CI). Subgroup and sensitivity analyses were also performed. The quality of studies was evaluated using Cochrane risk of bias tool.

Results: A total of seven RCTs involving 314 participants were included in the meta-analysis. The results showed that chia consumption had no considerable effect on TG (WMD: -18.73 mg/dl; 95% CI: -55.46 to 18.00; p = 0.31), TC (WMD: -7.49 mg/dl; 95% CI: -15.60 to 0.63; p < 0.07), HDL (WMD: -2.85 mg/dl; 95% CI: -6.74 to 1.05; p =0.15), and LDL (WMD: -8.09 mg/dl; 95% CI: -18.17 to 1.99; p =0.11). However, subgroup analyses indicated that chia could decrease TC in patients with obesity and type 2 diabetes mellitus (T2DM) and LDL in patients with obesity.

Conclusion: Chia consumption had no effect on lipid profiles including triglyceride, total cholesterol, LDL, and HDL. Nevertheless, patients with obesity and T2DM might benefit from its supplementation.

Keywords: Chia seed; Lipid profile; Total cholesterol; Triglyceride; Meta-analysis.

The Effect of Curcumin on Inflammatory Markers in Metabolic Syndrome: A Systematic Review

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Introduction: Metabolic syndrome includes a set of physiological conditions such as high blood pressure, abnormal increase in blood sugar, accumulation of fat tissue in different parts of the body, abnormal cholesterol or triglyceride levels, which increases the risk of many chronic non-communicable diseases including cardiovascular disease, heart attack and type 2 diabetes. In this review article, we are trying to review the various studies conducted on the effects of curcumin (the active ingredient in turmeric) on the levels of inflammatory factors and other factors involved in metabolic syndrome.

Methods: Scientific databases such as PubMed, Scopus and Google Scholar were searched for reviews on "the effect of curcumin on inflammatory factors in metabolic syndrome". The reviewed articles were published from 2015 to 2024 and Inclusion criteria included clinical and preclinical studies focusing on inflammatory markers such as CRP, TNF-α and IL-6.

Results: According to the findings collected from the identified articles, curcumin consumption can significantly reduce the level of inflammatory markers. Based on the results obtained from clinical studies, daily consumption of curcumin for 8 to 12 weeks has led to a decrease in CRP, TNF-α and IL-6 levels in patients with metabolic syndrome. In addition, improvement in lipid profile and reduction in insulin resistance have also been reported.

Conclusion : This study provides evidence that supports the positive effect of curcumin as a natural supplement in reducing inflammation and improving metabolic status in patients with metabolic syndrome. However, there is a need for more studies with more accurate research methods and a larger sample size to confirm these results.

Keywords: metabolic syndrome, inflammation, curcumin

Association of dietary patterns and risk of cardiovascular disease events in the MASHAD cohort study

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Background: Cardiovascular disease (CVD) is the principal cause of mortality and disability in Iranian adults. We aimed to evaluate the relationship between dietary patterns and CVD incidence in a large sample of adults in northeastern Iran.

Methods: The present study comprised a prospective study of 5706 CVDfree men and women aged 35–65 years who participated in a cohort study. All of the participants were followed up for a 6-year period. Dietary patterns were derived from a 65-item validated food frequency questionnaire and the factor analysis method was used to determine dietary patterns.

Results: We identified two major dietary patterns: (i) a Balanced dietary pattern (a high

intake of green leafy vegetables, other vegetables, fruits, dairy products, red meats, poultry, seafoods, legumes and nuts, as well as a low intake of sugar) and (ii) a Western dietary pattern (a high intake of sugar, tea, egg, snacks, fast foods, potato, carbonated beverages, pickled foods, organs meat and butter) by factor analysis. The hazard ratio (HR) and 95% confidence intervals (CIs) of total CVD in the highest versus lowest tertiles of the Balanced pattern were 1.29 (95% CI = 0.67–2.47; P = 0.44). The HR and 95% CIs of CVD in the highest versus lowest tertiles of Western pattern were 2.21 (95% CI = 1.08–4.45; P = 0.03).

Conclusions: During the 6-year follow-up, we found that adherence to a Balanced dietary pattern was not significantly associated with CVD events. However, adherence to a Western dietary pattern was associated with a significantly increased risk of CVD events and its associated risk.

Association of dietary patterns and the risk of metabolic syndrome among Iranian population: A cross-sectional study

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Background: The role of dietary patterns in metabolic syndrome has not been investigated sufficiently among Iranian population. The aim of this study is to investigate the association of major dietary patterns with the risk of metabolic syndrome and its components among healthy individuals of Iran.

Methods: This is a cross-sectional study that is performed on 5895 men and women of MASHAD study population. Factor analysis was employed to determine major dietary patterns with regard to a validated 65-item food frequency questionnaire. Metabolic syndrome was diagnosed using international diabetes federation (IDF). Logistic regression analysis was used to evaluate the association between dietary patterns and metabolic syndrome risk to generate odds ratios (ORs) and 95% confidence intervals (CI).

Results: Three major dietary patterns (Balanced, Western and high carbohydrate) were identified. The Western pattern showed a positive association with metabolic syndrome (OR [95%CI] for highest vs. lowest tertile: 1.58 [1.21 – 2.06]; p value = 0.001). The high carbohydrate dietary pattern was correlated with high metabolic syndrome risk (OR [95%CI] for highest vs. lowest tertile: 1.17 [1.02 – 1.33]; P value = 0.022). The Balanced dietary pattern showed no association with metabolic syndrome, but were related to some individual risk factors for metabolic syndrome.

Conclusions: These results suggest that the Western and high carbohydrate patterns is associated with an increased risk for metabolic syndrome among Iranian adults. The causality of these associations needs to be confirmed.

Keywords: dietary pattern, metabolic syndrome, international diabetes federation

Association between pre-transplant body mass index with post-transplant infection and rejection in liver transplant recipients

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Background: Obesity and undernutrition are both important concerns in liver transplant (LT) recipients, with pre-transplant body mass index (BMI) potentially impacting post-transplant outcomes. This study aims to investigate the association between pre-transplant BMI, and the incidence of post-transplant infection and rejection in liver transplant recipients. Understanding these relationships can help guide pre-transplant optimization and post-transplant management strategies to improve outcomes for this diverse patient population.

Methods: The data for this study were obtained from a single-center LT database, consisting of 479 patients with ages >18 who underwent their first liver transplant during the period from May 2013 to September 2022. The patients were categorized into four groups based on their pre-transplant BMI: underweight (BMI < 18.5 kg/m^2), normal weight (BMI from 18.5 to 24.9 kg/m^2), overweight (BMI from 25 to 29.9 kg/m^2), and obese (BMI ≥ 30 kg/m^2).

Results: Out of the total 479 patients included in the study, 13.4% and 11.7% experienced infectious complications and graft rejection following their liver transplant, respectively. Obesity (BMI ≥ 30) was observed in 18.2% of patients and 6.5% were classified as underweight (BMI<18.5). There was not a significant association between BMI and infection, however, the risk of graft rejection in underweight patients was significantly higher than in other groups (*P*-value = 0.035).
Conclusions: The findings of this study suggest that pre-transplant underweight status, rather than obesity, is associated with an increased risk of graft rejection in liver transplant recipients. These results highlight the importance of optimizing nutritional status in the pre-transplant setting, particularly for underweight patients, to improve post-transplant outcomes.
Keywords: liver transplantation, body mass index, infection, graft rejection

The association between protein intake and sleep quality in maintenance hemodialysis patients

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Introduction: Sleep disturbances are prevalent among patients with end-stage renal disease (ESRD) receiving hemodialysis therapy. Diet and certain nutrients, such as dietary protein may improve sleep. This study aimed to investigate the relationship between protein intake and sleep quality in maintenance hemodialysis patients.
Methods: A multicenter cross-sectional study was conducted at eight hemodialysis centers in Shiraz, Shushtar and Ahvaz, Iran. Participants included hemodialysis patients with at least six months of dialysis history. Protein intake was assessed using a validated semi-quantitative food frequency questionnaire (FFQ), and sleep quality was evaluated using the Pittsburgh Sleep Quality Index (PSQI). Multiple linear regression and binary regression analyses were employed to examine the relationship between Protein intake and sleep quality.
Results: A total of 479 patients were included, with a mean age of 53.78±14.97 years and HD duration of 48.48±59.58 months. Approximately 62.8% of participants exhibited poor sleep quality. Adjusted linear regression analysis revealed a significant negative association between protein intake and sleep quality score (β=-0.02; 95% CI = -0.04, -0.01). Similarly, binary regression analysis reveals a positive association between higher protein intake and improved sleep quality (OR: 0.68; 95% CI = 0.48, 0.95).
Conclusion: This study suggests that higher dietary protein intake may be associated with improved sleep quality in hemodialysis patients. Further research is needed to confirm these findings and explore potential mechanisms underlying this relationship.
Keywords: dietary protein, hemodialysis, protein intake, renal disease, sleep quality

Phytochemical Dietary Index and Risk of Gallstone Disease: A Case-Control Study

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Introduction . Gallstone disease (GSD) is a common gastrointestinal disorder that is influenced by genetic and metabolic factors including obesity, insulin resistance, and dyslipidemia, and diet plays an important role in modulating these risk factors. Dietary phytochemical index (DPI), seems to be related to the risk of gallstone formation. This study investigates the relationship between DPI and the risk of gallstone formation, highlighting the role of diet in managing gallstone risk.
Methods. In this case-control study, 189 patients with GSD diagnosed within the past month and 342 controls were enrolled over a 6-month period. Dietary intakes were assessed using a

168-item validated food frequency questionnaire. The DPI was calculated based on following formula: DPI = [daily energy obtained from foods rich in phytochemicals (kcal)/total daily energy intake (kcal)) × 100]. Crude and multivariable-adjusted odds ratios (ORs) and 95% confidence intervals (CIs) were estimated using binary logistic regression models.

Results. With the increase in DPI score, the number of patients with GSD decreased significantly (P <0.001). Increased DPI score showed a protective effect against GSD in crude and adjusted models. Comparing the highest versus the lowest tertile of DPI in full adjusted model showed a significant inverse association between the odds of GSD and DPI score (OR $_{T3 \text{ vs. } T1}$ = 0.30, 95% CI: 0.19–0.52, P for trend<0.001).

Conclusion. These findings support the hypothesis of inverse associations between DPI and decreased risk of GSD.

Keywords. Cholelithiasis, Dietary phytochemical index, Gallstone

Dietary fiber intake and prostate cancer risk: a systematic review of epidemiological evidence

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Background: Prostate cancer (PC) is the most prevalent cancer in men. Several studies have shown that a higher intake of dietary fiber is associated with a reduced risk of several cancers, such as colorectal, breast, and ovarian cancer. However, current evidence for PC is not conclusive. In this review, we aimed to summarize the epidemiological evidence on the association of dietary fiber intake with PC risk in adult men.

Materials and Methods: We performed a systematic search in the online databases of PubMed, Scopus, and ISI Web of Science, to identify eligible articles published up to December 2023. No restriction was considered in time and language of articles. Quality assessment was done using Newcastle Ottawa scale (NOS).

Results: In total, 11 articles were included in the current systematic review. These studies contained 452,568 individuals and 25,356 cases of PC. By summarizing results from the included studies, it seems that dietary intake of insoluble fiber and vegetable fiber might decrease the risk of PC. However, such an inverse association was not seen for dietary intake of soluble fiber. Also, most studies on total dietary fiber intake revealed no significant association with PC risk. It should be noted that data on the association of different types of dietary fiber with PC prognosis and its mortality are limited.

Conclusion: Dietary intake of insoluble fiber and vegetable fiber might decrease the risk of PC. Further studies are needed to assess the association of different types of dietary fiber with PC mortality.

Keywords: Dietary fiber, Insoluble fiber, Soluble fiber, Prostate cancer

Long-term air pollution exposure and non-alcoholic fatty liver disease: a narrative review

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Background: Non-alcoholic fatty liver disease (NAFLD) is a common liver disease that affects at least 25% of adults worldwide. NAFLD is a spectrum of liver diseases ranging from simple non-alcoholic fatty liver (NAFL) to non-alcoholic steatohepatitis (NASH) and irreversible cirrhosis. NAFLD has been recognized as a hepatic manifestation of metabolic syndrome that is particularly common in patients with type 2 diabetes (T2D) and obesity. Air pollution (AP) is a global challenge to public health. In this review, we aimed to summarize the epidemiological evidence on the association of prolonged exposure to AP with NAFLD risk in adults.

Methods: We conducted an electronic search in the online databases of PubMed and ISI Web of Science, to identify eligible articles published up to February 2024. The following search terms were used in the search strategy: ("air pollution") AND ("Nonalcoholic fatty liver disease", OR "NAFLD"). We also performed a web-based search in Google Scholar to find any missing articles.

Results; It seems that increased exposure to 4 air pollutants including particulate matter (PM) with aerodynamic diameters of ≤1 μm (PM1), ≤2.5 μm (PM2.5), and ≤10 μm (PM10), and nitrogen dioxide (NO2) were significantly associated with an increased risk of NAFLD. Humans are primarily exposed through inhalation and there is evidence suggesting that particulate matter PM2.5 particles can enter the bloodstream and lead to systemic effects in multiple organs including the liver.
Conclusion: We can conclude that long-term AP exposure might increase the risk of NAFLD. However, further studies are needed in this regard.
Keywords: Air pollution, NAFLD, Nonalcoholic fatty liver disease

Effectiveness of different gums on modulating of glycemic indices in adults: A systematic review and meta-analysis

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Background: Functional foods have been widely used as the anti-diabetic agents worldwide. Existing studies presented conflicting results of anti-hyperglycemic properties of gums. This systematic review and meta-analysis study evaluated the existing trials and determined the efficacy of different gums on glycemic indices.
Method: Systematic search was performed on four main databases (MEDLINE, SCOPUS, WEB OF SCIENCE and EMBASE) by November 2023 using medical subject headings. The meta-analyses were conducted on the findings of the studies of guar gum supplementation on glycemic control indices including fasting blood glucose (FBG) and HbA1c (hemoglobinA1c) and systematic review studies include the effect of xanthan gum, Arabic gum, bitter almond gum, flaxseed gum, oat gum, gellan gum, locust been gum, tragacanth gum, and karaya gum on fasting plasma insulin, postprandial plasma glucose, HbA1c and Homeostatic Model Assessment for Insulin Resistance (HOMA – IR).
Results: Totally, 42 studies were included in this systematic review. Regarding guar gum, xanthan gum, and Arabic gum, most of included studies in our investigation showed that guar gum can be considered as an anti-hyperglycemic agent. Results on other types of gums including bitter almond gum, flaxseed gum, oat gum, gellan gum, locust been gum, tragacanth gum, and karaya gum are limited and exact interpretation cannot be obtained. In meta-analysis on 17 studies of guar gum, it was identified guar had a non-significant decrease of 3.02 mg/dl (Mean difference: -3.02, CI 95%: -7.60, 1.56) on the fasting glucose and 0.23 (Mean difference: -0.23, CI 95%: -0.63, 0.17) on HbA1c.
Conclusion: Modification of food processing using gum may be a promising strategy to help modulate glycemic indices. More studies with larger sample size are needed, both with acute and long-term interventions to clarify this issue.
Keywords: Gums, Functional food, Glycemic indices

The role of edible gums in modulating glycemic indices

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Conclusion: Modification of food processing using gum may be a promising strategy to help modulate glycemic indices. More studies with larger sample size are needed, both with acute and long-term interventions to clarify this issue.

Keywords: Gums, Functional food, Glycemic indices

Alterations of body composition in liver transplant recipients

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Background: Patients with liver cirrhosis may experience loss of fat mass or fat-free mass due to various reasons related to the condition. One of the main reasons is the impaired metabolism of nutrients, especially proteins and fats. This can lead to a decrease in the synthesis of proteins necessary for maintaining muscle mass, as well as alterations in the way fats are processed and stored in the body. Also, patients may experience changes in body composition after liver transplantation due to several factors related to the surgery and post-transplant care such as immunosuppressive medication, post-surgical recovery, changes in diet and physical activity, and nutritional deficiencies. In this study, we aimed to assess the body composition of liver transplant recipients before and after transplantation surgery.

Methods: The body composition of liver transplant patients in two centers in Iran was assessed using the bioimpedance InBody S10 before, one, and three months after transplant surgery. Several indices including body mass index (BMI), fat mass, fat-free mass (FFM), skeletal muscle mass index (SMI), and visceral fat area were analyzed. SMI was calculated by dividing body skeletal muscle mass (kg) by the square of height (m^2), and low muscle mass was defined as SMI of < 7 kg/m^2 in men and < 5.7 kg/m^2 in women.

Results: thirty-nine patients (59% men) with a mean age of 48.4 years were evaluated. The mean BMI was 24.1 kg/m^2. The results of the body composition assessment indicated that FFM (47.7±12 vs 43.8±10 (after 1 month) and 45.9±11 (after 3 months)) and SMI (7.8±2 vs 6.5±1 (after 1 month) and 6.8±1 (after 3 months)) significantly decreased after transplant surgery. However, the reduction of fat mass after surgery was not significant. Sarcopenia based on SMI was detected in 2.9%, 17.6%, and 13.3% of men and in 11.8%, 26.5%, and 20% of women before, one, and three months after surgery, respectively. Sarcopenia significantly increased one month after transplant surgery (*P*-value = 0.007).

Conclusions: Loss of muscle mass and sarcopenia is frequent after liver transplant surgery, especially in the first month, which indicates the importance of nutritional assessment and proper nutritional support post-liver transplant surgery to reducing the risk of sarcopenia, promoting muscle strength, and enhancing overall recovery post-surgery.

Keywords: Liver Transplantation, Body Composition, Sarcopenia, Malnutrition

Association between adherence to the MIND diet and sleep quality and its components among adults undergoing angiography

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Background: The impact of dietary patterns on sleep quality and duration has been explored in previous research. However, these studies have yielded contradictory results. Therefore, the current study aimed to assess the association between adherence to the MIND diet and quality and its components among adults undergoing angiography.

Method: This cross-sectional study was conducted on 720 men and women aged 35 to 75

who had referred for Angiography to Afshar hospital a referral hospital, Yazd, Iran .Dietary intakes were assessed using a validated food frequency questionnaire (FFQ). Sleep quality and its components were evaluated using the Pittsburgh Sleep Quality Index (PSQI). Binary logistic regression was applied to examine the relationship between adherence to the MIND diet and sleep quality and its components.

Results: In total, 653 participants were included in the analyses. After taking potential confounders into account, no significant association was found between the MIND diet adherence and short sleep duration (OR = 1.77; 95%CI: 0.96–3.28, P_{trend}=0.06). No significant association was detected between the MIND diet adherence and overall sleep quality (OR = 0.83; 95%CI: 0.47–1.48, Ptrend=0.57). Also, there was no significant relationship between adherence to the MIND diet and subjective sleep quality, sleep efficiency, sleep latency, sleep duration, use of sleep medication and day time dysfunction (P > 0.05).

Conclusion: The primary finding of this study indicates that there is no significant association between adherence to a MIND diet and sleep quality and its components among patients having cardiovascular risk factors. More studies are required to confirm these findings.

Keywords: MIND diet; sleep quality; sleep disorders; sleep duration

How food waste threatens patients and health system? a cross-sectional investigation in Iran

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Introduction: Hospital food is not only contributed to nutrients supply, but also it is involved in disease rehabilitation, readmission, cost of care, and death. Therefore, we quantified food waste in hospitals and had a holistic look at its potential outcomes.

Methods: Food waste of 171 patients from medical and surgical wards of three hospitals were quantified using a calibrated scale in breakfast, lunch and snacks during a day. Food intakes were extracted from 24h recalls. Cost of food waste was determined using food service management system and data from Iran National Exchange Bureau considering inflation rate using consumer price index. Data was analyzed using Stata MP 14.0.

Results: Totally, food waste was measured in 398 meals. In average, approximately 1.1 kg food was served for each patient in the studied meals, half of it was discarded. Discarded food was corresponding to mean waste of 625.7 kcal energy, 26.8 g protein, and 44.0% of food service's budget. Rice, soup, milk, and fruits had the highest waste, respectively. Monthly estimation cost of food waste in the studied wards was 1773 million Rials or 7350.5 US dollar. Linear regression model demonstrated that severe malnutrition increased food waste production in these hospitals (unstandardized B = 220.9, 95% CI: 89.1, 352.8; adjusted R2 = 7.5%, regression p = 0.004).

Conclusions: The results signify the importance of food waste for patients' health maintenance and cost management in hospitals.

Keywords: cost, food waste, hospital, nutritional status, patient

Probiotics as an effective strategy to prevent and treat non-alcoholic fatty liver disease

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Non-alcoholic fatty liver disease (NAFLD) is a common condition that fat accumulate in the liver and is associated with higher chances of insulin resistance, central obesity, diabetes, metabolic syndrome, dyslipidemia, cardiovascular and chronic kidney diseases. It can lead to more serious conditions such as NASH (non-alcoholic steatohepatitis), cirrhosis, and hepatocellular carcinoma. To manage NAFLD, modification of Lifestyle alongside pharmacological treatments is very important. In this research, a variety of literature were reviewed. It was cleared that there is a

bidirectional relationship between the gut and liver, called "gut-liver axis". Gut dysbiosis contributes to NAFLD pathogenesis through leaky gut, bacterial translocation and inflammation. It is confirmed that probiotics have a significant role in regulation of the gut microbiota in a positive manner. Therefore, the aim of this study is to investigate the effects of probiotics on NAFLD. According to the reviewed studies, there is evidence for the benefits of probiotic (live microorganisms; mainly *Lactobacillus*, *Bifidobacterium*, *Akkermansia* and *Streptococcus*) or symbiotic (probiotic and prebiotic) foods, and their potential to target NAFLD. Probiotics can lower the liver fat amount, restore gut microbiota, reduce pathogens, adjust metabolism, and improve the intestinal barrier integrity. According to several clinical trials, probiotics may improve liver parameters in NAFLD patients. It can be concluded that probiotics at proposed dosages of 5×10^6 to 3×10^{10} CFU/day can be an effective management tactic for the prevention and treatment of NAFLD, although there are some challenges facing treatment by probiotics that require further investigations: difficulties in probiotics selection, study duration and probiotics dosage.

Association between Protein Intake and Lung Functional Capacity, Exacerbations, and Mortality in Chronic Obstructive Pulmonary Disease (COPD) Patients: A Narrative Review

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Introduction: Malnutrition is prevalent among chronic obstructive pulmonary disease (COPD) patients. Insufficient protein intake is the main cause of malnutrition in these patients and is associated with worsened outcomes. This study investigates the association between protein intake and various health outcomes in COPD patients, including functional capacity, exacerbations, and mortality.
Methods: The search was performed to evaluate the relationship between protein intake and COPD patients' conditions, using PubMed and Web of Science.
Results: The results of this review showed that insufficient protein intake was prevalent among COPD patients and was linked to worse functional outcomes, increased exacerbations, more frequent hospitalizations, and higher mortality compared with sufficient protein intake. Higher protein intake was associated with improved functional capacity, improved physical performance in pulmonary rehabilitation, and reduced mortality.
Conclusion: Adequate protein intake is crucial for managing COPD, affecting functional capacity, exacerbation rates, and mortality. Balanced macronutrient intake positively influences lung function and overall health. Further research is needed to refine dietary recommendations and interventions for COPD patients.
Keywords: COPD; Protein Intake; Malnutrition; Functional Capacity.

The Association Between Plant-Based Dietary Index and Sarcopenia: A Cross-Sectional Study

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Introduction: A musculoskeletal disorder called sarcopenia causes major age-related reductions in muscle mass, strength, and function. The majority of people with sarcopenia are elderly, sedentary, and have concomitant conditions that limit their ability to move around or use their musculoskeletal system. The Plant-based diet index (PDI) is a novel dietary pattern that has three indices: the overall PDI, the healthy plant-based diet index (hPDI), and the unhealthy plant-based diet index (uPDI). These indices are grouped into a system that gives plant foods positive or reverse values, and vice versa for animal foods.
Methods: Sarcopenic obesity is define as having skeletal muscle mass (SMM) in two lower quintiles and fat mass (FM) in two upper quintiles. The SMM and FM will measure according to recommendations by Bioelectrical impedance analysis (BIA) (Inbody Co., Seoul, Korea). The PDI will assess by using FFQ data to classify foods into 18 groups, scoring them from 1 to 5 based on consumption. Plant foods receive positive scores, while animal foods receive inverse scores. The hPDI favors healthy plant foods, and the uPDI favors less healthy plant

foods. The total score reflects adherence to a plant-based diet, ranging from 18 to 90.
Results: A lower chance of becoming overweight or obese was associated with a higher PDI score (HR: 0.71 (95% CI: 0.55–0.93), P-trend <0.001). Overweight/obesity was negatively correlated with the hPDI score [HR: 0.79 (95% CI: 0.62–0.98), P-trend = 0.02]. Subgroup analysis revealed a strong negative correlation between overweight/obesity and PDI/hPDI in the group of people under 55.
Conclusion: The findings demonstrate that following the overall plant-based diet index lowers the chance of obesity.
Keywords: Sarcopenia, Diet, Plant-based diets, Obesity, Overweight

The Role of Tolerogenic Probiotics in Neuroimmune Disorders: A Systematic Review of Gut-Brain Axis Modulation and Immune Tolerance

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Background: Neuroimmune disorders involve complex interactions between the nervous and immune systems, with emerging evidence pointing to the gut microbiota's crucial role. Certain probiotics, known as tolerogenic probiotics, may manage these disorders by promoting immune tolerance and reducing inflammation. However, the efficacy of tolerogenic probiotics in this context remains under-explored. This systematic review aims to evaluate the current evidence on the effects of tolerogenic probiotics on neuroimmune disorders, particularly focusing on their influence on the gut-brain axis, pain receptors, neuroimmune interactions, and immune tolerance mechanisms.
Methods: A comprehensive search was conducted across major databases (e.g., PubMed, Scopus, Web of Science) to identify studies published through May 2024. Eligible studies were randomized controlled trials, cohort studies, or case-control studies involving tolerogenic probiotic interventions in neuroimmune disorders. Studies were assessed for quality using Cochrane criteria and data were extracted on outcomes related to neuroimmune modulation, inflammation, and symptom alleviation.
Results: Twelve studies met the inclusion criteria, demonstrating that tolerogenic probiotics can modulate immune and nervous system interactions by influencing key components of the gut-brain axis. These include effects on intestinal epithelial cells, immune cells, and enteric glial cells. Several studies reported reduced inflammation and symptom severity in conditions such as systemic lupus erythematosus, multiple Sclerosis, and, Inflammatory bowel disease though findings were heterogeneous regarding probiotic strains and treatment durations.
Conclusion: Current evidence suggests that tolerogenic probiotics can potentially alleviate symptoms of neuroimmune disorders by targeting immune and neurological pathways. However, further high-quality, large-scale studies are needed to confirm their efficacy and inform clinical applications.
Keywords: Tolerogenic probiotics, Neuroimmune disorders, and, Gut-brain axis

Association Between Pro-Inflammatory Diets and Multiple Sclerosis Risk: A Case-Control Study

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Introduction: A pro-inflammatory diet has been implicated as a potential risk factor for multiple sclerosis (MS). This study aimed to examine the relationship between the inflammatory potential of an individual's diet, assessed by the Pro-Inflammatory/Anti-Inflammatory Food Intake Score (PAIFIS), and dietary diversity, measured by the Dietary Diversity Score (DDS), with MS risk.
Method: A hospital-based case-control study was conducted with 597 participants, including 297 MS patients and 300 healthy controls, all over 18. Data on smoking status, dietary intake, and anthropometric measures such as body mass index, waist circumference, body fat percentage, and fat-free mass were collected. Dietary information was obtained using a validated 160-item semi-quantitative food frequency questionnaire, and PAIFIS and DDS were calculated.
Result: The mean age of the participants was 34.45 ± 5.76 years, and 49.4% were female. MS patients had significantly higher PAIFIS scores compared to healthy controls (p = 0.001). While DDS was not significantly associated with MS risk, a higher PAIFIS was independently linked to increased MS risk (odds ratio: 1.002; 95% confidence interval: 1.001–1.004; p = 0.001).

Conclusion: These findings suggest that a diet with high inflammatory potential may contribute to MS development, underscoring the importance of dietary factors in disease prevention. Further research is required to confirm these results.
Keywords: Multiple sclerosis (MS), Pro-inflammatory diet , and, Dietary Diversity Score (DDS)

Relationship between physical activity, knowledge, attitude and nutritional performance with body mass index of Iranian teenage girls

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Background: Adolescence is considered one of the most critical periods of human development, in which nutrition, physical activity and weight control play a very effective role. Therefore, the period of puberty provides an exceptional opportunity for any intervention to improve the nutritional status, nutritional assessment and control of weight and physical activity level in them. Therefore, this study was conducted with the aim of investigating the relationship between physical activity, knowledge, attitude and nutritional performance with body mass index in students.
Methods: the statistical population of 270 female students in the age range of 14.3 ± 1.3 in Miami city in 1401 with a purposeful sampling method. and were selected as available. And they completed the questionnaire containing demographic information, awareness, attitude and nutritional performance, and the international physical activity questionnaire, and then using SPSS software, they were analyzed at a significant level (P>0.05).
Results: Weak students were obtained. Statistically significant relationship between nutritional level and body mass index index, nutritional attitude level and body mass index index, nutritional performance level and body mass index index of the study was obtained. In the study, there was no statistically significant relationship between knowledge and nutritional attitude, nutritional attitude and nutritional performance of girls participating in the study. And a statistically significant relationship was obtained between nutritional awareness and nutritional performance and physical activity and nutritional performance.
Conclusion: Based on the findings, it can be concluded that the level of knowledge and nutritional performance of girls is average and their nutrition attitude is weak, and the need for information about proper nutrition, physical activity, weight control methods in textbooks and cyberspace is necessary.
Keywords: Knowledge, attitude, nutritional performance, physical activity, body mass index

Acrylamide Intake and Metabolic Syndrome Risk Incidence: Tehran Lipid and Glucose Study

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Introduction: This cohort study aimed to determine the relationship between acrylamide intake and the risk of metabolic syndrome (MetS) in Tehranian adults.
Methods: A total of 4548 (including 1762 men and 2786 women, the mean age of men and women were 38.6±14.3 and 35.9±11.8, respectively) adults were evaluated. The dietary data was collected using a standard FFQ. The amount of acrylamide content noted in the analysis of 30 food items in view of cooking methods and food preparation was used. Multivariable Cox proportional hazards regression models were used to estimate the incidence of MetS in association with acrylamide intake.
Results: This study was implemented on 1762 men and 2786 women, respectively with the mean±SD age of 38.6±14.3 and 35.9±11.8 years. A total of 1279 [28% of total] subjects presented with Mets incidence during the mean follow-up of 6.23 years. The incidence of MetS and low

HDL-C were not associated with quartiles of acrylamide intake after adjustment for confounding factors. Participants in the fourth quartile of acrylamide intake had 11% and 14% higher risk of high triglyceride and high waist circumference, respectively after adjustment for confounding factors. Moreover, acrylamide intake was positively related to high blood pressure incidence in the adjusted model [HR: 1, 1.0 (0.92-1.08), 1.10 (1.02-1.19), 1.16 (1.07-1.26) P-trend= 0.003)].

Conclusions: No apparent association was observed between acrylamide intake and MetS incidence. Long-term intake of acrylamide is associated with an increased risk of hypertriglyceridemia, high blood pressure, and abdominal obesity in those with MetS.

Keywords: Abdominal obesity, Blood pressure, HDL-C, Triglyceride.

Nutritional status in cancer patients treated with radiotherapy, systematic review

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Introduction: The nutritional status of cancer patients changes during receiving therapeutic care, and these patients may even suffer from malnutrition during cancer. This can lead to a decrease in response to treatment in these patients. Radiation therapy alone or in combination with chemotherapy and surgery is used as an effective method in cancer treatment. This Systematic review was conducted with the aim of evaluating the nutritional status of cancer patients undergoing radiotherapy.

Methods: This Systematic review covers keywords Nutritional status, malnutrition, radiotherapy, cancer in SID,Scopus,PubMed,Google Scholar databases. Studies between 2010-2024 were included.186 articles were selected. After removing duplicate articles, articles with keywords in the title or abstract of the article and the full article file was available (26 articles) were evaluated using the PRISMA check list.

Results: The results of the studies indicated that in most patients, radiotherapy has a negative effect on the average weight, BMI and nutritional status of the patients. Also, the factors that have the most negative effect on the nutritional status of patients undergoing radiotherapy include dry mouth, reduced sense of taste, and swallowing disorders. The results indicated that the prevalence of severe malnutrition increases in patients after radiotherapy regardless of the location of the radiotherapy. Also, the studies indicated that radiotherapy in the head and neck and mediastinum area, compared to radiotherapy in other areas of the body, lead to more weight loss and malnutrition due to factors such as mouth ulcers, gum damage, dry mouth, tongue, Decreased sense of taste and smell.

Conclusions: Due to the increase in the prevalence of malnutrition and the decrease in the intake of energy and nutrients in patients undergoing radiotherapy, it is necessary for these patients to refer to a nutritionist and use other methods such as food supplements and intravenous nutrition.

Keywords: Nutritional status, malnutrition, radiotherapy, cancer

Household food security and components of sustainable diet, A case study of rural areas of Zahedan district, Iran

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Introduction: Sustainable diets (SD) play a crucial role in achieving food security. The role of SD in improving household food security status, particularly in rural areas, remains uncertain. The present study aimed to assess the association between rural household food security (HHFS) status and components of SD in Zahedan rural areas.

Methods: HHFS status and usual diet data were measured in 321 rural households in Zahedan, through completing the household food insecurity access scale questionnaire and 24-h diet recalls for two non-consecutive days. The SD was calculated by considering the maximum nutrient rich food (NRF), minimum cost, water and carbon food print using Linear and goal programming. Linear regression was applied to assess the associations between HHFS and the

difference components of SD, water and carbon footprint, food groups and cost, compared with usual diet.
Results: The usual diet compared to SD, contained lower gram of fruits (10%), vegetables (35%), dairy products (37%), meat and legumes (67%), as well as NRF (66%), carbon (78%) and water (61%) footprint and cost (28%) and higher gram of bread (119%), and fats and sweets (124%). The frequency of moderate and severe household food insecurity was 53.3%. Higher consumption of fruits (OR:0.96;(95% CI 0.93-0.98, P≤0.001)) and dairy products were associated with the lower OR of household food insecurity.
Conclusions: Although the usual diet seems to more sustainable than the modeled SD, the difference is mainly due to its nutritional deficiencies and lower NRF. Implementing policies to enhance access and affordability of fruits, vegetables and dairy products are required.
Keywords: Food security, sustainable diet, rural, Iran

Effectiveness of omega-3 fatty acid supplementation for pruritus in patients undergoing hemodialysis

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Background: Patients undergoing hemodialysis (HD) frequently experience the chronic kidney disease-associated pruritus (CKD-aP). The aim of this study was to investigate the effectiveness of omega-3 supplementation in the management of CKD-aP in patients undergoing hemodialysis.
Methods: In this triple blind, randomized clinical trial, the effect of the omega-3 supplement on uremic CKD-aP was assessed in 112 chronic hemodialysis patients at Caspian Hemodialysis Center in Rasht, Iran. Patients were randomly divided into the intervention group receiving omega-3 supplements (3 g/day) and the control group receiving placebo containing MCT oil for 2 months.
Results: Omega-3 supplementation had no effect on CKD-aP. The results did not change after adjusting for age and sex, additional adjustments for weight, height, physical activity, smoking, and alcohol use, additional adjustments for underlying diseases and weight, height, physical activity, smoking, and drinking alcohol, and further adjustments for underlying diseases and biochemical indices.
Conclusion: Omega-3 supplementation for 2 months had no effect on CKD-aP in patients with CKD. Further studies with longer duration are warranted.
KEYWORDS: chronic kidney disease, omega-3 fatty acids, pruritus, dialysis, CKD

Dietary patterns in relation to pre-diabetes; results from Kurdish population based- study

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Introduction: Pre-diabetes is a condition that increases the risk of developing type 2 diabetes. Dietary modifications can prevent the progression of pre-diabetes to diabetes. Therefore, this study was aimed to investigate the dietary patterns in relation to pre-diabetes.
Methods and Materials: This cross- sectional study was performed using data from Ravansar non-communicable diseases (RaNCD) cohort study in which is Kurdish population based study aged 35–65 years, Ravansar, Kermanshah province, Western Iran. Pre-diabetes was diagnosed based on the American Diabetes Association (ADA) guidelines, fasting blood sugar between 100 to 125 mg/dl. Three dietary patterns were extracted by principal component analysis including plant-based diet, high protein diet; and energy-dense diet. Binary logistic regression in crude and adjusted (adjusting for age and gender) odds ratios (OR) and 95% confidence intervals (CI) was used to determine the association.

Results: A total 5954 participants were included to this study with mean age 45.8± 7.82 y. We observed higher adherence to energy-dense diet was significantly associated with increased odds of pre- diabetes in both crude (OR: 1.14; CI 95%: 1.04-1.25) and adjusted model (OR: 1.13; CI 95%: 1.02-1.24). On the other hand, the findings of this study did not show any association between following plant-based and high-protein diets with pre-diabetes in both crude and adjusted models.
Conclusion: The findings of this study reflected that participants with pre-diabetes followed an energy dense diet. Therefore, providing a low-calorie, nutrient-dense diet, and weight management should be considered in the dietary recommendations of these people.
Keywords: Pre- diabetes; diet; dietary patterns; energy dense diet

Interaction of diet and lifestyle score (LLDS) with genetic risk score (GRS) on mental disorders in overweight and obese women

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Introduction: Mental disorders have a great impact on people's quality of life. This study aims to investigate the interaction of LLDS and GRS on mental disorders in overweight and obese women in Tehran.
Methods: 373 obese and overweight women participated in the current cross-sectional study. Dietary assessment was done using a 147-item FFQ. Three single nucleotide polymorphisms MC4R, CAV-1, and Cry-1 were genotyped by PCR-RFLP technique and were combined to produce the GRS. LLDS and GRS scores were calculated for each individual and their relationship with stress, anxiety, and depression was examined.
Results: Statistical results showed that the interaction between LLDS and GRS on mental disorders in obese and overweight women was not statistically significant. The interaction between LLDS and GRS with stress was equal to B=0.031 (P-value = 0.445), anxiety B=0.010 (P-value = 0.758), and depression B=0.010 (P-value = 0.781).
Conclusion: Although the LLDS and GRS can be used in psychological analyses, this study showed that these two indices do not play a decisive role alone in mental disorders. The need for more research is felt to identify more effective factors in this field.
Keywords: Depression, Diet, Obesity.

Investigating the relationship between diet and lifestyle with the quality of life in overweight women who refer to health-care centers in Tehran

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Introduction: The quality of life (Qol) can be based on environmental factors such as dietary intake. Diet and Lifestyle Score (LLDS) is a scoring system that evaluate the reliability of a healthy diet. This study aims to investigate the relationship between LLDS and Qol in overweight and obese women in Tehran.
Methods: 390 obese and overweight women participated in the current cross-sectional study. Dietary assessment was done using a 147-item FFQ. SF-36 is a short-form self-administered questionnaire that measures quality of life. LLDS were calculated using Vinke's method for each and its relationship with Qol was examined.
Results: There is no significant difference between the participant's characteristics such as age, height, weight, BMI, energy intake and Qol in two groups with high and low LLDS, in the raw and adjusted models (P>0.05). The findings of this study show that there is no relationship between LLDS with Qol even after adjusting for confounders (P=0.61, -0.002 and -0.001: 95% CI, 0.00: B).
Conclusion: This study has shown that there is no relationship between diet and lifestyle with quality of life.
Keywords: Diet and lifestyle score, Obesity, Quality of life

Investigating the interaction between dietary energy density and genetic risk score on metabolic profile in overweight and obese women in Tehran

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Introduction: One of the risk factors causing metabolic diseases is obesity, and the main cause of obesity is positive energy balance. Some studies have reported a positive association between dietary energy density (DED) and energy intake. The purpose of this study is to investigate the interaction between DED and genetic risk score (GRS) on metabolic profile.
Methods: 390 obese and overweight women participated in the current cross-sectional study. The intake of animal and vegetable proteins was taken from the 147-item FFQ. 12 cc of venous blood samples were taken from all participants in the study who were fasting for 12 to 10 hours. Anthropometric values and serum levels of TC, LDL, HDL, TG, FBS were measured. Three single nucleotide polymorphisms MC4R, CAV-1, and Cry-1 were genotyped by PCR-RFLP technique and were combined to produce the GRS.
Results: After adjusting for confounders, a significant interaction was observed between higher DED and GRS on TG, FBS, and HDL compared to lower DED and GRS ($P<0.05$).
Conclusion: This study has shown that higher DED in interaction with higher GRS leads to increased risk of metabolic diseases.
Keywords: Energy density, Genetic, Obesity.

The interaction between dietary glycemic index and load with Melanocortin 4 gene polymorphism on healthy and unhealthy phenotype of obesity in overweight and obese women

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Introduction: Considering certain risk factors associated with obesity phenotypes, this study aims to evaluate the interaction between dietary glycemic index (GI) and glycemic load (GL) with MC4R on obesity phenotypes.
Methods: This cross-sectional study was conducted on 390 overweight and obese women. FFQ was used to assess dietary intake, GI and GL. Biochemical factors, anthropometric data, and physical activity levels were assessed. Participants were classified into two groups: metabolically healthy and unhealthy obesity phenotypes. MC4R was genotyped by PCR-RFLP technique.
Results: There were significant associations between higher weight ($P = 0.004$) and waist circumference ($P = 0.009$) with lower GI adherence, and higher HDL levels ($P = 0.03$) with lower GL adherence. Higher caloric and protein intake were associated with higher GL adherence ($P = 0.001$). Higher meat consumption was related to lower GL adherence ($P = 0.004$). No significant interactions between the MC4R and GI or GL were observed on obesity phenotypes.
Conclusion: there was complex effects of diet and genetics on the metabolic profile, emphasizing the necessity of considering these factors in designing therapeutic and preventive programs for managing obesity.
Keywords: Glycemic index, MC4R, Obesity.

The Interaction Between Long Non-Coding RNAs MALAT1 And TUG1 With Fat Quality Indices on Cardiovascular diseases risk factors in Overweight and Obese Women: A Cross-Sectional Study

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Introduction: Obesity involved in chronic diseases. Irregular expression of Long non-coding RNAs (lncRNAs) linked to obesity. Therefore, we aimed to investigate the interaction between lncRNAs Metastasis-Associated Lung Adenocarcinoma Transcript 1 (MALAT1) and Taurine Upregulated Gene 1

(TUG1) with fatty acid quality indices (DFQI) on Metabolic Profile.

Methods: 346 overweight and obese women were included. A validated and reliable 147-item FFQ was used. The cholesterol-saturated fat index (CSI) was used as a measure of DFQI. A real-time polymerase chain reaction was performed to evaluate lnc-RNAs MALAT1 and TUG1 gene expression.

Results: Significant interactions between lncRNAs MALAT1 and CSI, were observed on triglyceride (β =6.268, 95%CI = 0.760 to 11.776, p = 0.026), HOMA-IR (β =0.121, 95%CI = 0.013 to 0.230, p = 0.029), WC (β =0.427, 95%CI = 0.036 to 0.818, p =0.032), WHR (β =0.005, 95%CI = 0.001 to 0.008, p = 0.016), body adiposity index (β: 0.130, 95%CI: 0.019,0.240, p=0.022) and visceral adiposity index (β: 0.718, 95%CI: -0.028,1.463, p=0.059).

Conclusions: It appears that lncRNA MALAT1, via interactions with DFQI, is involved in elevated Metabolic Profile.

Keywords: Cardiovascular diseases, Diet, Genes.

The effect of Selenium Supplementation on the complications of Gestational Diabetes Mellitus (GDM): A Systematic Review

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Introduction: The increased prevalence of gestational diabetes mellitus (GDM) leads to adverse complications such as intrauterine growth restriction, fetal mortality, and increased risks of obesity and type 2 diabetes in infants and also metabolic syndrome and cardiovascular disease in mothers. Selenium (Se), a crucial trace element, exhibits antioxidant and hypoglycemic properties and may lower fasting blood glucose (FBS) levels. Evidence-based studies have indicated an inverse correlation between serum Se levels and diabetes, suggesting that Se supplementation may serve as a potential therapeutic intervention to ameliorate GDM-related complications. This review assesses its efficacy in recent clinical trials.

Method: Three electronic databases (Web of Science, Scopus, and PubMed) were searched to identify studies reporting the effects of Se supplementation on GDM outcomes. Only randomized controlled trials published between 2019 and 2024 were included. Several papers were excluded due to screening titles and abstracts.

Result: Ultimately, five articles were included in this study, which involved a total of 276 participants and varied in dosages and duration of Se supplementation that showed mixed effects on GDM. In three studies, intervention groups were receiving 200 µg/day Se, one showed improved FBS, another reported benefits on glycemic status, lipid profiles, and metabolic gene expression in GDM patients, and the third indicated enhanced insulin signaling and reduced newborn hyperbilirubinemia. Additionally, while 50 g/day of Se improved FBS and antioxidant indices, the study by Najib et al. found no significant effect with 100 µg/day after 12 weeks.

Conclusion: These conflicting results suggest that the effects of Se supplementation on GDM may depend on dosage and combination with other supplements, warranting further research to determine optimal interventions.

Keywords: Gestational Diabetes Mellitus, Pregnancy, Selenium, Supplementation

Using the mathematical equations to estimate variations of body size and body composition in overweight and obese women adhering to a weight-loss diet

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Introduction: Prediction of the changes in body size and other anthropometric indices following the weight loss is very significant in the compliance of a weight-lowering diet. Regarding the limited research in this area, the present study designed to estimate the variations of anthropometric and body composition measurements following a weight-loss diet in overweight and obese females.
Methods: A total of 212 overweight/obese females aged 18-60 years who adhered to an individualized low-calorie diet (LCD) were monitored for five months and body weight, waist circumference (WC), hip circumference (HC), body composition (e.g. lean mass and fat mass), body mass index (BMI), waist to hip ratio (WHR), waist to height ratio (WHtR), a body shape index (ABSI), and abdominal volume index (AVI) were determined. Data were analyzed using Stata (Version 18.0) and linear mixed model.
Results: A consistent decrease in anthropometric measurements and fat mass was observed during five-months follow-up of LCD, which were significantly associated with weight loss except than WHR. Furthermore, mathematical equations demonstrated a close relationship between percent change (PC) of body weight with decrease of WC (PC-WC=−0.120+0.703×PC-WT), HC (PC-HC=−0.350+0.510×PC-WT), body fat percentage (PC-Body Fat=−0.019+0.915×PC-WT), BMI (PC-BMI=−0.024+0.992×PC-WT), WHtR (PC-WHtR=−0.113+0.702×PC-WT), and improvements in ABSI (PC-ABSI=−0.112+0.034×PC-WT) and AVI (PC-AVI=−0.324+1.320×PC-WT).
Conclusion: The decreasing rates of WC, HC, body fat percentage, WHtR, ABSI, and AVI in relation to the weight loss were clinically and statistically significant. This means that a healthy weight lowering diet would be accompanied by reducing the body fat, body size and the risk of morbidities.
Keywords: Anthropometry, Body composition, Mathematical equations, Weight-loss diet.

Effects of combination therapy with consumption of Lactobacillus Reuteri probiotic and 8 weeks of moderate resistance training (MRT) on the expression of liver autophagy genes BECLIN-1 and PARKIN in male Wistar rats with non-alcoholic fatty liver disease

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Introduction: The advancement of technology and lifestyle changes have led to an increase in chronic diseases such as NAFLD. Therefore, the intestinal microbiota can affect NAFLD through various mechanisms. As a result, manipulation of the intestinal microbiota can be a suitable therapeutic strategy for the treatment of NAFLD. In addition, autophagy is a key cell protection mechanism to deal with various stress conditions. Beclin-1 and Parkin are key genes in the autophagy process and protective mechanisms against liver damage. So, the purpose of this study was to investigate the effect of 8 weeks of MRT and consumption of probiotics on the expression of Beclin-1 and Parkin genes in the liver cells of male Wistar rats with NAFLD.
Methods: In this experimental study, 40male Wistar rats aged 8–10weeks were divided into 4groups (N = 10). The groups were: control, supplement (Daily intake of $2*10^9$CFU by gavage), training, and training+supplement. At the end of the study, the Beclin-1 and Parkin genes were measured by the PCR method. The data were analyzed using SPSS25 software.
Results: The results of the present study showed combination therapy with consumption of Lactobacillus Reuteri probiotic and 8 weeks of MRT increased the expression of the Parkin (P = 0.028) and Beclin-1 (P = 0.048) genes in the liver in rats with NAFLD.

Conclusion: This study showed that the consumption of probiotics and MRT together has a greater effect on the expression of the autophagy genes (Beclin-1 and Parkin), which can always play a protective role against liver damage and diseases.
Keywords: BECLIN-1: Probiotics: Non-alcoholic Fatty Liver Disease (NAFLD): PARKIN: Rats: Resistance Training.

Association between hip to height ratio and unstable angina; results from MASHAD cohort

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Introduction: Cardiovascular diseases (CVDs) are the leading cause of death worldwide. Coronary artery disease (CAD) is a significant contributor to CVDs and is responsible for the majority of CVD deaths. Unstable angina (UA) is a critical manifestation of acute coronary syndrome (ACS). Visceral adiposity, a potent risk factor for CVD, is often assessed through anthropometric indices such as hip circumference (HC). This study's primary objective is to establish the relationship between the emerging hip-to-height ratio (HHR) and UA incidence.
Method: This study was conducted based on the Mashhad Stroke and Heart Atherosclerotic Disorder (MASHAD) study that started in 2010 and followed up until 2020. HC was measured in the biggest area of hip with a tape by trained staff. Height also was measured with a measuring tape without shoes. HHR was calculated like height (cm) divided by HC (cm). diagnosis of UA was through a heart health questionnaire under cardiologist supervision.
Result: A total of 7548 individuals participated in the study. Of these, 0.8% were UA (N= 62). The mean age of UA patients was 61.7 ± 7.2 years old, and the mean HHR was 0.64 ± 0.06 cm. Multivariable logistic regression showed that for every unit increase in HHR, the UA incidence decreases by 40.8% [OR=0.592 (0.375-0.936)] (P-value =0.025).
Conclusion: HHR is a protective factor against UA incidence and, eventually, CVDs.
Keywords: Cardiovascular disease, anthropometry, unstable angina

Association between waist to height ratio and stable angina; results from MASHAD cohort study

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Introduction: Cardiovascular diseases (CVDs) are the leading cause of death worldwide. Ischemic heart disease (IHD) is a significant contributor to CVDs and is responsible for most disabilities and mortalities. Stable angina, namely angina pectoris, is a critical manifestation of IHD. Visceral adiposity, a potent risk factor for CVD, is often assessed through anthropometric indices such as waist circumference (WC). The primary objective of this study is to establish the relationship between the waist-to-height ratio (WHtR) and stable angina incidence.
Method: This cross-sectional study was conducted based on phase II of the Mashhad Stroke and Heart Atherosclerotic Disorder (MASHAD) study that started in 2010 and followed up until 2020. WC was measured in the narrowest area of the waist with a tape by trained staff. Height was also measured with a measuring tape without shoes. WHtR was calculated as WC (cm) divided by height (cm). The diagnosis of stable angina was made through a heart health questionnaire under cardiologist supervision.
Results: A total of 7548 individuals participated in the study. Of these, 1.6% had stable angina (N= 120). The mean age of stable angina patients was 61.4 ± 6.5 years old, and the mean WHtR was 0.60 ± 0.07 cm. Multivariable logistic regression showed that for every unit increase in WHtR, the incidence of stable angina increased by 63.7% [OR=1.637 (1.010-2.655)] (P-value =0.046).
Conclusion: WHtR is a risk factor for stable angina incidence and, ultimately, CVDs. Future studies should investigate the role of WHtR as a screening tool.

Keywords: Cardiovascular disease, anthropometry, stable angina

The Association between Consumption of ultra-processed foods and frailty in older adults: a systematic review of observational studies

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Introduction: The consumption of ultra-processed foods (UPFs) negatively impacts the health of the elderly, contributing to frailty due to their high chemical content, low nutrients, and inflammatory properties.
Methods: This study was conducted using articles collected without language restrictions from Scopus, Embase, PubMed, and Web of Science until July 2024. The study focused on elderly people and evaluated factors such as fatigue, decreased resistance, decreased aerobic capacity, chronic illnesses, poor endurance, low physical activity, low grip strength, slow walking speed, and significant weight loss in the preceding year. This study adhered to PRISMA guidelines and articles were selected based on inclusion and exclusion criteria.
Results: 86 articles were obtained, 82 were excluded, and 4 were included. These 4 studies involved 70,079 elderly. Four studies involving 70,079 elderly individuals were included. Two studies used a cohort design, while two used a cross-sectional design. All studies showed a link between higher ultra-processed food intake and increased frailty risk in the elderly. However, one study found no association in individuals with a BMI over 30.
Conclusion: Eating ultra-processed foods is linked to higher frailty risk in older adults. To prevent frailty, it is advisable to reduce UPF consumption.
Keywords: Frailty, Older adults, Ultra-Processed Food, Systematic review

The association between ultra-processed foods and anthropometric indices and weight gain after bariatric surgery: a systematic review of observational studies

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Introduction: The consumption of ultra-processed foods (UPF) has been linked to adverse health outcomes, including weight gain and obesity. This systematic review aims to evaluate the impact of UPF on anthropometric indices and weight gain in patients following bariatric surgery.
Methods: A thorough literature review was conducted using databases such as PubMed, Scopus, Embase, and Web of Science. The review focused on studies published until July 2024, without any language restrictions. The main objective was to identify research on the association between ultra-processed food (UPF) consumption and anthropometric outcomes in post-bariatric surgery patients. The inclusion criteria covered studies involving adults who had undergone various bariatric procedures. Data were extracted from four relevant articles analyzing changes in weight loss, weight regain, fat mass, and fat-free mass. This study was conducted following the PRISMA guideline for article selection.
Results: A total of 4 studies involving 397 adults were included. Findings indicated a significant association between high UPF intake and increased weight gain post-surgery. Patients consuming higher amounts of UPF exhibited less favorable changes in weight loss, fat mass, fat-free mass, and greater weight regain than those with lower UPF consumption. The studies highlighted the role of dietary quality in maintaining weight loss and improving anthropometric indices after bariatric surgery.
Conclusion: This study emphasizes the importance of reducing ultra-processed food intake in post-bariatric surgery patients to improve long-term weight loss and overall health.
Keywords: Bariatric surgery, ultra-processed food, weight, Anthropometric Indices, obesity, Systematic review

The role of leptin on individual diagnosed with acute leukemias: a review study

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Introduction: Adipocytes produce a 16k Da protein known as leptin, which is associated with different acute leukemias. The purpose of the current study was to review the current body of evidence on leptin's role on acute leukemias.
Methods: A thorough search of the literature was carried out utilizing databases like Scopus, PubMed, and Web of Science. "Adipokines," "Adipocytes," "Leptin," "acute leukemias," "acute myeloid leukemia," and "acute lymphoblastic leukemia" were the primary search terms. 36 of the 178 papers that were initially found, based on the inclusion and exclusion criteria were eligible to be assessed in this investigation.
Results: The results of this study demonstrated that leptin serum levels rise in acute leukemia patients regardless of age or gender. Furthermore, compared to acute myeloid leukemia, leptin serum levels were greater in acute lymphoid leukemia. Leukemic cell proliferation is stimulated by leptin, both by itself and in conjunction with other cytokines. This may be the result of leukemic precursor cells' and progenitor cells' ability to resist apoptosis of their increased expression of certain receptors, which increases their reactivity to external stimuli. Leukemic hematopoiesis may also be indirectly impacted by leptin. However, Patients with acute leukemia should not use serum leptin levels as a diagnostic marker.
Conclusion: Leptin's stimulatory effects on leukemia cells imply a possible function as a prognostic biomarker and therapeutic target. Elevated leptin levels are related with acute leukemia development, especially in the lymphoid subtype.
Keywords: Adipokines, Adipocytes, Leptin, acute leukemias, acute myeloid leukemia, and acute lymphoblastic leukemia

The association between dietary patterns and maternal depression: A Systematic review

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Introduction: Prenatal and postnatal depression are among the most prevalent mood disorders in mothers. Since nutrition plays key role in developing mental health issues; we decided to evaluate the relationship between dietary patterns and prenatal and postpartum depression.
Method: A systematic search on PubMed, the Latin American and Caribbean Health Science Literature (LILACS), and Scopus databases for cross-sectional and cohort studies was done up to January 2024 without any language restrictions.
Results: 14 studies (9 cohort and 5 cross-sectional) were included in this study. The effects of healthy, western, and traditional food patterns on postpartum and prenatal depression were investigated. Our findings indicate that a healthy eating pattern and a rich diet of fruits, vegetables, nuts, and dairy products had an inverse relationship with anxiety and depression, not only before but also after childbirth. There was no clear association between Western diet and prenatal depression. We also indicated that special diets including traditional Indian, Japanese, British, and Brazilian diets were associated with a reduction in the risk of depression before and after childbirth. Moreover, the nut fruit pattern and seafood pattern reduced the risk of postpartum depression in Chinese women among the most prevalent diets in late pregnancy, the omnivorous diet reduced the risk of depression.
Conclusion: A healthy diet rich in fruits, vegetables, nuts, legumes, low-fat dairy products, olive oil, fish, eggs, and whole grains protects against the symptoms of postpartum and prenatal depression. There is no evidence of the relationship between Western diet and prenatal and postpartum depression.
Keywords: Maternal depression; Dietary patterns; Prenatal; Postpartum

Effect of nano-curcumin on chronic diseases; A comprehensive review of clinical trials

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Background: Plant extracts and their bioactive compounds are well-known for their therapeutic potential in treating various diseases. Curcumin, widely used in traditional medicine, is valued for its antioxidant and anti-inflammatory properties, which reduce oxidative stress and inflammation. It also exhibits antibacterial, anticancer, and anti-mutagenic effects, making it effective against infections, cancer growth, and mutations.
Method: A thorough systematic search of medical databases, including ISI Web of Science, Scopus, PubMed, and Google Scholar, was conducted up to August 26, 2022, to identify unrestricted randomized clinical trials investigating the effects of nano-curcumin on chronic diseases.
Results: We reviewed findings from nine randomized clinical trials on the effectiveness of nano-curcumin for managing chronic conditions like type 2 diabetes, coronary artery disease, and Non-alcoholic fatty liver disease (NAFLD). Daily doses of 80–120 mg of nano-curcumin was shown to benefit patients with type 2 diabetes, heart disease, NAFLD, lipid profiles, and those on hemodialysis. Further research suggested that 80 mg daily may alleviate diabetic complications such as neuropathy and nephropathy. NAFLD patients receiving nano-curcumin exhibited improved HDL, quantitative insulin sensitivity check index (QUICKI), and nesfatin levels compared to those who did not. Additionally, nano-curcumin may help hemodialysis patients by lowering serum hs-CRP levels and reducing adhesion molecule levels.
Conclusion: This review emphasizes the potential benefits of nano-curcumin in enhancing various chronic diseases, particularly as a complement to standard therapy and a healthy lifestyle.
Keywords: chronic diseases, clinical trial, nano-curcumin

Investigating the efficacy of vitamin D supplementation on NAFLD: A Systematic review of clinical trials

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Introduction: One of the most prevalent liver diseases all over the world is nonalcoholic fatty liver disease (NAFLD) which can cause chronic liver disorders if not properly treated. Thus, this systematic review was investigated to conducted to evaluate the clinical trial articles on the efficacy of vitamin D supplementation on NAFLD.
Method: A systematic search was conducted in PubMed, Scopus, Web of Science, and Google Scholar up to June 2024 without any restriction in the time and language. This search was conducted by using the search terms such as: "vitamin D", "nonalcoholic fatty liver disease", and "NAFLD".
Results: 12 trials including 955 NAFLD patients were added to this systematic review. In eleven of these trials vitamin D supplements were found to have no significant effect on aspartate aminotransferase (AST), alanine aminotransferase (ALT) and gamma-glutamyl transferase (GGT) but a significant decrease in alkaline phosphatase (ALP) was observed. In only one study, the results were slightly different, and despite no change in AST and ALT levels with the use of supplement, GGT levels decreased.
Conclusion: Given the important effects of vitamin D, maintaining an optimal serum level of at least 75 nmol/L (equivalent to 30 ng/mL) is desirable for several health outcomes. According to these trials, there were no significant changes in the main liver factors by consumption of vitamin D supplement in NAFLD patients. However, further studies are recommended.
Keywords: Vitamin D, Nonalcoholic fatty liver disease, NAFLD

The Role of Gut Microbiome in Autoimmune Inflammatory Bowel Disease

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Introduction: Inflammatory bowel disease (IBD) is a chronic relapsing-remitting systemic disease of the gastrointestinal tract, characterized by an inflammatory process that requires lifelong treatment. The underlying causes of IBD are still unclear, as this heterogeneous disorder results from a complex interplay between genetic variability, the host immune system and environmental factors. Innate immune cells (IIC) defend against pathogens and excessive entry of intestinal microorganisms, while preserving immune tolerance to resident intestinal microbiota. Research on the gut microbiome and IBD is rapidly evolving. The specific microbial species involved, their mechanisms of action and how to manipulate them for therapeutic benefits are further investigated. This knowledge holds promise for the development of more effective and targeted treatments for IBD, which will ultimately improve the lives of millions of people affected by this debilitating disease.

Methods: Several scientific databases, such as Google Scholar, PubMed, and CrossRef were used, and the reviewed articles were from 2002 to 2023, and there were 34 reviewed articles. And only articles in English were reviewed.

Results: Six articles were directly reviewed, two of which were specifically about inflammatory bowel disease and various factors that cause it, such as environment (diet, stress, etc.), genetics, and system. And four on the beneficial effect of the gut microbiota on health as well as the development of IBD, it was concluded that treatments, such as selective use of antibiotics or manipulation of the microbiome, etc.

Conclusions: It should be noted that it is now known which bacteria may be involved in the development of IBD and therefore the selective administration of antibiotics is one of the ways to combat this disease. And since IBD patients have fewer health-promoting bacteria, prescribing symbiotic and a proper diet can benefit them.

Keywords: Immune responses; microbiota; inflammation; inflammatory bowel diseases (IBDs); nutrition

Investigating the Effect of Calorie Restriction Diet on the Primary and Secondary Aging Process in Humans: A Systematic Review

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Introduction: Aging involves a decline in physical and physiological performance in organisms due to age. Primary aging results from reduced activity due to energy consumption and oxidative stress, while secondary aging is caused by environmental factors. Due to the lack of drug treatment, treatment based on a healthy lifestyle such as calorie restricted diet is considered. In this systematic study, the effect of a calorie-restriction diet on primary and secondary aging was investigated.

Methods: We searched for studies on the association between calorie restriction diet, primary aging, and secondary aging in original articles from Web of Science, Scopus, and PubMed. A total of 428 articles were identified from the search of the main electronic databases, which was reduced to 54 articles after deduplication. Of the 54 references screened by title and abstract, 6 were selected for inclusion and exclusion criteria by reading the full text.

Results: Conducted searches showed that Calorie restriction diet is effective in improving primary aging (effect on mitochondrial capacity, oxygen consumption rate, oxidative stress, and core body temperature), secondary aging (improvement of lipid index, inflammatory markers) and the chance of developing diseases related to primary and secondary aging reduces. Also, studies showed the different effects of this diet on sleep, mood, reduction of bone mass, muscle mass, and lean mass.

Conclusion: Based on conducted searches, a caloric restriction diet is effective in controlling aging processes and reducing the complications of aging. However, more research is needed to determine the ideal duration and type of calorie restriction diet to improve the quality of the elderly's life.

Keywords: Calorie Restriction Diet, Primary Aging, Secondary Aging

Investigating the Effect of the Insufficient Sleep and Proper Quality of Sleep on Obesity: A Systematic Review

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Introduction: Obesity, which is defined as the accumulation of fat tissue and excess weight, cannot only be caused by receiving excess energy and lack of activity. Insufficient sleep and low quality of sleep, by affecting the physiological processes of people, are effective in creating disruptions in natural processes and the emergence of people's vulnerability. In this systematic review study, the effect of sleep on the occurrence of purulence was investigated.
Methods: We searched for studies on the association between Insufficient sleep, obesity, and sleep quality in original articles from Web of Science, Scopus, and PubMed. A total of 196 articles were identified from the search of the main electronic databases, which was reduced to 27 articles after deduplication. Of the 27 references screened by title and abstract, 6 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that insufficient sleep and quality of sleep affect daily energy consumption (regulation of thermogenic activity), hormones affecting the activity of the digestive system, and appetite (ghrelin, leptin, PYY, GLP-1, and pancreatic polypeptides), the type of food consumed, adjusting the time of eating, improving the activity of the microbiome and affecting the enjoyment of eating is effective.
Conclusion: Based on conducted searches, insufficient sleep, and its proper quality by affecting the processes related to the reception, absorption, and metabolism of food is effective in the occurrence of obesity. However, more research is needed to determine the insufficient and quality of sleep effective in preventing obesity.
Keywords: Insufficient Sleep, Obesity, Sleep Quality

Investigating the Effect of Quercetin on Huntington's Disease (HD): A Systematic Review

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Introduction: Huntington's disease (HD) is an inherited neurodegenerative disorder characterized by motor impairment and progressive cognitive impairment. Current treatments are symptomatic and mainly aimed at neurological diseases and neurobehavioral problems. Despite the treatments based on neurological and behavioral symptoms, nowadays the treatment based on a healthy lifestyle and the use of natural bioactive compounds is considered. Quercetin is a natural flavonoid whose antioxidant, anti-apoptotic, and anti-inflammatory properties make it effective in improving body disorders. So this systematic review has been conducted to check the effects of quercetin on huntington's disease and its treatments.
Methods: We searched for studies on the association between quercetin, treatment, and huntington's disease in original articles from Web of Science, Scopus, and PubMed. A total of 137 articles were identified from the search of the main electronic databases, which was reduced to 23 articles after deduplication. Of the 23 references screened by title and abstract, 7 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that Quercetin is effective in modulating mitochondrial function (reducing oxidative stress, modulating the UPS system, and reducing mitochondrial membrane damage), improving inflammatory response (reducing microglial proliferation, reducing astrocyte proliferation and reducing mHTT accumulation), improving the autophagy pathway and reducing behavioral symptoms.
Conclusion: Based on conducted searches, Quercetin is effective in improving and preventing Huntington's disease by affecting mitochondrial activity, and inflammatory responses and improving neurological symptoms. However, to determine the effective

dose, duration, and effective pharmaceutical form, additional studies are needed.
Keywords: Quercetin, Treatment, Huntington's Disease

Nutritional Status of Patients with Pressure Ulcers Hospitalized in referral Hospital: A cross-sectional study

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Introduction: One of the major problems in dealing with long-term hospitalized patients is pressure ulcers, which in addition to increasing the mortality risk of patients, will impose a significant economic burden on the health care system. The present study investigated the nutritional status of patients with pressure ulcers admitted to Ghaem Hospital.
Method: This cross-sectional study was conducted during November 2022 to March 2023 in Ghaem referral educational hospital, Mashhad. Demographic information, medications and supplements, pressure ulcer characteristics (including duration, stage and extent of the patients' pressure ulcer based on the PUSH questionnaire, type of dressing), nutritional status using the PG-SGA questionnaire, anthropometric characteristics, laboratory markers, and clinical symptoms and nutritional intake were collected.
Results: A total of 82 patients with an age of 66.06 ± 17.61 years were enrolled. 48 (58.5%) were male. The average score of the PUSH was 10.6±3.7 and the average score of PG-SGA was 10.07±3.9. The most common site of pressure ulcers was the sacrum (78%). 79 patients (96.4%) had enteral nutrition, 2 (2.4%) had enteral and supplementary parenteral nutrition, and 1 (1.2%) patient was NPO without nutritional support. According to PG-SGA, 22 patients (26.8%) had severe malnutrition and 52 patients (63.4%) had moderate malnutrition. PG-SGA score in patients with a pressure ulcer area ≥12 cm2 (median score 12 and interquartile range 15-8) is significantly lower than patients with an area below 12 cm2 (p=0.010).
Conclusion: The present study showed that more than two-thirds of patients with pressure ulcers had moderate or severe malnutrition, and therefore proper nutritional screening, intervention and monitoring is necessary for all patients with pressure ulcers.
Keywords: malnutrition, pressure ulcer, PG-SGA

The Association of Nutritional Status and Depression, Anxiety, and stress in Patients with Colorectal Cancer: A Cross-Sectional Study

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Introduction: Colorectal cancer is one of the most common and debilitating neoplasms in the world. The nutritional status of these patients affects quality of life and cancer survival. This study investigated the levels of stress, anxiety and depression in colorectal cancer patients before surgery and its relationship with the nutritional status of these patients.
Methods: This cross-sectional study was conducted on patients with colorectal cancer who were admitted to the surgical department of Ghaem Hospital in Mashhad before tumor resection surgery. The level of stress, anxiety and depression of the patients was evaluated using the depression, anxiety and stress scale 21 (DASS21) questionnaire and their nutritional status was evaluated by the patient using PG-SGA.
Results: 71 patients participated in this study. The average age was 56.96±13.3 years and 43.7% were male. The mean depression score of the patients was 3.8±6.4, with 4.2% of moderate depression and 4.2% of severe and very severe depression. The average anxiety score was 3.69±5.5, and 5.6% were in the severe and very severe anxiety category. Also, the average stress level was 9.94 ± 9.7, and 9.8% of them had severe and very severe stress. A significant relationship was observed between PG-SGA score and depression and anxiety (p=0.016 and 0.005, respectively). There was an urgent need for nutritional intervention for all patients with moderate, severe and very severe depression

(PG_SGA≥9). Additionally, 80% of those with moderate anxiety, 20% of those with mild anxiety, and all of those with severe and very severe anxiety indicated an immediate need for nutritional intervention (PG_SGA≥9).
Conclusion: This study showed the relationship between severe malnutrition before surgery and the level of anxiety and depression. For this reason, the nutritional status and emotional status of patients with colorectal cancer should be evaluated.
Keywords: Colorectal Neoplasms, Nutritional Status, DASS

Nutritional Therapeutics in Chronic Non-Communicable Diseases: A Focus on Viral Infections (HCV& HIV)

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Background: Chronic non-communicable diseases (NCDs) such as cardiovascular disease, diabetes, and cancer are among the leading causes of death globally. Emerging evidence suggests that viral infections, particularly hepatitis C virus (HCV) and human immunodeficiency virus (HIV), exacerbate these conditions through mechanisms involving chronic inflammation and immune dysfunction. This review aims to explore the potential role of nutritional interventions in mitigating the impact of HCV and HIV on NCDs, focusing on how diet may alleviate virus-induced inflammation and improve health outcomes.
Methods: A comprehensive literature review was conducted, examining studies related to the interaction between viral infections, NCDs, and nutrition. Sources included clinical trials, cohort studies, and meta-analyses investigating dietary interventions in populations affected by HCV and HIV.
Results: The findings suggest that antioxidant-rich diets and omega-3 fatty acids may reduce liver inflammation and fibrosis in HCV-infected individuals, potentially lowering their risk of cardiovascular diseases. In HIV-positive individuals, supplements such as vitamin D, minerals, and omega-3s were found to improve immune function and reduce inflammation, offering a potential avenue for NCD prevention.
Conclusion: Nutritional interventions present a promising strategy for managing NCDs in the context of viral infections. By addressing chronic inflammation and immune dysfunction, targeted dietary approaches could enhance clinical outcomes for patients with HCV and HIV. However, further research is required to refine these strategies and develop specific nutritional guidelines.
Keywords: Nutritional Therapy, Chronic Non-Communicable Diseases, Viral Infections, Hepatitis C Virus, Human Immunodeficiency Virus, Immune Response, Inflammation

Comparison of Hedonic Hunger Between Adults with Different Weight Status: A Systematic Review and Meta-Analysis

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Introduction: Hedonic eating, reward-driven eating rather than out of biological needs, has been proposed as one of the important causes of overweight and obesity in recent years. The present systematic review and meta-analysis aim to compare hedonic hunger between normal weight and overweight/obese adults.
Methods: We conducted a comprehensive search on PubMed, Web of Science, and Scopus until January 19, 2023, using relevant keywords. All English-language original observational studies conducted on healthy adult subjects that used the Power of Food Scale (PFS) to evaluate hedonic hunger were included. Data extraction followed a predefined form, and quality assessment was performed using the Joanna Briggs Institute checklist. Meta-analysis was conducted using StataMP-17 software with the random-effects method.
Results: From electronic database searches, a total of 1,294 articles were identified, along with one study found through manual reference searching. Five cross-sectional studies with a total of 2,761 participants were included after screenings. All studies included both sexes. Two

studies included only university students, and three studies were conducted on adults. The results of the random-effect meta-analysis (I2=22.15%, Q=5.77, P=0.33) showed that the mean hedonic hunger was significantly higher in individuals with overweight/obesity (SMD=0.33 [0.23, 0.43]).
Conclusion: Hedonic hunger may be higher in overweight/obese adults than in those of normal weight. Given the limited number and low quality of included studies, additional longitudinal research is necessary for a more precise conclusion.
Keywords: Hedonic hunger, Overweight, Obesity

The Potential Role of Saturated Fatty Acids in Hedonic Hunger and Obesity: A Review

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Hedonic hunger, characterized by eating palatable foods such as sweets and fast foods for pleasure rather than to satisfy physiological needs, has been identified as an important factor contributing to overeating and obesity in recent years. In hedonic hunger, reward pathways in the brain are activated by dopamine. Some biochemical parameters, such as endocannabinoids and opioids, can indirectly help activate the brain's reward pathways by increasing dopamine release. Some studies indicate that a higher diet intake of saturated fatty acids may enhance hedonic hunger. This review aims to investigate the proposed mechanisms related to the role of dietary saturated fatty acids in hedonic hunger. Research has shown that saturated fatty acids can affect hedonic hunger in several ways. First, these fatty acids can directly increase dopamine release in the brain and thus increase hedonic hunger. Secondly, these fatty acids can increase the signaling of opioids in the brain and indirectly increase dopamine concentration in the brain, thereby increasing hedonic hunger. Thirdly, by reducing serum leptin levels and leptin signaling as an appetite-suppressing hormone, they increase hedonic hunger. Based on the suggested mechanisms, it seems that in controlling overeating and obesity, the amount of saturated fatty acids in the diet is of great importance regarding hedonic hunger and food intake.
Keywords: Saturated Fatty Acids, Hedonic hunger, Obesity

Food craving during the menstrual cycle

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Introduction: Food craving _a powerful and often uncontrollable urge to eat specific foods_ has been identified as a factor contributing to overweight and obesity. Some research suggested that food cravings may intensify during specific phases of the menstrual cycle. This study aimed to investigate the menstrual cycle's effect on food craving levels.
Methods: This cross-sectional study investigated healthy, non-menopausal females aged 19-49 years. Food craving was assessed using the validated Persian version of the food craving inventory. Participants were asked whether the menstrual cycle affects their levels of food craving. An independent samples t-test was used to determine the significant difference in food craving scores between females with positive and negative responses. If their response was positive, they were asked during which period of the cycle their food craving increases.
Results: This study involved 464 healthy women with a mean age of 34.1 years and a mean BMI of 28.7 kg/m^2. Among them, 60.1% reported that their menstrual cycle affects their food cravings, while 39.9% did not. Statistical analysis revealed that only cravings for fast foods were significantly higher in those who reported an effect (2.6 vs. 2.4, p = 0.017). Of those who felt affected by their menstrual cycle, 54% experienced increased cravings during the pre-menstrual period, 30.6% during the menstrual period, 8.3% during both pre-menstrual and

menstrual periods, and 7.2% after the menstrual period.
Conclusion: The study found that most participants reported an increase in food cravings during the pre-menstrual and menstrual periods. This finding should be taken into account for effective weight management.
Keywords: Food craving, Obesity, Menstrual cycle

Association of Zinc Status with Matrix Metalloproteinases, Advanced Glycation End Products, and Blood Pressure in Patients with Chronic Kidney Disease

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Introduction: Inflammation, oxidative stress, and hypertension trigger the development of chronic kidney disease (CKD). Zinc is known to have antioxidant and anti-inflammatory properties and a possible role in regulating blood pressure.
Methods: This cross-sectional study included 90 patients with CKD. Serum zinc and the levels of MMP-2, MMP-9, AGEs, and creatinine were measured using validated biochemical methods. Three 24-h food recalls were completed to evaluate dietary zinc intake. Systolic and diastolic blood pressure (SBP, DBP) were measured using a digital sphygmomanometer.
Results: Participants' mean age was 60.68±8.81 years. The prevalence of zinc defciency in our participants was 10%. Serum zinc was negatively correlated with MMP-9 (r = −0.231, p=0.032) and creatinine (r= −0.304, p=0.004). However, after adjusting for confounding variables, the association between serum zinc and MMP-9 was near the significance level (β= −0.174, p=0.09) and zinc remained in the model as one of the predictors. Serum zinc was positively correlated with the dietary intake of zinc (r=0.241, p=0.025) and estimated glomerular filtration rate (eGFR) (r=0.259, p=0.015).
Conclusion: In conclusion, our results showed that serum zinc might be one of the predictors of serum MMP-9 in patients with CKD. In addition, serum zinc was positively associated with its dietary intake and eGFR. Future longitudinal studies or clinical trials are required to reveal any causal association between zinc status and profibrotic or inflammatory biomarkers among patients with CKD.
Keywords: Chronic kidney disease, Zinc, Matrix metalloproteinases, Advanced glycation end products, Blood pressure

Effects of canola oil on body weight and composition in adults: a systematic review and meta-analysis of 31 randomized controlled trials

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Background: We aims to provide an overview and update the current documents regards to the effect of CO compared to other dietary oils on body weight and composition in adults.
Methods: PubMed, Scopus, Google Scholar and ISI Web of Science were searched until October 2023 for randomized clinical trials (RCTs) which assessed the effect of CO on anthropometric measures
Results: 31 studies were included in this systematic review and meta-analysis. CO consumption significantly increased WHR (mean difference (MD): 0.003 cm, 95% CI: 0.001, 0.005, P value: 0.003). However, it did not significantly affect other anthropometric measures (P>0.05). Based on subgroup analysis, CO supplementation significantly reduced BW in studies on T2DM patients, with parallel design, on patients over 50 years old and with dose of more than 30 g/d. It also significantly increased WC in trials with parallel design and on hyperlipidemia patients. In addition, CO supplementation significantly increased WHR in the majority of sub groups.
Conclusions: Compared to other oils supplementation, CO could decrease BW and

increase WHR, and WC in general or in subgroup analysis. Further studies are needed to provide additional insight into the effect canola oil on BW and composition in adults.
Keywords: canola oil, weight, body composition, randomized clinical trials, systematic review, meta-analysis.

Potato consumption and risk of cardiovascular disease: a systematic review

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Introduction: Regarding the prevalence of cardiovascular diseases and its relationship with food intake, various studies have been conducted. It has been shown that potato consumption may be associated with the risk of cardiovascular disease. Therefore, the present study addresses the relationship between potato consumption and cardiovascular diseases in adults by summarizing published observational studies.
Methods: This systematic review was conducted by searching in the PubMed and Google Scholar databases up to August 2024, using the following key words: “potato” OR “potato consumption” and “cardiovascular disease” OR “CVD”. No time or language restriction was applied. The information of the studies was extracted and tabulated.
Results: Overall, 4 studies (3 cohorts and one cross sectional studies) were included. Reviewing the included articles, no significant association was observed between potato consumption with CVD. In addition, consumption of potatoes including boiled potatoes, fried potatoes, and French fries was associated with a higher risk of diabetes mellitus, high fasting blood sugar, reduction of high-density lipoprotein (HDL) and obesity. In another article that examined the effect of potato consumption on the causes of mortality related to cancer and CVD, there was no evidence to show that potato consumption is related to cancer mortality.
Conclusion: In this review study, no significant association was found between potato consumption and cardiovascular diseases, although the consumption of fried potatoes may cause obesity, cardiovascular diseases, and type 2 diabetes. However, it seems necessary to conduct more cohorts to ensure the results.
Keywords: Potato; Cardiovascular disease; Diet; Review.

The association between rice intake and colorectal cancer risk in adults: a systematic review

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Introduction: Colorectal cancer (CRC) is the third most common cancer in the world, and various studies have investigated the effect of diets on CRC. It has been shown that rice, as one of the most widely consumed foods, may have a positive effect on reducing the risk of CRC. Therefore, our aim was to investigate the relationship between rice consumption and the risk of colon cancer in adults according to observational studies.
Methods: This systematic review was conducted by searching PubMed and Google Scholar databases until August 2024 using the following keywords: "colorectal cancer" or "CRC" and "rice" and "diet". Quality assessment was done using the Newcastle Ottawa Scale.
Results: In the systematic search, in total, we found 7 related articles. These studies were observational including 3 cohort and 4 case-control studies. Among the studies, four articles concluded that the high intake of rice is associated with a reduced risk of colorectal cancer, while two studies revealed no significant association in this regard. Also, one study showed that adherence to a diet with a high amount of rice is associated with an increased risk of colorectal cancer. It should be noted that the inconsistent results obtained in previous studies might be due to the different types of exposure in the studies. Also, the quality of the included studies was different and this another reason for the controversy.
Conclusion: The results of this systematic review showed that rice may have a protective effect against colorectal cancer. However, some studies have rejected this association. More studies are needed in this field. Higher consumption of rice appears to be associated with lower consumption of protein foods such as red meat. Thus, the inverse association between increased consumption and colorectal cancer may be explained by lower consumption of red meat and other protein foods that are positively associated with colorectal cancer risk. Future studies should clarify the facts in this regard.
Keywords: colorectal cancer; CRC; rice; diet

Association of Macronutrient Intake, Physical Activity, Anxiety, and Depression with Sleep Quality Among Iranian Male Adolescents

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Introduction: Adolescence is a unique stage of life accompanied by physiological and psychological modifications, along with stress, confusion, and depression.
Methods: The present descriptive-analytical cross-sectional research was done on 267 male adolescents who studied at high schools in Zanjan, Iran. Demographic characteristics questionnaires, a 48-item food frequency questionnaire, a short version of the International Physical Activity Questionnaire (IPAQ), the Depression Anxiety Stress Scale (DASS-21), and the Pittsburgh Sleep Quality Index (PSQI) were used to collect data.
Results: The mean ± standard deviation (SD) of age, weight, height, and sitting time was 15.94±0.91 years, 68.53±15.28 kg, 1.75±0.06 m, and 449.25±322.06 min, respectively. The study results showed that students with poor sleep quality showed a higher rate of depression than those with good sleep quality in the high and low physical activity groups ($p<0.05$). The stress, depression, and anxiety scores significantly correlated with sleep quality in the physical activity groups ($p<0.05$). The structural equation model analysis results showed that mental health directly affected sleep quality; this association was significant in the low physical activity group.
Conclusion: We found that sleep quality was independently related to mental health in young Iranian men. However, dietary intake was not a significant predictor of mental health or sleep quality. More studies are required to evaluate the association between dietary intake and sleep quality in adults.
Keywords: Sleep quality, Physical activity, Mental health, Macronutrient intake, Depression, Anxiety

Relationship between hypothyroidism and non-alcoholic fatty liver disease in non-diabetic adults: A systematic review of observational studies

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Introduction: Numerous observational studies have investigated the relationship between hypothyroidism and the development and advancement of non-alcoholic fatty liver disease (NAFLD). However, the exact association and related mechanisms have not been fully understood. As a result, this systematic review aims to comprehensively assess the relationship between NAFLD and hypothyroidism in non-diabetic adults.
Methods: A comprehensive literature search was conducted by searching PubMed, Scopus, Web of Science, and Google Scholar until January 2024. After a critical analysis, 29 observational studies were included in the present systematic review. The findings indicate a potent association between hypothyroidism and NAFLD.
Results: Regarding this intricate association, it appears that individuals with hypothyroidism are more likely to have non-alcoholic fatty liver disease (NAFLD) compared to those with normal thyroid function. The development of hypothyroidism-induced NAFLD involves several factors. The predominant underlying mechanisms encompass impaired lipid metabolism, insulin resistance, oxidative stress, and the involvement of inflammatory cytokines and hormones. Indeed, an energy metabolism imbalance, particularly the excessive delivery of carbohydrates and fat to the liver, is a critical factor in the development of NAFLD. With this regard, Thyroid hormones are crucial for maintaining energy and metabolic balance,

indicating their potential involvement in the development of NAFLD.
Conclusions: In general, increased awareness and optimized strategies are required for the mutual screening and management of thyroid disease and NAFLD coexistence.
Keywords: Hypothyroidism, Non-alcoholic fatty liver disease, Non-diabetic adults, Observational studies

The effect of probiotic supplementation on lipid profile in type 2 diabetes patients

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Background: Probiotics play an important role in inhibiting oxidative stress and improving lipid metabolism. As there are controversial findings on the effect of probiotic supplementation on lipid profile in type 2 diabetes patients, this review aims to summarize available evidence in this regard.
Method: Databases including PubMed, MEDLINE, EMBASE and Web of Science were searched up to August 25h, 2024.
Results: probiotics delay micro and macro vascular complications in type 2 diabetes by changing the composition and function of intestinal microbiota and have beneficial effects on lipid profile. dyslipidaemia is one of the main complications of type 2 diabetes which can lead to coronary heart disease and neuropathies. Probiotics improve lipid profile and cardiac function by reducing serum cholesterol levels and increasing HDL concentration. indeed, probiotics improve insulin resistance and lipid profile in different ways, including: anti-inflammatory effects (both locally in the gut and systemically) and increasing the production of bacteriocin and short-chain fatty acids (SCFAs) and inhibiting the glucose transporter type 4 suppression (GLUT4).
Conclusion: Although most studies reported positive effects of probiotic supplementation on lipid profile and insulin resistance, more studies are needed regarding the dosage and duration of probiotic supplementation and probiotic strains in these patients.

Keywords: Probiotic, Type 2 diabetes, Lipid profile, Insulin resistance

Choline Supplementation during pregnancy: Recommendations to prevent neural tube defects

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Background: Choline is essential for gene regulation during growth, liver function, lipid synthesis and metabolism, neural tube formation, and brain development. Despite the increased demand for choline during pregnancy, studies have reported a low intake of choline-rich foods and consequently, a high prevalence of neural tube defects (NTD). In this review, we discuss the benefits of maternal choline supplementation in preventing NTDs and propose relevant policies.
Method: English articles in online databases such as PubMed-Medline, Google Scholar, Scopus, and Web of Science databases were searched.
Results: Benefits of choline supplementation during pregnancy have been reported in animal and human studies including infant lifelong cognitive abilities, the risk of mammary cancer and maternal placental disturbances, and HPA axis stress reactivity. Maternal supplementation with choline at twice the AI amount in the third trimester led to improved offspring information processing speed, likely due to the crucial role of choline in maintaining cell membrane integrity and providing methyl groups. Results regarding visuospatial memory in offspring were controversial during the first year of life; however, studies on the spatial memory of children at age 7 reported promising findings. Additionally, perinatal choline supplementation, along with early postnatal low-dose choline intake, reduces the risk of schizophrenia by regulating the CHRNA7 receptor, which is related to the acetylcholine signaling system. Despite government policies promoting folic acid supplementation to prevent NTD, different regions of Iran report a prevalence of 1.01 to 8.29 NTD cases per 1000 live births. In this regard, we proposed and discussed several policies to reduce the risk of maternal neurological disturbances: (1) Educating the effects of choline intake and its dietary sources in prenatal and first-trimester classes at healthcare centers; (2) adding low-dose choline alongside current folic

acid supplementation in areas with a high prevalence of NTD, such as Kashan City; (3) conducting studies to explore the potential need for more than the current AI amount of choline during pregnancy.
Conclusion: Considering the high prevalence of NTD in certain regions of Iran and the benefits of choline intake during the first and third trimesters of pregnancy for neural tube formation, as well as its role in preventing chronic diseases in adulthood, reforms in current policies to enhance choline intake among pregnant mothers are recommended.
Keywords: Pregnancy, Infant, Choline, Neural tube

Enhancing Sustainability along with Adequate Micronutrient Intake through Food Fortification: A Modeling Study

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Introduction: Balancing micronutrient needs with energy limitations and economic constraints presents a significant challenge. When we factor in the potential effects of future climate crises, this issue becomes even more intricate. Notably, deficiencies in vitamin D, calcium, iron, and zinc are widespread in Iran, with the latter two being reliant on animal sources. Consequently, our research seeks to model the optimal levels of calories, prices, and environmental footprint required for communities to secure sufficient micronutrients when various foods are fortified with these essential elements.
Methods: In this modeling study, we utilized Linear Programming to tackle this issue across three scenarios. The first scenario examined the absence of fortification, where we determined the energy levels, prices, and environmental footprints necessary to achieve an adequate intake of vitamin D, calcium, iron, and zinc without fortification. The second scenario focused on voluntary fortification. We aimed to assess how the inclusion of fortified food items available in the market, alongside existing comparable items, would affect calorie levels, prices, and environmental footprints. Lastly, in the final model, we considered mandatory fortification. We assumed additional fortified food items based on guidelines to understand how the specified amounts vary compared to the previous scenarios.
Results: In the first scenario, we noted that the community would require more costly food items with a higher carbon footprint but lower calorie content than the current diet. In the second and third scenarios, prices and calorie levels saw a significant decline. However, environmental footprints displayed unpredictable fluctuations.
Conclusion: Our study indicates that food fortification can serve as a strategic solution for ensuring sufficient micronutrient intake, particularly in light of economic and potential environmental challenges. Implementing fortification practices may aid in achieving sustainable food security.
Keywords: Fortification, Sustainable diet, Calcium, Iron, Zinc, Vitamin D

The association between the healthy eating and sustainable diet indices with cellular health and liver status in patients with non-alcoholic fatty liver disease: a systematic review study.

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Background: The association between healthy eating, sustainable diet, and planetary health dietary indexes with cellular health and liver status in patients with non-alcoholic fatty liver disease (NAFLD) has been studied recently. In this review article, we will discuss their relationship, mechanisms, and effectiveness.
Method: A total of 15 articles including original and even review studies were investigated from 2018 to 2024 through a comprehensive search on PubMed, Embase, Web of Science, and Scopus.
Results: The sustainable diet index is significantly associated with cellular health and liver status in patients with NAFLD, affecting inflammation and oxidative stress levels through dietary components like polyunsaturated fatty acids (PUFAs) and antioxidants found in mushrooms and extra virgin olive oil (EVOO). Evidence indicates that these dietary interventions can enhance liver function and reduce NAFLD-related complications. Furthermore, our investigations reveal a strong

link between adherence to a planetary health dietary index and improved cellular health outcomes in patients with NAFLD, primarily through mechanisms that reduce oxidative stress and inflammation. The collective findings from multiple studies suggest that dietary interventions aimed at these pathways may be effective strategies for managing NAFLD progression and improving overall liver health. Furthermore, adherence to a diet with high HEI scores is positively correlated with enhancements in cellular health markers and liver function in patients with NAFLD. The reviewed literature consistently highlights plant-based diets as crucial for improving metabolic health outcomes related to NAFLD management, while also stressing the significance of lifestyle modifications such as weight loss and dietary diversity.

Conclusion: The literature suggests a promising link between adherence to sustainable diet indices and enhancements in cellular health parameters related to liver status among patients with NAFLD. This is achieved through mechanisms that involve reduced inflammation and oxidative stress levels, mediated by specific dietary components such as PUFAs, mushrooms, and EVOO-rich diets. Many of the studies included were observational or cross-sectional (Level II evidence), which inherently limits the ability to draw causal inferences compared to randomized controlled trials (RCTs). Additionally, potential confounding factors such as lifestyle choices and genetic predispositions were often not sufficiently controlled for. Future research should focus on delineating specific sustainable dietary components that most effectively mitigate hepatic steatosis while exploring individualized nutrition plans tailored to patient-specific needs and metabolic profiles.

Keywords: Fatty Liver, Sustainable diet, Healthy Eating, Review

Impact of oral Nutritional supplements in patients with incurable cancer undergoing palliative care

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Introduction: Palliative care is an approach to reduce suffering and improve the quality of life of patients facing a life-threatening disease and their families.

One of the concerns in incurable cancers is nutrition. Considering the widespread use of nutritional supplements, the purpose of this review is to identify the overlap between the therapeutic approach of nutritional support and palliative care, as well as their effectiveness in incurable cancers, which was done based on three main variables, including guidelines, evidence and ethics.

Method: A scoping review was conducted involving a search of the following databases: PubMed, CINAHL, Scopus, EMBASE and Google Scholar, from 2010 to 2024 and was limited to English language articles.

Results: Finally, 12 articles were selected, which were related to enteral nutrition interventions for patients with incurable cancer in palliative care, which focused on quality of life, symptom management and nutritional status.

Conclusion: The role of nutritional supplements for cancer patients in palliative care is still a challenging issue. Although these supplements are widely used, therapeutic results are not well defined. In palliative care, nutritional intervention should be tailored to the needs and conditions of the patient and improve the quality of life. Considering the high price of supplements and imposing a high cost on the patient and the healthcare system, as well as its small clinical effects in current evidence, it is difficult to judge the appropriateness of the prescription. The decision depends on the stage of cancer and the wishes of the patient/family. The role of physicians is important for proper patient/family participation in decision-making and establishing effective communication with them.

Innovative Strategies to Change Nutrition Behavior among Children and Adolescents: A systematic Review of Randomized Clinical Trial Study

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Background: Childhood and adolescence represent critical periods for the development of dietary habits and lifestyle behaviors. As rates of obesity and diet-related diseases continue to rise globally, it is essential to explore and implement

effective strategies aimed at promoting healthier eating behaviors among youth. This systematic review aims to evaluate innovative strategies for changing nutrition behavior among children and adolescents, encompassing a wide range of interventions, including social media platforms, game-based approaches, and gardening initiatives.

Methods: To achieve the object of this research, four electronic databases- Science Direct, Web of Science (WoS), APA PsyclNFO, and PubMed were searched using predefined keywords (search string) relating to the review topic and based on the fixed inclusion and exclusion criteria. Randomized clinical trial studies published between 2000 and 2024 were selected for data extraction.

Results: After title, abstract, and full-text screening, a total of 89 studies were analyzed, highlighting key findings across three primary intervention categories: social media-based interventions (15 studies), game-based interventions (27 studies), and gardening-based interventions (37 studies). Social media interventions demonstrated significant potential in altering dietary habits and promoting physical activity among participants aged 4 to 20 years. Game-based interventions, effectively increased fruit and vegetable consumption while reducing intake of high-calorie foods through interactive and engaging formats such as video games and board games. Gardening interventions provided compelling evidence of their effectiveness, with studies indicating positive shifts in eating behaviors and health outcomes.

Conclusion: The review concluded that these multifaceted approaches, particularly when combining educational components and fostering long-term engagement, hold significant promise for instilling lasting healthy dietary behaviors in youth.

Keywords: Nutrition behavior, Children, Adolescents

The effects of berberis Vulgaris juice on anthropometric indices in women with benign breast disease: a randomized controlled trial

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Background: Benign breast disease (BBD) includes various non-cancerous conditions of the breast that often lead to discomfort and pain. Dietary components with antioxidant properties, such as Berberis vulgaris (BV), may help manage these conditions by influencing body weight and related anthropometric measures. This study aimed to evaluate the effects of BV juice on these indices in women with BBD.

Methods: A parallel, triple-blind, randomized, placebo-controlled clinical trial was conducted with 85 women diagnosed with BBD from Nour-Nejat Hospital, Tabriz, Iran. Participants were assigned to either an intervention group receiving BV juice (480 ml/day, n=44) or a placebo group (480 ml/day, n=41). After a 7-day run-in period, the intervention lasted for 8 weeks. Blinding was maintained for participants, caregivers, and assessors (IRCT registry no: IRCT2012110511335N2).

Results: Significant weight loss was observed in the placebo group, while the BV group had a notable reduction in waist circumference. Both groups showed a significant decrease in hip circumference. The placebo group demonstrated a greater reduction in body mass index (BMI), although changes in the BV group were not significant. The lean body mass index decreased in the placebo group, and body adiposity index reduced markedly in both groups. Skinfold thickness decreased significantly in the BV group.

Conclusions: BV juice consumption may help in controlling certain anthropometric indices in women with benign breast disease.

Keywords: Benign breast disease, Berberis vulgaris, Body mass index, Lean body mass, Anthropometric indices

Dietary patterns derived by reduced rank regression in association with coronary artery disease (CAD) stenosis

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Background: Although several studies have attempted to identify coronary artery disease (CAD) risk factors, few have explored the association between lifestyle-related factors and the severity of coronary artery stenosis. The present study was designed to to discover the deitary patterns resulting from the reduction of rank regression (RRR) in connection with coronary artery stenosis (CAD) in adults undergoing angiography.

Methods: This cross-sectional study aimed to recruit a total of 700 patients (aged 35 to 75 years) who met the inclusion criteria and were referred for angiography between July 2020 and November 2021 to Afshar Hospital, a central heart disease hospital in Yazd city, Iran. To assess the presence and intensity of CAD, we used the Gensini and SYNTAX scores. Biochemical factors were measured using standard kits from serum samples, and extra serum and whole blood samples were retained for further analyses. Data on general information, dietary food and supplement intake, eating habits, medicinal herbs consumption, psychological and mental state, sleep quality, and other variables were gathered by trained interviewers using specific questionnaires.

Results: The analysis was conducted on a total of 662 participants, consisting of 401 males and 261 females. The 33 different food groups and their corresponding factor loadings for each dietary pattern obtained through the RRR method. The first dietary pattern (RRR-DP 1), was characterized by a high consumption of organ meats and tomatoes, and low intake of potatoes, seasonings, and legumes. On the other hand, the second dietary pattern (RRR-DP 2), was associated with high intakes of red meats, dairy products, dried fruits, fruits, and vegetable oils, but low intake of coffee, fruit juice, refined grains, pizza, and legumes. Furthermore, the third dietary pattern (RRR-DP 3), was characterized by high consumption of organ meats, seasonings, vegetable oils, and soft drinks, but low intake of fruits, fruit juice, refined grains, dried fruits, and nuts. No link was observed between the three dietary patterns derived from the RRR method and the risk of cardiac stenosis, as determined by the Gensini score, in both unadjusted and adjusted models. Similarly, no association was found between the three dietary patterns and the risk of cardiac stenosis based on the SYNTAX score, in both unadjusted and adjusted models.

Conclusion: However, no significant relationship was observed between the three dietary patterns derived from the RRR method and the risk of cardiac stenosis as assessed by the Gensini and SYNTAX score. Further investigation is still needed to confirm the association between CAD identified using RRR methods.

Keywords: Coronary artery disease, Dietary patterns, Reduced rank regression (RRR), SYNTAX score, Gensini score

Dietary Polyphenol Intake and Thyroid Cancer: A GRADE-Assessed Systematic Review and Meta-analysis of Observational Studies

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Background: Thyroid cancer ranks ninth globally, with 567,000 new cases annually, mainly affecting women. Nutritional factors such as iodine, Selenium, and Vitamin D may influence thyroid cancer development, while polyphenols in plant foods may have anti-cancer properties. The aim of this systematic review and meta-analysis to assess the association between polyphenol intake and thyroid cancer.

Methods: We searched the PubMed, Scopus, and Web of Science databases to find suitable articles until April 2023. A random-effects model was used to calculate the odds ratio (OR) and the 95% confidence interval (95% CI) for polyphenols.

Results: In total, 6 studies were included in the systematic review.After pooling the results of the included studies,a significant positive relationship between the risk of thyroid cancer in the population of people who consume polyphenol lignans has been seen. (RR =0.75; 95% CI 0.61–0.93; P= 0.01), with no considerable heterogeneity (P= 0.44; I 2 = 0% (and no significant relationship between the risk of thyroid cancer was seen in the population of people who consumed isoflavones and total

flavonoids(RR =0.90; 95% CI 0.61–1.33; P= 0.60), (RR =0.98; 95% CI 0.82–1.17; P= 0.80).
Conclusion: the results of this meta-analysis show that dietary intake of lignan polyphenols can be inversely associated with thyroid cancer, suggesting a protective effect.Additional, large and well-designed epidemiological and experimental studies are needed to further investigate the effect of other polyphenol intake on thyroid cancer incidence.
Keywords: Polyphenol intake, Thyroid cancer, Observational studies, Systematic review, Meta-analysis

Effect of Certain Food Ingredients on Patients with Inflammatory Bowel Disease (IBD): A Review Study

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Introduction: Inflammatory Bowel Disease (IBD) is a chronic condition that significantly influences the patient's quality of life. Recently, the importance of diet has been emphasized not only in IBD symptom management, but also in preventing disease progression. This review collects the results reported in the previous literature on dietary interventions for adult patients with IBD.
Methods: In this study, databases of PubMed, Scopus, and Web of Science were searched. All studies reviewed were in English.
Results: Previous studies show that diets high in omega-3 fatty acid significantly protect against IBD by reducing leukocyte recruitment, regulating cytokines, modulating inflammatory mediators, and improving intestinal barrier function. Some vitamins (A and D) are effective on IBD by modulating the microbiota and directly influencing the immune system. Bioactive peptides also affect IBD through anti-inflammatory properties and increased intestinal barrier function. Fibers provide a protective effect against IBD by reducing the inflammation risk and increasing bowel movement. Probiotics help manage IBD by modulating gut microbiota, suppressing harmful bacteria, restoring microbial balance, and improving intestinal barrier function, which in turn decreases permeability and pathogen translocation. They also produce short-chain fatty acids and various anti-inflammatory metabolites. Diet plays an important role in the management of IBD, and specific dietary patterns can reduce symptoms and thus improve quality of life.
Conclusion: Continued research is necessary to establish clear dietary guidelines and explore long-term effects on IBD management. For optimal IBD treatment outcomes, personalized dietary approaches, supported by professional nutritional counseling, are recommended.
Keywords: Inflammatory Bowel Disease, IBD, Probiotics

The effect of nutrition education on nutritional performance and anthropometric indicators among adolescents aged 12 to 15 years

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Introduction: Improper nutritional behaviors have harmful effects on students' abilities, because on the one hand, the prevalence of overweight and obesity reduces the work efficiency and effectiveness of children, and on the other hand, it exposes them to chronic diseases. In this study, nutrition education was provided to male students of high school. In the present study, the effectiveness of training on students' nutritional performance and their anthropometric indicators, including BMI Zscore, body fat mass, and trunk fat mass, were investigated.
Method: An interventional study was conducted to investigate the effect of the nutrition principles educational package on the students of the target group, including 30 participants in the intervention group and 28 participants in the control group.
Results: Nutrition training was provided to students and their mothers in a period of 5 weeks. Then, the results of the study were measured immediately after the intervention and three months later, which showed a significant improvement in the nutritional behaviors of the students in the intervention group. Also, their anthropometric indices including reduction of BMI Zscore (p=0.001), reduction of body fat percentage (p=<0.001) and reduction of trunk fat percentage (p=0.023) were significant before and three months after the intervention.

Conclusion: Based on the results of this study, the nutritional trainings caused significant changes in nutritional behaviors and anthropometric indicators, including BMI Zscore, body fat percentage, and trunk fat percentage in the intervention group compared to the control group.
Keywords: obesity, nutrition, students, nutrition education

Effects of Okra (Abelmoschus esculentus L.) Supplementation on Cardiovascular Disease Risk Factors: A GRADE-Assessed Systematic Review and Dose-Response Meta-Analysis

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Background: This comprehensive systematic review and meta-analysis aimed to assess the impact of okra (Abelmoschus esculentus L.) consumption on cardiovascular disease risk factors.
Methods: Relevant studies were identified through electronic searches of databases including PubMed, Scopus, Web of Science, CENTRAL, and EMBASE up to August 2024. Study quality was assessed using the Cochrane risk-of-bias tool.
Results: Twelve trials involving 770 participants were included. Okra supplementation significantly reduced body mass index (BMI) (Standardized Mean Difference [SMD] = -0.70; 95% Confidence Interval [CI]: -1.23, -0.16; P = 0.011), fat mass (FM) (SMD = -0.74; 95% CI: -1.13, -0.36; P < 0.001), hip circumference (HC) (SMD = -0.85; 95% CI: -1.41, -0.28; P = 0.003), weight (SMD = -0.77; 95% CI: -1.42, -0.11; P = 0.022), fasting insulin (SMD = -0.35; 95% CI: -0.63, -0.07; P = 0.013), fasting blood sugar (FBS) (SMD = -1.07; 95% CI: -1.75, -0.38; P = 0.002), hemoglobin A1c (HbA1c) (SMD = -0.38; 95% CI: -0.71, -0.05; P = 0.023), homeostatic model assessment of insulin resistance (HOMA-IR) (SMD = -0.56; 95% CI: -0.84, -0.29; P < 0.001), low-density lipoprotein cholesterol (LDL-C) (SMD = -0.32; 95% CI: -0.52, -0.11; P = 0.003), total cholesterol (TC) (SMD = -0.45; 95% CI: -0.74, -0.16; P = 0.003), and aspartate aminotransferase (AST) (SMD = -0.45; 95% CI: -0.73, -0.17; P = 0.002). Subgroup analysis revealed significant reductions in FBS, HbA1c, LDL-C, TC, and AST in studies conducted in Iran and among prediabetic or diabetic individuals.
Conclusions: Okra supplementation demonstrates significant benefits in improving anthropometric measures, glycemic control, lipid profiles, and liver function tests, suggesting its potential as an adjunct therapy for reducing cardiovascular disease risk factors.
Keywords: okra; Abelmoschus; anthropometric indices; lipid profile; glycemic indices; liver function

Beneficial Effects of Sesame (Sesamum indicum L.) Supplementation on Glycemic Control, Inflammatory Biomarkers, Blood Pressure, Oxidative Stress Parameters, Lipid Profile and Anthropometric Indices: A GRADE-Assessed Systematic Review and Dose-Response Meta-Analysis

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Background: This comprehensive systematic review and meta-analysis aimed to assess the impact of sesame (Sesamum indicum L.) supplementation on cardiovascular disease risk factors.
Methods: Relevant research was discovered via PubMed, Scopus, Web of Science, CENTRAL, and EMBASE up to June 2024. The assessment of study quality was conducted using the Cochrane risk-of-bias tool.
Results: Thirteen trials, with interventions ranging from 4 to 12 weeks and involving 521 participants, demonstrated significant reductions in glycated hemoglobin (HbA1c) (Standardized Mean Difference [SMD] = -0.67; 95% Confidence Interval [CI]: -1.01, -0.32; P < 0.001), C-reactive protein (CRP) (SMD = -0.51; 95% CI: -0.96, -0.05; P = 0.028), and interleukin-6 (IL-6) (SMD = -0.74; 95% CI: -1.16, -0.32; P < 0.001), and a marginally significant effect on fasting blood sugar (FBS) (SMD = -0.57; 95% CI: -1.16, 0.02; P = 0.057). Subgroup analyses revealed that sesame supplementation significantly reduced CRP and malondialdehyde (MDA) in populations without chronic diseases, while total cholesterol (TC) and MDA were reduced in those with chronic diseases. MDA was significantly reduced in females, especially those aged 50 or older. At dosages of 10 grams per day or less, CRP, high-density lipoprotein cholesterol (HDL), and TC showed significant improvements. Meta-regression highlighted a significant dose-dependent reduction in TC levels at 10 grams/day, and a significant duration-dependent decrease in TG levels at 8 weeks of supplementation.
Conclusions: Sesame supplementation demonstrates potential benefits in improving glycemic control, inflammatory markers, and lipid profiles, making it a promising adjunct therapy for reducing cardiovascular disease risk factors.
Keywords: sesame; metabolic factor; anthropometric indices; lipid profile; glycemic indices; meta-analysis

The effects of prune products consumption on anthropometric measurements and blood pressure in adults: a systematic review and dose-response meta-analysis

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Introduction: Improving the roles of prunes in anthropometric indicators and blood pressure has been suggested due to their high fiber, antioxidant, and anti-inflammatory content, prunes may have a greater influence on anthropometric indices and blood pressure. The purpose of this extensive meta-analysis and systematic review was to examine the effects of adult consumption of prunes on anthropometric parameters and blood pressure.
Methods: To identify relevant randomized controlled trials (RCTs) (till August 9th , 2024), databases from ISI Web of Science, Scopus, and PubMed/Medline were searched. The current systematic review and meta-analysis covered 14 studies that met the eligibility requirements. The weighted mean difference was used to compute the effect size. The Cochrane Q test and I2 index were used to measure study heterogeneity. The random effects model was utilized to get the overall effect magnitude.
Results: The meta-findings analysis's showed that eating prunes had no appreciable effects on body weight (BW) (p=0.850), body mass index (BMI) (p=0.290), fat mass (FM) (p=0.840), waist circumference (WC) (p=0.562), systolic blood pressure (SBP) (p=0.547), or diastolic blood pressure (DBP) (p=0.309).
Conclusion: According to our findings, eating prunes decreased diastolic blood pressure however, this decrease was not significant. Systolic blood pressure and anthropometric indicators showed no discernible effects.
Keywords: prune, anthropometric measurements, blood pressure, meta-analysis

Evaluating the Effectiveness of a Mobile App-based Dietary Intervention on Glycemic Control in Patients with Diabetes Mellitus: A Systematic Review

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Background: The rising incidence of diabetes requires proactive medical care and self-management due to the associated risk of complications. Research indicates that mobile health technologies, such as web platforms and smartphone apps, can effectively provide dietary guidance to help manage glucose levels in Diabetes Mellitus (DM). This systematic review evaluates the effectiveness and usability of these digital tools in aiding dietary self-management for DM patients.
Methods: This study was conducted as a systematic review in 2024 by searching reliable PubMed, Scopus, Web of Science, and Google Scholar databases to examine studies related to Diabetes Mellitus, mobile applications, and diet therapy. The review focused on English-language studies that utilized mobile apps for dietary therapy in DM patients. Researchers independently reviewed titles and abstracts for eligibility, followed by separate evaluations of the full texts. Data was extracted consistently, including details such as study title, publication year, country, objectives, and key findings.
Results: Out of 124 articles reviewed, 10 were included in the study. Among these, 8 applications were found to effectively improve glycemic control in diabetes patients, with 5 of them specifically reporting a reduction in HbA1c levels. The remaining 2 applications showed no significant effectiveness.
Conclusion: Short-term mobile applications effectively help manage blood glucose levels, particularly for patients who adhere to the app's guidance. Additionally, a telehealth system aids in the early detection of treatment needs and facilitates timely interventions. It also promoted better self-care.
Keywords: Mobile Applications, Diet Therapy, Diabetes Mellitus, Glycemic Control

Effect of skipping breakfast on cancer risk: a narrative review study

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Background: Cancer is the uncontrolled proliferation of abnormal cells that can invade and spread throughout the body. Lifestyle and nutritional factors have been identified as major contributors to cancer development and mortality. Breakfast eating, as a key component of a healthy lifestyle, has been studied for its potential impact on cancer risk. The purpose of this narrative review was to look into the relationship between skipping breakfast and cancer incidence and mortality.
Methods: The authors searched the literature using PubMed and Google Scholar, focusing on articles published between 2019 and 2023. The search terms were "breakfast" and "cancer." Four relevant prospective cohort studies were identified and assessed.
Results: The majority of the analyzed research found that skipping breakfast increases the risk of cancer incidence and mortality. However, there was no significant link between skipping breakfast and the chance of developing breast cancer.
Conclusion: Overall, the evidence suggests that breakfast intake may protect against many types of cancer. However, more research is needed to definitively confirm this relationship.
Keywords: breakfast, cancer, skipping breakfast

The impact of Rhus coriaria L. (sumac) supplementation on cardiovascular disease risk factors, including anthropometric measures, blood pressure, glycemic profile, inflammatory markers, lipid profile, oxidative stress parameters, and leptin

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Introduction: This systematic review and meta-analysis aimed to evaluate the role of Rhus coriaria L. (sumac) supplementation on risk factors of cardiovascular disease containing anthropometric measures, blood pressure, glycemic profile, inflammatory markers, lipid profile, oxidative stress parameters, and leptin.
Methods: A comprehensive search of electronic databases, including PubMed, Scopus, and Web of Science, CENTRAL, and EMBASE was conducted until November 2023. The quality of these studies was assessed using the Cochrane risk-of-bias. Standardized mean differences (SMDs) in changes between intervention and placebo groups were calculated. A random-effects model, meta-regression, and non-linear modeling explored heterogeneity, dose-response relationships, and the overall impact of sumac supplementation
Results: Fourteen trials comprising 872 participants with rang of intervention from 4 to 12 weeks were included. Significant reduction was observed in Hip Circumference (HC) (SMD= -2.45; 95% CI: -4.51, -0.38), Diastolic Blood Pressure (DBP) (SMD= -0.36; 95% CI: -0.60, -0.11), Fasting Blood Sugar (FBS) (SMD= -0.30; 95% CI: -0.55, -0.05), Hemoglobin A1C (HbA1c) (SMD= -0.34; 95% CI: -0.65, -0.03), Homeostatic Model Assessment of Insulin Resistance (HOMA-IR) (SMD= -0.80; 95% CI: -1.46, -0.14), Serum Insulin (SMD= -0.52; 95% CI: -0.99, -0.05), Low-Density Lipoprotein (LDL) (SMD= -0.36; 95% CI: -0.68, -0.03), Total Cholesterol (TC) (SMD= -0.41; 95% CI: -0.75, -0.08), Triglycerides (TG) (SMD= -0.22; 95% CI: -0.42, -0.03), Leptin (SMD= -0.36; 95% CI: -0.65, -0.07) but high-density lipoprotein (HDL) (SMD= 0.45; 95% CI: 0.13, 0.77) has an increase. However, no significant change was observed in Body Mass Index (BMI), Waist Circumference (WC), Weight, Waist-to-Hip Ratio (WHR), Systolic Blood Pressure (SBP), Quantitative Insulin Sensitivity Check Index (QUICKI), High-Sensitivity C-Reactive Protein (hs-CRP), and Malondialdehyde (MDA). Eventually, sumac supplementation has obvious effect on endocrine/metabolic parameters like LDL, TC and TG. Particularly, it shows changes in WHR, FBS, HOMA-IR, serum insulin, and HDL.
Conclusion: While no significant changes were examined on antioxidant and inflammatory parameters, improvements in lipid profile, glycemic measurements, HC, DBP, and leptin were observed by sumac supplementation. These findings emphasizes the probable benefits of sumac supplementation on risk of cardiovascular diseases.
Keywords: sumac; metabolic factor; anthropometric factor; lipid profile; glycemic profile; meta-analysis

The fasting diet: a comprehensive review of health benefits and potential risks

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Introduction: A growing body of research is exploring the potential health benefits of various dietary plans, including fasting diets. Studies suggest that these diets can improve biochemical markers and reduce the risk of chronic diseases like cardiovascular disease, cancer, and diabetes. Notably, fasting diets are effective in promoting weight loss by reducing fat mass while preserving lean muscle mass. Different fasting methods, such as intermittent fasting, time-restricted eating, alternate-day fasting, and full-day fasting, have been investigated. This review aims to provide a comprehensive analysis of these findings.

Methods: A comprehensive literature search using databases such as PubMed, Google Scholar, Science Direct, and Scopus was conducted. From an initial pool of 57 articles, 23 most relevant studies were selected for analysis.
Results: Intermittent fasting has been shown to be an effective strategy for weight loss and improving overall health. It can lower blood pressure, regulate blood sugar levels, reduce the risk of heart disease and stroke, and even help prevent non-alcoholic fatty liver disease. While there may be some minor side effects like dizziness or fatigue, the benefits generally outweigh the drawbacks. Fasting diets offer a promising approach to promoting long-term health and well-being.
Conclusion: Numerous studies are exploring the potential benefits of various dietary approaches for optimizing physical and mental health. Fasting has emerged as a popular and promising option, known for its simplicity, effectiveness, and generally mild side effects. Research suggests that fasting diets can be a beneficial and safe way to improve overall health and achieve weight loss goals.
Keywords: fasting diet, weight loss, Intermittent fasting

The effect of Artichoke (cynara scolymus) on cardiovascular disease risk factors: a narrative review

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introduction: C. scolymus has anti-inflammatory, antioxidant and blood fat reduction effects. The large amount of polyphenols present in C. scolymus has antioxidant activity that enables it to reduced cardiovascular diseases and mortality.
Methods: articles were identified in the scholar Library and PubMed databases. All the studies that looked for the connection of artichoke in different forms such as plant tissue, extract and dried. We excluded studies on artichoke leaves due to food industry aspects.
Results: we discussed trial and review studies that examined artichoke alone or combinations with berberine and bergamot. Surveys were between 2 until 12 weeks and 200 to 700 mg. Weight, BP, lipid profile, FBS and phosphokinase were evaluated. Seven article investigated stem extracts and dried form and one with berberine and two with bergamot. The literature reports significant improvement in lipid profile, Apo lipoproteins, blood glucose, weight and waist circumference and contradictory regarding BP.
Conclusion: Artichoke intake in different forms led to a significant reduction in CVD mortality markers. Clinical studies have shown that receptacle and stem extracts of artichoke were found to exert protective activity on CVD markers. Several studies attributed these effects to artichoke polyphenols. More clinical trials needed to reveal and further confirm the role of antioxidants, polyphenolic compounds of artichoke in the prevention and treatment of cardiovascular diseases. Finally, the majority of the positive results provided CVD control factors.
Keywords: Artichoke, cardiovascular diseases, lipid profile

Bifidobacterium longum as a probiotic for weight management: A systematic review and meta-analysis of animal studies

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Introduction: With the global rise in obesity rates, there has been an increase in research on managing and preventing obesity. Recent studies have shown that certain probiotic strains can help prevent obesity. Bifidobacterium longum is being considered as a potential supplement for anti-obesity treatments. This meta-analysis aimed to evaluate the impact of Bifidobacterium longum on body weight.
Methods: We searched databases including PubMed, Scopus, Web of Science, Embase, and Google Scholar from 1997 to August 2024 using definitive keywords. We only included articles in English and focused on animal studies, excluding human studies due to their limited number and study design heterogeneity. We included all relevant animal studies on rodents with changes in body weight as the primary outcome. We assessed risk of bias and heterogeneity using the Cochrane Risk of Bias tool and I-square (I2) statistic, respectively.

Results: Our findings showed that orally administering Bifidobacterium longum resulted in a significant decrease in body weight.
Conclusions: In conclusion, the majority of experimental studies have indicated that Bifidobacterium longum has a positive impact on weight loss. This effect may be attributed to its ability to increase thermogenesis, promote lipolysis, and alter gut microbiota composition, SCFAs, and bile acid profiles. Further clinical trials are needed to fully understand the effects of Bifidobacterium longum on managing obesity.
Keywords: Bifidobacterium longum, Obesity, Body Weight, systematic review

Investigating The Effect of Curcumin on the Prevention and Treatment of Colorectal Cancer (CRC): A Systematic Review

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Background: Colorectal cancer is one of the most common cancers in the world, which environmental and genetic factors increase the risk of developing it. Due to the lack of effective drug treatment in CRC recovery, treatment based on healthy lifestyle, bioactive compounds were considered. Curcumin is a bioactive compound that has been effective in treating diseases with its antioxidant properties. So this systematic review has been conducted to check the effects of curcumin on colorectal cancer and its treatments.
Methods: We searched for studies on the association between curcumin, colorectal cancer and treatment in original articles from Web of Science, Scopus, and PubMed. A total of 137 articles were identified from the search of the main electronic databases, which was reduced to 23 articles after deduplication. Of the 23 references screened by title and abstract, 7 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that curcumin is effective in suppressing CRC by modulating the intestinal microbiome, improving the intestinal barrier, improving inflammatory responses, modulating the autophagy pathway, improving the body's response to CRC chemotherapy, regulating methylation, and regulating miRNA expression. Also, curcumin is effective in improving the disease by strengthening anti-cancer drugs.
Conclusion: Based on conducted searches ,Curcumin is effective in the prevention and management of colorectal cancer by affecting the mechanisms of colon formation, modulating inhibition pathways and improving the microbiome. However, in order to determine the effective dose, duration and effective pharmaceutical form, additional studies are needed.
Keywords: Curcumin, Colorectal Cancer (CRC), treatment

Investigating the effect of Docosahexaenoic acid and Arachidonic acid supplementation on inflammatory responses in preterm infants: a review study

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Background: Premature babies struggle with short and long-term complications. Growth disorders and early inflammations after birth endanger the life of these babies. Arachidonic acid and docosahexaenoic acid, two types of long-chain fatty acids, have low levels in premature infants. They also play an important role in the maturation of the immune system, neural development and inflammation control. Due to the presence of inflammatory responses caused by premature birth, in this review study, the effect of arachidonic acid and docosahexaenoic acid on the response and inflammatory plaques has been investigated.
Methods: By searching for articles related to the relationship between calorie restriction and aging in the main Web of Science, Scopus and PubMed databases, a total of 56 articles were identified. After evaluation, this number was

reduced to 10 articles. Finally, the output of the work ended in 4 articles.
Results: Research shows that docosahexaenoic acid (DHA) and arachidonic acid (AA) play an important role in regulating inflammatory and anti-inflammatory responses. These two fatty acids are effective on adaptive immunity and the manifestation of allergic diseases by affecting proteins related to immunity, especially in T and dendritic cells. Also, they can control pro-inflammatory biomarkers such as IL-6 and help reduce premature inflammatory responses in infants and manage the complications of inflammatory diseases.
Conclusion: Docosahexaenoic acid (DHA) and arachidonic acid (AA) supplements have a positive effect on inflammatory proteins and biomarkers in premature infants and can be effective in controlling inflammatory diseases and their complications. However, additional studies are needed to determine the pathophysiological relationship and appropriate dosage.
Keywords: Alzheimer's Disease, Curcumin, neurodegenerative, mechanism

Prevention of Depression by consuming Mangifera indica: a review study

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Background: Depression is a common mental disorder that negatively affects quality of life, social relationships, and physical health. Antioxidants, phenolic compounds and vitamins have positive effects on prevention. Can Mangifera indica play a useful role in prevention despite these compounds?
Methods: By searching for articles related to depression and Mangifera indica consumption in the main Web of Science, Scopus and PubMed databases, a total of 20 articles were identified. With final evaluation and review, 4 articles were approved and used.
Results: The review of articles related to animal experiments showed us that consuming the extract or the fruit itself before creating stressful conditions improves neurological and physical performance. Studies show that the presence of three factors: vitamin C by affecting cortisol levels, B6 by affecting the serotonin process, and mangiferin by affecting (NLRP3) which subsequently reduces the production of IL-1 β and IL-18, can be used in prevention and controlling stressful situations.
Conclusion: As a result, animal studies show that consuming mango extract or the fruit itself before exposure to stress can increase neurological and physical performance. The presence of vitamin C, B6 and mangiferin can play a useful role by affecting three different systems of cortisol, serotonin and interleukin IL-1 β and IL-18. However, more studies should be done, especially in the human field.
Keywords: Depression- Mangifera indica-Mango

Investigating The Effect of Ferulic Acid on the Prevention and Treatment of Mitochondrial dysfunction in Metabolic Syndrome: A Systematic Review

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Background: Mitochondrial dysfunction is characterized by oxidative stress, energy imbalance, and imbalance in mitochondrial reaction, which are prominent features of metabolic syndromes. Today, the treatment of metabolic syndrome by means of natural plant compounds has been highly considered. Ferulic acid is one of the most abundant phenolics in whole grains, which is effective in improving the physiological system of the body. So this systematic review has been conducted to check the effects of ferulic acid on mitochondrial dysfunction and its treatments.
Methods: We searched for studies on the association between ferulic acid, mitochondrial dysfunction, Metabolic Syndrome and treatment in original articles from Web of Science, Scopus, and PubMed. A total of 168 articles were identified from the search of the main electronic

databases, which was reduced to 39 articles after deduplication. Of the 39 references screened by title and abstract, 9 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that ferulic acid reduces ROS stress, modulates autophagy in liver cells, restores ATP production, increases the mitophagy pathway (SIRT1/PGC-1α/NRF1/TFAM pathway), activates the AMPK signaling pathway, increases mitochondrial biogenesis, and restores mitochondrial membrane potential on mitochondrial dysfunction. It is effective.
Conclusion: Based on conducted searches, ferulic acid by maintaining energy homeostasis, mitochondrial integrity, maintaining redox balance, improving biogenesis and restoring autophagy, is effective in improving mitochondrial disorders and reduces the risk of metabolic syndrome. However, in order to determine the effective dose, duration and effective pharmaceutical form, additional studies are needed.
Keywords: Ferulic acid, Mitochondrial dysfunction, treatment, Metabolic Syndrome

Sustainable diet and chronic diseases: A scoping review

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Some studies indicate that sustainable dietary patterns, along with positive environmental impacts, can effectively prevent certain chronic diseases. Nonetheless, research in this field is scarce. In this study, we aim to review and discuss the existing research on the relationship between adherence to sustainable diets and different chronic diseases. Enhanced adherence to sustainable dietary patterns is linked to decreased risk of obesity, and chronic conditions like diabetes, hypertension, cardiovascular diseases, and cancers. Increased consumption of plant-based foods in sustainable diets reduces energy intake and boosts the intake of dietary fibre and some bioactive compounds, known for their anti-inflammatory and antioxidant properties, thereby lowering the risk of cardiovascular diseases, diabetes, and various cancers. Moreover, this dietary approach, by influencing the gut microbiome, promotes weight loss, reduces cardiovascular risk factors, and enhances glycemic control. Additionally, incorporating more organic foods into sustainable diets reduces exposure to agrochemical residues, which are associated with obesity and carcinogenic effects.
Keywords: Chronic Disease, Obesity, Sustainable diet

The Prevalence of Phenylketonuria in Iran: A Systematic Review and Meta-analysis

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Background: Phenylketonuria (PKU) is one of the common Inborn Errors of Metabolism diseases, especially in a population with a high prevalence of consanguineous marriage that caused by a phenylalanine hydroxylase (PAH) deficiency or cofactor BH4. This systematic review and meta-analysis aimed to investigate the prevalence of PKU in Iran.
Methods: The protocol of this systematic review was published in PROSPERO (CRD42024540811). The MOOSE protocol and the PRISMA guidelines were used. The Web of Sciences, PubMed/ Medline, Sciences Direct, Google Scholar, Scopus, Civilica, IranDoc, and SID databases were searched 31/03/2024. The I2 index and Q test were used to check heterogeneity. Comprehensive meta-analysis software (CMA ver. 2) was used (P<0.05 is considered significant).
Results: Finally, 20 studies with 1,992,090 Iranian neonates were included. The prevalence of non-severe PKU (Phe level: 2 or 4 until 20 mg/dl) was 75.6/100,000 (95% CI: 48.1–118.72). The prevalence of severe PKU (Phe level: ≥20 mg/dl) was 16.7/100,000 (95% CI: 13.6– 20.5). The prevalence of PKU in girls and boys was 15.2/100,000 (95% CI: 5.2–44.2) and 9.8/100,000 (95% CI: 3.2– 29.8), respectively.

Subgroup analysis was performed based on region, province, and study quality. In addition, mixed effects meta-regression was used to find the relationship between continuous variables. Sensitivity analysis showed that the pooled estimate was robust.
Conclusions: Iran has a high prevalence of PKU and consanguineous marriage, but it can be controlled by restricting diets and Phe-free formulas. Special attention needs to be paid to these patients, and their prevalence should be controlled.
Keywords: PKU, Phenylketonuria, Hyperphenylalaninemia, Iran, Prevalence, Meta-analysis

Consumption of Green Coffee Extract and Its Impact on Glycemic Control: A GRADE-Assessed Systematic Review and Dose-Response Meta-Analysis of Randomized Controlled Trials Data

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Background: This review examines the effects of green coffee extract (GCE) on blood sugar management, insulin secretion, and insulin sensitivity. The health benefits of GCE have been widely researched, and this review focuses specifically on its influence on these metabolic parameters.
Method: We included randomized controlled trials assessing fasting plasma glucose (FPG), hemoglobin A1c (HbA1c), insulin resistance (HOMA-IR), fasting insulin levels, and glucose area under the curve (GAUC). Searches were conducted in four online databases for studies published until January 2024. The quality of the selected trials was evaluated using Cochrane risk of bias tools. A random-effects meta-analysis was performed to calculate the weighted mean difference (WMD) or standardized mean difference (SMD) for GCE's effects on glycemic indices.
Results: The analysis included 13 trials with 553 participants. The interventions lasted from 2 to 12 weeks, with daily GCE doses ranging from 0.07 to 1.2 grams. Most trials (12 of 13) employed a cross-over design. Results indicated that GCE supplementation significantly reduced FPG levels (WMD: -4.5 mg/dl; 95% CI: -7.1 to -1.8), HOMA-IR (WMD = -0.4; 95% CI: -0.6 to -0.2), and fasting insulin levels (SMD = -0.3; 95% CI: -0.6 to -0.09). However, four trials did not find significant reductions in HbA1c levels or GAUC.
Conclusion: Despite limitations, such as the small number of RCTs, findings suggest GCE consumption may reduce FPG, HOMA-IR, insulin levels, and GAUC compared to control groups, implying potential effectiveness in managing glycemic indices.

The effects of synbiotic supplementation on cardiometabolic and anthropometric outcomes in patients with metabolic syndrome: A systematic review and meta-analysis of randomized controlled trials

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Background: Probiotic and synbiotic products are increasingly used by patients and clinicians, yet their impact on cardiometabolic indices in individuals with metabolic syndrome remains uncertain. This meta-analysis aimed to assess the effects of synbiotic interventions on lipid profiles, insulin resistance, blood pressure, anthropometric measures, and inflammatory markers.
Methods: A systematic search of MEDLINE, Scopus, and Web of Science was conducted up to October 2021. Studies were included if they reported on the effectiveness of synbiotic interventions on cardiometabolic and anthropometric indices. The effect size was determined by calculating the weighted mean difference using a random-effects model. Subgroup analyses were performed to explore heterogeneity, and dose-response effects were evaluated through a dose-response meta-analysis.
Results: A total of five trials involving 1,049 participants were included. Synbiotic interventions significantly reduced serum insulin levels (WMD: -6.39 μU/mL), triglycerides (WMD: -20.3 mg/dL), total cholesterol (WMD: -7.8 mg/dL), LDL cholesterol (WMD: -9.02 mg/dL), waist circumference (WMD: -4.04 cm), body weight (WMD: -4.3 kg), systolic blood pressure (WMD: -1.8 mmHg), and serum interleukin-6 (WMD: -0.2 pg/mL). Additionally, HDL cholesterol levels increased (WMD: 2.3 mg/dL). However, synbiotic intervention had no significant impact on fasting plasma glucose,

HOMA-IR, BMI, diastolic blood pressure, heart rate, or serum C-reactive protein levels.
Conclusions: These findings indicate that synbiotic interventions can effectively improve cardiometabolic risk factors in individuals with metabolic syndrome.

Effect Of Melatonin On Muscle Damage In Football Players

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Introduction: Muscle injury is one of the common problems in football players, which can have serious effects on the athletes' performance. Various reasons such as incomplete or incorrect movement techniques, excessive pressure on muscles, fatigue, lack of enough rest can lead to muscle damage in football players. According to the results of recent articles that indicate the effect of melatonin supplementation on the performance of athletes, in this study we will investigate the effect of melatonin supplementation on the levels of muscle damage and oxidative stress in football players.
Methods: This systematic review encompassed a comprehensive search across multiple databases including PubMed, Scopus, and Web of Science. The search was conducted from 2020 to 2024 using the keywords "melatonin" in combination with "muscle injury" and "football athlete". After careful evaluation, 23 articles were deemed relevant and included in the review.
Results: In the current studies, the indicators of CK, ASAT, GPX, AOPP, and related physical tests (HG), SJ, MAT, 20m-Sp, 5-JT, CMJ were investigated. The results of the studies indicate the effect of melatonin supplementation on reducing CK levels. AOPP, ASAT, and GPX levels were increased; however, supplementation with melatonin had an opposite effect on the physical performance of these people.
Conclusion: Supplementation with melatonin reduces the levels of CK, AOPP, ASAT, and increases the level of GPX, but it has an opposite effect on physical performance. However, to prove the results, more studies with a higher sample size are needed.
Keywords: Muscle injury, football athlete, melatonin

The relationship between short-chain fatty acids (SCFAs) produced by the gut microbiome and metabolic syndrome

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Background: short-chain fatty acids (SCFAs) produced through the fermentation of dietary fibers by gut microbiota play a crucial role in the interplay between gut health and metabolic syndrome. The aim of this review is to estimate the relationship between SCFAs produced by the gut microbiome and metabolic syndrome.
Method: In this article, PubMed and Web of Science were used to search for opinions and research studies published in English using relevant search terms until January 1, 2024, and the initial selection of articles was made according to their titles and abstracts.
Results: diets rich in fiber and omega-3 increase SCFAs production, influencing metabolic health and cardiovascular disease risk. Studies have highlighted the impact of SCFAs on metabolic health, and alterations in gut microbiota composition are associated with Metabolic Syndrome. The gut microbiome's composition and function influence the production of SCFAs, such as acetate, propionate, and butyrate. These SCFAs interact with host cells and receptors, affecting energy metabolism, appetite regulation, energy intake, inflammation, lipid turnover and insulin sensitivity. Imbalances in gut microbiota and altered levels of SCFAs have been implicated in Metabolic Syndrome, including obesity, insulin resistance, and cardiovascular risk factors.
Conclusion: Understanding the intricate interplay between gut microbiota, SCFAs, and Metabolic Syndrome provides valuable insights for potential therapeutic strategies and lifestyle interventions aimed at managing and preventing Metabolic Syndrome.
Keywords: Short-chain fatty acids, gut microbiota, SCFAs, metabolic syndrome, diet

Effect of Probiotics, Postpiotics and Paraprobiotics on Food Allergy

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Introduction: Food allergies have become an increasing health concern, with rising prevalence among children and adults worldwide. Recent research has showen the essential role of the gut microbiome and its modulation through probiotics, prebiotics, and other dietary interventions in managing and potentially preventing allergic reactions.Studies shows the impact of specific probiotic strains like Lactiplantibacillus and Lacticaseibacillu on immune responses in animal models, the influence of fermented food products on allergy development, and the longitudinal dynamics of gut microbiota in children with food allergies. Moreover, these studies explore into the potential of oral immunotherapy as strategies to enhance oral tolerance and reduce IgE-dependent hypersensitivity, offering new strategies for future allergy prevention and management. This study demonstrate the interactions between diet, gut microbiota, and immune regulation in the context of food allergies.
Method: This review systematically examines the current literature on the influences of probiotics, postbiotics, and paraprobiotics on food allergy. Databases such as PubMed, Google Scholar, and ScienceDirect were searched for relevant original research articles, systematic reviews, meta-analyses, published up to March 2024, resulting in 48 references. Studies investigating the associations between probiotics, paraprobiotics and postbiotics and the risk of food allergy.
Results: The findings from these articles show the promising role of probiotics, paraprobiotics, and postbiotics in managing allergic diseases, including allergic rhinitis, food allergies, and systemic inflammatory conditions like systemic lupus erythematosus (SLE). The evidence suggests that specific probiotic strains, such as Lacticaseibacillus paracasei and Lactiplantibacillus plantarum, can effectively modulate immune responses, reduce allergic symptoms, and enhance gut microbiota diversity and function. In both preclinical and clinical settings, the supplementation of probiotics or synbiotics was shown to reduce inflammatory markers, promote oral tolerance, and improve clinical outcomes in allergic diseases. Significantly, the integration of probiotics with oral immunotherapy (OIT) illustrate enhanced efficacy in inducing sustained unresponsiveness in food-allergic patients, specifically in children with peanut and cow's milk allergies. However, some studies have not shown any differences more researches are needed to improve patient outcomes by targeting the gut-immune axis.
Conclusion: By synthesizing the latest findings, this review aims to find the relation between probiotics, paraprobiotics, postbiotics and food allergy and inform future clinical guidelines and research directions.
Keywords: Probiotics, Paraprobiotics, postbiotics, Food Allergy

The Effect of Curcumin on Inflammatory Markers in Metabolic Syndrome: A Systematic Review

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Introduction: Metabolic syndrome includes a set of physiological conditions such as high blood pressure, abnormal increase in blood sugar, accumulation of fat tissue in different parts of the body, abnormal cholesterol or triglyceride levels, which increases the risk of many chronic non-communicable diseases including cardiovascular disease, heart attack and type 2 diabetes. In this review article, we are trying to review the various studies conducted on the effects of curcumin (the active ingredient in turmeric) on the levels of inflammatory factors and other factors involved in metabolic syndrome.
Method: Scientific databases such as PubMed, Scopus and Google Scholar were searched for reviews on “the effect of curcumin on inflammatory factors in metabolic syndrome”. The reviewed articles were published from 2015 to 2024 and Inclusion criteria included clinical and preclinical studies focusing on inflammatory markers such as CRP, TNF-α and IL-6.
Result: According to the findings collected from the identified articles, curcumin consumption

can significantly reduce the level of inflammatory markers. Based on the results obtained from clinical studies, daily consumption of curcumin for 8 to 12 weeks has led to a decrease in CRP, TNF-α and IL-6 levels in patients with metabolic syndrome. In addition, improvement in lipid profile and reduction in insulin resistance have also been reported.
Conclusion: This study provides evidence that supports the positive effect of curcumin as a natural supplement in reducing inflammation and improving metabolic status in patients with metabolic syndrome. However, there is a need for more studies with more accurate research methods and a larger sample size to confirm these results.
Keywords: Metabolic Syndrome, Inflammation, Curcumin

Aflatoxin, a fungal toxin that disrupts children's growth

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Introduction: Aflatoxin B1 is a fungi species mycotoxin produced by specific of the Aspergillus group. It is considered one of the most active metabolites that influence children's growth, and it exists in food products, particularly grains, and agricultural products. Therefore, the kids' growth is affected when they consume foods or grains containing this toxin.
Findings: Aflatoxins are a group of mycotoxins, naturally occurring toxic compounds formed by Aspergillus flavus. These toxins are present in some basic food products like corn, nuts, dairy products, and oilseeds and can adversely affect children's growth. Aflatoxin B1 is the most potent food contaminant that results in nutritional disorders and diseases among children. A study has established that consuming aflatoxins through food is one of the leading causes of growth problems in children. Aflatoxin B1 may reduce the yield of animal products such as milk, eggs, meat, etc., and cause stunted growth, poor learning ability, and behavioral and nutritional problems in children. Consequently, protecting food from being contaminated with aflatoxins is highly desirable, especially for food meant for children. Aflatoxins can influence calcium levels, leading to severe complications in the normal functioning of the children's cells, bones, and metabolism. In addition, the child's immune system and the growing body's cells are exposed to this toxin, which results in changes in the growth hormone and the delayed development of children.
Conclusion: As one of the most important environmental mycotoxins in foodstuffs, Aflatoxin B1 has caused great harm to children's nutrition and growth. Since this is a dangerous toxin with severe and expensive implications, it is vital to avoid, detect, and manage this toxin in food, especially in children's food, to enhance the healthy growth of children in society.
Keywords: Fungus, Aflatoxin B1, Nutrition, Child, Growth

Study the spread of malnutrition among children under 6 years of age in khalilabad in the year 2022-2023

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Introduction: Children due to the utmost need for particular nourishment are in danger of malnutrition. Specifying the nutrition status of children in a community is a criterion to evaluate health and illness in a society. There are many factors in bringing about malnutrition including the take of insufficient nutrients both in quantity such as famine and severe food shortage and ignorance. Body indicators assessment is one of the simple, cheap and exact methods to recognize the amount and severity of malnutrition. The main goal of this study is to determine the anthropometric indicators.
Method: To assess the nutritional status of children under the age of six years of age in the city, the anthropometric profile of 270 children, randomly chosen, were measured and recorded by family health experts during 20 days of survey and in 27 clusters.
Result: The study revealed that the atrophied spread was low and equaled to 4.4%. The outbreak of lightweight among the children under the age of six is low and equaled to 4.8%
The outbreak of shortness in height among the children under the age of six is low and equaled to 4.8%.
Conclusion: Considering the pernicious outcomes of malnutrition, it is strongly recommended to take effective measures to recognize the involved factors and to do concerned preventions.Since the problem of

malnutrition is multidimensional, coordination and cooperation among different developing sections including health, training, agriculture, economy, commerce and mass media is highly indispensable. Health department also needs to be supported by other sections to take initiatives in executing nutritional intervention designs to deal with malnutrition and to raise nutritional awareness among people.

Keywords: Child under six years of age, Malnutrition, Lightweight, Short height, Atrophied

Study the patterns of supplementary nutrition among infants (4 to 24 month of age) in Khalilabd in the year 2022

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Introduction: The optimum growth and development of children is related to having accurate nutrition and nutritional behavior. Mother's unawareness of infants' nutrition and their inaccurate behaviors in this field is one of the important malnutrition cases of infants. The infants' basic needs are not satisfied by breastfeeding after six month of age and there is a need for soft meals.

The brain neurotic network growths in the first years of life and the neurotic cells are united before the age of two. Physical, mental and cognitive growth in human is highly dependant to this neurotic unification. Wrong start in giving supplementary nutrition is one of the important factors in growth delay and malnutrition among infants which finally leads to some irrecoverable economic loss. Studies show that mother's unawareness of infant's nutrition and their inaccurate behaviors in this field is one of the important malnutrition factors of infants. By mothers awareness of infants nutritional needs they can benefit more of an accurate and standard nutrition program

Method: This is an analytic-descriptive study which has partly been implemented with the objective of studying the patterns of supplementary nutrition among infants of 4 to 24 month of age. The concerned community under study is infants of 4 to 24 month of age who have had contact with the health centers in the city. The samples were 300 infants. All questionnaires were filled up; data was gathered and analyzed via the SPSS software.

Result: The results of the study show that the point of start in giving supplementary nutrition is over six month of age. (47/3%) which 71/12% of those who started supplementary nutrition were rural and 28/88% of them were urban residents. There was a meaningful correlation between the point of start in giving supplementary nutrition and resident place. Urban residents started supplementary nutrition in order by giving oatmeal (63/82%), rice syrup (12/76%), meal of the day (12/76%), soup (9/57%), Mamana (powdered milk) and mashed potato (1/06%). Rural residents started supplementary nutrition in order by giving oatmeal (75/24%), rice syrup (12/19%), meal of the day (1/45%), soup (9/22%), Mamana (powdered milk) (0/97%) and mashed potato (0/97%).

Conclusion: There has been a meaningful relationship between residents place, starting point of giving supplementary nutrition, mother's age, level of father's education, father's job, birth degree, type of delivery, breastfeed after birth, and the source of finding information about supplementary nutrition.

Per the acquired results it can be deduced that although the order of starting supplementary nutrition in Khalilabad is in coordination with infant's nutritional program but half of the mothers deployed this pattern

Keywords: Supplementary nutrition ,Infants of 4 to 24 month of age , Malnutrition , Growth and evelopment ,Khalilabad

New interventions in the prevention and control of obesity in children

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Introduction: Obesity is linked to many serious health problems, including type 2 diabetes, heart disease, stroke, and some types of cancer. The purpose of the following article is to examine "new interventions in the prevention and control of obesity in children".

Method: The current research was compiled using a systematic review method and compiled using a descriptive-analytical method. 436 articles were extracted from various scientific

databases. After careful examination, 57 articles that were most closely related to the studied variables were separated, and finally, they were extracted by descriptive method and article analysis.
Result: The findings showed that appropriate cultural programs and policies that help people eat nutritious foods in proportion to their calorie needs can reduce overweight and obesity.
Conclusion: Multicomponent lifestyle interventions that make it easier for people to be more physically active can also help them maintain a healthy weight.
Keywords: new interventions, obesity, children, public health interventions

Hospital malnutrition: nutritional management of hospitalized patients

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Background: Hospital malnutrition is a syndrome that is associated with a significant increase in complications and physical disability, short-term and long-term mortality, impaired recovery after illness, increased costs of care and treatment, and increases in 90% of elderly patients. In the hospital, factors such as insufficient food intake, decreased appetite and fasting for diagnostic procedures, increased number of medications, reduced mobility, and digestive diseases in hospitalized patients cause hospital malnutrition. According to the studies published in this field, this article presents the malnutrition status of patients hospitalized in treatment centers and their prevention methods.
Materials and methods: To obtain studies related to hospital malnutrition, the databases of the American National Library (PubMed), the World Health Organization (WHO), Cleveland Clinic, ScienceDirect, Healthline, and the European Society for Clinical Nutrition and Metabolism (ESPEN) were searched. Became No time limit was considered in the search.
Findings: The prevalence of malnutrition increases with age, co-morbidities, and intensity of care in 90% of the elderly population. However, malnutrition is often not diagnosed and treated in the hospital. Therefore, a screening is needed for a better diagnosis.
Conclusion: These findings show that nutritional support reduces mortality among malnourished patients in the medical department. The results support the data found by these studies and may help inform patients, physicians, and authorities about the usefulness of nutritional support in practice.
Keywords: hospitalization, malnutrition, nutritional support

Nutritional Therapeutics in Chronic Non-Communicable Diseases: A Bacterial Perspective

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Introduction: Chronic non-communicable diseases (NCDs), including cardiovascular diseases and certain cancers, are major global health concerns. Growing evidence suggests that bacterial infections significantly contribute to the onset and progression of these diseases by promoting chronic inflammation and disrupting immune homeostasis. H.pylori, a bacterium linked to gastric cancer, can induce chronic inflammation that may extend beyond the gastrointestinal tract, contributing to cardiovascular disease and type 2 diabetes. On the other hand, S. pneumoniae, a common cause of pneumonia and other respiratory infections, is known to exacerbate conditions like chronic obstructive pulmonary disease (COPD) and increase cardiovascular risk.
Method: This review focuses on the role of nutritional therapeutics in managing NCDs, particularly through the modulation of bacterial pathogens such as Helicobacter pylori and Streptococcus pneumoniae.This review synthesizes current research on the interaction between nutrition and bacterial pathogens in the context of NCDs, highlighting the potential of dietary interventions to mitigate the impact of bacterial infections on these diseases. The findings underscore the importance of a comprehensive approach that includes

nutritional therapy in the prevention and management of NCDs.
Result: Nutritional strategies, including high-fiber diets and antioxidants, have demonstrated potential in suppressing H. pylori colonization and reducing associated inflammation.Probiotic supplementation, along with diets rich in vitamins and minerals, has shown promise in enhancing the immune response and reducing the severity of infections caused by S. pneumoniae.
Conclusion: While nutritional interventions targeting bacterial infections offer promising avenues for NCD management, further research is needed to clarify the mechanisms involved and optimize dietary strategies for clinical application.
Keywords: Nutritional Therapy, Chronic Non-Communicable Diseases, Bacterial Infections, Helicobacter pylori, Streptococcus pneumoniae

The Relationship Between Nutrition and Functional Gastrointestinal Diseases (FGID) In Adults

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Introduction: The role of food in the development of gastrointestinal disorders is very important.Fructose intolerance is common in patients with gastrointestinal disorders and malabsorption has been observed in the intestines.Patients with functional disorders of the gastrointestinal tract are more likely to suffer from chronic pain and other functional disorders.Nutritional deficiencies or malnutrition can cause digestive problems such as diarrhea, blood loss, weight loss and anemia.Therefore, the aim of this study was to investigate the effect of nutrition on functional disorders of the gastrointestinal tract. Due to the heavy burden that these diseases impose on the health of different communities, it is important to study other indicators such as the effect of food. According to studies, there is a lot of evidence that this index is associated with the incidence of gastrointestinal problems as well as FGID. Considering that many people suffer from gastrointestinal diseases, especially FGID, due to micronutrient deficiencies and supplementation with these micronutrients is a great help in the treatment of these people, we decided to conduct a review study to investigate effective foods for patients with FGID.
Method: Gastrointestinal diseases are a common cause of death. The most common of these diseases is FGID, which is characterized by a decrease in blood supply to organs such as the liver and subsequently the appearance of gastrointestinal problems. The study will be conducted to access articles on supplements affecting FGID by searching the literature published in the databases of ISI Web of Science, PubMed, and Google scholar. Terms and keywords obtained from the Mesh Medical Topic Database and the study of published articles in this field are searched by combining the AND and OR operators: ("Supplements" OR "supplementation" OR "trial" OR "randomized clinical trial") AND ("FGID" OR stomach pain) 499 articles were found through the investigation of such databases. we reviewed 19 studies on the consumption of FGID and Gastrointestinal disorders.
Result: The results indicate that the motor response of the upper gastrointestinal tract to the consumption of different carbohydrates , especially foods Eliminating a certain group of carbohydrates can lead to better digestive function. The results also show that diets with higher levels of spicy foods and high in oil are consistently associated with outcomes of digestive disorders, including worsening intestinal inflammation. As a result, it can be dealt with by observing a healthy lifestyle pattern. Some nutritional tips that can help improve and prevent this disease are: tip1- Consumption of vegetables, fruits, nuts, legumes, olive oil, and lean protein sources such as soybeans, chicken meat, and fish tip2- Choosing the right lifestyle and taking beneficial supplements.
Conclusion: in this study, the side effects of immunosuppressive and gastrointestinal drugs on patients will not be investigated.
Keywords: inflammatory pathologies ،health benefits of plant based nutrition ،functional diseases , gastrointestinal tract

The effect of nigella sativa on anthropometric parameter in adults: systematic review and meta-analysis of randomized controlled trials

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Introduction: This study examines the effects of Nigella sativa (black seed) supplementation on anthropometric indices in adults. Nigella sativa has been used for centuries to treat arthritis, diabetes, asthma, and metabolic disorders. Recently, its potential role in managing obesity has gained attention.
Methods: We conducted a comprehensive review, searching PubMed, Scopus, ISI Web of Science, and Google Scholar until March 2024. Only randomized, placebo-controlled trials investigating the effects of Nigella sativa on body weight, body mass index (BMI), and waist circumference were included. A total of 45 relevant studies were analyzed.
Results: Our analysis revealed significant reductions in BMI (mean difference [MD]: −0.35 kg/m^2, 95% confidence interval [CI]: −0.52 to −0.18, I^2 = 8.85%) and waist circumference (MD: −1.72 cm, 95% CI: −2.91 to −0.52, I^2 = 61.22%) following Nigella sativa supplementation. Subgroup analysis based on dose (I^2 = 0.0%) and age (I^2 = 10.22%) eliminated heterogeneity. However, no significant change in body weight was observed (MD: −0.78 kg, 95% CI: −2.4 to +0.84, I^2 = 95.49%).
Conclusion: Nigella sativa supplementation may help improve BMI and waist circumference, but its effect on body weight was not statistically significant in this analysis. Further research is needed to understand its impact on weight management better.
Keywords: Nigella sativa , BMI , Weight ,WC

Association of Ischemic Heart Disease with Dietary Fatty Acids: A Case-Control Study

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Introduction: Among non-communicable illnesses, cardiovascular diseases (CVDs) account for more than 70% of global mortality. The link between IHD and dietary fats reported contradictory results. Some types of fatty acids may cause coronary heart disease (CHD). no research has related dietary Fatty Acids consumption to IHD in middle Easterners diets which may differ substantially from western norms.
Method: This case-control study conducted in Tehran, Iran. 443 cases and Controls, 40-80 years, were evaluated the relation of whole types of dietary fats with IHD.The cases were selected with an medical record of stable ischemic heart disease confirmed by the physician, using a consecutive sampling method. Individuals who refer to the hospital for other reasons were chosen as the control group. The short form of International Physical Activity Questionnaire (IPAQ) was used to measure physical activity level. The semi-quantitative 237-item food frequency questionnaire (FFQ) was used to assess the amount of food intake and the form of consumption of various foods. Quantitative information was described using mean and standard deviation and qualitative information was described using number and percentage, which were compared between the groups using the independent t-test and chi-square test, respectively
Result: There was not significant difference in term of BMI, Smoking, use alcohol, Right SBP1, Right DBP1, HGB, HCT, MCV, MC, MCHC, HDLC, and LDL. Comparison of dietary intake among the case and control groups is presented Table 2. The case group had lower intake of DHA (11.36±12.58 vs. 14.19±19.57, P=0.01) than the control group. No significant difference was found in term of dietary protein, total fat, carbohydrate, energy, and Saturated fatty acids. A negative association was found between CHD and DHA (OR: 0.98, CI 95%: 0.98, CI95%: 0.97-0.99), P=0.01). No significant relationship was observed between the intake of the Cholesterol, SFA, MUFA, with CHD.
Conclusion: we found DHA could reduce the risk of IHD whereas we have not found any significant association between SFA, PUFA, MUFA, and TFA with the odds of IHD. These finding need to be confirmed by large-scale future studies that analyses these fatty acid in diet classification. Also we need a cohort study with consideration the body composition to follow up the length of SFA intake in patient to see the exact relation. If the results of this study are confirmed in future research higher intake of DHA in diet can be

recommended as a strategy to prevent the IHD events.
Keywords: Dietary fats, CVD, IHD, fatty acids,

The effect of a comprehensive lifestyle intervention on anthropometric indices, food intake, and physical activity of adolescent

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Introduction: Non-communicable diseases are associated with underlying factors such as obesity, the lack of physical activity, and an unhealthy diet. Given the limited studies on lifestyle intervention in adolescents, this study aimed to evaluate the effect of a comprehensive lifestyle intervention on anthropometric indicators, food intake, and physical activity of adolescent boys.
Method: This was a field trial study conducted with 126 students overweight and obese male students. The intervention was designed in two levels according to the Ottawa, charter and CDC's school-based obesity prevention strategies. A physical activity tracker were used to assess the physical activity of the participants. GLM Repeated measures was used to analyze the effects of the intervention after adjustment of the confounders.
Result: Following the intervention, the intake of energy, carbohydrate, protein, and fat decreased in the intervention group while they increased in the control group. Moreover, compared to the control group, the health promotion intervention results in a significant increase in physical activity for the intervention group. The intervention group had a significant decrease in BMI and body fat compared to the control group.
Conclusion:
Conclusion: This study showed the beneficial effects of a comprehensive lifestyle intervention on the improvement of anthropometric, dietary intake and physical activity indices. Therefore, the implementation of a school-based multifaceted strategy that emphasizes the promotion of physical activity and dietary changes can be considered a vital solution for obesity management in children and adolescents.
Keywords: Lifestyle, obesity, adolescent.

Energy-Adjusted Dietary Inflammatory Index (EDII) Associated with Breast Cancer and its Pathobiological Biomarkers: Hospital-Based Incidence Case-Control Study

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Introduction: Breast cancer (BC) is the leading cause of cancer deaths in women worldwide. The crosslink between inflammation, diet-induced inflammation, and BC has been investigated. This study aimed to examine the association between the energy-adjusted dietary inflammatory index (EDII) and BC.
Method: This case-control study was conducted on 165 BC patients and 166 healthy women. EDII scores were calculated based on dietary data collected using a validated 147-item food frequency questionnaire (FFQ).
Result: According to the logistic regression models, we found positive significant associations and correlations between the EDII score and tumor size (beta=0.55, p<0.001), tumor stage (r=0.17, p=0.02), and histological grade (r=0.23, p=0.004). However, in the crude, adjusted for age and adjusted for various confounders, there was no significant association between EDII and BC odds.
Conclusion: We found a significant association between the EDII score and tumor size, KI67, tumor stage, and histological grade. The study results are consistent with the recommendations aimed at maintaining higher diet quality, which is adopting healthy diets characterized by low DII scores to reduce the risk for BC. Future studies with prospective designs seem necessary for a more detailed examination of the proposed hypothesis.
Keywords: Breast Cancer, Biological Markers, Women's Health, Energy-Adjusted Dietary Inflammatory Index, Nutrition

Omega 3 effects on sleep and body composition in children with autism spectrum disorder: a randomized placebo-controlled trial

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Introduction: Children with Autism Spectrum Disorder often face challenges with sleep disturbances and adverse body composition changes, impacting their well-being.
Method: This 8-week study involved 59 boys aged 7 to 15 diagnosed with Autism Spectrum Disorder in Tehran. The treatment group received daily omega-3 capsules (360 mg DHA, 720 mg EPA), while the control group received a placebo. Body composition was measured using Bioelectrical Impedance Analysis method. Sleep patterns were tracked using a GT3X activity monitor for 7 days pre and post-intervention. Dietary intake was assessed through recall interviews. SPSS version 26 was used for data analysis, including independent t-tests, Mann-Whitney U tests, and adjusted regression tests to assess treatment effects, controlling for age and baseline values.
Result: Omega-3 supplementation increased sleep duration by 9.13 minutes (P = .02; Z=-2.2) and decreased protein intake by 1.7% (p=.03; T=2.14) compared to placebo. However, no significant changes were noted in other sleep-related factors. The intervention group showed a 3.4% increase in carbohydrate intake (p=.07; [-.37-7.27]) compared to placebo, with no significant differences in body composition measures between the two groups post-intervention.
Conclusion: Spectrum Disorder following omega-3 supplementation compared to the placebo group. Additionally, the omega-3 group exhibited higher carbohydrate intake and decreased protein consumption in their daily diet post-intervention. These findings suggest a potential benefit of omega-3 supplementation for improving sleep duration in ASD, highlighting the importance of further research with larger sample sizes and longer intervention periods to confirm and expand upon these results.
Keywords: autism spectrum disorder, sleep quality, body composition.

Dietary inflammatory index in relation to non-alcoholic fatty liver disease

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Introduction: Non-alcoholic fatty liver disease is a preventable and treatable chronic liver disease characterized by the accumulation of more than 5% of liver fat cells. Dietary modification is a significant impact on liver health and the effect of diet on inflammatory potential can be quantified by the Dietary Inflammatory Index (DII). Method: text
Result: Findings showed that patients with the highest DII had significantly higher serum inflammatory cytokine, also NFS and FIB-4 as a marker of disease severity. Patients in the last tertile of the DII had a higher level of AST (OR: 3.71; 95% CI: 1.97–6.98), ALT (OR: 2.73; 95% CI: 5.03–1.48), GGT (OR: 3.77; 95% CI: 9.34–1.52), and FBS (OR: 1.93; 95% CI: 3.49–1.06) compared to patients in the first tertile. After adjusting for confounding factors, the relationship remained significant.
Conclusion: The severity of the NAFLD fibrosis score and FIB-4 index were significantly correlated with the Dietary Inflammatory Index.
Keywords: Dietary inflammatory index (DII), Liver, non-alcoholic fatty liver disease

The role of nutrition in the prevention and management of autoimmune diseases: a systematic review of observational and clinical trial studies

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Introduction: Autoimmune diseases like rheumatoid arthritis (RA) and multiple sclerosis (MS) are chronic inflammatory conditions with complex origins involving genetic, environmental, and lifestyle factors. Recent evidence suggests nutrition may play a crucial role in modulating the immune system and inflammatory processes, potentially affecting the risk and progression of these diseases. This systematic review evaluated current evidence on nutritional factors in preventing and managing autoimmune diseases.
Method: A comprehensive search of electronic databases (PubMed, Google Scholar, Cochrane Library) was conducted for relevant studies published up to March 2024. The search included

studies investigating associations between dietary factors or nutritional interventions and the risk, progression, or management of autoimmune diseases, particularly RA and MS. Eligible study designs included randomized controlled trials, cohort studies, and case-control studies.

Result: Findings suggest that certain dietary patterns, such as the Mediterranean diet and anti-inflammatory diets, may be associated with reduced risk of developing autoimmune diseases and improved outcomes. Specific nutrients like omega-3 fatty acids, vitamin D, and antioxidants showed potential benefits in modulating disease activity. However, evidence for individual dietary components or supplements was inconsistent, and overall evidence quality varied across studies.

Conclusion: This review provides an overview of current evidence on nutrition's role in preventing and managing autoimmune diseases, focusing on RA and MS. While certain dietary patterns and nutrients show promising effects, further high-quality research is needed to establish clear dietary recommendations. Integrating nutritional strategies into autoimmune disease management may offer complementary approaches to conventional treatments.

Keywords: Dietary patterns; Nutrients, Auto-immune diseases; Observational studies, Trials

The association between maternal serum vitamin B12 levels and glycemic indices in children: a systematic review of observational studies

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Introduction: Emerging evidence suggests that maternal vitamin B12 status during pregnancy may influence glycemic control in offspring. This systematic review aims to synthesize the available observational evidence on the association between maternal serum vitamin B12 levels and glycemic indices in children.

Method: Electronic databases (PubMed, Embase, Web of Science) were systematically searched for observational studies published up to August 2023 that examined the relationship between maternal vitamin B12 levels during pregnancy and measures of glycemic control in children.

Result: A total of 18 studies (12 cohort, 4 case-control, 2 cross-sectional), involving over 10,000 mother-child pairs, met the inclusion criteria. The majority of studies reported an inverse association between maternal vitamin B12 levels and markers of insulin resistance, impaired glucose tolerance, or elevated glycated hemoglobin in offspring. Children born to mothers with vitamin B12 deficiency during pregnancy exhibited higher insulin resistance indices (HOMA-IR), elevated fasting glucose, and increased risk of prediabetes or type 2 diabetes compared to those born to mothers with adequate B12 levels. Potential mechanisms include the role of B12 in insulin sensitivity, beta-cell function, mitochondrial metabolism, and epigenetic modifications affecting glucose metabolism genes.

Conclusion: This systematic review provides evidence that lower maternal vitamin B12 levels during pregnancy are associated with adverse glycemic outcomes in offspring, potentially increasing the risk of insulin resistance and type 2 diabetes later in life. Ensuring adequate vitamin B12 status during the periconceptional period and throughout pregnancy may have implications for the metabolic health of future generations.

Keywords: Vitamin B12, Maternal, Pregnancy, Children, Glycemic indices.

The potential protective effects and mechanisms of fasting on neurodegenerative disorders: a Systematic review of pre-clinical and clinical studies

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Introduction: The prevalence of age-related neurological diseases is increasing with the intensification of the global aging phenomenon. Accumulating evidence suggests that neurodegenerative disorders can be prevented, and also their progression can be delayed by regulating the metabolic pathways through fasting diets. Therefore, this study aimed to investigate the possible protective effects and mechanisms of action of fasting on neurodegenerative disorders.

Method: This systematic review was conducted by systematically searching electronic databases, including PubMed, Google Scholar, and

ScienceDirect using relevant keywords, such as "mechanism," "fasting," and "neurodegenerative disorders." Studies published in the English language until the end of January 2024, investigating the effects and mechanisms of action of fasting on neurodegenerative disorders, were included in the study.

Result: A total of 23 studies, including 17 experimental studies and 6 clinical trials, were involved in the systematic review. Metabolic and cellular mechanisms of fasting could lead to both structural and functional changes in the brain. The most important mechanisms well described in animal models included enhanced antioxidant mechanisms, DNA repair, cellular waste removal or autophagy, and subsequent stress resistance upon refeeding and glucose restoration. Another proposed mechanism is the alteration and enrichment of intestinal microbiota during fasting. The gut microbiota is an important mediator among dietary timing, circadian rhythms, and immune system function, thus influencing the central nervous system.

Conclusion: Fasting could be considered a non-pharmacological approach for both the prevention and treatment of neurodegenerative disorders; however, more research is necessary in this field.

Keywords: Mechanism; Fasting; Neurodegenerative disorders.

Effects of Camelina sativa oil Supplementation on risk factors for cardiovascular disease: A Systematic Review and Dose-response Meta-analysis of Randomized Clinical Trials

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Introduction: Prior studies showed that Camelina oil supplementation (COS) positively impacts cardiometabolic health. This meta-analysis aimed to evaluate COS's efficacy on cardiovascular disease risk factors.

Method: Relevant studies were selected by searching ISI Web of Science, PubMed, and Scopus up to June 30, 2024.

Result: Seven RCTs were analyzed, revealing that COS significantly decreased HOMA-IR (WMD: -0.97; 95% CI: -1.81, -0.13; I2 = 28.9%; p = 0.023), BMI (-4.35 kg; 95% CI: -7.16, -1.53; I2 = 0.0%; p = 0.002), WC (-4.66 cm; 95% CI: -2.13, -1.02; I2 = 0.0%; p = 0.012), and WHR (-0.06; 95% CI: -0.11, -0.01; I2 = 0.0%; p = 0.024), and serum hs-CRP (-0.74 mg/dl; 95 % CI: -2.01, -0.23; I2= 0.0%; p = 0.006) compared to the control group. In addition, pooled data on lipid profile demonstrated that the COS did not significantly change LDL, HDL, TC, and TG. However, subgroup analysis according to trial duration and dose of intervention showed that COS significantly reduced TC (weighted mean difference [WMD]: -11.64 mg/dl; 95% CI: -25.49, -2.21; I2= 35.8%; p = 0.009) in trials with more than eight weeks and dosages of less than 30 g/d. Furthermore, COS did not significantly change BMI, SBP, DBP, FBG, and FI compared to the control group.

Conclusion: COS may reduce cardiovascular disease risk by improving hs-CRP, body composition, TC, and HOMA-IR. However, COS did not change blood pressure, other glycemic indices, and lipid profile markers. Further RCTs with longer duration and larger number of subjects are needed.

Keywords: Blood pressure, Body composition, Camelina oil, lipid profile.

Associations of anti-inflammatory-antioxidant rich diets and synbiotics with health-related conditions in patients with progressive multiple sclerosis: A single-center, randomized clinical trial

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Introduction: Multiple sclerosis (MS) is a chronic autoimmune disease of the central nervous system (CNS) characterized by inflammation and neurodegeneration. The most

prominent clinical features include visual loss and sensorimotor symptoms, which mainly affect young people. Current research provides evidence that diet may influence MS's onset, course, and quality of life in patients with MS. This study aimed to assess the impact of synbiotics and an anti-inflammatory-antioxidant-rich diet on fatigue, and pain in patients with progressive forms of MS.

Methods: In this single-center, single-blind, randomized, controlled clinical trial, seventy participants with three forms of progressive MS (primary-progressive, secondary-progressive, and progressive-relapsing) were randomly assigned to receive either synbiotics supplement and anti-inflammatory-antioxidant-rich diet or a placebo along with their usual diet for four months. Modified fatigue impact scale (MFIS), global pain scale (GPS), bladder control scale (BLCS), and bowel control scale (BWCS), were assessed at baseline and the end of the trial.

Results: Sixty-nine participants completed the trial, resulting in a 98% adherence rate to the diet, and no reports of serious side effects. Significant mean changes were observed in fatigue (Δ for experimental group = -10.5 ± 10.8 vs. Δ for control group = -0.08 ± 4.1; $P < 0.001$), pain (-14.1 ± 19.0 vs. 0.9 ± 10.3; $P < 0.001$), bladder (-0.76 ± 2.1 vs. 0.3 ± 1.1; $P = 0.013$) and bowel (-6.6 ± 3.2 vs. -0.05 ± 2.3; $P < 0.001$) control.

Conclusion: The anti-inflammatory-antioxidant-rich diet and synbiotics co-supplementation improved fatigue, pain, and bowel/bladder status among patients with progressive MS.

Keywords: diet; Fatigue; Pain; Progressive multiple sclerosis; Synbiotics

Antioxidants and blood pressure: a beneficial relationship

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Background: Among cardiovascular diseases, high blood pressure is a multifactorial consequence and the main risk of fatal complications. Oxidative stress and chronic inflammation are potentially responsible for endothelial damage and vascular stiffness, two major causes of hypertension and cardiovascular disease. The relationship between composite dietary antioxidant index (CDAI) and hypertension remains unknown. Our study aims to investigate the association of CDAI with hypertension in adults.

Methods: To find studies on the relationship between antioxidants and blood pressure, the databases of the National Library of America (PubMed) and ScienceDirect were searched with the keywords antioxidant, blood pressure, vascular regeneration, and oxidative stress. Became No time limit was considered in the search.

Results: Reactive oxygen species (ROS) are increased and antioxidant capacity is decreased in hypertensive humans, many of whom suffer from end-stage renal disease (ESRD). Antioxidant therapy can improve human cardiovascular outcomes only if adequate doses are used. Treatment with vitamins C and E reduces superoxide production in tissues, especially blood vessels. According to the studies conducted on the biological activity of peptides, they have antioxidant activity and renin inhibitors. In addition, antioxidant peptides have the potential to be evaluated against renin and provide an alternative for the treatment of hypertension without causing adverse effects.

Conclusion: Our study showed a negative linear relationship between CDAI and adult hypertension. Our results showed that arterial stiffness is significantly reduced in patients consuming antioxidants and endothelial function increases.

Keywords: Antioxidant; blood pressure; oxidative stress; vascular regeneration

Association between the triglyceride-glucose index and the risk of cardiovascular disease in Kurdish adults: Result from RaNCD cohort study

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Introduction: The triglyceride-glucose (TyG) index, a consistent content for insulin resistance, has been related to cardiovascular disease (CVD). We aimed to peruse the relationship between the TyG index and development of CVD in Kurdish adults.
Method: In this cross-sectional study, data was used from the Ravansar Non-Communicable Diseases (RaNCD) Cohort Study. Subjects with a history of stroke, myocardial infarction, or coronary artery disease, or who were currently receiving medications for these conditions, were classified as CVD patients.
Result: The research comprised 9723 individuals overall (51.76% of whom were female, mean age 47.3 ±8.26 year). We found that the TyG index in CVD patients (8.82±0.81) was substantially higher than that in non-CVD patients (P=0.001), and the top quartile of the TyG had significantly more Body Mass Index (BMI) (28.73±4.20), Triglyceride (TG) (239.45±103.30), and Fasting Blood Sugar (FBS) (117.85±50.36) values than the lowest quartiles (P=0.001). The TyG and CVD showed a positive association according to the cohort data. The chances of CVD were 2.54 (95% CI: 2.16-2.98) times higher in the fourth tertile of the TyG index than in the first tertile. After controlling for confounding factors, their association was still significant (OR: 1.58, 95%Ci: 1.35-1.95). The predictive value of the TYG score was 63% for females and 57% for males, according to ROC curve research.
Conclusion: According to the findings, risk of cardiovascular disease was linearly correlated with the triglyceride glucose index. Moreover, the TyG may be more accurate predictor of CVD in females
Keywords: Triglyceride glucose index, cardiovascular disease, Persian cohort

Effect of Chia Seed (Salvia hispanica L.) on Lipid Profile in Adults: A Systematic Review

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Introduction: Chia seeds (CS) (Salvia hispanica L.), the most excellent vegetative source of α-linolenic acid, bioactive proteins, and fibers, are among the top unconventional oilseeds shown to have bounteous benefits against vaious non-communicable diseases. Chia seed has been explored in different research models for health and the prevention of human diseases. Evidence has suggested the potential for improving insulin resistance, disordered lipid profiles, glucose tolerance, and even adiposity. This study aimed to evaluate the effect of consumption of chia seeds on the lipid profile, triglycerides, and serum ω-3 fatty acids in adults.
Method: Related studies were detected by searching the Cochrane Library, PubMed, Embase, and Scopus databases up to June 2024. Two independent authors selected and extracted data from those articles. After the selection process, ten clinical trials were included. Forest plots and summary tables were constructed to present data, and sensitivity subgroup analyses were performed on some outcomes. Heterogeneity, sensitivity analyses, and publication bias were evaluated using standard methods.
Result: Of the 30 articles found, 7 (213 patients) were included in our study. Of the chia seed interventions, three studies showed a significant decrease in total cholesterol. One of the studies reviewed showed a significant reduction in low-density lipoprotein. Three studies showed a substantial increase in high-density lipoprotein, and three significantly decreased triglycerides.
Conclusion: The current systematic review provides evidence from Randomised Clinical Trials that chia seed intake appears to have a neutral or beneficial effect on some lipid and fatty acid profile markers.
Keywords: Lipid profile, Chia seed, Salvia hispanica

The association between Dietary Diversity Score and odds of nonalcoholic fatty liver disease: a case-control study

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Introduction: The present study aimed to examine the association between DDS and its components and NAFLD among Iranian adults.
Method: In the case-control study, we enrolled 121 newly diagnosed cases of NAFLD and 122 with age, BMI and sex-matched controls. All NAFLD patients were diagnosed through ultrasonography methods by gastroenterologists. Anthropometric parameters of participants including weight, height, hip circumference and waist circumference were measured. A validated 147-item semi-quantitative food frequency questionnaire was applied to assess the usual dietary intakes of participants. Binary logistic regression was conducted to estimate the risk of NAFLD in relation to DDS and its components, including refined grains, vegetables, fruits, dairy and meats.
Result: The mean age of study participants was 42.7 years of them 53.1% were male. Higher adherence to DDS [odds ratio (OR) = 0.48; 95% confidence interval (CI), 0.25-0.95] and vegetable group (OR = 0.34; 95% CI, 0.16-0.71) were remarkably associated with lower risk of NAFLD, after adjusting for several confounders including age, BMI, physical activity, energy intake, job, education, and antihypertensive drugs usage. Contrastingly, greater adherence to the refined grain (OR = 3.36; 95% CI, 1.44-7.87) and meat group (OR = 3.27; 95% CI, 1.25-6.90) was significantly associated with increased risk of NAFLD.
Conclusion: High DDS is inversely correlated with the risk of NAFLD. Hence, increasing the diversity score of diet by emphasizing the higher diversity scores for vegetables and less for meat and refined grains may be profitable for the management of NAFLD.

Keywords: NAFLD, DDS, diet, fatty liver, nutrition

Consumption of "Diabetes Risk Reduction Diet" and Odds of Breast Cancer Among Women in a Middle Eastern Country

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Introduction: The present study was designed to assess the association between consumption of "diabetes risk reduction diet" (DRRD) and odds of breast cancer among a large group of women in a Middle Eastern country.
Method: This population-based case-control study enrolled 350 newly diagnosed cases of stage I-IV breast cancer and 700 age-matched apparently healthy individuals as controls. We collected dietary data via a validated 106-item Willett-format semi-quantitative dish-based food frequency questionnaire. A DRRD score was included based on 9 dietary factors (cereal fiber, coffee, nuts, whole fruits, ratio of polyunsaturated to saturated, trans fat, sugar-sweetened beverages, red and processed meat, and lower glycemic index). For food and nutrient items with a protective association with diabetes in earlier studies, participants were given the score as the quintile of that food item, but for food groups with unfavorable association with diabetes, we did vice versa. Total DRRD score ranged from 5 to 45.
Result: We found that individuals with the greatest adherence to the DRRD were 0.41 times less likely to have breast cancer than those with the lowest adherence (OR: 0.59; 95% CI: 0.38, 0.90, and P-trend = 0.002). Stratified analysis by menopausal status indicated a significant inverse relationship in postmenopausal women (OR: 0.57; 95% CI: 0.36–0.90), but not in premenopausal women (OR: 0.76; 95% CI: 0.19–2.96). Moreover, by BMI status, we found statistically significant inverse association between adherence to the DRRD and odds of breast cancer among normal-weight women (OR: 0.59; 95% CI: 0.36, 0.98) but not in overweight women (OR: 0.66; 95% CI: 0.31, 1.40).

Conclusion: Overall, we found that consumption of "diabetes risk reduction" diet was associated with a reduced odds of breast cancer, in particular among normal-weight women and postmenopausal women.
Keywords: Breast cancer, DDRD, nutrition, diet, cancer

Long-term effects of early-life nutrition on gut microbiome development and health outcomes: a review

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Purpose of Review: Early-life nutrition significantly influences the development of the gut microbiome, which in turn affects long-term health outcomes. This review aims to evaluate how different feeding practices, including breastfeeding, formula feeding, and the introduction of solid foods, shape the gut microbiome and impact health over the lifespan.
Recent Findings: The results of the reviewed studies showed that breastfeeding and complementary feeding significantly affect the gut microbiome in infants. Specifically, breastfeeding is recognized as a protective factor in developing a healthy microbiome and reducing the risk of metabolic diseases and gut disorders. In contrast, early and inappropriate introduction of complementary feeding can lead to negative changes in microbiome composition and an increased risk of inflammatory bowel diseases and metabolic disorders.
Summary: Early-life nutrition critically influences the development of the gut microbiome and has profound implications for long-term health. A balanced diet, rich in prebiotics and low in processed foods, supports a healthy microbiome and can prevent or mitigate various chronic diseases. Continued research is needed to refine dietary recommendations and interventions to maximize health benefits from infancy through adulthood.
Keywords: Gut Microbiome ،Infant Nutrition ، Long-Term Health ،Prebiotics ،Dietary Supplements

Energy-Adjusted Dietary Inflammatory Index (EDII) Associated with Breast Cancer and its Pathobiological Biomarkers: Hospital-Based Incidence Case-Control Study

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Background: Breast cancer (BC) is the leading cause of cancer deaths in women worldwide. The crosslink between inflammation, diet-induced inflammation, and BC has been investigated. This study aimed to examine the association between the energy-adjusted dietary inflammatory index (EDII) and BC.
Methods: This case-control study was conducted on 165 BC patients and 166 healthy women. EDII scores were calculated based on dietary data collected using a validated 147-item food frequency questionnaire (FFQ).
Results: According to the logistic regression models, we found positive significant associations and correlations between the EDII score and tumor size (beta=0.55, $p<0.001$), tumor stage ($r=0.17$, $p=0.02$), and histological grade ($r=0.23$, $p=0.004$). However, in the crude, adjusted for age and adjusted for various confounders, there was no significant association between EDII and BC odds.
Conclusions: We found a significant association between the EDII score and tumor size, KI67, tumor stage, and histological grade. The study results are consistent with the recommendations aimed at maintaining higher diet quality, which is adopting healthy diets characterized by low DII scores to reduce the risk for BC. Future studies with prospective designs seem necessary for a more detailed examination of the proposed hypothesis.
Keywords: Breast Cancer, Biological Markers, Women's Health, Energy-Adjusted Dietary Inflammatory Index, Nutrition

Effect of high-dose vitamin D on mortality and hospital length of stay in ICU patients with covid-19: a randomized clinical trial

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Introduction: Evidence indicating the effect of vitamin D supplementation on improving the clinical outcomes of COVID-19 is limited. This study aimed to examine the effect of high-dose vitamin D on mortality and hospital length of stay in ICU patients with COVID-19.
Method: A single-center, double-blind, placebo-controlled, randomized clinical trial study was conducted on 61 patients with moderate to severe COVID-19 hospitalized in the ICU of Golestan Hospital, Kermanshah, Iran. Participants were randomly divided to receive a single dose of 300 000 IU vitamin D3 intramuscularly (n = 31) or placebo (n = 30). The primary outcomes were the length of hospital stay and in-hospital mortality. Secondary outcomes were the length of stay in the ICU, the number of patients requiring mechanical ventilation, and the serum level of 25-hydroxyvitamin D.
Result: Out of 61 randomized patients, 44 patients with a mean age of 53.49 ± 13.2 years, body mass index of 29.80 ± 5.0 kg/m2, and serum vitamin D level of 24.36 ± 4.47 mg/dL were included in the study for primary analysis, of whom 31 (70.5%) cases were men. Median (interquartile range), the length of hospital stay between the vitamin D group (5.0 [6.0 - 11.0] days), placebo group (11.0 [6.0 - 17.0] days) (log-rank P = 0.23; unadjusted hazard ratio [HR] for hospital discharge, 3.4 [95% confidence interval [CI], 0.4 - 28.05]; P = 0.25; adjusted HR, 0.04 [95%CI, 11.52 - 0.0001]; P = 0.27) and mortality (unadjusted odds ratio [OR], 0.63 [95% CI,0.09 - 4.21]; P = 0.63; adjusted OR, 0.46 [95%CI, 0.03 - 6.55]; P = 0.57) showed no significant difference between the two groups before and after the adjustment of confounding factors. No significant difference was observed between the two groups regarding the need for mechanical ventilation (unadjusted OR for intubation = 2.1 [95% CI, 0.17 - 25.01]; P = 0.55), adjusted OR = 1.16 [95%CI, 0.04 - 27.57]; P = 0.92), and the length of stay in ICUs (log-rank = 2.49, P = 0.114; unadjusted HR for ICU discharge, 6.28 [95%CI, 0.5 - 78.42]; P = 0.15; adjusted HR = 21.48 [95%CI, 0.12 - 3677.48]; P = 0.24).
Conclusion: Based on the results, A high dose of vitamin D did not significantly reduce mortality and hospital length of stay in ICU patients with COVID-19.
Keywords: Hospitalization, Mortality, SARS-CoV-2, Vitamin D

Association between food insecurity and diet quality in Iranian adults with type 2 diabetes: a cross-sectional study

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Introduction: Food insecurity is a growing concern worldwide and has been linked to various adverse health outcomes, including poor dietary habits and chronic diseases. This study aims to investigate the relationship between food insecurity and diet quality among Iranian adults with T2D, focusing on understanding how different levels of food insecurity influence dietary habits and overall health.

Method: This cross-sectional study involved a sample of 250 Iranian adults diagnosed with T2D, who were selected from urban and rural areas. Participants were classified into three groups based on their food security status: high, marginal, and low. The Household Food Insecurity Access Scale (HFIAS) was used to measure food insecurity. Through a 24-hour dietary recall, the measurement of dietary intake was done and diet quality was evaluated by using the Healthy Eating Index (HEI-2015). Statistical

analyses such as analysis of variance and logistic regression were utilized to explore the association between food insecurity levels and diet quality.

Result: Approximately 38% of participants reported experiencing low and marginal food security, and 42% were classified as having high food security. Participants with low and marginal food security had an average BMI of 29.0 kg/m^2 (± 4.2), whereas those with high food security had an average BMI of 24.5 kg/m^2 (± 3.8). Analysis indicated that participants with low and marginal food security had significantly lower Healthy Eating Index (HEI) scores compared to those with higher food security levels (OR = 2.5, 95% CI: 1.7-3.6, p < 0.001). Specifically, those in the low and marginal food security groups had an average HEI score of 48 (± 7.6), while the HEI score for the high food security group was estimated at 72 (± 6.8).

Conclusion: This study investigates a significant association between food insecurity and poorer diet quality among Iranian adults with T2D. Lower levels of food security is associated with higher BMI and poorer diet quality.

Keywords: Food insecurity, Diet quality, Type 2 diabetes, Healthy Eating Index

The interaction between polyphenol intake and genes (MC4r, Cav-1, and Cry1) related to body homeostasis and cardiometabolic risk factors in overweight and obese women: A cross-sectional study

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Introduction Cardiovascular disease (CVD), which is an important global health challenge, is expanding. One of the main factors in the occurrence of CVD is a high genetic risk. Polyphenols are one of the important dietary components that may have a protective role in people who have a high Genetic Risk Score (GRS) for cardiometabolic risk factors. This study examines the interaction between polyphenol intake and specific genes (MC4r, Cav-1, and Cry1) related to maintaining body balance and their interaction with cardiometabolic risk factors.
Methods; This cross-sectional study included 391 women who were overweight or obese, aged 18 to 48 years, with a body mass index (BMI) between 25 and 40 kg/m2. Total dietary polyphenol intake was assessed with a validated 147-item food frequency questionnaire (FFQ), and polyphenol intakes were determined using the Phenol-Explorer database. Serum samples underwent biochemical tests. The GRS was calculated based on the risk alleles of three genes: MC4r, Cav-1, and Cry1.
Results ;The mean ± standard deviation (SD) age and BMI of women were 36.67 (9.1) years and 30.98 (3.9) kg/m2 respectively. The high GRS and high TDPI group had a significant negative interaction with fasting blood glucose (FBS) (P= 0.01). Individuals who had a high GRS and a high phenolic acid intake were found to have a significant negative interaction with Triglyceride (P= 0.04). Similarly, individuals with high GRS and a high intake of flavonoids had a significant negative interaction with TG (P<0.01) and a significant positive interaction with High-density lipoprotein (HDL) (P= 0.01) in the adjusted model.
Conclusions ;Those with a high GRS may have a protective effect on cardiometabolic risk factors by consuming high amounts of polyphenols.

Keywords: Cardiometabolic risk factors, Genetic Risk Score, Homeostasis, Obesity, Polyphenols.

Assessing Micronutrient Deficiencies: The Role of the Hidden Hunger Index in Understanding Global Malnutrition

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Background: The Hidden Hunger Index (HHI) serves as a crucial tool for assessing the distribution and prevalence of micronutrient deficiencies, often referred to as hidden hunger, which affects over two billion individuals globally. This index was developed to highlight deficiencies in essential vitamins and minerals, specifically targeting iron, vitamin A, and zinc, which are critical for health, cognitive development, and economic productivity. The HHI utilizes a composite indicator that combines prevalence data on stunting, anemia, and low serum retinol levels among vulnerable

populations, particularly preschool-aged children. (HHI cut-off scores: Mild 0 to 19.9, Moderate 20 to 34.9, Severe 35 to 44.9, Alarmingly High 45 to 100)
Method: Data sources from the "Hidden Hunger Index by Muthayya et al. (2013) and the Food and Agriculture Organization of the United Nations (2023)" have been used to generate the HHI World map.
Results: Recent analyses reveal that hidden hunger is widespread in low- and middle-income countries, where diets lack diversity and essential nutrients. The Hidden Hunger Index (HHI) documents these deficiencies and allows for comparisons with indices like the Global Hunger Index, offering insights into the effectiveness of interventions aimed at reducing micronutrient deficiencies and informing public health strategies.
Conclusion: The HHI underscores the critical need for enhanced data collection and monitoring of micronutrient status to guide public health strategies, serving as a vital advocacy tool for mobilizing resources and prioritizing nutrition interventions in areas most impacted by hidden hunger as the global community works towards sustainable development goals.
Keywords: HHI, Malnutrition

Body composition in patients with cystic fibrosis

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Background: Epidermaolysis bullosa (EB) is a heterogeneous group of rare genetic disorder characterized by skin blister formation resulting from specific genetic mutation. Clinically, EB manifests through various skin abnormalities, such as blisters, scars, pigmentation irregularities, alopecia, nail dystrophy, and deformities of extremities, with potential involvement of other systems such as respiratory, oral, musculoskeletal, digestive, dental, and reproductive. Patients with EB intake, chronic inflammation, frequent infections, and increased nutritional needs for epithelial repair. This malnutrition can hinder growth, development, and wound healing.
Therefore, accurate dietary assessment should include body composition evaluation alongside traditional anthropometric indices. This study aims to investigate body Fat Mass (FM), Fat-Free Mass (FFM), and Basal Metabolic Rate (BMR), in pediatric EB patients using Bioelectrical Impedance Analysis (BIA), recognizing the significant prognostic implications of body composition alterations in this population.
Methods: This descriptive cross-sectional study involved 52 children with EB aged 8 to 18 referred to the specialized children's clinic. Height was assessed using a standardized non-elastic measuring tape. Weight, body composition, and basal metabolic rate were determined utilizing the S 10 device.
Result: This study showed there was no significant difference between the desired parameters including weight (p-value: 0.72), height (p-value:0.56), FM (p-value:0.691), FFM (p-value:0.505), BMR (p-value:0.781), and BMI (0.832) between the two groups of male and female. The percentiles of weight for age (0.034), height for age (0.021), and BMI foe age (0.041) were significantly lower in both groups than in the normal percentiles.
Conclusion: In comparison to the healthy population, children diagnosed with EB exhbit significant deficits in both weight and height.
Keywords: Epidermaolysis bullosa, Fat Mass, Fat-Free Mass, Basal Metabolic Rate, Bioelectrical Impedance Analysis

Hospital malnutrition: increasing risk factors

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Background: According to worldwide studies, the prevalence of malnutrition among hospitalized patients has been reported to be about 15% to 60%. Hospital malnutrition is related to a high incidence of morbidity and mortality. It is often associated with impaired immunity, a high risk of infectious complications, and delayed wound healing after surgery.
Methods: To find studies related to the relationship between the prevalence of malnutrition and the prevalence of risk factors, the databases of the American National Library (PubMed) and ScienceDirect and Nutricion Hospitalaria were searched with the keywords

malnutrition, hospital, cost, screening, and nutrition assessment. Converted No time limit was considered in the search.
Results: After controlling for patient and hospital characteristics, hospitalizations for moderately malnourished patients were, on average, 18% longer than for well-nourished patients. The duration of medical stay increased by 23% and the duration of surgery by 32%. Costs were, on average, 31 to 34 percent higher than well-nourished patients with similar characteristics. Severely malnourished patients (11% of patients studied) stayed 34% longer and had 38% higher total costs than well-nourished patients. They stayed in medical beds 53% longer and had an average of 55% higher medical costs. The trends were similar regardless of the type of cost data used.
Conclusion: It is strongly recommended that published best practice guidelines widely use mandatory feeding screening to target and reduce the incidence of malnutrition in hospitals. Collaboration between physicians, nutritionists, pharmacists, and specialist nurses in Nutrition is critical to this initiative.
Keywords: cost; hospital malnutrition; nutrition assessment; screening

Developing a novel approach towards the effects of vitamin D consumption on preventing hyperglycemia

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Introduction: Vitamin D regulates calcium absorption, controls the calcium reservoir, modulates the activity of calcium-dependent endopeptidases in beta cells, enhances the conversion of proinsulin to insulin, increases insulin output, and augments insulin activity in target tissues. Vitamin D deficiency leads to glucose intolerance and affects insulin secretion. The identification of vitamin D receptors in all body tissues has opened new avenues in exploring its connections to other metabolic disorders, such as diabetes. Various pathogenic features of this condition are associated with several vitamin D-related genes. It has been shown that vitamin D supplementation reduces the risk of type 1 and type 2 diabetes and related complications.
Method: This study is a systematic review of several prospective studies regarding vitamin D. Both Iranian and foreign scientific databases were used in this study using researches from 2013 to 2020.
Results: The results indicate a correlation between vitamin D deficiency and glucose metabolism disorders. Vitamin D enhances insulin exocytosis by activating calcium-dependent endopeptidases and regulates insulin secretion and sensitivity, and its deficiency may lead to insulin resistance and elevated blood sugar levels. The results show that maintaining adequate levels of vitamin D can be beneficial in improving glycemic control in individuals with hyperglycemia or diabetes.
Conclusions: To establish a definitive causal relationship, Extensive and well-controlled clinical trials are required. Managing vitamin D levels in patients with hyperglycemia is vital for devising a proper diabetes management strategy. Therefore, investigating the role of vitamin D in the prevention and management of diabetes is essential.
Keywords: beta cell protection, cholecalciferol, diabetes, insulin resistance, vitamin D.

Association of neutrophil to lymphocyte ratio with depression score in MASHAD cohort study

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Introduction: The prevalence of depression bas been increasing worldwide. Inflammatory markers are related to depression. In this study we aimed to evaluate neutrophil to lymphocyte ratio (NLR) with severity of depression.
Methods: Total of 9704 participants participated to the Mashhad Stroke and Heart Atherosclerotic Disorder (MASHAD) cohort study who were between 35-65 aged. Depression was assessed using Beck scale. The NLR was computed according to the results of hematological analysis. Multi-nomial regression analysis was used to show the correlation between NLR and depression.
Results: In severe score the levels of NLR was significantly (OR= 1.298; CI= 1.009, 1.670, p= 0.042) higher compared to individuals with minimal depression.
Conclusions: The current study showed that the severe scale of depression was associated to NLR.

Keywords: lymphocyte, neutrophil, depression, Inflammatory markers

The association between plant-based diet indices and risk of mortality in patients with cirrhosis: a cohort Study

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Background. Following a plant-based diet is associated with a wide range of health benefits. The current study aimed to investigate the association between plant-based diet indices, specifically the plant-based diet index (PDI), healthful PDI (hPDI), and unhealthful PDI (uPDI) and risk of mortality in cirrhotic patients.
Methods. This study included a total of 121 patients with cirrhosis, who were followed for four years. Plant-based diet indices were calculated based on a validated semi-quantitative food frequency questionnaire consisting of 168 items. The Hazard ratio (HR) with their corresponding 95% confidence intervals (CIs) were estimated using the Cox proportional risk models.
Results. During 3955 person-month of follow-up, 43 deaths (7 women, 36 men) were documented. After adjusting all confounders, it has been found that the PDI (HR T3 vs T1 = 0.16, 95% CI = 0.03–0.89, P trend = 0.024) and hPDI (HR T3 vs T1 = 0.04, 95% CI = 0.02–0.61, P trend = 0.020) were inversely associated with mortality. While, the greater adherence to uPDI was directly associated with a significant increase in mortality risk (HR T3 vs T1 = 8.74, 95% CI = 0.33–17.14, P trend = 0.018). The 4-year survival rate among patients showed a significant relationship with all three indices.
Conclusions. Our findings highlight that adherence to PDI and hPDI can significantly reduce mortality in patients with cirrhosis, while a significant increase in mortality risk was found in those with higher adherence to uPDI. However, confirmation of these findings requires further studies.
Keywords. Plant-based diet index, healthful plant-based diet, unhealthful plant-based diet, cirrhosis

The importance of implementing food safety assurance systems in hospitals catering

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Introduction: Multiple programs and systems are applied in the food industry to guarantee the safety of manufactured products. Among those approaches, Hazard Analysis and Critical Control Points (HACCP) system is a well-known tool for identifying and controlling food safety hazards during food preparation and handling. This system is especially important in catering, where food is prepared in one place and served in another, increasing the risk. In this study, the implementation of HACCP and similar systems/programs in the catering of hospitals or other healthcare units are assessed.
Methods: A comprehensive search was conducted via databases such as PubMed, Google Scholar, and SID to identify the relevant titles and abstracts using specific terms regarding hospital, food safety issues, HACCP, and catering.
Results: So far, few reports existed in the literature concerning the planning and implementation of food safety programs like HACCP in hospital catering, and most of them were dedicated to topics like HACCP need assessment, the implementation of HACCP prerequisite programs, and the evaluation of food safety knowledge, attitude, and practice among hospital food service staffs. Despite numerous reports on the occurrence of foodborne illnesses in hospitals, and considering the possibilities of food contamination during food preparation and handling, it seems that none of the well-known food safety assurance systems, including HACCP, is mandatory in these settings.
Conclusion: In consequence, to protect hospitalized patients from confronting unsafe food products, the employment of a food safety assurance system in hospital catering seems to be necessary.
Keywords: Hospital, HACCP, Catering, Food safety

The effects of probiotic supplementation on the symptoms of irritable bowel syndrome: a systematic review

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Background: Irritable bowel syndrome (IBS) is one of the most common functional bowel disorders, affecting 5-20% of the world's population. Dietary intakes or food supplements are among the most important factors influencing symptoms of this disorder. Although many studies evaluate the effects of probiotic supplements on IBS; the results seem to be contradictory. Therefore, the present study aimed to examine the effects of probiotic supplementation on the symptoms of IBS.

Methods: To find clinical trial studies on the effects of probiotic supplementation on the symptoms of IBS in this systematic search, online databases including PubMed, Web of Science, Scopus, and Google Scholar were searched using the keywords "probiotic" and "irritable bowel syndrome" or "IBS" up to May 2024 without publication date or language restrictions. The quality of the selected studies was evaluated using the Cochrane tool.
Result: In this search, 9 related articles were found. In these 9 studies, a total of 956 patients with IBS entered the probiotic group and 1102 entered the control group. All selected studies were randomized clinical trials. Among the findings of this review, 8 studies showed that probiotic supplementation can improve the symptoms of this syndrome, such as severe diarrhea, constipation, abdominal pain, and bloating. However, in one of the studies, no significant effect was reported. Moreover, probiotic supplementation did not cause any special complications in the patients in none of these studies.
Conclusion: The results of this systematic review indicated that probiotic supplementation can be recommended as a complementary treatment in patients with IBS.
keywords: irritable bowel syndrome, probiotics, dietary supplements

Strategies for improving the nutritional value of plant-based meat analogs

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Introduction: Plant-based meat alternatives (PBMA) are food products from plant components and engineered to mimic the taste/texture/appearance of conventional meat. Health-related concerns along with ethical considerations, economic and environmental issues have increased the global popularity/demand for PBMA. In this review, novel approaches for better competition of PBMA with conventional meats and increasing their nutritional similarity were gathered from the previous studies.
Methods: In this study, databases of PubMed, Scopus, and Web of Science with the keywords of "Plant-based meat alternative" OR " PBMA" AND "Plant-based meat analogs" were checked up to August 2024.
Results: Vegetable proteins often lack one/more essential amino acids. To address this deficiency, techniques such as the combination of various plant proteins are being investigated. For example, mixing two protein sources of pea (high in lysine/low in methionine) and brown rice (high in methionine/low in lysine) provides all essential amino acids. Another challenge is the presence of anti-nutritional factors such as phytates that prevent the absorption of minerals. Recent research suggests the use of phytase to reduce phytate levels, thereby increasing mineral bioavailability. PBMAs are increasingly fortified with essential nutrients commonly lacking in plant sources, such as vitamin B12 and iron, which help address deficiencies common in plant-based diets.
Conclusion: Despite the recent remarkable progress in PBMA, there are still some challenges. More studies are needed to find new ways of production for improving nutritional/functional characteristics. Also, more efforts are required to inform/educate people about the superiority of PBMA over meat.
Keywords: Meat alternatives, Meat analogues, Plant-based protein

Akkermansia muciniphila and non-alcoholic fatty liver disease: A systematic review

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Introduction: Non-alcoholic fatty liver disease (NAFLD) has emerged as the most prevalent chronic liver condition, affecting approximately one-third of adults worldwide. Recent research indicates that Akkermansia muciniphila (A. muciniphila), a beneficial gut bacterium, holds significant promise as a therapeutic agent for NAFLD. This systematic review aims to evaluate the impact of A. muciniphila supplementation on modulating nonalcoholic fatty liver disease (NAFLD).
Methods: A comprehensive search was conducted across electronic databases from PubMed, Scopus, Web of Science, and Google Scholar, through May 2024 to identify relevant publications. Eligible articles were selected and evaluated through a systematic review process.
Results: Although some studies reported inconsistent findings, the majority indicated that A. muciniphila positively influences various metabolic processes, including obesity, glucose and lipid metabolism, and liver function. This bacterium alleviates hepatic steatosis, improves gut barrier function and modulates the composition of the intestinal microbiota. Additionally, it plays a role in bile acid metabolism, exhibits anti-inflammatory properties and aids in the regulation of immune responses.
Conclusions: This review highlights the potential of A. muciniphila as a next-generation probiotic for managing NAFLD. However, the absence of clinical trials specifically evaluating the efficacy and safety of this strain in NAFLD patients highlights the need for further research. Well designed clinical trials are crucial to confirm the therapeutic benefits of A. muciniphila and to establish its role in the managing of this widespread liver condition.
Keywords: Akkermansia muciniphila; Microbiota; Non-alcoholic Fatty Liver Disease

Investigating The Effect of Exerkines on Obesity-Induced Disruption: A Systematic Review

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Background: Obesity is an important medical condition worldwide. The lack of effective treatment has led to healthy lifestyle, diet and exercise as a new approach to treat obesity and its complications Exerkines (myokines, adipokines, cytokines) are signaling components that are released in response to acute and/or chronic exercise and are effective in improving the physiological process of organs. So this systematic review has been conducted to check the effect of exerkines on obesity-induced disruption.
Methods: We searched for studies on the association between exerkines, obesity, obesity-induced disruption and Obesity related disease in original articles from the Web of Science, Scopus, and PubMed. A total of 139 articles were identified from the search of the main electronic databases, which was reduced to 31 articles after deduplication. Of the 31 references screened by title and abstract, 5 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted studies on clinical and preclinical cases show that Myokins (exerkines secreted from muscles), adipokines (exerkines secreted from white adipose tissue), batokines (exerkines secreted from brown adipose tissue) increase mitochondrial biogenesis and mitophagy, increase fatty acid oxidation, increase thermogenesis, browning of WAT, decrease inflammation, increase Sensitivity to insulin, increased glucose and fat metabolism, and maintaining the quality of mitochondrial activity.
Conclusion: Based on conducted searches, exerkines released during exercise have the potential to moderate and ameliorate obesity-related metabolic diseases. However, additional studies are to determine the exact effect of exerkines and activities.
Key words: Obesity-Induced Disruption, Obesity, Exerkines, Obesity related disease

Investigating the Effect of Tirzapatide on Obesity and Weight Management: A Systematic Review

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Background: Obesity is a chronic and metabolic disease which associated with so many diseases. In addition to treatments based on healthy lifestyle, drug therapy is recommended in people with BMI ≥ 30 or BMI ≥ 27 with obesity complications. Tirspatide is the first dual agonist of glucose-dependent insulinotropic peptide and GLP-1 receptor. So this systematic review has been conducted to check the effect of tirzapatide on obesity and weight management.
Methods: We searched for studies on the association between Tirzapatide, obesity and Weight Management in original articles from Web of Science, Scopus, and PubMed. A total of 320 articles were identified from the search of the main electronic databases, which was reduced to 38 articles after deduplication. Of the 38 references screened by title and abstract, 6 references were selected for the inclusion and exclusion criteria by reading the full text, a total of 10358 adults were tested.
Results: Conducted searches on preclinical and clinical models show that doses of 5, 10 and 15 mg of tirpatide with effects on the brain (regulation of satiety, appetite and food intake), the liver (decreasing FBS levels, increasing A1C and TIR globin levels), pancreas (increasing insulin secretion and increasing beta cell activity), increasing insulin sensitivity by affecting fat tissue (reducing VAT, AST), and effect the stomach. Also, the gastrointestinal side effects of tirosopide are less than other drugs.
Conclusion: Based on conducted Tirosopide is effective in weight loss and obesity by changing BMI, body weight, lipogenesis and mass accumulation. However, more researches are needed to identify its appropriate and safe dosage.
Keywords: Tirzapatide, Obesity, Weight Management

Investigating The Effect of Intermediate Fasting Diet on Obesity-Related Aging and Its Diseases: A Systematic Review

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Background: Aging is a physiological process characterized by organ function decline, structural deterioration, and metabolic changes. Obesity has an effect on the activity of organs so that it causes dysfunction and aging. Due to the lack of proper treatment, treatment based on healthy lifestyle and diet is considered. In this systematic review, the effect of intermittent fasting diet on obesity-related aging is investigated.
Methods: We searched for studies on the association between intermediate fasting, obesity and aging in original articles from Web of Science, Scopus, and PubMed. A total of 518 articles were identified from the search of the main electronic databases, which was reduced to 50 articles after deduplication. Of the 50 references screened by title and abstract, 6 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that IF diet regimen inhibits the activity of Akt, mTOR pathway and activates FOXO, increases the ratio of NADH and thus activates AMPK and sirtuins. Also, improving the antioxidant capacity, reducing lipid peroxidation, reducing C-reactive protein, IL-6, TNF, cyclooxygenase-2, Nrf2, and heme oxygenase-1, which causes a delay in aging and related diseases.
Conclusion: Based on conducted searches, Intermittent fasting diet with a suitable approach can reduce the incidence of aging related to obesity by affecting the cellular and molecular mechanism and modulating. However, more additional and clinical studies are needed to determine IF diet as an effective diet to control aging and its related diseases.
Key words: Intermediate fasting, Obesity, Aging

Investigating The Effect of GABA on Obesity: A Systematic Review

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Background: Obesity is the excessive accumulation of body fat resulting from impairment in energy balance mechanisms. GABA (γ-aminobutyric acid) is a neurotransmitter which has a role to glucose homeostasis, lipid metabolism and energy expenditure. so this systematic review has been conducted to check the effects of GABA on obesity and its treatment.
Method: We searched for studies on the association between GABA, obesity and treatment in original articles from Web of Science, Scopus, and PubMed. A total of 596 articles were identified from the search of the main electronic databases, which was reduced to 27 articles after deduplication. Of the 27 references screened by title and abstract, 6 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on clinical and preclinical cases show that GABA increases lipolysis in WAT (activating PKA phosphorylation and upregulating the expression of lipolytic enzymes (p-PKA, ATGL) and browning proteins (PPARα, PGC1α)), reducing lipid accumulation by Reducing adipogenic factors (C/EBPα) and lipogenic factors (LPAATθ, lipin1), reducing hepatic lipid accumulation by reducing hepatic lipogenic proteins, adipogenic proteins (C/EBPα, PPARγ) and lipogenic proteins,lipolytic enzymes (p-PKA) and Reduces Lipid Accumulation and browning proteins in 3T3-L1 adipocytes
Conclusion: Based on conducted research, GABA suppresses by increasing in body fat mass and fat accumulation by reducing adipogenesis and lipogenesis, promoted WAT browning and increasing the loss of energy as heat. The efficacy and safety of GABA require that GABA be used to treat obesity and metabolic disorders. but further studies are needed to determine the exact dosage and frequency.
Keywords: GABA, Obesity, treatment

Interesting The Effect of Butyrate on Ferroptosis: A Systematic Review

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Background: Ferroptosis is a nonapoptotic cell death characterized by mitochondrial atrophy and lipid peroxidation, which could be an effective treatment for tumors. Butyrate is a non-digestible carbohydrate resulting from the fermentation of microbiomes, which has various health effect including improving the immune system and anti-inflammatory system. So this systematic review has been conducted to check the effects of butyrate on ferroptosis to cure tumors.
Method: We searched for studies on the association between butyrate, ferroptosis and treatment in original articles from the Web of Science, Scopus, and PubMed. A total of 96 articles were identified from the search of the main electronic databases, which was reduced to 36 articles after deduplication. Of the 36 references screened by title and abstract, 4 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on clinical and preclinical studies show that butyrate enhances ferroptosis via the regulating ATF3/SLC7A11 pathway, induced RAS-RSL-3 and erastin cell ferroptosis, induces cell ferroptosis via the CD44/SLC7A11 pathway and promotes ferroptosis by inducing lipid ROS production by downregulating of solute carrier and glutathione peroxidase 4. Moreover, the FFAR2-AKT-NRF2 axis and FFAR2-mTORC1 axis account for the butyrate-mediated downregulation of SLC7A11 and GPX4, respectively. Therefore, the expression of ferroptosis-related biomarkers increases after butyrate treatment.
Conclusion: Based on the studies conducted, butyrate therapy could be a key factor in enhancing ferroptosis as a new target for treating various types of tumors and cancers. Further research is required to determine other mechanisms and the exact, tolerable, and effective dosage for treatment.
Keywords: Butyrate, Ferroptosis, Treatment

Investigating The Effect of GDF15 on Obesity: A Systematic Review

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Background: Obesity is excessive body accumulation caused by energy imbalance. Growth differentiation factor 15, also known as macrophage inhibitory cytokine 1, is a member of the transforming growth factor β superfamily. GDF15 controls hematopoietic growth, energy homeostasis, adipose tissue metabolism and etc. So this systematic review has been conducted to check the effects of GDF15 on obesity and its treatments.
Method: We searched for studies on the association between GDF15, obesity and treatment in original articles from the Web of Science, Scopus, and PubMed. A total of 258 articles were identified from the search of the main electronic databases, which was reduced to 23 articles after deduplication. Of the 23 references screened by title and abstract, 5 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on clinical and preclinical models show that GDF15 reduces food intake and body mass through binding to glial cell-derived neurotrophic factor family receptor alpha-like (GFRAL) and the recruitment of the receptor tyrosine kinase RET in the hindbrain. The ligand-receptor complex activates the PI3K/AKT pathway and controls food intake, which leads to weight loss or cachexia. In other mechanisms, GDF15 and leptin act together to reduce visceral adiposity while preserving lean mass and endurance neuronal activation in the GARL AP/NTS pathway.
Conclusion: Based on the studies conducted, GDF15 could be an effective way to reduce food intake and body fat mass, but further studies are required to determine the mechanisms and the exact dosage for the treatment of obesity.
Keywords: GDF15, Obesity, Treatment

Prevalence and Association Between Avoidant/Restrictive Food Intake Disorder (ARFID) and Disorders of Gut-Brain Interaction (DGBI): A Scoping Review

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Background; Avoidant/restrictive food intake disorder (ARFID) is an eating disorder characterized by restrictive and avoidant eating behaviors not associated with body weight or shape concerns which may be exacerbated by disorders of gut-brain interaction (DGBI). The present scoping review was conducted to systematically map the existing literature on ARFID and DGBI to determine the prevalence of ARFID in DGBI, the prevalence of DGBI in ARFID patients, and to assess the association between these disorders.
Methods ;Online databases, including PubMed, Scopus, and Web of Science were systematically reviewed from 2013 to March 2024. Studies that reported the prevalence of ARFID in DGBI groups, the prevalence of DGBI in ARFID individuals, and examined the association between ARFID and DGBI were included.
Results: Of 4085 screened sources, seven studies met inclusion criteria for this study. The prevalence of ARFID in patients with DGBI ranged from 13.2% to 40%. Individuals with ARFID had higher risk for DGBI (and its symptoms) compared with controls.
Conclusion: This review provides a comprehensive summary of the prevalence of ARFID (and its subtypes) in DGBI patients, the prevalence of DGBI (and its symptoms) in ARFID group, and the association between this recently diagnosed eating disorder and DGBI. Many limitations exist related to the small sample sizes and inconsistency between ARFID and DGBI diagnostic scales. Larger-scale research is needed to better cite the association between these two common disorders. Also, more practice is needed to define precise assessment tools for ARFID and DGBI diagnosis.
Keywords: Avoidant/Restrictive Food Intake Disorder; Eating disorders; Picky eating; Disorders of Gut-Brain Interaction; Functional Gastrointestinal Disorders

Comparison of two methods of Bariatric surgery and drug therapy in the treatment of obesity: A Systematic Review

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Introduction: Obesity is a global health issue linked to serious chronic illnesses, remaining a challenge despite advances in managing hypertension and diabetes. Research on the gut-brain axis has led to safer weight loss medications. With nearly one-third of the global population overweight or obese, treatment strategies involve diet, exercise, and growing reliance on pharmaceuticals and surgery. This review compares the effectiveness of bariatric surgery and drug therapy for obesity treatment.
Methods: A review was conducted by two independent researchers using the PICO criteria. They searched Google Scholar, PubMed, CINAHL, Medline, Web of Science, and SID databases from 2014 to 2024 with MESH keywords on obesity, bariatric surgery, and drug therapy. After applying inclusion and exclusion criteria and evaluating quality, 6 articles were selected for the study.
Results: Bariatric surgery is highly effective for severe obesity, resulting in significant weight loss and improved health, including lower diabetes and cardiovascular risks. However, it carries risks such as weight regain and nutritional deficiencies, necessitating ongoing follow-up. Medications like orlistat and semaglutide also aid weight loss and metabolic health, but their effectiveness varies and side effects may occur. Long-term safety data is limited, and success often relies on lifestyle changes. Future advancements may offer better non-surgical alternatives.
Conclusions: Medications assist weight management, but surgical options typically provide more significant, lasting obesity treatment results. Treatment choices should consider BMI, health conditions, and personal preferences. Surgical procedures, especially for type 2 diabetes patients, demonstrate better weight loss and metabolic health outcomes.

Keywords: Bariatric surgery, Obesity, Drug Therapy

Total Parenteral Nutrition (TPN) in a child with Short-chain acyl -CoA dehydrogenase (SCAD) admitted to PICU in Isfahan pediatric hospital. Case Report

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Background; Short-chain acyl -CoA dehydrogenase deficiency (SCAD) is an autosomal recessive metabolic disorder in fatty acid β-oxidation. We report Total Parenteral Nutrition (TPN) in a child with Short-chain acyl -CoA dehydrogenase (SCAD) admitted to PICU.
Methods: This is a report of 10 months old patient with admission weight of 10.100 kg and 73 cm height and serum ammonia about 320 µmol/dl. Enteral feeding was started with protein and fat restriction to control ammonia and metabolic disorder. Due to the frequent intolerance of enteral feeding and its effect on the nutritional status and growth of the child, total parenteral nutrition (TPN) was requested. TPN was adjusted for fat and protein restriction with high dextrose and calories. the composition of TPN solution was changed according to serum ammonia levels. After hyper ammonia treatment, the composition of TPN changed as follows :1 to 2 gr/kg of protein, 20% of calories from fat and the rest calorie from carbohydrates.
Results ;The patient was hospitalized for 7 months and his general condition did not change. and due to the worsening of intolerance, trophic gavage at the rate of 1cc/kg/2 hours and TPN were set for the child. he was hospitalized with an initial weight of 10.100 kg and was discharged with a weight of 11.035 kg
Conclusion: Although TPN is not a common way of nutritional support in metabolic disorders, it can be an effective way to fulfill the nutritional needs in urgent circumstances.
Keywords: SCAD, TPN, Short-chain acyl-CoA dehydrogenase, nutritional support

Prevalence of premenstrual syndrome (PMS) and its association with food craving and anxiety in teenagers

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Introduction: Premenstrual syndrome (PMS) is a common condition marked by cyclical physical and psychological changes in women during the luteal phase. Various factors may influence the reduction of psychological and behavioral symptoms associated with PMS. Food craving identified as a specific desire for certain foods due to temporary psychological or physiological triggers. This study aimed to assess the correlation between food cravings and anxiety among adolescents.
Methods: This cross-sectional study conducted in high schools in Qazvin. We used stratified clustered randomization technique for sampling, selecting five schools from two designated educational strata. In each school, participants identified using a simple random sampling method. A total of 300 students participated after a comprehensive explanation of the study and obtaining informed consent. Participants completed various assessments, including demographic surveys, the premenstrual symptom screening tool (PSSD), the food craving-trait questionnaire (T-PFQ), and the Beck anxiety inventory (BAI). Furthermore, anthropometric data collected using the Omron model BF-511 scale and measuring tape.
Results: The results revealed that 51.9% of the participants exhibited severe PMS, 29.7% moderate PMS, and 18.4% manifested mild symptoms. The correlation demonstrated significant relationships between PMS and food craving (r=0.378) and anxiety (r=0.485) (P<0.05). Each incremental unit in anxiety and craving deviations linked to a respective 0.44 and 0.26 standard deviation increase in PMS scores. Together, these variables accounted for 31% of the overall variations in PMS symptoms.
Conclusion: Findings revealed that 51.9% of individuals with severe and moderate PMS monthly. An increase in anxiety and food cravings is associated with an increase in PMS.
Keywords: premenstrual syndrome, food craving, body composition, anxiety

Association between food craving and body composition in female college students

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Introduction: Obesity is a significant global concern. Analyzing the motivational processes linked to maladaptive behaviors in obese individuals is essential for management and prevention. Exploring the connection between food cravings and body composition offers insights into addressing the obesity epidemic and its public health implications.
Methods: The research was a cross-sectional study with 200 female students from Qazvin University of Medical Sciences. Participants selected via stratified random sampling, ensuring representation from all faculties based on student enrollment. Simple random selection employed within the faculties. Of the participants, 196 completed the questionnaires and underwent anthropometric assessment. Food craving assessed using the Food Craving-Trait Questionnaire (T-PFQ), while body composition evaluated using the InBody570 device.
Results: The average age of the participants in the study was 22.24±3.23 years, with a majority being undergraduate students. The overall food craving score among the participants was 111.71±29.33, indicating a significant positive correlation (r=0.22, p<0.05) between BIA score and eating cravings. Each body composition parameter, including weight, BMI, fat percentage, muscle percentage, waist circumference, and arm circumference, showed a statistically significant and positive association with food

cravings (p<0.05). However, only BMI exhibited a positive correlation with food cravings in the linear regression analysis (p<0.05).
Conclusion: In conclusion, food cravings are significant contributors to overweight and obesity, obstructing weight loss. This study indicates that Body Mass Index (BMI) significantly influence food cravings.
Keywords: food cravings, body composition, obesity

Application of artificial intelligence in nutrition science: a systematic review

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Introduction: Nowadays, with the improvement of life style and economic development, the quality and health of food is considered important for people. The use of technologies such as artificial intelligence is effective for achieving the sublime goals of the food industry and can cause innovation in this field..
Methods: A comprehensive search of electronic databases was conducted to identify relevant studies published between 2010 and 2024. Inclusion criteria encompassed research articles focusing on the application of AI in the food and nutrition, including food production, supply chain management, nutrition assessment, waste reduction, and consumer behavior analysis. A total of studies were identified and critically appraised.
Results: The findings revealed that AI offers numerous opportunities to revolutionize the food and nutrition system's sustainability. AI-powered technologies such as machine learning, neural networks, and data analytics enabled precise crop monitoring, leading to optimized resource utilization and reduced environmental impact. Additionally, AI-enhanced supply chain management systems facilitated efficient tracking, tracing, and authentication of food products, minimizing food fraud and wastage. In nutrition assessment, AI demonstrated its potential to generate personalized dietary recommendations by analyzing vast amounts of individual-specific data.
Conclusion: Considering the applications of artificial intelligence in the field of nutrition science and the effects of its use on improving the health and quality of life of people in the society, the present study can be used in the design and development of systems based on artificial intelligence in this field.
Keywords: Artificial intelligence, Nutrition science, Learning algorithm

Virtual Reality in the Treatment of Obese Patients: A Systematic Review

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Conclusion: Obesity is one of the most important health problems worldwide. The prevalence of obesity has increased dramatically in the last decades and is now recognized as a global epidemic. Virtual reality (VR) is promising for the evaluation and management of obese patients. The main objective of this review was therefore to examine the evidence regarding the efficacy of VR-based treatments as a component of therapeutic interventions for obesity.
Methods: Four databases (PubMed, Medline, Scopus, and Web of Science) were searched for related publications from 1986 to 2022 using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Inclusion criteria encompassed research articles focusing on the application of VR in reducing the weight of obese patients.
Results: The initial database searches identified 788 articles, 136 of which we removed as duplicates. From the 652 articles identified, 30 were selected. It includes most research in which VR was utilized to carry out the intervention. VR-based interventions usually combine exposure to VR environments with cognitive therapies. The VR component seems to be especially suitable for reducing body image disturbances, such as body image dissatisfaction, and for increasing self-esteem and self-efficacy.
conclusions: We conducted a broad analysis of studies on the use of VR in obese patients. Considering the applications of VR in the field of obesity and the effects of its use on improving the health and quality of life of people in the society,

the present study can be used in the design and development of systems based on VR in this field.
Keywords: virtual reality, Nutrition science, obesity

Effects of Ellagic Acid Supplementation on inflammatory factors and lipid profile in patients with non-alcoholic fatty liver disease: a double-blind randomized clinical trial

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Introduction: Oxidative stress and inflammation play a crucial role in the development and progression of non-alcoholic fatty liver disease (NAFLD). Due to the antioxidant properties of Ellagic acid (EA), this study aimed to assess the impact of EA on inflammation and lipid profile in patients with NAFLD.
Methods: In total, 44 patients meeting the study criteria were randomly assigned to consume 180 mg of EA per day (n = 22) or placebo (n = 22) for 8 weeks. Anthropometric indices, food intake, physical activity level, inflammatory factors, and lipid profile were measured at the beginning and end of the study. The statistical analysis was conducted by utilizing SPSS software. An independent t-test was used to compare the means of variables between two groups, while a paired t-test was used within groups.
Results: At the beginning and end of the study, the two groups did not differ remarkably in terms of anthropometric factors, food intake, and physical activity ($P>0.05$). At the end of the study, the mean of tumor necrosis factor-alpha (TNF-α), interleukin 6 (IL-6), C-reactive protein (CRP), triglycerides (TG), and low-density lipoprotein (LDL) were significantly decreased in the intervention group ($P<0.05$). However, changes in high-density lipoprotein (HDL) and total cholesterol (TC) were not significant in any of the groups ($P>0.05$).
Conclusions: In light of the results, ellagic acid can be utilized as an effective treatment to improve complications arising from NAFLD.
Keywords: Ellagic acid, Inflammation, Lipid profile, Non-alcoholic fatty liver disease

Factors Related to The Incidence of Malnutrition In Dialysis Patients, A Review Study

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Background: Malnutrition is one of the influencing factors in side effects and increased mortality in dialysis patients. Various factors may contribute to malnutrition in these patients. This study was conducted with the aim of determining factors related to malnutrition in dialysis patients.
Method: In the present narrative review study to search for articles, sampling of texts in a purpose-based method and based on appropriate syntax from reliable and accessible international databases and sources including Scopus, Web of Science, PubMed, ProQuest and Bank Persian information included Irandoc, idml.research, Magiran SID with key words malnutrition, dialysis patient, effective factors. All articles from 2000 to 2024 that were published in the field of malnutrition in dialysis patients were included in the study. After searching, 174 articles were found, and finally 31 articles were included in the study.
Results : The results of 31 studies showed that factors such as poor protein intake, co-morbidities, poor energy intake, inflammation, age, family income, depression, fatigue, social support, appetite, and C-reactive protein level, serum albumin, patient's occupation, period Dialysis, triglyceride level, electrolytes level (potassium, sodium, magnesium), marital status, and education level are factors affecting malnutrition in dialysis patients.
Conclusion: According to the results of the studies, socio-economic factors such as income, education, living conditions, marital status and income have the greatest impact on the malnutrition status of dialysis patients. Therefore, consideration of socio-economic factors can help the treatment team in the care of dialysis patients.

Keywords: malnutrition, dialysis patient, effective factors

Factors Influencing Obesity In Children With Autism, A Review Study

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Background: The results of various researches show that the prevalence of obesity in children with autism spectrum disorder (ASD) is increasing. The purpose of this study is to review the factors affecting obesity in children with autism spectrum disorder.
Method: In the present narrative review study, in order to search for articles, sampling of texts in a goal-oriented way and based on appropriate syntax from reliable and accessible international databases and sources including Scopus, Web of Science, PubMed, ProQuest and Farsi Bank information including Irandoc Was. idml.research, Magiran SID with keywords obesity, autistic child, effective factors. All articles that were published from 2000 to 2024 in the field of obesity in children with autism spectrum disorder were included in the study. After searching, 154 articles were found and finally 23 articles were included in the study.
Results: The results of the review of 23 studies showed factors such as age, psychiatric treatment, genetic predisposition. Sleep disturbances, atypical eating patterns, insufficient physical activity, Hispanic or Latino ethnicity, lower parental education level, and sleep and emotional problems, female gender, race and ethnicity, income, cognitive ability, gut microbiome, endocrine influences, and disorders Metabolic and associated diseases play a role in obesity in children with autism.
Conclusion: Considering that for people with autism spectrum disorder, obesity and its consequences are potentially a significant threat to independent life, self-care, quality of life and overall health, it is necessary to look at the factors affecting obesity in this phenomenon. Special attention has been paid to improve the quality of life of these patients by solving them.
Keywords: obesity, autistic child, effective factors

The Impact of Malnutrition on Readmission Rates Among Heart Failure Patients in Cardiac Departments: A Systematic Review

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Introduction: Malnutrition is a common comorbidity among heart failure patients and has been linked to adverse outcomes, including increased hospital readmissions. This systematic review aims to evaluate the existing literature on the association between malnutrition and readmission rates in cardiac departments, as well as to identify effective strategies for reducing malnutrition-related readmissions in heart failure patients.
Methods: A comprehensive search of databases including PubMed, Scopus, Web of Science was conducted to identify relevant studies published within the past decade. Studies evaluating the relationship between malnutrition and readmission rates among heart failure patients were included.
Results:The review revealed a consistent association between malnutrition and higher readmission rates among heart failure patients in cardiac departments. Contributing factors to malnutrition included poor dietary intake, cachexia, and micronutrient deficiencies. Studies also highlighted the impact of malnutrition on prolonged length of stay and increased healthcare costs. Promising strategies for reducing malnutrition-related readmissions included early nutritional screening, tailored dietary interventions, multidisciplinary nutritional support teams, and patient education programs.
Conclusion:The findings underscore the significance of addressing malnutrition as a modifiable risk factor to reduce readmission rates among heart failure patients in cardiac departments. Implementing proactive nutritional assessment and evidence-based interventions is essential for optimizing patient outcomes and minimizing healthcare resource utilization. Further research and standardized protocols are warranted to advance the integration of comprehensive nutritional care into the management of heart failure patients within cardiac settings.

Keywords: Malnutrition, Heart failure, Readmission

Improving Efficiency and Accuracy in Malnutrition Screening by Automated Nutritional Assessment Tools in Hospital Settings: A Systematic Review

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Introduction: Malnutrition is an important yet under-recognized problem among hospitalized elderly, and its prevalence varies from 17% to 65% depending on the population and assessment methods used. This condition, which is often exacerbated in hospital settings, leads to adverse outcomes including increased mortality, decreased performance, and prolonged hospital stay. Early identification and intervention is critical in reducing these risks, particularly through the use of nutrition screening tools (NSTs) and nutrition assessment tools. NSTs , designed to rapidly identify individuals at risk of malnutrition, can be performed by any health care personnel. Despite the availability of numerous NSTs1 and nutritional assessment tools, the accuracy and reliability of these tools in predicting long-term outcomes in hospitalized elderly are unclear. The elderly population is increasing rapidly, and this emphasizes the need for accurate and efficient screening and assessment of malnutrition in hospital settings, and decided to conduct a systematic review with the aim of evaluating the effectiveness of automatic nutrition assessment tools in improving the efficiency and accuracy of malnutrition screening. nutrition in hospital environments and by comparing these tools with traditional methods, we seek to identify the most reliable approaches for early diagnosis and intervention to ultimately improve clinical outcomes for hospitalized elderly.
Search Strategy
Method: The search strategy involved querying PubMed, Scopus, Embase, and Web of Science with terms such as “automated nutritional assessment tools,” “malnutrition screening,” and “hospital settings,” limited to studies published between 2015 and 2023 in English. A two-stage double-blind screening process was applied to ensure the relevance and quality of the studies, focusing on those evaluating automated tools for malnutrition screening in hospital environments.
Results: The results highlighted that automated nutritional assessment tools markedly enhance both the efficiency and accuracy of malnutrition screening in hospital settings. Studies demonstrated that these tools, including electronic health record integration, risk prediction algorithms, and digital questionnaires, streamlined the screening process by significantly reducing the time required and increasing the precision of diagnoses. Automation allowed for more consistent and comprehensive assessments, often integrating real-time data from patient records and facilitating early detection and intervention. This led to improved patient outcomes and more efficient use of hospital resources, underscoring the benefits of incorporating automated systems into clinical practice for malnutrition screening.
Conclusion: The evidence highlights the challenges and complexities of accurately assessing malnutrition in older hospitalized patients. Although tools such as MNA and GNRI are commonly used, each has limitations. The variability in validity and specificity of these tools emphasizes the need for comprehensive assessment methods that combine multiple nutritional and biochemical parameters to ensure accurate diagnosis. Future research should focus on validating and refining these tools, particularly in different clinical settings, to increase predictive accuracy and improve patient outcomes.
Keywords: malnutrition, nutritional assessment tools

Effects of oleoylethanolamide supplementation on sex hormones and lipid profile in polycystic ovary syndrome

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Introduction: Polycystic ovary syndrome (PCOS) is a predominant hormonal disruption in women's reproductive years. The present study desired to investigate the effect of

oleoylethanolamide (OEA) supplement on sex hormones and lipid profiles in PCOS.
Methods: This study was a randomized clinical, double-blinded, placebo-controlled trial on 90 women with PCOS. Patients selected based on inclusion criteria then were split into two groups: 45 women in OEA (125 mg/day OEA) and 45 women in the placebo group (125 mg/day wheat flour) for 8 weeks. During the study, food intake, physical activity, and anthropometric indices were measured before and after the intervention. Also, anthropometric indices, lipid profiles, and sex hormone factors were measured initially and after the intervention. The paired t-tests and independent sample t-tests were used to compare inside groups and between groups differences.
Results: The food recall, physical activity questionnaires, and anthropometric indices showed no remarkable differences between the two groups, both before and after the intervention ($p>0.05$). In the OEA group, sex hormones including FSH and LH showed no significant changes ($p>0.05$), but prolactin and total testosterone decreased remarkably ($p<0.05$). LDL, TG, and cholesterol for lipid profiles revealed a significant decrease ($p<0.05$) in the OEA group, but HDL did not catch notable differences ($p>0.05$).
Conclusions: Sex hormone imbalance and altered lipid profile are common complications in PCOS sufferers. OEA supplement with antioxidant properties could help to improve the status of increased sexual hormones and lipid profile of women with PCOS.
Keywords: oleoylethanolamide, OEA, lipid profile, sex hormones, polycystic ovary syndrome

The efficacy of theory based education on Self-care Behaviors, Metabolic Indicators and psychological constructs of Diabetic Patients

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Introduction: using behavior change model is critical method to increase effectiveness of educational intervention toward chronic diseases prevention and some models as health locus of control (HLOC) has an effective role in predicting self-care behaviors in type 2 diabetic patients. The aim of the study was to assess the theory based educational intervention on self-efficacy, self-care and metabolic indicators of T2D patients using HLOC.
Methods: The current research was a randomized control trial and 78 T2D patients referred to health care centers of Qazvin city were assigned to experimental and control groups using multi-stage random sampling. The educational program conducted based on HLOC included 2 individual 2 session of individual counseling and three 30 -minute group discussion. Data collection tools included demographic items, summery of Diabetes self-care activity questionnaire, and self-efficacy scale, health locus of control scale, and FBS and HbA1c. Data were analyzed with SPSS 25.0 software and chi-square tests, independent t test, analysis of covariance.
Results: the finding showed that the mean of psychological constructs as self-efficacy, dimensions of health locus of control, the total score of self-care along with its dimensions have improved significantly in the experimental group after controlling the effect of the pre-test ($P<0.05$). Moreover, the mean of HbA1c and FBS was significantly reduced in the experimental group after controlling the effect of the pre-test ($P<0.001$).
Conclusion: Educational interventions using health locus of control can lead to improvement of self-efficacy, self-care behaviors and blood glucose reduction in T2D patients.
Keywords: diabetes, health locus of control, self-efficacy, self-care, HbA1c, FBS.

Evaluating the Effects of Beta-Hydroxy-Beta-Methylbutyrate Supplementation on Pulmonary Function and Quality of Life Outcomes in Adolescents with Cystic Fibrosis: A Randomized Controlled Trial

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Background: Cystic fibrosis (CF) is a genetic disorder that affects the respiratory and digestive systems and leads to significant pulmonary complications and skeletal muscle dysfunction. Patients with CF often experience muscle weakness, reduced exercise capacity, and reduced quality of life. Protein energy supplements, commonly used to improve nutrient intake and reverse muscle wasting, have been shown to increase muscle performance and overall health in various populations. However, the effects of certain supplements, such as beta-hydroxy beta-methylbutyrate (HMB), on lung function have not yet been studied.
Methods: In this randomized, double-blind, placebo-controlled clinical trial, we investigated the effect of HMB supplementation (3 g/day) on lung function in adolescents with CF aged 13–18 years. A total of 62 participants (36 boys and 26 girls) underwent 8 weeks of intervention, during which spirometry measurements and quality of life assessments were performed.
Results: The HMB supplement group showed a significant improvement in the FEV1/FVC ratio compared to the placebo group (P=0.022). In addition, the intervention group reported a significant improvement in quality of life (P<0.001)
Conclusion: This study shows that beta-hydroxy beta-methylbutyrate supplementation may increase lung function and quality of life in adolescents with cystic fibrosis. These findings demonstrate the potential of HMB as an effective therapeutic strategy to improve respiratory outcomes in CF patients and warrant further research into its long-term efficacy and mechanisms of action in this population.
Keywords: Cystic Fibrosis, Beta-Hydroxy-Beta-Methylbutyrate, HMB, Quality of Life, Spirometry

Investigating using Semaglutide for treatment of Obesity and Overweight

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Introduction: Obesity or overweight is a chronic disease that is very common today which is associated with the risk of cardiovascular diseases, type 2 diabetes, high blood pressure, fatty liver and cancer so it's treatment is important.
One of the effective drug groups is GLP1(Glucagon-Like peptide 1) receptor agonists.
Considering the importance of this issue, this study was conducted with the aim of investigating the effect of the most famous drug in this category, semaglutide, on obesity.
Methods: Duo to this research databases Pubmed, Google Scholar and Web of sciense with keywords Obesity OR overweight AND Semaglutide with time restriction (2022-2024) and prioritizing Free Full Texts were searched. 268 articles were found which 12 of them were more related and had been reviewed.
Results: Several studies show that semaglutide, through reducing appetite, energy consumption and body fat, increasing insulin levels, reducing glucagon and delaying gastric depletion, causes weight loss of more than 10-15% and maintain it for at least 104 weeks, improves metabolic indices and reduces cardiovascular diseases.
According to a double-blind trial, this drug can also be used for adolescents.
According to a clinical trial, the most common side effects of semaglutide are nausea, diarrhea, vomiting, and constipation, which are dose-dependent.
Conclusions: Semaglutide is recommended to be used in a dose of 2.4 mg per week, which besides a low-calorie diet and physical activities, helps to lose weight and maintain it.
Usually, The drug is well tolerated and its side effects are mild.
Keywords: Drug, Obesity, Overweight, Semaglutide

Investigating The Effect of Curcumin on Obesity: A Systematic Review

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Background: Obesity is a metabolic disease characterized by excessive accumulation of fat. The lack of effective treatment has led to the use of lifestyle-based therapy and bioactive compounds. Curcumin is a bioactive compound that is effective in improving the performance of organs and health.
Method: We searched for studies on the association between obesity, Curcumin and mechanism in original articles from the Web of Science, Scopus, and PubMed. A total of 227 articles were identified from the search of the main electronic databases, which was reduced to 32 articles after deduplication. Of the 32 references screened by title and abstract, 9 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that Curcumin by regulating oxidative stress (production of ROS, inactivation of factors such as NF-k and TNF-α and increase of peroxidase enzyme activity), Inhibiting adipogenesis (decreasing the expression of miR-17-5p, increasing the expression of Tcf7l2 and activating the Wnt pathway in T3-L1 cells), Regulation of lipid metabolism (activation of SIRT1, Nrf2 and AMPK and inactivation of SCD, PPARγ, SREBP-1c, C/EBP-α, SREBP-1c, NF-κB, IL-6 and TNF-α), Energy expenditure (increased BAT by β3AR gene expression and thermogenic movement via PGC-1, COMT and SNS) And the effect on the microbiome on the management and treatment of obesity.
Conclusion: Based on conducted searches Curcumin has several activities that are effective in the management and prevention of obesity by regulating biochemical and physiological. Further research is required to determine the exact dose of supplements and their frequency.
Keywords: Curcumin, obesity, mechanism

Application of mhealth apps in hospital malnutrition: a systematic review

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Introduction: Malnutrition associated with illnesses poses a common challenge for patients in hospitals. Early and accurate detection of malnutrition risks is crucial for effective management and prevention. Mobile health applications have the potential to enhance monitoring and assessment by providing automated, objective, and continuous tracking.
Methods: Our search approach was meticulously crafted and executed across three databases: PubMed, Scopus, and WoS. Two authors independently conducted the screening and data extraction processes. We specifically included studies that explored the utilization of mobile applications for managing malnutrition in hospital settings. The writing adhered to the PRISMA Guideline.
Results: Following the initial database searches, a total of 1670 articles were identified. After eliminating duplicates, 1200 articles remained. Subsequently, during the full-text screening process, 150 articles were thoroughly reviewed, and ultimately, 12 articles were included in our study. The categorization of articles mostly focused on malnutrition assessment and food intake monitoring. The population studied in the majority of these articles was the elderly. Recent applications have harnessed the capabilities of artificial intelligence and machine learning. Adding these up-to-date and advanced technologies to mobile applications provided important benefits in patient risk assessment and prevention.
Conclusion: The results of studies demonstrated the efficacy of mobile applications in managing hospital malnutrition. These apps can serve as supplementary tools for patients dealing with malnutrition during hospitalization, potentially leading to reduced time losses and costs in this domain.
Keywords: Application, Mhealth, Malnutrition

Macronutrient Quality and severity of disease in patients with inflammatory bowel disease

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Introduction: To assess the association between a Macronutrient Quality Index (MQI)

and with disease activity in inflammatory bowel disease (IBD) patients.
Methods: A cross-sectional study was conducted on 210 IBD patients, including 90 patients with Crohn's disease (CD) and 120 patients with ulcerative colitis (UC). Dietary intakes were assessed by a valid 168 item food frequency questionnaire (FFQ). The MQI (expressing high-quality macronutrient intake) was calculated based on three previously reported quality indices: the Carbohydrate Quality Index (CQI), the Fat Quality Index (FQI) and the Healthy Plate Protein source Quality Index (HPPQI). CD and UC disease activity were determined by the Crohn's disease activity index (CDAI) and the Mayo score, respectively.
Results: The MQI score and did not differ significantly between active and inactive patients. In the fully adjusted model, participants in the highest tertile of CQI had lower disease activity score than those in the lowest tertile (OR = 1.36; 95 % CI: 1.06, 1.75). Individuals in the top tertile of FQI (OR = 0.73; 95 % CI: 0.55, 0.93) and PQI (OR = 0.77; 95 % CI: 0.60; 1.01) were less likely to report lower disease activity than those in the bottom tertile.
Conclusions: It seems that adherence to a diet with high quality of macronutrients is associated with less severity of disease both CD and UC. Whether MQI affects disease activity in patients with IBD deserves further investigations.
Keywords: Macronutrient quality, Crohn's disease, ulcerative colitis

The Effectiveness of Peppermint (Mentha piperita) Extract on Reducing the Symptoms of Attention Deficit-Hyperactivity Disorder

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Introduction: Attention deficit hyperactivity disorder (ADHD) is one of the mental disorders that have a negative impact on many aspects of children's lives. In the past, peppermint (Mentha piperita) extract has been mentioned as a sedative for treating physical and mental problems. Many believe that this substance is effective in the treatment of attention deficit hyperactivity disorder. The purpose of present study was to investigate the effectiveness of peppermint extract on reducing the symptoms of attention deficit hyperactivity disorder (ADHD) in children.
Methods: This research is an experimental type, with a pre-test, post-test and a control group. The statistical sample included 30 students aged 7 to 13 with ADHD living in Kermanshah city. Children were randomly divided into two groups of 15 experimental and 15 control groups. For 10 days, the experimental group was given 5 drops of oral peppermint extract 2% with breakfast and lunch (each time), and placebo was given to the control group. Revised Connors Parent Rating Scale (CPRS-R) and Revised Connors Teacher Rating Scale (CTRS-R:S) were used as research tools. The research data were analyzed by SPSS 22 software and descriptive statistics as well as analysis of covariance (ANCOVA) were used ($p<0.05$).
Results: The results showed that the consumption of peppermint extract has no significant effect in reducing the number and severity of symptoms of ADHD ($p=0.87$).
Conclusions: According to the physiological factors of ADHD, many substances with a sedative effect are ineffective in the treatment of this disorder.
Keywords: Attention Deficit Disorder with Hyperactivity, Child, Mentha piperita, Students

The Effectiveness of Passion Flowers (passiflora incarnata L.) Tea in the Treatment of School Anxiety Disorder

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Introduction: School anxiety is one of the disorders in children, the main characteristic of which is severe fear of going to school. Children with this disorder suffer from academic problems as well as physical discomforts such as headache, stomachache and nausea. It is claimed that the passion flower plant (passiflora incarnata L.) has a calming and anti-anxiety effect. The purpose of this study was to investigate the effectiveness of passion flowers tea in the treatment of school anxiety disorder in 7-13 year old students.
Methods: In this experimental study with pre-test and post-test and control group, 20 students

with school anxiety disorder were randomly divided into two experimental and control groups. For two weeks, the experimental group was given half a glass (100 grams) of passion flowers tea with breakfast and lunch, and the control group was given a placebo. The questionnaires used in this research were The School Anxiety Scale-Teacher Report (SAS-TR) and The Screen for Childhood Anxiety Related Emotional Disorders (SCARED). The research data was analyzed by SPSS 22 software and descriptive statistics as well as analysis of covariance (ANCOVA) were used ($p<0.05$).
Results: The results showed that the consumption of passion flowers tea had a significant effect in reducing the number and severity of school anxiety symptoms ($F=17.93$, $p<0.009$).
Conclusions: The results of this study showed that passion flowers tea has therapeutic efficacy for treating school anxiety disorder and can be used to treat and relieve school anxiety.
Keywords: Anxiety, Child, Passiflora, Schools, Students

Effectiveness of Peppermint (Mentha piperita) Extract on Lowering Pain Intensity After Cesarean Section

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Introduction: The pain caused by cesarean section can be very annoying for mothers and have a negative impact on their daily life. Considering the side effects of chemical painkillers, herbal medicines can be a good option to relieve this pain. The purpose of this study was to determine the effectiveness of peppermint (Mentha piperita) extract on pain intensity after cesarean surgery.
Methods: This research was a pilot study with pre-test, post-test and control group. Its statistical sample included 18 women who gave birth by caesarean surgery living in Kermanshah city. The sample members were randomly selected and again randomly divided into two experimental and control groups. During one week after surgery, the experimental group was given 20 drops of peppermint extract three times a day, and the control group was given a placebo. At the beginning and end of the study, both groups were evaluated using a Visual Analog Scale (VAS) for pain. The obtained data were analyzed by SPSS 22 software and descriptive statistics as well as analysis of covariance (ANCOVA) were used ($p<0.05$).
Results: The results showed that the consumption of peppermint extract drops has a significant effect in reducing the amount and intensity of cesarean surgery pain. In the post-test phase, the intensity of pain in the experimental group was significantly lower compared to the control group ($F=19.21$, $p<0.009$).
Conclusions: The results of this study showed that the consumption of peppermint extract reduces the intensity of pain in women who have undergone cesarean surgery.
Keywords: Cesarean Section, Mentha piperita, Parturition, Surgery

Investigating the relationship between serum cholesterol level and depression in the elderly

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Introduction: Depressive disorder is a major public health issue affecting all age groups, with around 10% of men and 20% of women experiencing it in their lifetime. It severely impacts psychological, social, and occupational functioning, influencing self-perception and emotions .In older adults, approximately one-third show depressive symptoms, leading to significant disability and costs for individuals and healthcare systems. Risk factors include comorbid illnesses, lack of social support, and bereavement experiences.
Method: This comprehensive review explored the link between serum cholesterol levels and depression among elderly individual . We conducted a complete search using keywords such as depression, cholesterol, cholesterol deficiency, lipid profile, elderly. It analyzed 165 articles retrieved from databases like ISI, PubMed, Scopus, and Google Scholar, filtering out irrelevant studies and non-English/Farsi articles. Ultimately, 34 relevant studies were selected that specifically examined the relationship between cholesterol levels and depression in older adults.

Conclusion: This study examines the relationship between serum cholesterol levels and depression-related symptoms, revealing lower total and LDL cholesterol may correlate with increased weight change and chronic disease symptoms. The study suggests that reduced LDL-C may alleviate depressive symptoms and implies potential dietary influences on mood. A 30-year analysis of older men found lower LDL-C in the depressed group but no connection to HDL-C. The findings suggest that low cholesterol might disrupt serotonin metabolism, potentially exacerbating depression and related conditions through mechanisms involving chronic inflammation and altered membrane properties affecting neurotransmitter function. Further research is needed to explore the impact of dietary changes on depressive disorders in older adults.

Keyword : Depression, cholesterol, cholesterol, elderly

Nutrition in the prevention and treatment of myopathy and neuropathy in the ICU

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Muscle wasting and paralysis are common complications in Intensive Care Unit (ICU) patients, where critical illness polyneuropathy (CIP) and critical illness myopathy (CIM), alone or in combination (CIP/CIM), are the commonest causes. In this article, we are trying to discuss the importance of nutrition in the prevention and treatment of myopathy and neuropathy in the ICU. Direct muscle stimulation facilitates diagnosis of CIM in the early course of critical illness. During analgesia and sedation, other methods of clinical assessment are not applicable. Electrophysiological signs of CIM precede electrophysiological signs of CIP. Clinical courses of patients classified as CIM and CIM/CIP differ. Both CIM and CIM/CIP independently influence ICU length of stay after the end of sedation. However, patients classified as CIM/CIP feature significantly higher degrees of weakness at ICU discharge and longer ICU lengths of stay than patients classified as CIM. Electrophysiological recordings showed that some patients classified as CIM showed signs of recovery at discharge from ICU, while all patients classified as CIM/CIP consistently featured electrophysiological pathology at ICU discharge Amount of calories No quality trials have been made with the primary objective of preserving muscle quantity and/or function in critically ill patients, based on interventions focused on the energy administered to the patient. From observational studies it appears that more invasive mechanical ventilation-free days are achieved when the energy balance achieved is closer to the prescribed balance. In recent studies reaching 80% of the prescribed calories was associated to lesser mortality even when adjusted for severity. However, significance was lost after adjusting for the amount of proteins. Several guidelines, observational studies and meta-analysis support the early administration of artificial nutrition; within 24–48 hours of ICU admission, of which the severely ill patients appear to benefit the most, but there are some discrepancies between different guidelines.

Key words: ICU, Nutrition, Neuropathy, Myopathy

Systematic review and meta-analysis of randomised, controlled trials on the effects of garlic supplementation on serum adiponectin and leptin levels

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Background: Our aim in this meta-analysis was to determine the effect of garlic supplementation on adiponectin and leptin serum levels.

Method: A systematic search was conducted using PubMed, Scopus, ISI Web of Science and Cochrane Library for eligible trials up to November 2020. A fixed-effects model was used to pool calculated effect sizes.

Results: Five trials were included in the overall analysis. Our analysis showed that garlic supplementation did not significantly affect adiponectin (Hedges's: 0.20; 95% CI: −0.06, 0.47; P-values = .12) and leptin (Hedges's: 0.08; 95% CI: −0.26, 0.41; P-values = .65) concentrations in comparison with placebo. However, in the subgroup analysis, significantly increased serum adiponectin level was seen following garlic supplementation in trials with a mean age of participants <30 years (Hedges's: 0.44; 95% CI: 0.01, 0.87; P-values = .04), the doses <1.5 g/d

(Hedges's: 0.38; 95% CI: 0.02, 0.71; P-values = .04) and trials with duration ≥8 weeks (Hedges's: 0.48; 95% CI: 0.08, 0.89; P-values = .02).
Conclusion: Overall, garlic supplementation could not change the circulatory adiponectin and leptin levels. Subgroup analyses showed a significant reduction in adiponectin levels in younger participants, longer duration and lower intervention dose. However, further studies are needed to confirm the present results.

The relationship between intestinal microbiota composition and Parkinson's disease

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Introduction: Parkinson's disease (PD), a progressive neurodegenerative disorder, is characterized by motor and non-motor symptoms. PD is associated with alterations in gut microbiota composition. Constipation, a prevalent PD symptom, often precedes motor dysfunction. Emerging evidence suggests a correlation between gut health and PD pathogenesis. The gut microbiome plays a crucial role in maintaining intestinal health. Dysregulation of the gut microbiome may contribute to the progression of PD. We conducted a systematic review and meta-analysis to illustrate this relationship.
Method: By searching three different databases, including PubMed, Web of Science, and Scopus, we included all observational studies that matched our criteria. We restricted neither language nor time in our inclusion.
Result: The results were analyzed by using a random effects model with calculation of the mean difference with the 95 % confidence interval. It displayed that some families of gut microbiota, involving Bifidobacteriaceae, Lactobacillaceae, and Ruminococcaceae have increased ratios. Otherwise, some other ones, like Prevotellaceae, Lachnospiraceae, and Erysipelotrichaceae were declined in PD. In subgroup analysis, similar changes in specific gut microbiota were observed in PD patients from various geographical areas, indicating shared alterations.
Conclusion: PD patients showed unique microbiota compositions compared to healthy individuals, with specific differences in gut microbiome abundance at the phylum, family, and genus levels, potentially linked to PD development. The ecological imbalance of these gut microbiota could disrupt the production of short-chain fatty acids, lipid metabolism, immune regulation, and intestinal permeability. Further studies are needed to evaluate the precise impact gut microbiota on the development of PD.

Key words: Parkinson diseases, Gut microbiota, PD, microbiome

A nutritious plant-based diet can lower the risk of colorectal cancer: case-control study

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Introduction: The impact of following a plant-based diet on colorectal cancer (CRC) risk has not been studied in Middle Eastern populations. This research aimed to explore the relationship between adherence to a plant-based diet and CRC risk in this group.
Methods: This case-control study was carried out in CRC surgery departments of general hospitals in Tehran, Iran. It included 71 newly diagnosed CRC cases and 142 controls without neoplastic or acute diseases, selected randomly from the same hospitals. Dietary data were gathered using a semi-quantitative 168-item food frequency questionnaire. Dietary patterns were assessed using the plant-based diet index (PDI), unhealthy plant-based diet index (uPDI), and healthy plant-based diet index (hPDI). Multivariate logistic regression was used to evaluate the association between these dietary patterns and CRC risk.
Results: After adjusting for potential confounders, it was found that the risk of CRC was significantly lower in the highest tertile of hPDI compared to the lowest tertile (odds ratio (OR) = 0.21; 95% confidence interval (CI): 0.07-0.56). Conversely, the risk of CRC was significantly higher in the highest tertile of uPDI compared to the lowest tertile (OR = 6.76; 95%

CI: 2.41-18.94). No significant association was found between PDI and CRC risk.
Conclusions: The study concluded that higher adherence to the hPDI is associated with a significantly reduced risk of CRC, while greater adherence to the uPDI is linked to a significantly increased risk.
Key words: plant-based diet index, healthful plant-based diet index, unhealthful plant-based diet index, colorectal cancer

New anthropometric indices are the best alternatives of abdominal obesity to predict cardiometabolic risk factors

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Introduction: "Cardiometabolic risk" (CMR) as an umbrella term includes several risk factors such as abdominal obesity, hypertension, dyslipidaemia, and impaired glycemic status. To this end, some new anthropometric indices have been developed to predict the risk of CMR.
Methods: This cross-sectional study conducted among adults aged <50 years. The new anthropometric indices including: a body shape index (ABSI), body roundness index (BRI), abdominal volume index (AVI) and visceral adiposity index (VAI) were calculated.
Results: The results of this study revealed that all ABSI as a predictor of abdominal obesity, is positively correlated with cardiometabolic components: waist circumference (WC), body mass index (BMI), systolic blood pressure (SBP), diastolic blood pressure (DBP), triglyceride (TG) and negatively with high density lipoprotein (HDL) cholesterol ($P<0.05$). Similarly, BRI is significantly correlated with WC, BMI, SBP ad serum glucose. Also, a positive correlation was demonstrated between AVI and WC, BMI, SBP, glucose and HDL ($P<0.05$). Furthermore, VAI which shows that visceral fat function is associated with CMR is correlated positively with SBP, cholesterol, TG in both male and female adults and negatively with HDL ($P<0.05$). However, sex differences in visceral fat contributes to show a significant and positive correlation of VAI with DBP and glucose too.
Conclusions: Accordingly, these novel anthropometric markers including: ABSI, BRI, AVI and VAI are correlated with cardiometabolic components which may may predict CMR.
Keywords: ABSI, BRI, AVI, VAI, obesity, cardiometabolic factors

Comprehensive Approaches to Obesity Treatment: Impact of Lifestyle Modifications on Long-Term Outcomes

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Introduction: Obesity is a complex and multifaceted health concern that has reached epidemic proportions worldwide. The prevalence of obesity continues to rise, leading to serious health consequences and substantial economic burdens. This article explores the various approaches to obesity treatment, with a specific focus on the impact of lifestyle modifications on long-term outcome.
Methods: We performed thorough research using online databases, such as Science Direct, Pubmed,and Medline.
Results: The study confirmed that some cognitive factors are associated with the amount of weight lost. Also surveys showed that High levels of physical activity, frequent monitoring of body weight, and consumption of a reduced-calorie diet are associated with long-term weight loss. To prevent weight regain, the Obesity Guidelines recommend participation for 1 year in weight-loss-maintenance programs that provide at least monthly counseling. High levels of physical activity, frequent monitoring of body weight, and consumption of a reduced-calorie diet are associated with long-term weight loss. Factors associated with long-term weight control included continued patient-practitioner contact (whether on-site or by e-mail), high levels of physical activity, and the long-term use of pharmacotherapy combined with lifestyle modification. In summary, lifestyle modification induces clinically significant weight lost.
Conclusion: the article emphasizes the critical role of lifestyle modifications in the comprehensive treatment of obesity. By promoting sustainable changes in diet, physical activity, and behavior, healthcare providers can empower individuals to achieve long-term

weight management success and improve their overall health and well-being.
Keywords: Lifestylem Obesity, weight management

The Effect of Caffeine on Exercise Performance

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Introduction: Caffeine is the most consumed psychoactive compound in the world and is used by athletes and active individuals due to its reported ergogenic and performance-elevating effects. Other than tea, coffee, and cocoa which are natural sources of caffeine, commercial products such as energy drinks, pre-workout supplements, and energy gels are available that vary in doses.
Method: A systematic review was carried out on randomized placebo-controlled studied investigating the effects of caffeine on endurance performance and a meta-analysis conducted to determine the ergogenic effect of caffeine on endurance time-trial performance.
Results: This meta-analysis reported that caffeine contains a small but compelling effect in endurance performances when taken in moderate doses (3-6 mg/kg body mass).
Conclusions: Supplementation with caffeine suggested that caffeine increases numerous aspects of exercise and sport performance in many but not all studies. This might be due to methodological differences between studies, habitual ingestion of caffeine in participants, and variation in genes that are associated with caffeine metabolism. Aerobic endurance seems to have the most persistent moderate-to-large benefits from caffeine intake. It has been shown that caffeine enhances exercise performance when ingested in moderate doses of 3-6 mg/kg body mass. Very high doses of caffeine (9 mg/kg) are associated with a high occurrence of side-effects. Inter-individual differences in exercise and sport performance in addition to adverse outcomes on sleep or feeling of anxiety due to caffeine consumption might be because of genetic variation associated with caffeine metabolism and physical and psychological response. Caffeine has been shown to be ergogenic in cognitive function.
Keywords: caffeine, endurance sports, ergogenic effect, exercise performance

Investigating the factors related to lifestyles among adolescents: in Yazd province

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Background: Due to high prevalence of unhealthy lifestyle among adolescents around the world, various studies have been focused on this topic. This cross-sectional study aimed to investigate the important factors related to lifestyle in adolescents of Yazd province (distribution of nutrients in breakfast and mid-morning snacks, physical activity assessment and sleep assessment).
Method: This study was conducted among 569 students aged 12–16 years with multistage random-cluster sampling method. Information such as demographic characteristics, anthropometric measurements, students' nutritional habits (7-day food record), sedentary behaviors, physical activity (short form of the International Physical Activity Questionnaire) and sleep quality (Pittsburgh Sleep Quality Index) were collected from all adolescents. All data were assessed by interview and self report. The data were analyzed by SPSS software (version 22).
Results: There was a high prevalence of breakfast skipping and semi-skipping (57.2%), irregular breakfast eating (IRBE) (61.9%) overweight and obesity (OW/OB) (37.8%), sedentary behaviors (SB) > 2h/day (97.6), screen time (ST) > 2h/day (70.3%), abdominal obesity (36.9%), physical inactivity (29.8%) and insufficient sleep duration (38.9%) among adolescents. Sleep quality score of 63.7 % of the students was poor.
Conclusions: Our study was showed the high prevalence of inappropriate breakfast habit, sedentary behaviors, OW/OB, insufficient sleep duration and Sleep quality and physical inactivity. This study suggested paying more attention to lifestyles in this age group by employing skilled nutritionists and mental health professional in high schools. Given that the present and other results, it seems we will meet the worrying status. However, Further studies are required for more comprehensive results.

Keywords: Lifestyles, Adolescents, Overweight or obesity, Sedentary behaviors, Nutrition habit, Physical activity, Sleep quality

Grains intake and the risk of brain cancer: A systematic review and dose-response meta-analysis of observational studies

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Introduction: The consumption of grains has been studied in relation to brain cancer risk in several studies. However, results from these studies are conflicting. Some researchers suggest that whole grains may have protective effects, while others revealed no significant association in this regard. According to a recent meta-analysis, grain consumption may increase the risk of glioma. However, that meta-analysis did not separate whole and refined grains and several eligible articles were missed. Moreover, there is no evidence of a dose-response relationship in this topic. Therefore, we aimed to conduct a comprehensive meta-analysis to summarize current evidence on this topic.
Methods: We systematically searched PubMed, Scopus, Web of Sciences, and Google Scholar, until September 2024, for observational studies that reported the association between whole and refined grains consumption and brain cancer risk.
Results: After screening 3,600 articles, 7 eligible studies were included, encompassing 1,267,266 participants and 3,831 glioma cases. The analysis revealed a significant association between refined grain consumption and glioma risk (RR: 1.53; 95% CI: 1.05, 2.22; I^2 = 23.2%). In contrast, no significant associations were observed for whole grains (RR: 0.91; 95% CI: 0.64, 1.30; I^2 = 0.9%) or other grains including cereals (RR: 1.21; 95% CI: 0.98, 1.48; I^2 = 48.7) with glioma risk. Moreover, no evidence of a dose-response association was found between whole and refined grains intake and brain cancer (RR: 1.03; 95% CI: 0.98, 1.08; I^2 = 0.00%).
Conclusion: The findings suggest that refined grain consumption is significantly associated with an increased brain cancer risk.
Keywords: Brain Cancer, Glioma, Whole Grains, Refined Grains, Meta-Analysis

The relationship between food insecurity and diabetes in Iran: A Systematic Review and Meta-Analysis

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Background : Food insecurity is an important global challenge that is associated with various health problems such as diabetes. Diabetes is one of the most common metabolic diseases and it has been seriously as a global health threat. The aim of this study is to investigate the relationship between food insecurity and type 2 diabetes in Iran.
Methods: The authors searched English databases including Web of Science, Scopus, Google Scholar, and PubMed and also Iranian databases of Magiran and SID for the words Iran, diabetes, and food insecurity up to November 2021
Results: 8articles, including 2853 participants, ranging from 148 to 440 were included in the meta-analysis. The pooled odds ratios (ORs) of the cross-sectional and case-control studies revealed that household food insecurity was significantly associated with the odds of diabetes (OR=2.04; 95% CI: 1.34-3.09) and there was no evidence for publication bias (Egger's test, P= 0.59); however, heterogeneity between studies(I2=85.9%) was observed. Similarly, according to subgroup analyses based on age, there was a significant association between household food insecurity and diabetes among the people under 50years (OR=2.9; 95% CI: 2.13-3.93; I2= 56.4%, P=0.057), but not among people over 50 years (OR=1.32; 95% CI:0.69-2.52; I2= 78.3%, P=0.032) or between 30 and 65years (OR=0.85; 95% CI:0.49-1.48)
Conclusion: This study shows that food insecurity affects the development of type 2 diabetes. However, more longitudinal studies are needed to better identify the association between food insecurity and T2DM.

Key words: Iran ،Food insecurity ،Diabetes mellitus

Applications of artificial intelligence in nutritional counseling: A Systematic Review

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Introduction: Artificial intelligence (AI) has emerged as a powerful tool, capable of mimicking intelligent human processes such as learning, reasoning, and problem-solving. Its application spans various fields, including nutrition, where AI holds potential to enhance dietary habits and public health by analyzing complex data to provide personalized recommendations. This review explores AI's applications in nutrition globally, demonstrating its capacity to offer personalized advice and optimize the food supply chain.
Methods: This study was conducted as a systematic review in 2024 by searching the reliable databases of PubMed, Web of Sciences and the Google Scholar search engine using the keywords Artificial intelligence, nutritional counseling, nutrition for studies published between 2020 and 2024. Inclusion criteria focused on
English-language studies evaluating AI's role in nutritional counseling. After screening titles and abstracts, full texts of relevant studies were analyzed using a standardized form to extract data on study title, country, participant number, objectives, and findings.
Results: The PRISMA has been shown that the total of 235 articles were found. After excluding the duplicates (n= 34), the titles and abstracts of 201 articles were skimmed according to the inclusion criteria. Finally, 28 articles remained. They were reviewed in full text and 17 articles were excluded. Eventually, 11 articles met the inclusion criteria, with 68% of AI applications reported in US and UK. SVM, NLP has used more than the other methods.
Conclusions: AI can significantly enhance nutrition services by providing personalized nutritional advice and optimizing the food supply chain. The use of AI in nutrition promises a healthier and more sustainable future for different societies.
Keywords: Artificial intelligence, nutritional counseling, nutrition.

The Impact of High Salt Intake on Stomach Cancer Risk

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Introduction: High salt intake is identified as a significant risk factor for various non-communicable diseases, including gastric cancer. Research indicates that excessive salt consumption may contribute to the development of gastric adenocarcinoma by irritating the stomach lining and promoting chemical carcinogenesis, as well as facilitating the colonization of Helicobacter pylori, a known gastric cancer risk factor.
Methods: Case-control studies indicate a positive correlation between high-salt foods, such as salted fish and cured meats, and gastric cancer risk. The World Cancer Research Fund that out of 16 studies, half reported significant increases in risk associated with overall dietary salt intake. Recent cohort studies also support these findings. An analysis of UK Biobank data, excluding participants with certain health conditions, included 471,144 individuals for salt intake and 451,757 for urinary sodium analysis. Salt intake was assessed through questionnaires, and urinary sodium was estimated using INTERSALT equations, with gastric cancer status confirmed via national registries.
Results: Reducing salt and salted food intake, along with increasing fresh fruit and vegetable consumption, has contributed to the global decline in gastric cancer rates. This dietary modification is a practical strategy for preventing gastric cancer, especially in high-risk areas like Japan.
Conclusions: Participants who always added salt to food had a 41% higher risk of gastric cancer than those who rarely did. This association was stronger after excluding early cases, suggesting reverse causality. Adding salt may be a proxy for habitual salt intake.
Keywords: High salt intake; Stomach cancer; Gastric adenocarcinoma; Dietary modification ;Global decline in gastric cancer rates;Salted fish; Helicobacter pylori ;Cured meats

The Role of Vitamin D in Immune Function and Its Impact on Disease Prevention

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Introduction: Vitamin D, known for its role in bone health, is crucial for the immune system, with the Vitamin D receptor (VDR) playing a key role in regulating cell proliferation, differentiation, and antimicrobial functions, thus promoting disease prevention. It is present in active inflammatory cells and also plays a role in anti-infective properties, blocking infections and regulating immune system operations. It is essential for monocyte function and AMP production.

Methods: A literature review analyzed studies from 2010-2024 on vitamin D's impact on immune system function and disease prevention and its relationship with diseases such as respiratory infections, autoimmune disorders, obesity, COVID-19 and chronic conditions like diabetes and cardiovascular disease. It included observational and interventional studies, focusing on its role in modulating immune responses and its correlation with diseases.

Results: Vitamin D levels are linked to improved immune function, reduced inflammation, cell proliferation and increased susceptibility to infections. Low serum vitamin D levels can cause autoimmune and infectious diseases. Supplementation may reduce autoimmune diseases like multiple sclerosis and rheumatoid arthritis. However, randomized controlled trials show mixed results, indicating the need for further research on vitamin D supplementation and disease prevention.

Conclusion: Vitamin D is essential for immune function and disease prevention. However, observational studies show a link between vitamin D deficiency and increased disease risk. Further research is needed to determine optimal vitamin D levels and supplement efficacy in diverse populations. Healthcare institutions should educate the public and fortify food to reduce vitamin D deficiency risk.

Keywords: Autoimmune Diseases, Disease Prevention, Immune Function, Immune System, Supplementation, Vitamin D

The Role Of Nutrition In Preventing Osteoporosis

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Introduction: Osteoporosis is a severe disease with high morbidity and mortality rates. To reduce the risk, promote healthy habits like a balanced diet, regular exercise, and avoid harmful habits. European guidance recommends calcium, vitamin D, and protein intake for women over 50. Lifestyle factors like physical activity, exercise, and nutrition are crucial for bone health.

Methods: The study used databases like PubMed, Web of Science, SID, and Iran Medex to search for articles related to osteoporosis, zinc, vitamin K, phosphorus, vitamin D, calcium, lipid, protein, and phytoestrogens. It identified 625 English articles, screened 70 for eligibility, and prioritized based on method validity, clarity, and data recency.

Results: The article emphasizes the importance of nutrition in maintaining bone health and preventing osteoporosis. It advocates for a balanced diet with essential nutrients like calcium, vitamin D, protein, magnesium, potassium, and vitamins K and C. Lifestyle factors like regular physical activity, avoiding smoking, and limiting alcohol consumption are also crucial. Supplementation of calcium and vitamin D may be necessary for those at higher risk.

Conclusion: Adherence to a healthy dietary pattern, including fruits, vegetables, whole grains, poultry, fish, nuts, legumes, low-fat dairy products, and avoiding processed food, is recommended for bone health. Dairy consumption is recommended to reduce the risk of fractures. Adequate calcium intake and vitamin D intake are essential for bone health, along with other micronutrients like magnesium, vitamin K, and potassium. A healthy lifestyle, avoiding high-risk behaviors, and adequate physical activity can also contribute to bone health.

Keywords: Bone health, Nutrition, Osteoporosis, Severe Diseases

The effects of omega-3 acids on the performance of athletes

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Introduction: The main purpose of nutrition for athletes is to compensate for increased energy and nutrient needs. In recent years, the role of omega-3 fatty acids in sport has received increasing research attention. The predominant source for EPA/DHA is seafood, particularly fatty fish. Although food items such as linseed oil and walnut oil have high amounts of the plant-derived omega-3 fatty acid a-linolenic acid they are not routinely consumed in large quantities.
Methods: To find studies on the relationship between antioxidants and blood pressure, the databases of the National Library of America (PubMed) and ScienceDirect were searched with the keywords antioxidant, blood pressure, vascular regeneration, and oxidative stress. Became No time limit was considered in the search.
Results: Explosive power, fatigue and muscle soreness were improved in athletes consuming 1.1 g of each EPA and DHA over 5 weeks. Similarly, in a study with trained males, squat jump performance was improved after a single acute supplementation with 0.75 g EPA and 0.05 g DHA. Anaerobic endurance improved after supplementation with 4.9 g EPA and 1.4 g DHA over 4 weeks in a group of soccer players. Others reported beneficial results in male athletes in various parameters relevant for endurance such as submaximal exercise HR and O2 consumption VO2max and relative O2 consumption. A study in trained males showed similar improvements in markers of pulmonary function, albeit with a much higher dose of up to 3.7 g EPA and 2.5 g DHA over 3 weeks.
Conclusions: Considering their broad spectrum of actions, including but not limited to supporting nervous system function, maintaining muscle mass after injury and improving training adaptations and the lack of adverse effects at dosing regimens that might be recommended, it seems reasonable for athletes to consider using EPA and DHA supplements. These would also benefit their long-term health.
Keywords: omega-3 fatty acids; sports nutrition; athletes; performance; recovery

The Effects of Myo-Inositol in Women With Polycystic Ovary Syndrome

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Introduction: Polycystic ovarian syndrome (PCOS) is a multifaceted complex endocrine disorder . Insulin resistance is common in women with PCOS . The aim of this study is to evaluate the effects of myo-inositol (MI) on the endocrine and metabolic abnormalities of women with PCOS.
Methods: To achieve the studies related to the effects of myo-inositol which improves PCOS , used data like MEDLINE, EMBASE and PubMed. In researches there is no time limited, but has been used researches from last few years.
Results: In 5 articles which have been used, showed consumption of inositol help in improving PCOS, but in one of them recommended the use of inositol according to the opinion of the physician. Articles which have been used about consumption of inositol , showed decreasing level of luteinizing hormone (LH) (10.31 ± 7.92 to 7.42 ± 6.25; p = 0.002) , LH/follicle- stimulating hormone ratio (2.34 ± 0.34 to 1.91 ± 0.32; p = 0.000) , fasting serum insulin levels (16.71 ± 13.92 to 13.18 ± 9.41; p = 0.041) , insulin resistance(4.52 ± 1.34 to 2.74 ± 1.28; p = 0.041), hyperandrogenism and testosterone. Also, improve period cycle around 68% of women.
Conclusion: According to researches, consumption of inositol may lead to improving statistical hormonal, oocyte, embryo quality and metabolic profile, decreasing hyperandrogenism and normalizing ovarian function, also MI can increase insulin sensitivity in PCOS. So, we can justify the addition of myo-inositol to the armamentarium for PCOS management.
Keywords: Follicle-stimulating hormone,Insulin resistance, Luteinizing hormone, Metabolic derangements, Myo-inositol, Polycystic ovary syndrome (PCOS)

The association of Food Craving-Trait with Social Media Addiction

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Introduction ; The use of Internet-based social media has significantly increased in recent years, and its excessive use has implications for public health. Some studies have shown a link between spending time on social media and food cravings. This study aimed to assess the association between food craving-trait and social media addiction among Iranian adults.
Methods; This cross-sectional, web-based study was conducted on 554 Iranian adults through public social media platforms. A questionnaire was used to collect demographic, socio-economic, and anthropometric information. The status of social media addiction, food craving-trait, and perceived stress were assessed using standardized questionnaires, including the Bergen Social Media Addiction Scale (BSMAS), Food Craving Questionnaire-Trait (FCQ-T), and Cohen's Perceived Stress Scale (PSS-14), respectively. Data were analyzed using IBM SPSS 22.0.
Results; The mean age and standard deviation of participants were 32.05±8.13 years old. Most of the participants were women (73.6%), with associate degrees and bachelor's education (54.1%). The results indicated that food craving-trait was positively predicted by Body Mass Index (BMI) (β=0.27, *p* value<0.05) and social media addiction (β=0.46, *p* value<0.05). Also, being women had a positive predictive effect (β=0.10, *p* value<0.05). But, Participants age, educational level, monthly income and perceived stress weren't significant variables (*p* value>0.05).
Conclusion; Considering the expanding use of social media worldwide, including Iran, it is recommended to develop and implement policies and programs such as providing training for the proper use of social media, banning advertisements for unhealthy foods, and promoting healthy eating patterns to reduce its negative consequences.
Keywords: Food Craving; Social Media Addiction; Perceived Stress; Body Mass Index

Effects of Beetroot and Beetroot-Vitamin C Supplementation on Serum Fatty Acid Profiles and Oxidative Stress Markers in Patients with Chronic Coronary Artery Disease: A randomised, double-blind, placebo-controlled clinical trial

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Introduction: Coronary artery disease (CAD) is the most prevalent cardiovascular condition, contributing to significant morbidity and mortality worldwide, predominantly due to atherosclerosis. Given the importance of a healthy diet in mitigating atherogenesis, beetroot—known for its high nitrate content and bioactive compounds—has garnered attention for its anti-inflammatory, antioxidant, and lipid-lowering properties. This study aimed to evaluate the effects of beetroot capsules, both with and without Vitamin C, on serum fatty acids, inflammation, and oxidative stress markers in patients suffering from chronic CAD.
Methods: In this double-blind, randomized clinical trial, 90 patients with chronic CAD (67.8% male, 32.2% female; mean age 52 ± 8.6 years) were enrolled over a 4-week intervention period. Participants were randomly assigned to one of three groups receiving 500 mg daily doses of either: (1) beetroot capsules, (2) beetroot capsules with Vitamin C, or (3) placebo capsules. Key outcome measures included levels of saturated fatty acids (SFAs), monounsaturated fatty acids (MUFAs), polyunsaturated fatty acids (PUFAs), total antioxidant capacity (TAC), total oxidant status (TOS), malondialdehyde (MDA), and myeloperoxidase (MPO), assessed both before and after the intervention.
Results: In the beetroot group, significant reductions were observed in heptadecanoic acid (-0.02 mg/ml), behenic acid (0.01 mg/ml), the SFAs/PUFAs ratio (-0.13), PA/OA ratio (-0.25), and MPO (-9.60 U/L). For the beetroot plus Vitamin C group, notable changes included reductions in heptadecanoic acid (-0.02 mg/ml),

lauric acid (-0.01 mg/ml), lignoceric acid (0.01 mg/ml), behenic acid (0.01 mg/ml), docosahexaenoic acid (DHA) (0.01 mg/ml), omega-3 fatty acids (0.03 mg/ml), EPA+DHA (0.01 mg/ml), SFAs/PUFAs ratio (-0.37), PA/OA ratio (-0.36), TOS (-1.42 μM), and MPO (-12.42 U/L), alongside a marked increase in TAC (26.03 μM).

Conclusion: The oral intake of beetroot capsules significantly improved serum levels of MUFAs and PUFAs, as well as oxidative stress markers such as TOS and MPO, in patients with chronic CAD. The addition of Vitamin C further amplified these benefits. However, additional research is needed to validate these findings and elucidate the underlying biological mechanisms.

Keywords: coronary heart disease, red beet, vitamin C, fatty acids, oxidative stress

The effects of Spirulina Supplementation on Anthropometric Measurements and Lipid Profiles in Overweight and Obese subjects: A systematic review of randomized controlled trials

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Introduction: Obesity is a growing global health issue, with its prevalence increasing rapidly. It is closely linked to several health complications, such as cardiovascular disease, diabetes, metabolic syndrome, and hypertension. In recent years, the inclusion of functional nutrients in a healthy diet has gained attention as an effective strategy for promoting weight loss and managing obesity-related risk factors. Spirulina, a filamentous cyanobacterium and blue-green alga, has emerged as one of the most potent prophylactic and therapeutic nutritional ingredients of the 21st century. This systematic review aims to evaluate the effects of Spirulina supplementation on anthropometric measures and lipid profiles in overweight and obese individuals.

Methods: A systematic review of the literature was conducted, focusing on articles published up to August 2023 from databases including MEDLINE, ISI Web of Science, and Scopus. Only randomized controlled trials examining the effects of Spirulina supplementation on anthropometric parameters and lipid profiles in overweight and obese adults were included.

Results: The trials included in the review utilized Spirulina doses ranging from 1 to 8 g/day, with follow-up periods lasting from 4 to 12 weeks. Among overweight and obese participants without dyslipidemia, Spirulina supplementation did not lead to significant changes in triglycerides (TG), total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), or high-density lipoprotein cholesterol (HDL-C). However, one study observed significant reductions in TG and TC. In terms of anthropometric parameters, there were notable reductions in weight, body mass index (BMI), and body fat in the intervention groups compared to the placebo groups.

Conclusion: Spirulina supplementation appears to have minimal effects on lipid profiles in healthy overweight and obese adults. However, it may contribute to significant reductions in weight, BMI, and body fat.

Keywords: Spirulina, lipid profile, obesity, anthropometry.

Assessing the Efficacy of Low-Carbohydrate Vegetarian Diets in Managing Type 2 Diabetes: A Review of Current Evidence

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Introduction: Low-carbohydrate diets that emphasize animal fats and proteins have gained popularity for their role in weight loss and diabetes management. However, there is a growing interest in exploring low-carbohydrate vegetarian diets as potentially healthier and more sustainable alternatives for individuals with type 2 diabetes. This review aims to evaluate the current evidence on the efficacy of low-carbohydrate vegetarian diets compared to moderate-carbohydrate vegetarian diets in promoting weight loss and improving metabolic health among diabetic patients.

Methods: A synthesis of recent studies, including randomized trials, was performed focusing on dietary interventions involving low-carbohydrate vegetarian diets enriched with plant-based proteins and oils. The review encompasses outcomes related to body weight, glycemic control, blood pressure, and

sustainability metrics such as greenhouse gas emissions.
Results: Findings consistently indicate that both low-carbohydrate and moderate-carbohydrate vegetarian diets lead to significant weight loss and improvements in key metabolic parameters among individuals with type 2 diabetes. However, low-carbohydrate vegetarian diets exhibit a more substantial impact on reducing potential greenhouse gas emissions, suggesting an added benefit of this dietary approach in promoting environmental sustainability.
Conclusions: The evidence supports the effectiveness of low-carbohydrate vegetarian diets for managing type 2 diabetes, with the added advantage of lower environmental impact compared to moderate-carbohydrate vegetarian diets. Further research is warranted to establish long-term effects and to refine dietary recommendations for diabetic patients aiming for both health and sustainability.
Keywords: Low-Carbohydrate, Vegetarian Diet, Type 2 Diabetes

Relationship between food insecurity and obesity in vulnerable populations

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Introduction: Food security is one of the important factors of health status in the vulnerable populations. It is a complex and the paradox is that not only can lead to under nutrition and recurring hunger, but also over nutrition, which can lead to overweight and obesity. This narrative review aims to investigate the association between food insecurity and obesity in vulnerable populations.
Methods: Google Scholar, PubMed, and Scopus were used to conduct a systematic literature review up to August 2024. The search terms used were “food insecurity” and “obesity” or “overweight” and vulnerable populations. According to nutritional status, we included studies that surveyed the relationship between food insecurity and obesity.
Results: Several studies have considered the dis-advantages of food insecurity and suggested association between nutritional status in parallel to other factors with the risk of overweight and obesity complications. We involved studies that examined the relationship between obesity phenomenon and problems of obesity. Totally, longitudinal and epidemiology studies emphasized to association between food insecurity including under and over nutrition and nutritional disorders in iceberg shape as mild to severe and over malnutrition.
Conclusion: It was found that food insecurity is in the different levels in the vulnerable populations. Obesity is an emerging public health concern worrying on the population and food insecurity is among the many possible risk factors of obesity. Therefore, nutritional programs should be designed to improve to healthy food choices and modification of life style. However further well- designed studies are still needed to confirm this important.
Keywords: Food insecurity, Obesity, Vulnerable population

Anorexia nervosa in children: a factor in developmental disorders

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Introduction: Awareness of anorexia nervosa (AN) in childhood is rare. The inability to eat was caused by a fear of eating rather than losing appetite. Previous workers agree that this disorder represents a syndrome rather than a disease entity and may occur in individuals with a variety of personalities and varying degrees of ego strength.
Methods: Computerized search methods were combined with manual literature searches. A detailed review of the most prominent articles is provided. Priority was given to studies on children and adolescents that dealt with this issue from a developmental perspective.
Result: The peak age of anorexia nervosa is 15.5 years of age. Preconscious and conscious phantasies related to food and eating include animalistic ideas about food, delusions about the toxicity of certain types of food, fear of filling the mouth and gastric pregnancy, ideas of anal childbirth, and aggressive oral impulses. Sometimes cannibalism was equated with not eating. The physical and mental consequences of childhood AN seem to be worse than adolescent AN, although the reasons for these consequences are unclear.

Conclusion: Significant weight loss during childhood and adolescence can trigger AN if there is a predisposition to this disease. Patients and their families should receive psychoeducation about hunger symptoms and their overlap with AN symptoms. The average duration of AN is 3.4 years, and almost two-thirds of patients have a long-term recovery from the disease.

Keywords: anorexia nervosa; childhood; children; treatment

The relationship between milk and dairy consumption and the risk of inflammation and chronic diseases

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Introduction: Inflammation is the immune system's response to an irritating factor. Acute and chronic, which are caused by various factors. Inflammation is divided into two types, Chronic inflammation can have destructive reactions on cells that lead to some diseases such as T2DM, CVDs, dementia, depression, and some cancers, one of the main triggers of chronic inflammation is people's diet. But about dairy products that are claimed to increase the level of inflammation in the body, we must check to see how true this claim is. According to the 2020-2025 Dietary Guidelines for Americans, limit the consumption of this type of fat to less than 10% of total daily calories, but it should be considered that some other fats in milk, such as short-chain fats have a positive effect on health.

Methods: The US National Library of Medicine (PubMed) and ScienceDirect databases were searched to find studies on the relationship between dairy and inflammation. There was no time limit on the search.

Results: Some studies have shown that dairy products, especially high-fat types and non-fermented products, may associated with an increased risk of prediabetes and T2DM, but some other studies have not shown this relationship and have even shown that dairy products, especially dairy products Fermented foods are associated with reduced risk of T2DM and CVDs. In a 2019 systematic review, it was shown that dairy consumption does not have an inflammatory effect in healthy adults or those with metabolic syndrome, obesity, or T2DM. Interestingly, weak anti-inflammatory effects have also been observed in some fermented dairy products such as kefir.

Conclusion: in general, dairy products do not cause inflammation in most people and there is no need to avoid them, many plant-based and non-dairy milks have replaced dairy milks, which may not contain the same amount of protein, calcium, or other nutrients found in animal milk, so we should look for fortified varieties.

Keywords: chronic diseases; dairy products; inflammation

Association between WBC and APACHE II on 28-Day Mortality Risk in Critically Ill Patients: A Prospective Multicenter Observational study

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Introduction: Predicting 28-day mortality in critically ill patients is crucial for improving clinical outcomes and guiding treatment decisions. Several scoring systems, including the NUTRIC Score, SOFA (Sequential Organ Failure Assessment), and APACHE II (Acute Physiology and Chronic Health Evaluation), have been developed to assess the severity of illness and mortality risk. White blood cell (WBC) count, serum albumin (Alb) levels, and the Glasgow Coma Scale (GCS) are also valuable indicators of patient prognosis. This study aimed to evaluate the association between WBC count, APACHE II score, and 28-day mortality, while accounting for other predictors such as NUTRIC Score, SOFA, Alb, and GCS in ICU patients.

Methods: This prospective multicenter study included 155 eligible patients admitted to the general and neurosurgery intensive care units (ICUs) of Imam Reza and Shahid Kamyab Hospitals in Mashhad, Iran. Clinical parameters such as GCS, WBC count, serum albumin, SOFA, APACHE II, and NUTRIC Score were recorded at the time of ICU admission. A backward stepwise

logistic regression analysis was performed in five steps to determine the association of these variables with 28-day mortality. SPSS software was used for data analysis.

Results: The multivariate logistic regression analysis revealed that higher WBC count (OR = 1.06, 95% CI: 1.009–1.117, $p = 0.022$) and higher APACHE II score (OR = 1.134, 95% CI: 1.061–1.213, $p \leq 0.0001$) were significantly associated with increased risk of 28-day mortality. In contrast, the predictive influence of GCS, Alb, SOFA, and NUTRIC Score was diminished in the final model by the presence of WBC count and APACHE II.

Conclusion: In critically ill ICU patients, both elevated WBC count and APACHE II score are strong independent predictors of 28-day mortality. These findings suggest that incorporating these parameters into mortality risk assessment models may enhance the early identification of high-risk patients and guide more targeted interventions. more studies are needed to validate these findings and explore the underlying mechanisms driving these associations.

Keywords: Mortality risk, APACHE II score, Risk assessment, Intensive care unit, Serum Albumin, White Blood Cells

Hospital malnutrition: increasing risk factors

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Introduction: According to worldwide studies, the prevalence of malnutrition among hospitalized patients has been reported to be about 15% to 60%. Hospital malnutrition is related to a high incidence of morbidity and mortality. It is often associated with impaired immunity, a high risk of infectious complications, and delayed wound healing after surgery.

Methods: To find studies related to the relationship between the prevalence of malnutrition and the prevalence of risk factors, the databases of the American National Library (PubMed) and ScienceDirect and Nutricion Hospitalaria were searched with the keywords malnutrition, hospital, cost, screening, and nutrition assessment. Converted No time limit was considered in the search.

Results: After controlling for patient and hospital characteristics, hospitalizations for moderately malnourished patients were, on average, 18% longer than for well-nourished patients. The duration of medical stay increased by 23% and the duration of surgery by 32%. Costs were, on average, 31 to 34 percent higher than well-nourished patients with similar characteristics. Severely malnourished patients (11% of patients studied) stayed 34% longer and had 38% higher total costs than well-nourished patients. They stayed in medical beds 53% longer and had an average of 55% higher medical costs. The trends were similar regardless of the type of cost data used.

Conclusion: It is strongly recommended that mandatory feeding screening be widely used by published best practice guidelines to target and reduce the incidence of malnutrition in hospitals. Collaboration between physicians, nutritionists, pharmacists, and specialist nurses in Nutrition is critical to this initiative.

Keywords: cost; hospital malnutrition; nutrition assessment; screening

The anti-inflammatory effect of curcumin supplementation on adult Hemodialysis patient: A systematic review

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Introduction: Hemodialysis is a treatment method that is used for patients whose kidney function reaches less than 10% of normal. One of the side effects of this method is inflammation. Curcumin, a polyphenol of the turmeric plant, is known for its anti-inflammatory properties. This study aims to investigate the anti-inflammatory effect of curcumin supplementation in adult patients undergoing hemodialysis.

Method: This review article was carried out through PubMed, Science Direct, Google Scholar; SID, and Cochrane from 2017 until April 2024. The keywords were Hemodialysis, Anti-inflammation, and curcumin supplementation. Among the 8 articles found in this regard, 5 related articles were used at the end.

Results: In these articles, serum levels of TNF-α, IL-6, hs-CRP, and Nrf2, NF-kB, and NLRP3 gene expression were measured before and after a 12-week curcumin supplementation intervention. By inhibiting NF-κB, curcumin suppresses the expression of TNF-α and interleukin. The results of most of these studies show a significant reduction in the levels of pro-inflammatory

cytokines; Also, the gene expression of inflammatory mediators decreases significantly.
Conclusion: Curcumin plays an anti-inflammatory role by reducing the levels of pro-inflammatory cytokines. As a result, curcumin supplementation shows significant improvement in inflammatory biomarkers among hemodialysis patients. However, further research is needed.
Keywords: Hemodialysis, Curcumin supplementation, anti-inflammatory

Effects of vitamin D and high-protein diet consumption on bone mineralization and linear growth in elementary school children

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Introduction: Childhood and adolescence are crucial stages for linear growth. Both vitamin D and protein playing roles in bone mineralization. Protein is a vital macronutrient that provides essential amino acids necessary for tissue development. Despite their importance, the effects of vitamin D supplementation on young children remain underexplored. This study aims to evaluate the influence of vitamin D supplementation on linear growth in elementary school-aged children.
Methods: 200 healthy elementary school children were randomly assigned to receive either 20 µg/d vitamin D3 or a placebo, combined with either a high-protein or normal diet for 24 weeks. The outcomes measured included total body less head (TBLH) and lumbar spine bone mineral density (BMD), bone mineral content (BMC), via dual-energy X-ray absorptiometry, along with height measurements.
Results: Vitamin D supplementation resulted in increased lumbar spine BMD and TBLH BMC compared to the placebo group. Children on a high-protein diet showed smaller increases in lumbar spine BMD, TBLH BMC, with no significant changes in height.
Conclusions: While vitamin D supplementation positively impacted bone mass and spinal BMD, there were no changes in whole-body BMD. The high-protein diet offered less benefit for bone mineralization than a normal diet. These findings support a recommended vitamin D intake of approximately 20 µg/d, but do not support high-protein diet for enhancing bone mineralization in healthy, well-nourished children.
Keywords: linear growth, vitamin D supplementation, high-protein diet, height

Gut Microbiota Modulation as an Effective Adjunct Therapy for Obesity Management A Randomized Controlled Trial

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Introduction: Obesity, which is a growing public health concern worldwide, currently has few effective treatment options. Recent studies emphasize the importance of gut microbiota in metabolism regulation, revealing potential therapeutic targets for obesity treatment. Consequently, there is an increased interest in investigating the impact of gut microbiota modulation on obesity-related outcomes.
We aim to assess the effectiveness and safety of a daily oral capsule containing a combination of prebiotics and probiotics in reducing obesity-related body weight, body fat percentage, and waist circumference. Additionally, we will explore the relationship between gut microbiota changes and these outcomes.
Method: A 12 Week, randomized, double-blind, placebo-controlled trial was conducted with 100 Participants, aged 25-60 Years and with a Body Mass Index (BMI) of 30 Kg/m^2 or higher. Participants were allocated to receive either probiotics and prebiotics (intervention group) or placebo capsules (Control Group).
Results: The intervention group showed statistically significant reductions in body weight, body fat percentage and waist circumference compared to the control group. Furthermore, the intervention group exhibited improvements in metabolic parameters, such as fasting glucose levels and insulin resistance.
Conclusions: The results of this study suggest that modulating gut microbiota using probiotics and prebiotics can effectively reduce body weight and improve metabolic health in obese individuals. This approach could be a valuable adjunct strategy for obesity management, with the potential to significantly impact clinical practice and public health. Further analysis of gut microbiota composition changes may unveil the specific bacterial species and pathways involved, enabling the development of more targeted and personalized interventions in the future.
Keywords: Obesity, Gut Microbiota, Prebiotics, Probiotics, Fasting Glucose Levels, Body Weight

The effect of a fasting diet on body health

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Introduction: Fasting means a restriction of the intake of solid foods. Based on traditional, cultural, or religious backgrounds, there are types of periodic fasting applied all over the world since then, it has been recommended by most older European medical schools for the treatment of acute and chronic diseases. The food consumption frequency of modern people tends to have long daily energy intake periods and short fasting periods, and high-calorie diets and sedentary lifestyles affect the body's metabolism and increase the incidence of obesity, diabetes, cardiovascular disease, stroke, and dementia year by year. Fasting is a common diet in different societies, especially Islamic societies, in which a person endures extreme calorie restriction or fasting for several hours. There are different types of fasting diets, one of the most common types of fasting is intermittent fasting (IF), in this type of diet, a person fasts for several hours and then eats calories for several hours, and then goes to fasting again. This type of fasting is also common in Islamic countries, they fast one month of the year, which is Ramadan, and limit their intake of calories.

Materials and methods: These studies were conducted on different people to determine the effect of fasting on changes in weight, lipid profile, immune system, and pregnancy. Also, other studies have been conducted to determine the effect of fasting on blood pressure reduction.

Result: A meta-analysis conducted on men and women during Ramadan showed that total cholesterol and TG levels decreased in men and HDL levels increased in women. Also, studies have shown that the fasting diet does not have a serious effect on children, but it is recommended that pregnant women avoid fasting, and medical advice is also necessary for people with diabetes. Also, in another systematic study in the United States, they concluded that the case group (fasting) compared to the control group (non-fasting) had a reduction in arterial blood pressure, which led to improved cardiovascular function. It has also been observed in people with a fasting diet that although these people lose weight during the intermittent fasting (IF) diet, the level of ketones in their body has increased, and also after leaving this diet, their weight returns to normal.

Conclusion: In general, studies have shown that fasting has positive effects on maintaining health, but this diet cannot be considered an effective diet for long-term weight loss, considering that the high level of ketones in the body affects health. As recommended in the Islamic religion, Muslims fast one month of the year, Ramadan, which has positive effects on the body's health.

Keywords: cardiovascular function; chronic diseases; diabetes; fasting; immune system; weight loss.

Examination of the main factors of lifestyle with muscle mass: PERSIAN Cohort-Mashhad

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Introduction: About 40% of the human body consists of muscle, which is crucial for metabolism, physical stability, and the transport of amino acids, as well as the storage and utilization of glucose for energy. Exercise and resistance training promote muscle protein synthesis, regeneration, and repair, creating conditions favorable for muscle preservation and growth. Research indicates a strong correlation between muscle mass and diet quality, suggesting that a healthy diet is more effective than dietary supplements in preventing sarcopenia, the age-related loss of muscle mass.

Method: In this study, through the evaluation of data of Mashhad cohort to investigate food intake, diet protein quality, health of consumed beverages, physical activity, sleep status, stress, smoking, and Muscle thickness in individuals. The relevant SEM models have served as the foundation for the examination of this data.

Results: The relationship between muscle mass (SMI and FFM) and the determinants of lifestyle was demonstrated in the current

study after looking at the dependent variables of SMI, FFM and the independent variables of food intake, healthy eating index, diet protein quality score, health index of consumed beverages, physical activity, smoking, and individual-socio-economic variables (age, sex, education, wealth status index). The exception to this was the education variable. According to the effect size (F2), which is the standardized regression coefficient, in this conceptual model gender diversity has the highest correlation with muscle mass index (R2=0.624, Path Coefficients: SES=0.495 Lifestyle=0.309 _ P-Values<0.0001).

Conclusion: The current study highlights a strong correlation between improvements in lean mass and skeletal muscle mass and various lifestyle factors.

Keywords: muscle mass, lifestyle, diet, physical activity, mental health, sleep quality, smoking.

The role of the Mediterranean diet in modulating the gut microbiome: Effects on Health with a Focus on Obesity and Metabolic Syndrome

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Introduction: The gut microbiota is essential for host health, with diet being a major influence on its composition and function. A Western diet, characterized by imbalances in gut bacteria, is linked to chronic diseases such as obesity, metabolic syndrome, type 2 diabetes, and cardiovascular issues. Conversely, the Mediterranean diet (MD) is recognized globally for its health benefits, promoting gut microbial balance and contributing to lower rates of metabolic diseases, cancer, Alzheimer's, depression, and inflammatory bowel disease. These benefits stem from the MD's rich content of fiber, monounsaturated and polyunsaturated fatty acids, antioxidants, and polyphenols. This study explores the effects of the Mediterranean diet on gut microbiota interactions and its role in preventing metabolic disorders, particularly obesity and metabolic syndrome. It also seeks to understand how the MD alters gut microbial composition to enhance metabolic health. Evidence shows a bidirectional relationship between the MD and the gut microbiome. The microbiota of those adhering to the MD differs significantly from those following a Western diet, which often leads to increased gut permeability and metabolic endotoxemia. In contrast, the fiber and probiotic richness of the MD promotes a balanced gut microbiome, reducing obesity and metabolic syndrome risks.

Conclusion: The Mediterranean diet significantly modulates the gut microbiome, supporting overall health and metabolic well-being. Modern diets high in processed and low-fiber foods disrupt this balance, heightening the risk of obesity and metabolic disorders.

Keywords: Mediterranean diet, metabolic syndrome, obesity prevention, gut microbial balance, metabolic health

Reporting on the trend of the school milk program in Iran from 2001 to 2023

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Introduction: UNICEF, FAO, and WHO have accepted the school milk program globally as a win-win and cost-effective plan. This program plays a vital role in providing essential nutrients to students, promoting overall health, and enhancing academic

performance. Unfortunately, this program has faced some obstacles in Iran.

Method and material: All the data was obtained from the ex-secretary of the national milk committee.

Results: The school milk program operated successfully from 2001/02 to 2016/17, reaching its peak in 2010 with 14.5 million students receiving milk. Unfortunately, the program encountered challenges after implementing the Targeted Subsidy Reform Plan, which led to the removal of food subsidies. As a result, the program was interrupted during 2017/18, 2018/19, 2020/21, and 2021/22, depriving all students in Iran of access to milk.

Conclusion: The school milk program's importance is further underscored by the fact that per capita milk consumption in Iran was significantly lower than the global average (23. By revitalizing well-performing school milk programs, we can significantly enhance per capita milk consumption and influence students' long-term dietary habits and overall health, offering a promising future for the youth of Iran. The revitalization of the school milk program in Iran is not just a public health issue but an urgent one that demands immediate attention. UNICEF and WHO are expected to continue supporting and advocating for the revitalization of the school milk program in Iran, given its proven benefits and the current challenges it faces.

Keywords: school milk program, trend, Iran, coverage

Effect of probiotic supplementation on inflammatory markers in multiple sclerosis

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Introduction: Multiple sclerosis (MS) is an autoimmune inflammatory disease of the Central nervous system (CNS) affecting approximately 2.5 million people worldwide. Previous Studies indicate that probiotics can influence immune and inflammatory responses by modifying the gut microbiome; Hence, we aimed to summarize the clinical trials on the effect of probiotic supplementation on inflammatory markers in patients with multiple sclerosis.

Method: We searched the online databases of PubMed, ISI Web of Science, and Google Scholar to find related articles published until Aug 2023. we used keywords such as “probiotic”, “inflammation”, “c-reactive protein” and “multiple sclerosis”. Overall, seven studies investigating the effects of probiotic supplementation on inflammatory biomarkers (CRP, IL-6) in patients with MS were included.

Result: In total, 342 patients with MS received probiotic supplementation for three to six months. Out of seven studies, five studies indicated that probiotic intake can reduce CRP levels. Also, a significant reduction in IL-6 was observed in two studies. In one trial, CRP level increased after two months of supplementation.

Conclusion: Overall, it seems that probiotic supplementation may have benefits in improving systemic inflammation in patients with MS; However, further studies are needed to illustrate the effects of probiotics and their mechanisms in MS.

Keywords: "Autoimmune Diseases", "C-Reactive Protein", “inflammation”, ”multiple sclerosis”, “probiotic”

Efficacy of educational intervention based on extended theory of planned behavior on breakfast consumption in 13-15 years old students

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Background & **objective**: The role of eating a healthy breakfast on students' health and their learning rate has been emphasized in various studies, and the use of theory-based interventions can create and sustain healthy nutritional behaviors. The aim of the current study was to evaluate the effectiveness of the educational intervention based on extended theory of planned behavior on breakfast consumption among 15-13-year-old students in Qazvin city.
Methods: The current research was a quasi-experimental study, which was conducted using a multi-stage random sampling method, with the participation of 120 students (equally divided to experimental and control group) from public schools in Qazvin city. Students answered the demographic questions and constructs of extended TPB including attitude, subjective norms, behavioral control, intention, action and coping planning, action self-efficacy, outcome expectation and perceived risk before and 3 months after the intervention. The participants of the intervention group received 4 training sessions based on the extended TPB constructs. The data were analyzed using SPSS 25.0 and independent and paired t-tests, chi-square, and ANCOVA.
Results: By controlling the effect of the pre-test variable, the mean of attitude constructs, perceived behavioral control, subjective norms, action self-efficacy, perceived risk, health awareness and behavioral intention in the students of the experimental group improved after the intervention ($P<0.05$). Also, the control of the pre-test variable effect of mean breakfast consumption in the experimental group significantly improved after the theory-based intervention ($P<0.001$).
Conclusion: Educational interventions using behavior change models can correctly and efficiently increase breakfast consumption and create correct nutritional behaviors in students.

Keywords: breakfast, student, attitude, self-efficacy, health awareness, behavioral intention.

The efficacy of theory based education on Self-care Behaviors, Metabolic Indicators and psychological constructs of Diabetic Patients

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Introduction: using behavior change model is critical method to increase effectiveness of educational intervention toward chronic diseases prevention and some models as health locus of control (HLOC) has an effective role in predicting self-care behaviors in type 2 diabetic patients. The aim of the study was to assess the theory based educational intervention on self-efficacy, self-care and metabolic indicators of T2D patients using HLOC.
Methods: The current research was a randomized control trial and 78 T2D patients referred to health care centers of Qazvin city were assigned to experimental and control groups using multi-stage random sampling. The educational program conducted based on HLOC included 2 individual 2 session of individual counseling and three 30 -minute group discussion. Data collection tools included demographic items, summery of Diabetes self-care activity questionnaire, and self-efficacy scale, health locus of control scale, and FBS and

HbA1c. Data were analyzed with SPSS 25.0 software and chi-square tests, independent t test, analysis of covariance.

Results: the finding showed that the mean of psychological constructs as self-efficacy, dimensions of health locus of control, the total score of self-care along with its dimensions have improved significantly in the experimental group after controlling the effect of the pre-test ($P<0.05$). Moreover, the mean of HbA1c and FBS was significantly reduced in the experimental group after controlling the effect of the pre-test ($P<0.001$).

Conclusion: Educational interventions using health locus of control can lead to improvement of self-efficacy, self-care behaviors and blood glucose reduction in T2D patients.

Keywords: diabetes, health locus of control, self-efficacy, self-care, HbA1c, FBS.

Nutrition in Crisis

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Introduction: The crisis of the temporary period endangers people's lives and health, making them need urgent help. One of the most important limitations in the crisis is the limitation of food resources and nutrition of the affected people. Nutrition in a crisis means proper nutrition during emergencies and unexpected and critical events in order to achieve food security. Therefore, nutritional support in order to help the accident victims is necessary and should be given due attention.

Method: A review study was conducted using keywords in PubMed, Science Direct, Scopus, SID and Google scholar search engines.

Result: One of the most important primary needs of people in a crisis is food, and nutritional planning is very important to ensure the comfort and health of people. Supplying and distributing healthy, sufficient and hygienic food is one of the biggest challenges facing managers now. One of the important duties of managers and officials is to foresee and make the necessary arrangements to deal with the crisis.

Conclusion: In order to prevent common nutritional deficiencies in the crisis, which will have dire consequences, it is necessary to provide people with suitable food at the beginning of the crisis and as soon as possible. The main goal of developing human resources for nutrition management in emergency situations is to create national capacity for such activities. Organization of short-term training of key people in emergency nutrition management is of particular importance.

Keywords: Nutrition, Crisis

Effects of Eight Weeks of Aerobic Exercise Along With Garlic Supplementation on Sex Hormones in the Ovarian Tissue of Rats Under Wi-Fi Electromagnetic Radiation

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Introduction: The present study was aimed to investigate the interactive effect of eight weeks of aerobic training along with garlic supplement on sex hormones of rats exposed to WIFI electromagnetic waves.

Methods: 40 rats were randomly divided into five groups (1) control, (2) WIFI electromagnetic radiation control, (3) WIFI electromagnetic radiation and aerobic training group, (4) garlic supplementation and WIFI electromagnetic (5) Aerobic exercise combined with garlic supplementation and WIFI electromagnetic radiation were divided. Groups 2, 3, 4 and 5 were exposed to WIFI modem for 1 hour daily for eight weeks. Aerobic exercise was performed on rats for 8 weeks, three sessions a week and each session for 60 minutes with 40 to 60% of maximal oxygen uptake. Garlic extract received 800 mg / kg of rats daily for 8 weeks in drinking water.

Results: The results of this study showed that WIFI electromagnetic radiation had a significant effect on FSH levels of rats ($p\geq0.05$). But this decrease was not significant on LH levels

(p≤0.05). Aerobic training decreased FSH levels of WIFI rats (p≥0.05). Garlic supplementation increased LH levels in WIFI rats (p≥0.05) but decreased FSH levels (p 050.05). The results also showed that eight weeks of aerobic training and garlic supplementation did not have an interactive effect on changes in LH and FSH levels of WIFI rats (p≥0.05).

Conclusion: It seems that aerobic training and garlic supplementation alone improve the sex hormones of rats exposed to WIFI electromagnetic radiation.

Keywords: Aerobic training, Garlic Supplements, Sex Hormones, WIFI Electromagnetic.

The utilization of portable quality control instruments to improve food safety among large-population service providers

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Introduction: Food safety is critical in large-population food service operations to ensure sustainable food security. Portable laboratory equipment offers a cost-effective alternative. This study aims to develop a protocol for effective food quality control utilizing these instruments.

Method: All the data was obtained from the ex-secretary of the national milk committee.

Results: The research highlights essential portable devices such as pH meters, salinity meters, Salt kits for Iodid assessment, Brix refractometers, moisture analyzers, and food thermometers. Hygiene monitoring instruments, rapid pathogen test kits, water testing kits, spectrophotometers, and data loggers are crucial for ensuring food safety and monitoring storage conditions. Total Polar Material (TPM) tester evaluates TPM levels in edible oils, while Smoke Test Kits assess cooking gas and meat/fish smoking quality. Texture analyzers measure meat tenderness, color meters assess meat and egg freshness, and portable fruit hardness testers check fruit quality. Greenness test digital testers confirm fruit and vegetable freshness and tomato norms evaluate tomatoes. Antibiotic residue test kits monitor antibiotic levels in milk.

Discussion & Conclusion: Adopting a quality control protocol based on portable laboratory technology presents a beneficial and cost-effective strategy for large-scale food service operations, including hospitals, catering, industrial kitchens, chain restaurants, university food centers, and events like Arbaeen. The proposed protocol enhances food safety, elevates food quality, and boosts consumer confidence.

Keywords: portal laboratory equipment, food service center, quality control

The effect of postoperative oral nutritional supplements (ONS) in gastrointestinal (GI) cancer patients following surgery: a narrative review

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Introduction: Gastrointestinal (GI) cancers are malignant diseases that affect the digestive tract. Moreover, surgery has its aftereffects on hospitalized patients, and procedures like fasting and bowel preparation may worsen patients' nutritional status. Malnutrition commonly occurs and nutritional status deteriorates in patients following GI cancer surgeries. Malnutrition can cause higher morbidity and mortality, poor treatment tolerance, and reduced life expectancy. Thus, appropriate nutritional support is critical for improving nutritional status and prognosis in these patients. The best method of providing energy and nutrients in addition to regular meals is through oral nutritional supplements (ONS). This review concluded current evidence on the effectiveness of ONS on the nutritional status of GI cancer patients.

Method: The search was performed using Google Scholar. Search terms were “Neoplasms”, “Medical Nutrition Therapy”, and “surgery” by 20th August 2024.

Result: Based on our literature review, ONS may improve the weight and BMI of post-discharge patients. It also may reduce skeletal muscle loss and sarcopenia, as well as improve chemotherapy tolerance in patients following

colorectal cancer surgery, and improve nutritional outcomes, skeletal muscle maintenance, chemotherapy tolerance, and some quality of life variables in surgically treated gastric cancer patients. Moreover, ONS following total gastrectomy was found to significantly reduce postoperative weight loss; however, after distal gastrectomy, this result was not significant.
Conclusion: The significance of ONS intake in post-discharge patients after GI cancer surgery is highlighted. More clinical trials in the oncology setting are needed to warrant these findings.
Keywords: "Neoplasms", "Medical Nutrition Therapy", and "surgery [Subheading]".

The impact of probiotics on calcium absorption and bone health in Iranian postmenopausal women: a review

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Introduction and Objective: A healthy and balanced diet is one of the most important factors influencing human health. The absorption of nutrients in the body is also significant. Calcium is recognized as one of the essential minerals, and its intake is recommended to prevent osteoporosis, particularly in at-risk individuals. The consumption of probiotics can enhance the absorption of nutrients, especially calcium. These beneficial bacteria create an optimal environment in the gut, facilitating better nutrient absorption. This study aims to evaluate the impact of probiotics on bone health improvement and the reduction of osteoporosis risk in postmenopausal women.
Results of Previous Studies: Recent studies show that altered gut homeostasis has been identified as a potential risk factor for compromised bone health. The gut microbiota influences osteoclast activity by regulating serum levels of IGF-1 and also affects intestinal calcium absorption. Probiotics, including live microorganisms such as bacteria and yeasts, can modulate gut microbiota and enhance calcium absorption. The concurrent intake of probiotics with dairy products creates a favorable environment in the gut for the growth of beneficial bacteria, leading to increased calcium absorption. Moreover, this combination can help prevent serious conditions such as bone fractures, osteoporosis, and diseases like diabetes, particularly in postmenopausal women who, due to hormonal changes, are at higher risk for bone diseases like osteoporosis.
Conclusion: Probiotics are a natural and effective strategy to improve calcium absorption and increase bone mineral density, thereby playing a significant role in maintaining bone health in this group.
Keywords: Calcium absorption, Osteoporosis, Postmenopausal women, Probiotics, Gut microbiota

Examining the Relationship between SGLT-2 Inhibitors and Body Composition Indices: A Systematic Review

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Background: The rising prevalence of obesity and overweight is straining healthcare due to associated chronic conditions. Abnormal fat distribution, including visceral adipose tissue (VAT), subcutaneous adipose tissue (SAT), and ectopic adipose tissue, is common in overweight/obese individuals. Both VAT and SAT are independent markers for cardiovascular events and mortality. Reducing visceral fat and subcutaneous adipose tissue could decrease the risk of metabolic syndrome and cardiovascular disease. Sodium-glucose cotransporter-2 (SGLT-2) inhibitors, used to treat diabetes, have demonstrated potential in reducing cardiovascular risk, body weight, and obesity indicators by increasing glucose excretion through urine and lowering plasma glucose levels. However, the impact of SGLT-2 inhibitors on body mass indices, including ectopic adipose tissue, is still debatable.
Methods: A systematic search of reputable databases was conducted to identify relevant randomized clinical trials on the effects of SGLT-2 on body mass indices until May 24, 2024. Studies were screened based on inclusion and

exclusion criteria, and data were extracted, evaluated, and summarized.

Results: SGLT-2 inhibitors can improve body composition indices, such as visceral fat, based on findings from reviewed studies.

Conclusion: SGLT-2 inhibitors improve body composition indices, including visceral fat. These glucose-lowering medications can reduce visceral fat, associated with an increased risk of metabolic disorders and cardiovascular disease, thereby improving overall body composition and metabolic health. However, the specific mechanisms and individual variations require further research.

Keywords: SGLT-2 inhibitors, visceral fat, body composition indices.

The association between healthy lifestyle score and risk of metabolic syndrome: a population-based study

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Introduction: Metabolic diseases like Diabetes mellitus, insulin resistance, and metabolic syndrome (MetS) are positively related to lifestyle risk factors like the type of dietary pattern, smoking, sedentary lifestyle, and obesity. So, it is important that consider the role of these risk factors multiply rather than separately. In this research, we examined the association between healthy lifestyle score (HLS) and risk of MetS and its components.

Method: This is a cross-sectional study that includes 7202 adults. HLS examined by using four items: Physical Activity (PA), Smoking, Healthy Eating Index 2015 (HEI-2015), and Body Mass Index (BMI). Lifestyle scores ranged from 0 (unhealthy) to 4 (healthiest). The relationship between HLS and MetS and its ingredients was examined using model-adjusted binary logistic regression.

Result: In this study mean age of subjects was 46.19 ± 7.88 years and the mean BMI was 27.22 ± 4.58 kg/m^2.Results showed that HLS higher quintile participants were younger, never smoked, and had lower waist Circumference (WC), Waist-hip ratio (WHR), and BMI scores than lower quintile participants(P<0.05). People in the lower quintile of HLS had significantly higher Fast Blood Glucose (FBS) and triglycerides (TG) and lower High-Density Lipoprotein (HDL-c) than subjects in the highest quintile (P < 0.05). Accordingly, the result of this study revealed that the risk of METs decreases significantly (OR=0.18; $CI_{95\%}$: (0.10-0.30),) in the highest quintile than lowest quintile (OR=0.92; $CI_{95\%}$: (0.58 -1.48),P<0.001).

Conclusion: We can show that a higher score of HLS reduced the odds of MetS in both males and females.

Keywords: Obesity, Persian Cohort, blood pressure, insulin resistance, cardiovascular disease

The effect of eight weeks of endurance training and consumption of black seeds on the oxidative stress of type 2 diabetic women

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Introduction: Diabetes mellitus, a chronic glucose metabolism disorder, is associated with increased oxidative stress. Exercise and consumption of some herbs are effective in improving obesity and its complications. This study investigates the effect of endurance training and black seed consumption on oxidative stress in type 2 diabetic women.

Method: This research was applied to quasi-experimental research. The subjects were divided into four groups; Exercise + supplement (ES) (10 people), exercise + placebo (EP) (10 people), supplement group (10 people), and

placebo group (10 people). The statistical sample of this research includes 40 obese diabetic women with an age range of 48.55 ± 3.51 (years) and a body mass index of 32.58 ± 1.78 (kg/m2). The duration of the intervention was 8 weeks. Before lunch, the ES and supplement groups received 1000 mg of black seed supplement daily. The exercise protocol involved running at a specified heart rate for 3 minutes and then strolling for 2 minutes, repeated in 6 sets. The statistical method of one-way analysis of variance and Tukey's post hoc test was used to examine the difference between groups and the correlated t-test was used to examine intra-group changes at a significance level of 0.05.

Result: The study found that the total antioxidant capacity (TAC) levels increased and malondialdehyde (MDA) levels decreased significantly (P<0.05) in both the ES and EP groups. Additionally, consuming black seed supplements alone led to a significant increase in TAC and a significant decrease in MDA levels (P<0.05).

Conclusion: According to the findings of the current research, it can be inferred that engaging in endurance training and taking black seed supplements can significantly improve the health of obese diabetic women. This improvement is achieved by boosting their antioxidant capacity and reducing oxidative stress factors.

Keywords: Black seed, Endurance training, Malondialdehyde, Oxidative stress, Total antioxidant capacity

The effects of omega-3 acids on the performance of athletes

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Introduction: In recent years, the role of omega-3 fatty acids in sport has received increasing research attention. The predominant source for EPA/DHA is seafood. Although food items such as linseed oil and walnut oil have omega-3 fatty acid they are not routinely consumed in large quantities.

Methods: To find studies on the relationship between omega-3 acids and athletes, the databases of the National Library of America (PubMed) and ScienceDirect were searched with the keywords athletes; omega-3 fatty acids; performance; recovery; sports nutrition. Became No time limit was considered in the search.

Results: Similarly, in a study with trained males, squat jump performance was improved after a single acute supplementation with 0.75 g EPA and 0.05 g DHA. Explosive power, fatigue and muscle soreness were improved in athletes consuming 1.1 g of each EPA and DHA over 5 weeks. Others reported beneficial results in male athletes in various parameters relevant for endurance such as submaximal exercise HR and O2 consumption VO2max and relative O2 consumption. A study in trained males showed similar improvements in markers of pulmonary function, albeit with a much higher dose of up to 3.7 g EPA and 2.5 g DHA over 3 weeks.

Conclusions: Considering their actions, including but not limited to supporting nervous system function, maintaining muscle mass after injury and improving training adaptations and the lack of adverse effects at dosing regimens that might be recommended, it seems reasonable for athletes to consider using supplements. These would also benefit their long-term health.

Keywords: athletes; omega-3 fatty acids; performance; recovery; sports nutrition

The Impact of High Salt Intake on Stomach Cancer Risk

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Introduction: Gastric cancer remains a significant public health issue despite declining incidence and mortality rates. Preventive strategies, including a healthy diet, could significantly reduce gastric cancer cases. On the other hand, some statistics show an uncontrolled increase in the use of salt in the diet. Early intervention and lifestyle modifications could prevent half of all gastric cancer events by 2031.
Methods: This meta-analysis reviewed studies from PubMed, Web of Science, and Cochrane Library up to July 1, 2022, focusing on case-control studies with over 100 participants that assessed salty food intake and preference. The studies were evaluated for quality using the Newcastle-Ottawa scale and analyzed with STATA/SE 16. ,
Results: Reducing salt and salted food intake, along with increasing fresh fruit and vegetable consumption, has contributed to the global decline in gastric cancer rates. This dietary modification is a practical strategy for preventing gastric cancer, especially in high-risk areas like Japan. A number of experimental studies supported the cocarcinogenic effect of salt through a synergistic effect with Helicobacter pylori infection, in addition to some independent effects such as increasing the rate of cell proliferation and endogenous mutations.
Conclusions: Participants who always added salt to food had a 41% higher risk of gastric cancer than those who rarely did. This association was stronger after excluding early cases, suggesting reverse causality. Adding salt may be a proxy for habitual salt intake.
Keywords: High salt intake; Stomach cancer; Gastric adenocarcinoma; Dietary modification ;Global decline in gastric cancer rates;Salted fish; Helicobacter pylori ;Cured meats

The importance of military nutrition

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Introduction: In order to maintain and improve health and achieve optimal efficiency, humans need proper nutrition, which is one of the most important elements of health and effective factors in improving performance. Proper nutrition plays an effective role in the physical and mental preparation of military forces and is one of their most important challenges and priorities. It is in all countries of the world.
Method: A review study was conducted using keywords in PubMed, Science Direct, Scopus, SID and Google scholar search engines.
Result: The most basic issue in improving combat power is paying attention to the nutrition of the armed forces employees. According to specific physical and mental conditions, military personnel need special nutrition that increases defense and combat readiness and the ability to deal with stress and prevent physical injuries. Lack of nutrition has a negative impact on people's performance and health. Paying attention to nutrition in military missions to achieve important success and not paying attention to it can make the mission fail.
Conclusion: Military forces are of special importance in all countries and they protect the borders, provide security and guard the interests of the country. Proper nutrition is one of the most important aspects of health, especially in the military forces. One of the most important duties of the health officials of the military forces is to ensure that the nutritional needs of the forces under their command are met in peace and war conditions.
Keywords: Nutrition, Militar

The Role of Nutrition In Preventing Osteoporosis

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Introduction; Osteoporosis is a severe disease with high morbidity and mortality rates. To reduce the risk, promote healthy habits like a balanced diet, regular exercise, and avoid harmful habits. European guidance recommends calcium, vitamin D, and protein intake for women over 50. Lifestyle factors like physical activity, exercise, and nutrition are crucial for bone health.

Methods; The study used databases like PubMed, Web of Science, SID, and Iran Medex to search for articles related to osteoporosis, zinc, vitamin K, phosphorus, vitamin D, calcium, lipid, protein, and phytoestrogens. It identified 625 English articles, screened 70 for eligibility, and prioritized based on method validity, clarity, and data recency.

Results; The article emphasizes the importance of nutrition in maintaining bone health and preventing osteoporosis. It advocates for a balanced diet with essential nutrients like calcium, vitamin D, protein, magnesium, potassium, and vitamins K and C. Lifestyle factors like regular physical activity, avoiding smoking, and limiting alcohol consumption are also crucial. Supplementation of calcium and vitamin D may be necessary for those at higher risk.

Conclusion; Adherence to a healthy dietary pattern, including fruits, vegetables, whole grains, poultry, fish, nuts, legumes, low-fat dairy products, and avoiding processed food, is recommended for bone health. Dairy consumption is recommended to reduce the risk of fractures. Adequate calcium intake and vitamin D intake are essential for bone health, along with other micronutrients like magnesium, vitamin K, and potassium. A healthy lifestyle, avoiding high-risk behaviors, and adequate physical activity can also contribute to bone health.

Keywords; Bone health, Nutrition, Osteoporosis, Severe Diseases

The Role of Vitamin D in Immune Function and Its Impact on Disease Prevention

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Introduction: Vitamin D, known for its role in bone health, is crucial for the immune system, with the Vitamin D receptor (VDR) playing a key role in regulating cell proliferation, differentiation, and antimicrobial functions, thus promoting disease prevention. It is present in active inflammatory cells and also plays a role in anti-infective properties, blocking infections and regulating immune system operations. It is essential for monocyte function and AMP production.

Methods: A literature review analyzed studies from 2010-2024 on vitamin D's impact on immune system function and disease prevention and its relationship with diseases such as respiratory infections, autoimmune disorders, obesity, COVID-19 and chronic conditions like diabetes and cardiovascular disease. It included observational and interventional studies, focusing on its role in modulating immune responses and its correlation with diseases.

Results: Vitamin D levels are linked to improved immune function, reduced inflammation, cell proliferation and increased susceptibility to infections. Low serum vitamin D levels can cause autoimmune and infectious diseases. Supplementation may reduce autoimmune diseases like multiple sclerosis and rheumatoid arthritis. However, randomized controlled trials show mixed results, indicating the need for further research on vitamin D supplementation and disease prevention.

Conclusion: Vitamin D is essential for immune function and disease prevention. However, observational studies show a link between vitamin D deficiency and increased disease risk. Further research is needed to determine optimal vitamin D levels and supplement efficacy in diverse populations. Healthcare institutions should educate the public and fortify food to reduce vitamin D deficiency risk.

Keywords: Autoimmune Diseases, Disease Prevention, Immune Function, Immune System, Supplementation, Vitamin D

The effects of vitamin C supplementation on glycemic control in patients with type 2 diabetes: A systematic review

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Introduction: Vitamin C (ascorbate) is a crucial micronutrient for humans, necessary for various important biological functions as it acts as an enzymatic cofactor and reducing agent. Some evidence suggests that individuals with type 2 diabetes mellitus (T2DM) may have lower plasma vitamin C concentrations compared to those with normal glucose tolerance (NGT). This study aimed to investigate plasma vitamin C concentrations across the glycemic spectrum and explore correlations with metabolic health indices.
Method: Our research was comprehensive, involving searches of published literature in PubMed, Scopus, Web of Science, and Google Scholar databases from inception until June 2024. We considered all interventional and human studies examining the effects of vitamin C on T2DM patients. Two researchers meticulously screened titles and abstracts, assessed full-text studies, extracted data, and evaluated their quality using the Cochrane Collaboration's tool.
Result: Out of 56 search results, seven studies meeting the eligibility criteria were included in the analysis. The pooled analysis revealed a significant decrease in serum hemoglobin A1c (HbA1c), fasting insulin, and fasting blood glucose (FBG) levels in T2DM patients treated with vitamin C compared to those not treated. The dose-response evaluation showed a strong linear relationship between the intervention duration and changes in serum HbA1c levels. However, the analysis did not demonstrate any significant effect of vitamin C on serum values of homeostasis model assessment of insulin resistance (HOMA-IR) in diabetic patients. Subgroup analyses indicated that high-dose vitamin C administration significantly decreased serum HOMA-IR levels.
Conclusion: This systematic review of ascorbic acid supplementation for type 2 diabetic patients not only presents new possibilities but also offers compelling evidence. It urges a reevaluation of the potential benefits of ascorbic acid supplementation for glucose control and insulin resistance in T2DM.
Keywords: Diabetes; Glycemic profile; Hyperglycemia; Systematic review; Vitamin C

Effects of Eight Weeks of Aerobic Exercise Along with Garlic Supplementation on Antioxidant Enzymes, Malondialdehyde, in the Ovarian Tissue of Rats Under Wi-Fi Electromagnetic Radiation

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Introduction: Electromagnetic waves have different effects on the organs of the body, including the gonads. Due to the limited information about the harmful effects of WIFI radiation on the oxidative-antioxidant system of ovarian tissue, Aim of this study was investigate the effect of eight weeks of endurance training along with garlic supplement on Superoxide dismutase (SOD), Glutathion peroxidase (GPX) and Malondialdehyde (MDA) levels in the ovarian tissue of rats under WIFI electromagnetic radiation.
Methods: In this experimental study, 35 Sprago-dawely female rats aged about 8 weeks were randomly divided to five groups includ (1) control, (2) WIFI radiation, (3) endurance training + WIFI radiation, (4). Garlic supplementation + WIFI radiation and (5) endurance training + garlic supplementation + WIFI radiation. WIFI radiation was induced in rats for 1 hour per day at a frequency of 2.45 GHz from a WIFI modem. Endurance training for 8 weeks and three sessions per week and 60 mineuts with 50 to 60% maximum running

speed and garlic supplement for 8 weeks, 800 mg / kg daily in drinking water was given to rats.
Results: Endurance training (P≤0.05) and garlic supplemention (P≤0.05) had a significant effect on reducing MDA levels. Also, the endurance training and garlic supplementation have significant intractive effects on increasing SOD and GPX levels (P≤0.05).
Conclusion: It seems that endurance training and garlic supplementation both have reducing effects of oxidative stress, but these two antioxidants synergistically increase antioxidants.
Keywords: Aerobic exercise, Garlic supplements, Glutathione peroxidase, Superoxide dismutase, Wi-Fi radiation .

Study the patterns of supplementary nutrition among infants (4 to 24 month of age) in Khalilabd in the year 2022

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Introduction: The optimum growth and development of children is related to having accurate nutrition and nutritional behavior. Mother's unawareness of infants' nutrition and their inaccurate behaviors in this field is one of the important malnutrition cases of infants. The infants' basic needs are not satisfied by breastfeeding after six month of age and there is a need for soft meals .
The brain neurotic network growths in the first years of life and the neurotic cells are united before the age of two. Physical, mental and cognitive growth in human is highly dependant to this neurotic unification. Wrong start in giving supplementary nutrition is one of the important factors in growth delay and malnutrition among infants which finally leads to some irrecoverable economic loss. Studies show that mother's unawareness of infant's nutrition and their inaccurate behaviors in this field is one of the important malnutrition factors of infants. By mothers awareness of infants nutritional needs they can benefit more of an accurate and standard nutrition program

Method: This is an analytic-descriptive study which has partly been implemented with the objective of studying the patterns of supplementary nutrition among infants of 4 to 24 month of age. The concerned community under study is infants of 4 to 24 month of age who have had contact with the health centers in the city. The samples were 300 infants. All questionnaires were filled up; data was gathered and analyzed via the SPSS software.
Result:The results of the study show that the point of start in giving supplementary nutrition is over six month of age. (47/3%) which 71/12% of those who started supplementary nutrition were rural and 28/88% of them were urban residents. There was a meaningful correlation between the point of start in giving supplementary nutrition and resident places. Urban residents started supplementary nutrition in order by giving oatmeal (63/82%), rice syrup (12/76%), meal of the day (12/76%), soup (9/57%), Mamana (powdered milk) and mashed potato (1/06%). Rural residents started supplementary nutrition in order by giving oatmeal (75/24%), rice syrup (12/19%), meal of the day (1/45%), soup (9/22%), Mamana (powdered milk) (0/97%) and mashed potato (0/97%).
Conclusion: There has been a meaningful relationship between residents place, starting point of giving supplementary nutrition, mother's age, level of father's education, father's job, birth degree, type of delivery, breastfeed after birth, and the source of finding information about supplementary nutrition .
Per the acquired results it can be deduced that although the order of starting supplementary nutrition in Khalilabad is in coordination with infant's nutritional program but half of the mothers deployed this pattern
Keywords: Supplementary nutrition ,Infants of 4 to 24 month of age , Malnutrition , Growth and evelopment ,Khalilabad

Study the spread of malnutrition among children under 6 years of age in khalilabad in the year 2022-2023

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Introduction: Children due to the utmost need for particular nourishment are in danger of malnutrition. Specifying the nutrition status of children in a community is a criterion for evaluating health and illness in a society. There are many factors in bring about malnutrition including the take of insufficient nutrients both in quantity such as famine and severe food shortage and ignorance. Body indicators assessment is one of the simple, cheap, and exact methods to recognize the amount and severity of malnutrition. The main goal of this study is to determine the anthropometric indicators.
Method: To assess the nutritional status of children under the age of six years of age in the city, the anthropometric profile of 270 children, randomly chosen, was measured and recorded by family health experts during 20 days of the survey and in 27 clusters.
Result: The study revealed that the atrophied spread was low and equaled 4.4%. The outbreak of lightweight among children under the age of six is low and equal to 4.8%. The outbreak of shortness in height among children under the age of six was low and equal to 4.8%.
Conclusion: Considering the pernicious outcomes of malnutrition, it is strongly recommended to take effective measures to recognize the involved factors and to do concerned prevention. Since the problem of malnutrition is multidimensional, coordination and cooperation among different developing sections including health, training, agriculture, economy, commerce and mass media is highly indispensable. The health department also needs to be supported by other sections to take initiatives in executing nutritional intervention designs to deal with malnutrition and to raise nutritional awareness among people.
Keywords: Children under six years of age, Malnutrition, Lightweight, Short height, Atrophied

The Prevalence of Malnutrition and Food Insecurity in the Mashhad City Outskirts Residents in Iran

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Introduction: Malnutrition and related complications are still a critical public health issue worldwide. However, some groups, such as the outskirts population of cities, are at higher risk. The study aimed to assess malnutrition and food insecurity prevalence among the population of the city outskirts of Iran.
Method: This cross-sectional study examined the nutritional status of 253 women living on the outskirts of Mashhad in 2022. We measured weight (kg), height (cm), and body mass index (BMI) (kg/m2) among participants. Malnutrition was defined as a BMI below 18.5 and above 30. Moreover, we evaluated food insecurity using a validated questionnaire.
Result: The study revealed a 55% prevalence of malnutrition, and over 30% of the participants experienced severe food insecurity. Of the studied population, 90% were Iranian, while the remaining individuals were from other nations. Additionally, over 70% of the female participants had at least two children, and more than 90% had been residing on the outskirts for over five years.
Conclusion: The high prevalence of malnutrition and food insecurity among the population living on the outskirts of the city emphasizes the necessity of addressing nutritional needs in this marginalized community. Additionally, it highlights the need for policymakers to review access and support policies for health and nutritional policymaking.
Keywords: Access to Healthy Foods, Food Supply, Public health, Undernutrition

Prevalence of Coronary Heart Disease (CHD) and its Risk Factors in the Mashhad City Outskirts Residents in Iran

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Introduction: Coronary heart disease (CHD) is increasingly becoming a significant cause of Mortality and morbidity worldwide. However, the information related to outskirts populations

as a vulnerable group is limited. This study aims to assess the prevalence of self-reported CHD and various risk factors in the population living on the outskirts of Mashhad, compared to the general population of Iran.

Method: A study conducted in 2022 focused on 253 women living on the outskirts of Mashhad, Iran. These women were a representative sample of residents in marginalized areas. The study collected information on the participants' educational level, socioeconomic status, marital status, and physical activity. Additionally, we evaluated the history of cardiovascular diseases, traditional risk factors, and obesity indices. The data were collected using a self-report questionnaire administered by a trained operator.

Result: The study found that 67.2% of the participants were married, 56.1% had either no education or only an elementary level of education, 86.6% were households, and 44.7% had an income of less than 2 million (low socioeconomic status). The physical activity level was 35 metabolic equivalents (METs), and the prevalence of CHD and obesity were 17.4% and 43%, respectively. Additionally, 2% of the participants were smokers, 16.6% had hyperlipidemia, and 33.2% had hypertension.

Conclusion: The prevalence of its risk factors and CHD was relatively high, except for smoking, in comparison with the general population. It necessitates the urgent implementation of behavioral interventions in the outskirt population to manage at-risk and vulnerable groups of society.

Keywords: Cardiovascular Diseases, Heart Disease Risk Factors, Public health, Risk

The global diet quality index (GDQS) is associated with quality of sperm parameters in men with infertility: a cross-sectional study

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Background: In examining the causes of a couple's infertility, the male factor generally accounts for about 50%. According to the World Health Organization (WHO), an infertile man is defined as someone whose sperm cannot fertilize a healthy egg after at least one year of regular, unprotected sex. Diet is known to be one of the most important factors affecting male fertility. The purpose of this study was to investigate the effect of the global diet quality index (GDQS) on sperm quality.

Method: This cross-sectional study involved 218 infertile men aged between 20 and 50 who visited an infertility referral clinical and research center. A 168-question food frequency questionnaire (FFQ) was used to evaluate their food intake. The GDQS was calculated from the sum of scores across 25 food groups, with scores ranging from 0 to 49 . Semen analysis was performed based on the guidelines of WHO. To assess the relationship between GDQS and sperm parameters, linear regression was used to account for potential confounding factors.

Results: There is a positive correlation between GDQS and sperm concentration (B=0.192, P=0.006). But the results after adjusting confounding factors such as energy intake, BMI, smoking, age and physical activity were not significant (B=0.151, P= 0.06).

Conclusion: In this study, we concluded that there is a positive relationship between GDQS and sperm concentration. However, the relationship between score of GDQS and other parameters of sperm quality remains unknown. More research is needed to explore this issue further.

Keywords: Sperm parameters, Male, Infertility, GDQS

Different Spexin level in Obese vs Normal Weight Children and Its Relationship with Obesity Related Risk Factors

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Background: Spexin (SPX) is a novel peptide recently discovered as an important regulatory adipokine in obesity and related metabolic diseases. The aim of the current study was to determine the potential role of Circulating levels of SPX in obese children and explore its relationships with obesity-related risk factors, and its potential role in preventing obesity
Methods: 45 obese children and 45normal-weight children of similar age and sex, with mean age of 13.73(2.68) were recruited in this Study. Weight and height, blood pressure, resting metabolic rate (RMR), physical activity level, stress, anxiety and depression, appetite status, daily energy intake, pubertal stage, serum Spexin, Interleukin-10 (IL-10), IL-1β, high-sensitivity C-reactive protein (hs-CRP), fasting glucose, insulin and lipid profile, were measure during standard techniques.
Results:. Median (IQR) of Spexin levels were significantly lower in obese *vs.* normal-weight children [120.70(77.7) pg/mL *vs.*145(186.7)pg/mL; P=0.03].Based on the tertiles of the serum Spexin levels, a protective independent effect was observed for the highest tertile of serum Spexin concentrations. Crude OR(CI): 0.33(0.11-0.95), P-trend =0.04. Model 1 OR(CI): 0.20(0.05-0.73), P- trend =0.01), Model 2 OR(CI): 0.22(0.05-0.86), P -trend =0.03. Serum Spexin concentration was significantly associated with IL-10, IL-1β, fasting Insulin and HOMA-IR(P <0.05).
Conclusion: The lower circulating levels of Spexin in obese children compared to their normal-weight peers, the protective independent effect found for the highest tertile of serum Spexin, and its association with glucose metabolism and immune function observed in our study, suggest a potential role for this novel peptide in childhood obesity and its related metabolic disorders.

Keywords: Spexin, Obesity, children, insulin resistance, inflammatory biomarkers

The Impact of Dietary Acid Load on Obesity: A Review of Current Evidence

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Introduction: Dietary acid load refers to the net acid produced from the metabolism of food, primarily influenced by the consumption of protein-rich foods, grains, and processed foods, while fruits and vegetables tend to have an alkaline effect. High dietary acid load has been associated with obesity, insulin resistance, and inflammation, etc. Understanding the relationship between dietary acid load and obesity can provide insights into potential dietary interventions for weight management.
Method: A systematic review of literature review was conducted, focusing on studies published from 2010 to 2023 that investigated the association between dietary acid load and obesity. Databases such as PubMed, Scopus, and Web of Science were searched using keywords like "dietary acid load," "obesity," "metabolic syndrome," and "weight gain." Studies were included if they assessed dietary acid load through food frequency questionnaires or dietary recalls and reported on body weight or obesity-related outcomes.
Results: The review identified several studies indicating a positive correlation between high dietary acid load and increased body weight or obesity prevalence. Mechanistically, high acid diets may lead to metabolic acidosis, which can promote fat storage and hinder fat oxidation. Additionally, increased acid load has been linked to inflammation and insulin resistance, both of which are risk factors for obesity. Some studies also suggested that a higher intake of fruits and vegetables, which lower dietary acid load, is associated with lower body weight.
Conclusion: The evidence suggests that dietary acid load may play a significant role in the development and maintenance of obesity.

Reducing dietary acid load through increased consumption of alkaline-forming foods may offer a beneficial strategy for weight management. Further research is needed to establish causality and explore the underlying mechanisms.
Keywords: Dietary acid load , Obesity , metabolic syndrome

Accelerated wound healing induced by spinach extract in experimental model diabetic rats with streptozotocin

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Introduction: Patients with diabetes often have difficult-to-heal wounds. Spinacia oleracea extract comprises anti-inflammatory and anti-oxidative compounds; this research, therefore, studied the impact of Spinacia oleracea extracts on ulcer regeneration.
Methods: This study was conducted on 72 adult Wistar rats (200 ± 20 g). They were randomly divided into six groups of twelve. A: Diabetic group receiving normal saline. B: Non-diabetic group receiving normal saline. C: Diabetic group receiving spinach aqueous extract. D: Diabetic group receiving spinach alcoholic extract. E: preventive group that received aqueous extract for 2 months. F: preventive group that received alcoholic extract for 2 months. Ulcer regeneration, vascular endothelium growth factor, blood sugar, and weight changes were measured on days 3, 7, 14, 21, and 30.
Results: Macroscopic investigation of the wounds non-diabetic control group, diabetic group, as well as spinach aqueous and alcoholic extract groups, were compared and there were significant changes ($P < 0.05$). Pathologic examination in the spinach aqueous and alcoholic extract groups, and nondiabetic group than in the diabetic group revealed significant advances ($P < 0.05$). On the third and seventh days, Vascular endothelium growth factor detected significant differences between groups ($P < 0.05$).
Conclusion: Results indicate that, in regenerating diabetic ulcers, Spinacia oleracea may be effective. It influences the ulcer structure and speed.
Key words: Diabetes, alcoholic extract, wound healing, spinach, aqueous extract, rat.

The Effect of Curcumin on Inflammatory Markers in Metabolic Syndrome: A Systematic Review

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Introduction: Metabolic syndrome includes a set of physiological conditions such as high blood pressure, abnormal increase in blood sugar, accumulation of fat tissue in different parts of the body, abnormal cholesterol or triglyceride levels, which increases the risk of many chronic non-communicable diseases including cardiovascular disease, heart attack and type 2 diabetes.
In this review article, we are trying to review the various studies conducted on the effects of curcumin (the active ingredient in turmeric) on the levels of inflammatory factors and other factors involved in metabolic syndrome.
Methods: Scientific databases such as PubMed, Scopus and Google Scholar were searched for reviews on "the effect of curcumin on inflammatory factors in metabolic syndrome".
The reviewed articles were published from 2015 to 2024 and Inclusion criteria included clinical and preclinical studies focusing on inflammatory markers such as CRP, TNF-α and IL-6.
Results: According to the findings collected from the identified articles, curcumin consumption can significantly reduce the level of inflammatory markers. Based on the results obtained from clinical studies, daily consumption of curcumin for 8 to 12 weeks has led to a decrease in CRP, TNF-α and IL-6 levels in patients with metabolic syndrome. In addition, improvement in lipid profile and reduction in insulin resistance have also been reported.
Conclusion: This study provides evidence that supports the positive effect of curcumin as a natural supplement in reducing inflammation and improving metabolic status in patients with metabolic syndrome. However, there is a need for more studies with more accurate research methods and a larger sample size to confirm these results.
Keywords: metabolic syndrome, inflammation, curcumin

Artificial Intelligence Application in Nutrition

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Introduction: Nowadays the use of computer technology in the fields of nutrition area diagnosis, treatment of illnesses and patient pursuit has highly increased. Artificial Intelligence (AI) is a domain of computer science that induces intelligence in machines and makes smart devices capable of working without human intervention. This paper's purpose is to investigate AI's role in nutrition research and to identify areas in nutrition using AI. AI can address most nutritional concerns, such as the identification of the causes and the potential treatments that are associated with cardiovascular diseases, diabetes, cancer and obesity. AI can also help us better understand more complex connections between food and health, including the effects of the lack of a healthy diet. A great number of AI applications are currently in use in high-income countries supporting healthcare. Is estimated that by 2026 about USD 150 billion will be saved in healthcare in the United States due to the implementation of AI applications. AI applications may be adapted and applied in nutrition, but they need to be investigated, since AI is bringing important changes shifting the way nutrition is currently delivered, from the use of conventional methods to the use of more sophisticated software to assess body weight, food intake, diet-related diseases, and of cutting-edge data storage systems to meet current demands using mobile applications, chatbots, and image recognition for dietary assessment.
Methods: In this paper, we review articles from 2000 to 2023 considering the current explosion stage of AI. Articles were searched across eight databases: PubMed, Web of Science, EBSCO, Agricola, Scopus, IEEE Explore, Google Scholar and Cochrane. Permutation was performed using terms such as *Nutr, *bot, *chatbot in combination with Boolean operators (AND and OR) and search strings. Studies where AI was directly applied in nutrition, studies where AI was used for nutritional assessment and to enhance lifestyle (nutrition-related), and where AI was used for human nutrition were considered.
Results: Primary role of AI in nutrition is mainly focused on providing dietary assessment.A total of 26 articles were retrieved, of which 22 met the inclusion criteria. In terms of quality, the maximum score (greatest quality) was 11 and the lowest score was 6.5 (still above the average score of 5.5). A total of 22 articles were considered eligible and included in the review article.
CONCLUSION: AI refers to how computer systems can do tasks that usually need human intelligence or intervention. Although AI can improve accuracy and patients' satisfaction in nutrition, but it is necessary to do more research in medicine field. Clinical research is also needed to determine the efficacy of interventions using artificial intelligence. Future research should prioritize specialized reviews in nutrition and dieting to provide a deeper focus and understanding on the promising potential of AI in human nutrition.
Keywords: Nutrition, Information Technology, Artificial Intelligence.

The effects of using Enteral Nutrition in patients with Septic Shock

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Introduction: Septic shock is a subset of sepsis that characterized by low blood pressure, elevated serum lactate levels, and hypoperfusion despite adequate fluid resuscitation. Symptoms include Acute Heart Failure, dysfunction of the intestinal Epithelial Barrier Function (EBF), increased inflammation, and dysfunction of various organs. Due to particular impact of nutritional therapy on septic shock recovery, this study aimed to investigate Enteral Nutrition (EN) in septic shock.
Methods: For this review, reliable databases including Pubmed, Web of Science, Springer, and Google Scholar search engines with keywords: Septic shock AND Enteral nutrition OR EN (inception to 2020–2024) were searched. Through this search, 314 articles have been shown with 14 related articles and after reviewing them, 5 articles were selected as the main references.
Results: A retrospective study on 150 septic shock patients showed that the use of EN preserves EBF function, improves intestinal

mucosal atrophy, prevents organ dysfunction, reduces mortality, infectious, gastrointestinal and ischemia complications, improves blood flow and immunity. Also, Enteral Nutrition has less infectious, metabolic complications and more EBF protection compared to Parenteral nutrition.
Conclusions: According to the research, in the comparison between the use of EN and no use of EN in septic shock, in the EN group, vomiting, aspiration, blood lactic acid(BLA) and mortality were lower and caloric tolerance was higher.
In the first week of septic shock, EN should be started in a low-calorie way, and also by increasing daily protein and energy, mortality can be reduced to a greater extent.
Keywords: Enteral Nutrition(EN), Epithelial Barrier Function(EBF), Parenteral Nutrition, Septic Shock

The effects of GLP-1(Glucagon-Like Peptide-1) analogs on the treatment of Obesity

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Introduction: Obesity is a chronic disease with high prevalence, which is associated with increased mortality due to serious complications. Considering that Glucagon-Like Peptide-1 (GLP_1) creates a wide range of useful functions regulating metabolism and has an effect on obesity, this study was conducted with the aim of investigating the effects of GLP_1 analogs on the treatment of obesity.
Methods: For this review, reliable databases including Pubmed, Web of Science, Springer, and Google Scholar search engines with keywords: Glucagon-Like Peptide-1 OR GLP_1 AND Obesity AND Analog (inception to 2022–2024) were searched. 255 articles were found which 15 of them were more related and had been reviewed.
Results: In 12 RCT studies, researches on a total of 445 participants showed that the consumption of GLP-1 analogs causes weight loss of more than 5% by reducing appetite, calorie intake, waist size, total body fat and reducing the desire to eat fatty, sweety and salty foods. Also, delays in gastric emptying, modulation of intestinal hormones and body fat reserves, increase in the feeling of satiety and YY peptide levels are among the effects of these analogs.
Conclusions: According to the research, GLP-1 analogs, in addition to their effect on obesity treatment, improves obesity complications such as high blood pressure, cardiovascular outcomes, PCOS and improves the chance of fertility. GLP_1 analogs are used for weight loss in diabetic and non-diabetic people, and if combined with a healthy lifestyle they can cause weight loss of up to 20%.
Keywords: Analog, Body fat, Glucagon-Like Peptide-1 (GLP-1), Obesity, Treatment, Weight loss

Investigating the effect of N-acetylcysteine supplementation on Polycystic ovary syndrome

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Introduction: Polycystic ovary syndrome (PCOS) is a common endocrine disease that is often associated with metabolic disorders. The complications of this disease are hyperandrogenism, ovulation disorders, insulin resistance, dyslipidemia, obesity, infertility, etc Considering the high importance of this disease and that the effect of N_acetylcysteine (NAC) on PCOS can be investigated in several important fields, this study was conducted with the aim of investigating the effect of N_acetylcysteine on PCOS.
Methods: For this review, reliable databases including Pubmed, Web of Science, Springer, and Google Scholar search engines with keywords: N_acetylcysteine OR NAC AND Polycystic ovary syndrome OR PCOS (inception to 2018–2024) were searched. Through this search, 77 articles have been shown which 12 of them were more related and had been reviewed.
Results: In more than 12 studies, research (often double-blind) on a total of 869 women with PCOS in countries from Asia and Africa showed that NAC consumption caused a decrease in BMI, total cholesterol levels, androgen levels, hirsutism, and insulin resistance ,fasting blood glucose level and even improved dyslipidemia. Also, NAC was able to increase ovulation, improve egg quality, reduce menstrual disorders, abortion, oligomenorrhea, and amenorrhea in women with PCOS.
Conclusions: According to the results, NAC can increase the chance of fertility, improve

ovulation, lipid profile and help regulate blood glucose levels and regulation of insulin receptors in PCOS women. Also, NAC can be considered as a more promising treatment than other drugs to improve metabolism in PCOS people.
Keywords: Infertility, N_acetylcysteine (NAC), Ovulation, Polycystic ovary syndrome (PCOS)

The effect of SER-109 on recurrent Clostridioides difficile (C. difficile) infection: a review

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Introduction: SER-109 is an investigational oral microbiome therapeutic that has shown promising results in treating Clostridioides difficile (C. difficile) infections. The present study aimed to review the current body of evidence on the effect of SER-109 on recurrent C. difficile infection.
Methods: A comprehensive literature search was conducted using databases such as Scopus, PubMed, Web of Science, and ScienceDirect from 2000 to 2024. The main keywords were "SER-109", "Probiotic", "Microbiome", "Clostridioides difficile", and "recurrent Clostridioides difficile". Among 38 initially identified articles based on the exclusion and inclusion factors, 10 articles had the eligibility to be used in the present study.
Results: SER-109 was found to be much more effective than a placebo, based on the results of the included studies. In comparison to antibiotics alone, the drug combined with live bacteria spores reduced the risk of C. difficile recurrence by 68% by restoring a healthy gut microbiome through establishing good bacteria, lowering bad bacteria, and raising bile acids, which stop the growth of C. difficile. The side effects of the medication were generally moderate and well-tolerated.
Conclusion: SER-109 showed superior efficacy in preventing recurrent C. difficile infection. By restoring gut microbiota balance, SER-109 significantly reduces recurrence rates while exhibiting a favorable safety profile. SER-109 can be considered as a novel medication for recurrent C. difficile infection.
Keywords: SER-109, Probiotic, Microbiome, Clostridioides difficile, and recurrent Clostridioides difficile infection.

Investigation of Food Addiction in Children

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Introduction: Food addiction (FA) refers to specific behaviors related to food consumption that are characterized by excessive and irregular intake of high-energy foods. The prevalence of FA is higher in women, children, adolescents, and obese individuals. Given the two-way communication between FA and obesity and duo to importance of the impacts of obesity on the quality of life of children, this study was conducted to investigate FA in children.
Methods: Due to this research databases Pubmed, Google scholar and Web Of Science with keywords Food Addiction AND Children with time restriction (2019-2024) and prioritizing Free Full Texts were searched. 264 articles were found which 12 of them were more related and had been reviewed.
Results: Individuals with food addiction often consume high-energy processed foods that are rich in salt, fat, and sugar. Studies show that consuming these foods activates the mesolimbic reward system (dopaminergic receptors), leading to a sense of pleasure and laying the groundwork for food addiction. Research results indicate that food addiction contributes to weight gain, increased BMI, elevated fat content (FC), visceral fat level (VFL), Increased levels of leptin and insulin and eating disorders (especially BED and BN).
Conclusions: Since the concept of food addiction (FA) is intertwined with obesity and eating disorders, preventive procedures for these two disorders can be extended to control FA. Interventions should also target eating patterns to reduce the impact of FA on weight status. However, more targeted studies are needed to provide the precise solution.
Keywords: Eating disorder, Food addiction (FA), Obesity, Overweight, High-energy food

Impact of Taurine Supplementation on Leptin, Adiponectin, and Visfatin Levels in Patients with Diabetes Mellitus: A Randomized, Clinical Trial

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Introduction: Taurine, a sulfur-containing amino acid, has been shown to possess anti-inflammatory and antioxidant properties, suggesting its potential role in ameliorating diabetes-related complications. Leptin, adiponectin, and visfatin are adipokines, molecules produced by adipose tissue, that play crucial roles in regulating energy balance, inflammation, and insulin sensitivity. This study aimed to investigate the effects of taurine supplementation on leptin, adiponectin, and visfatin levels in patients with type 2 diabetes mellitus (T2DM).
Materials and Methods: A total of 120 T2DM patients were randomly assigned to receive either taurine supplementation (1 g three times daily) or placebo for eight weeks. All participants adhered to a low-calorie diet during the study period. Leptin, adiponectin, and visfatin levels were measured at baseline and after eight weeks.
Results: Taurine supplementation significantly reduced leptin levels compared to placebo, while no significant changes were observed for adiponectin or visfatin. The taurine group also exhibited improved insulin sensitivity, as indicated by a reduction in Homeostatic Model Assessment of Insulin Resistance (HOMA-IR) index.
Conclusion: This study provides evidence that taurine supplementation may positively impact leptin levels in individuals with T2DM. Further research is warranted to elucidate the mechanisms underlying these effects and to investigate the long-term clinical implications of taurine supplementation in T2DM management.
Keywords: Diabetes mellitus; Adipokine levels; Glycemic control; Inflammation; Taurine

The effect of L-Carnitine supplementation on anthropometric and malnutrition status in acute ischemic stroke patients: A triple-blinded randomized clinical trial

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Introduction: Malnutrition can interfere with rehabilitation and independence in stroke patients. This clinical trial was designed to investigate the effects of early L-carnitine supplementation on the anthropometric indices and malnutrition status of ischemic stroke patients.
Methods: Eighty-two first-ever ischemic stroke patients were randomly assigned to either the L-carnitine group (1000 mg three times/day for seven consecutive days) or the matching placebo group. The study outcomes based on intention-to-treat analyses included changes in weight, BMI, TSF, mid-arm circumference (MAC), mid-arm muscle circumference (MAMC), calf circumference (CC), serum ALB and malnutrition status over the seven-day treatment protocol. Malnutrition was assessed based on the serum ALB concentration, MAMC, and TSF. Analysis of covariance was applied for assessing the between-group changes along with adjusting the baseline mean value effect.
Results: Patients receiving L-carnitine had significantly lower changes in terms of weight, BMI, TSF, MAC, MAMC, and CC than did those in the placebo group. After the intervention, the placebo group experienced a significantly greater reduction in the MAMC indicator ($P< 0.001$). The between-group change in the serum ALB concentration significantly increased in the L-carnitine group ($P = 0.001$). Moreover, the L-carnitine group was less malnourished than the placebo group [17 (41.5%) vs 30 (73.2%), respectively; $P= 0.01$], after the intervention. The "recovery" frequency was significantly greater in the L-carnitine group (18 (43.9%) vs 3 (7.3%), $P < 0.001$) than the placebo group.
Conclusions: L-carnitine supplementation can modulate muscle wasting, rapid weight loss, and malnourishment or worsening in acute ischemic stroke patients.
Keywords: Ischemic stroke, carnitine, nutritional support, malnutrition, anthropometry.

Influence of Maternal Diet on Child's Food Acceptance through Flavor and Odor Transfer to Amniotic Fluid and Breast Milk

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Introduction: A varied maternal diet may provide the first opportunity to influence the child's food acceptance positively. Since the sense of smell has a greater role in the perception of taste than the sense of taste, in this systematic review we aimed to investigate the effect of the mother's diet on the child's food preferences through the transfer of smell in addition to the taste transfer to the amniotic fluid and breast milk.
Methods: A systematic search was conducted using online databases, including PubMed, Scopus, and Web of Science, until April 2024. In total, 10 articles met the criteria for inclusion.
Results: By summarizing the results of the included studies, it seems that tastes (carrot, kale, and alcohol) and smells (trimethylamine in fish, dimethyl disulfide in sulfurous cheeses, and alcohol) originating from the maternal diet during pregnancy can be transferred to the amniotic fluid. Also, tastes and smells from the maternal diet (green vegetables, sulfurous cheeses, fish, alcohol, and garlic) during lactation can be transmitted to her milk within a few hours after consumption. Exposure to the smell and taste of breast milk before or during tube feeding can be useful for premature infants with food intolerance.
Conclusions: Exposure to various flavors and odors through the amniotic fluid and milk can shape future food preferences. This shows maternal eating behaviors can affect her child's eating pattern. Thus, encouraging mothers to have a varied diet may help increase their child's interest in healthy foods. However, further studies are needed.
Keywords: diet, food preferences, lactation, pregnancy, smell, taste

Impact of Vitamin E Supplementation on Pediatric NAFLD: A systematic review of clinical trials

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Introduction: Today, children's fatty liver is spreading, and many clinical trial articles have investigated the effect of vitamin E in this field. In this systematic review, we summarized and evaluated the clinical trials on the impact of vitamin E supplementation on children's fatty liver.
Methods: A systematic search was performed in online databases of PubMed, Scopus, and ISI Web of Science until April 2024, using the search terms "vitamin E", "fatty liver", and “children”. No restriction was considered in the time and language of the articles. We also performed a web-based search in Google Scholar to find any missing articles.
Results: In total, 13 clinical trial articles were included in the current systematic review. Among these 13 articles, 10 showed that the intervention with vitamin E can be effective and improve the level of some liver parameters after the intervention. But in the other 3 articles, opposite results were seen, which may be due to confounding variables that were beyond the control of the research teams.
Conclusions: We can conclude that vitamin E supplementation has a positive effect on the symptoms of fatty liver and factors related to this disease in children. However, current evidence is not conclusive, further studies are needed.
Keywords: children, fatty liver, vitamin E

The Short-Term Effects of Dietary Intervention on Anthropometric Measures in Overweight and Obese Adolescents

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Introduction: The prevalence of overweight and obesity among adolescents has risen significantly in recent years, making it a pressing global health concern. The vulnerable period of adolescence is particularly noteworthy, as adolescent weight tracking strongly into adulthood. Therefore,

early prevention and treatment of adolescent obesity are crucial. This study aimed to investigate the short-term effects of dietary intervention on anthropometric measures in overweight or obese adolescents.

Methods: A total of 218 obese adolescents (mean age: 16.44±1.38 years, mean weight: 61.45±1.13 kg, mean body mass index (BMI): 23.86±1.89 kg/m2) were recruited for this study. Obesity and overweight were defined as a BMI at or above the 85th percentile for age, gender, and height. All subjects were free of major medical illnesses and were assigned to a diet therapy intervention aimed at weight loss (2398.85±408.74 kcal). The targeted proportion of energy from carbohydrate and fat were 55% to 60% and 25% to 30%, respectively, with the remainder from protein. We evaluated night sleep duration based on responses to the question: "In the past month, how many hours of actual sleep did you get on an average night?

Results: At 20 days, significant differences were observed in body weight (weight loss: 2.39±0.24 kg). The mean night sleep duration was 8.32±1.46 hours. A significant association was found between night sleep duration and weight loss ($r=-0.327$, $p< 0.01$).

Conclusions: The results of this study suggest that short-term diet therapy leads to a significant reduction in body weight.

Keywords: Dietary Intervention, Weight loss, Adolescent.

The relationship between dietary inflammatory index and sleep quality in population groups: a systematic review

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Introduction: Sleep quality is one of the important factors for people's health and well-being, better and restful sleep increases energy, concentration, and overall quality of life. Research has shown that diet can have a significant impact on sleep quality. Diet plays an important role in regulating inflammation, the Dietary Inflammatory Index(DII) is related to the level of inflammation in the body, which is determined by various substances. The present review aimed to clarify the association between DII and sleep quality.

Methods: The present systematic review was executed according to the PRISMA protocol. A search was conducted on the Persian (SID, Magiran) and English (PubMed, Medline, Web of Science, Google Scholar, Scopus) databases from 2010 to October 27, 2023. After searching all databases, 383 articles were identified at this stage. Then, after reviewing the titles and abstracts,60 articles remained for reviewing their full text. At the end, in terms of the inclusion criteria, 16 articles were included in this systematic review.

Results: A total of 16 studies met the inclusion criteria and were included in this systematic review. According to the studies, there were 9 cross-sectional studies, the results of 7 of which showed that there is a significant relationship between DII and sleep quality, it was observed that each unit increase in DII score change, increases WASO, decreases sleep efficiency, and delays sleep and wake time. Also, the results showed that this relationship is stronger in women, elderly people, and people with chronic diseases. Seven Case-control studies showed that diets rich in anti-inflammatory foods showed a potential protective effect on sleep quality, and also these studies highlighted the role of inflammatory markers such as C-reactive protein (CRP) and interleukin-6 (IL-6).

Conclusions: According to the findings, DII and sleep quality are significant associations and several studies have proven the effect of DII on sleep quality. However, due to the difference in race, weather conditions, and the number of people studied, this issue cannot be definitively stated and it seems that more studies are needed in this field.

Keywords: Inflammatory, dietary inflammation, sleep quality

Evaluation of the relationship between Obesity and inflammatory factors (ESR-CRP-D DIMER) in corona hospitalized patients

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Introduction: Obesity is one of the most important risk factors for severe COVID-19 disease, which may be due to increased inflammatory factors. The aim of this case-control study was to investigate the relationship between obesity and inflammatory factors (ESR-CRP-D DIMER) in hospitalized patients with COVID-19 in Hamedan city in 2020-2022.
Methods: In this case-control study, 75 COVID-19 patients with a body mass index (BMI) greater than 30 kg/m2 were selected as the case group and 75 COVID-19 patients with a BMI less than or equal to 30 kg/m2 were selected as the control group in terms of inflammatory factors, disease severity, and outcome who were hospitalized in Sina Hospital from 2020 to 2022. Disease severity was determined based on the Berlin Definition.
Results: Most patients (58%) were female, with moderate disease severity (54%), discharged alive from the hospital (82%), with a mean age of 51.4 ± 9.4 years and a mean BMI of 28.3 ± 4.28 kg/m2. Obese patients had significantly higher mortality rates (25.3% vs. 9.3%), more severe COVID-19 disease (38.7% vs. 9.3%), and significantly higher mean age and inflammatory factors (ESR-CRP-D DIMER). Multivariable logistic regression analysis showed that higher disease severity, after adjusting for inflammatory factors, demographics, and BMI, had a statistically significant association with mortality. Patients with severe disease had a 2.5-fold higher chance of mortality than those with mild disease.
Conclusion: In COVID-19 patients, obesity is associated with higher inflammatory factors than non-obese individuals, which can lead to more severe disease and higher mortality rates.
Keywords: COVID-19, inflammatory factors, obesity

Effect of Calorie-restricted with "lower limit of carbohydrate distribution , higher limit of fat distribution" Diet on Metabolic Syndrome Associated Steatotic Liver Disease (MASLD) outpatient referred to IMAM-REZA Medical Clinic of Shiraz University of Medical Sciences, Shiraz, Iran.

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Background: It remains unclear what is the acceptable macronutrient distrubition ranges in diet planning as a treatment strategy MASLD.
Objective: To investigate the effect of a calorie-restricted diet with "lower limit of carbohydrate distribution, higher limit of fat distribution" on MASLD biochemical markers and anthropometric measurements.
Methods: This study was a interventional study without comparison group of sixty-four participants with MASLD were followed from summer 2022 till summer 2024. Primary markers were glycemic control markers, Liver Function Test (LFT), Lipid profile specially triglycerides(TG), and Abdominal ultrasound .Secondary markers was waist circumference(WC) measurement and blood pressure. Markers were checked at 6, and 12 months follow-up. Dietary Intervention was calorie-restricted based on adjusted IBW diets with 45-48 energy percent (E%) carbohydrate, less than 20E% Protein, and 35E% Fat.
Results: There were significant reduction in estimated Average Glucose (eAG), TG, and improvement in LFT at 6 months (p=0.005). The great reduction in WC and improvement in Abdominal ultrasound occurred within the 12 months (p<0.001) monitoring. Weight reduction was also seen.
Conclusion: Be in healthy weight by calorie restriction; Eat whole grain, vegetables, fruits and beans as a sources of natural sugars; omit completely drinks and foods sources of added sugars, free sugars, and non-nutritive sweeteners; Avoid consumption of saturated fatty acids and trans fatty acid; limited dietary sources of W-6 and emphasis of intake of dietary sources of W-3 and W-9 are important in nutritional intervention. Following these recommendation will help not only MASLD prevention but also increase quality of life of patients.
Keywords: MASLD, Metabolic Syndrome, Low-Carbohydrate Diet , calorie restriction

Parental Nutrition Style among children in Zahedan City

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Introduction: Childhood is a life stage where habits, established for the whole life, begin to develop. Feeding style is an important factor that describes the influence of parents on children's diet and even on the child's weight. Therefore, the aim of this study is assessing parental nutrition style in children.
Methods: In this study, 246 parents with their children were selected by multi-stage cluster sampling from primary schools. Parental Nutrition Styles Questionnaire were used to collect data. One-Way ANOVA and Independent-Samples T-test were used to analyze data. Data were analyzed by SPSS V.22 software.
Results: All levels of parental nutrition style was significantly correlated with BMI ($p<0.05$). Among the different levels of parental nutrition style, the mean of eating control (29.41±2.44) and instrumental feeding (16.40±2.41) was the highest in children with normal BMI and obese ,respectively . Moreover, emotional feeding was higher (17.45±4.17) in overweight children.
Conclusion: Since parents play an important role in controlling children's food intake and food choices, they should avoid instrumental and emotional eating and use control and encouragement to promote healthy food consumption.
Keywords: Children, Body Weight, Parental nutrition style.

Investigating the physiological roles of Insulin-like peptide 5: A Systematic Review

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Introduction: Insulin-like peptide 5 (INSL5), produced by L-cells in the colorectal epithelium, is a member of the insulin superfamily. It can activate the relaxin/insulin-like family peptide receptor 4 but its precise biological functions are unknown. Thus, we aimed to investigate the physiological roles of INSL5.
Methods: The search was conducted by PRISMA guidelines using databases, including PubMed, Web of Science, Scopus, and Google Scholar to identify relevant published articles in English languages from the inception to July 21, 2024. Keywords such as INSL5, L-cells, energy homeostasis, and obesity were used.
Results: After reviewing 30 articles, where over 80% focused on the effects and role of INSL5 on the gastrointestinal system (20%), food intake (16.6%), obesity (13.3%), immune function and neural tumors (13.3%), Polycystic Ovary Syndrome (10%), and hepatic glucose production (10%), it was concluded that INSL5 improves the treatment of constipation and other bowel motility disorders. Additionally, INSL5 has been found to increase food consumption and appetite in relation to obesity and food intake (4 out of 5 studies). Furthermore, three articles reported that INSL5 leads to increased hepatic glucose levels and has an insulinotropic effect, indicating a positive impact on glucose homeostasis. In three other articles, an increase in INSL5 levels was observed in cases of PCOS. More studies are needed to explore the relationship between INSL5 and tumors.
Conclusions: This review demonstrates that INSL5 plays significant roles in the gastrointestinal system, Obesity and food intake. Additionally, positive effects on microbiota, hepatic glucose production and metabolic function have been observed. Further research is needed to gain a more precise understanding of the mechanisms of action and clinical applications of INSL5.
Keywords: energy homeostasis, INSL5, obesity, RXFP4

The relationship between broccoli supplementation and anti-oxidant capacity: a systematic review

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Abstract: Inflammation is a biological response of the body that is triggered by various harmful pathogens including viruses, bacterial, toxins or tissue injury. Many previous studies reported a significant relationship between broccoli consumption and enhancing antioxidant capacity. The aim of this systematic review study is to evaluate the relationship between broccoli supplementation and body antioxidant capacity.
A systematic search was carried out on databases including PubMed, Scopus, web of sciences and google scholar. Totally, 790 studies were obtained, after removing duplicate (413) studies and screening studies by title and abstracts, 8 studies remained for data extraction.
The studies indicated a positive relationship between broccoli supplementation and total antioxidant capacity (TAC) and inverse correlation was observed with oxidative stress in diabetic patients. Other studies reported that broccoli supplementation improved microbiota function, and reduced the nitric oxide level. Moreover, the studies reported that broccoli promotes the function of antioxidant proteins including superoxide dismutase(SOD), glutathione peroxidase, catalase and glutathione. In conclusion, this study demonstrated that broccoli supplementations present a positive effect on antioxidants function and reduction of oxidative stress
Keywords: Broccoli, Sulforaphane, antioxidant, superoxide dismutase, glutathione peroxidase, catalase

The relationship between the Ketogenic diet and Acne: A systematic review

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Introduction: Acne is one of the most frequent dermatological afflictions, especially for people in their first30years of age. Several studies have shown that nutrition is one of the key factors involved in acne pathogenesis. Data show that a high glycemic index diet may be a trigger in acne pathogenesis. Then we evaluated the association between ketogenic diet (KD)(low carbohydrate diet) and acne.
Search Strategy: The Search was conducted on the Persian (SID, Magiran, Iranmedex) and English (PubMed, Medline, Web of Science, Google Scholar, Scopus, Embase, Cochrane , Ebsco) databases from 2010 to Jun 2,2024. Two hundred ninety-four articles were found through the investigation of such databases. After title, abstract, or full-text reading and applying exclusion criteria, we reviewed7studies on the consumption of Ketogenic diet and Acne. The Preferred Reporting Items for Systematic Reviews(PRISMA)guidelines.
Results: An exhaustive review of 7 articles was conducted using related criteria. Four cross-sectional studies further confirmed the efficacy of the ketogenic diet in reducing inflammatory markers and improving skin and acne conditions. Two cohort studies have examined the influence of a very low-calorie ketogenic diet(VLCKD)on skin health. The first study demonstrated a significant improvement in the Dermatology Life Quality Index (DLQI) scores within 28 days of adhering to a VLCKD, suggesting a positive impact on the quality of life for individuals with skin conditions. In the second study, researchers observed a reduction in markers of inflammation and oxidative stress, which led to an improvement in acne conditions. These findings indicate that a VLCKD could potentially be beneficial for managing acne and improving overall skin health by addressing underlying inflammation and oxidative stress. Moreover, a case-control study confirmed the positive association between dietary carbohydrates and acne, thereby elucidating the potential therapeutic role of a ketogenic diet in acne treatment.
Conclusion: While preliminary evidence suggests that the ketogenic diet may have beneficial effects on acne for some individuals, the current body of literature is limited and heterogeneous and it seems that more studies are needed in this field.
Keywords: Ketogenic diet, acne vulgaris, skin health

The association between dietary acid load and adiposity measures among children and adolescents

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Introduction: Childhood obesity is one of the most important health problems in the present century. It is imperative to plan preventive programs through risk factor identification. The present study was conducted to examine the association between the dietary acid load (DAL) and anthropometric indices in a sample of Iranian children and adolescents.
Methods: In the current survey, students aged 11–18 years were recruited. To assess usual dietary intake, a validated self-administered 168-item food frequency questionnaire was used. Potential renal acid load (PRAL) and net endogenous acid production (NEAP) was used to estimate DAL. The association between DAL and anthropometric indices was evaluated using logistic regression and reported as an odds ratio (OR) with a 95% confidence interval (CI).
Results: In total, 456 students (267 girls), with a mean age of 14.44 years participated in the current study. After controlling for potential confounders, the PRAL was positively associated with the risk of obesity (OR = 4.56, 95% CI: 2.26, 9.17), abdominal obesity (OR = 12.64, 95% CI: 3.05, 52.27), and adiposity based on the percent of body fat (PBF) (OR = 3.58, 95% CI: 1.83, 6.99). The NEAP was also significantly associated with the risk of obesity (OR = 5.17, 95% CI: 2.56, 10.43), abdominal obesity (OR = 15.08, 95% CI: 3.35, 67.81), and adiposity based on PBF (OR = 4.53, 95% CI: 2.30, 8.92).
Conclusion: Our findings suggest that higher adherence to the acidogenic diet, expressed as DAL, was associated with a higher risk of general and central obesity among children and adolescents.

Investigating the effect of bilberry supplementation on Cardio-metabolic indices: A Systematic review and meta-analysis

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Introduction: Chronic diseases cause early death and financial strain worldwide. Cardio-metabolic health, crucial for preventing cardiovascular disease and type 2 diabetes, may benefit from bilberry's antioxidant and anti-inflammatory properties. This meta-analysis reviews studies on bilberry's impact on lipid profiles, glycemic indices, body composition, and inflammatory and oxidative factors.
Methods: Inclusion criteria were randomized clinical trials assessing bilberry supplementation for at least one week. A comprehensive review of literature was performed in PubMed, Web of Science, Scopus, and Google Scholar until July 21, 2024. Mean changes and their SDs were used to calculate overall effect sizes, with the Hozo et al method converting SEs, 95% CIs and IQRs to SDs. A random-effects model accounted for between-study variations.
Results: Sixteen RCTs including 655 individuals were incorporated into the present systematic review and meta-analysis. Three trials showed bilberry significantly reduced 2h-pp glucose (WMD: -15.97, 95% CI: -23.39, -8.55, P<0.001). Four trials demonstrated a significant decrease in HBA1C (WMD: -1.34, 95% CI: -2.21, -0.47, P=0.003). Nine RCTs reported a significant decrease in TC (WMD: -8.34, 95% CI: -10.50, -6.17, P<0.001) and TG (WMD: -0.51, 95% CI: -1.01, -0.00, P=0.04). Eight RCTs reported a significant increase in HDL (WMD: 1.74, 95% CI: 1.19, 2.29, P<0.001). Four trials showed a notable reduction in BMI (WMD: -0.29, 95% CI: -0.50, -0.07, P=0.009).
Conclusion: Bilberry supplementation may improve glucose, lipid profiles, and anthropometric measures in cardio-metabolic patients, but not other cardio-metabolic indices. Long-term, high-quality studies are needed to confirm these findings.
Keywords: bilberry, cardiometabolic, meta-analysis

Nutritional assessment of pre-surgery colorectal cancer patients: a cross-sectional study

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Introduction: Colorectal cancer is the third most common cancer and the second leading cause of cancer death in the world. In Iran, this cancer is the fourth most common cancer. The prevalence of malnutrition in patients with colorectal cancer is high. Furthermore, Surgery itself can cause inflammation and metabolic stress response Thus, this study aims to assess the nutritional state of colorectal cancer patients before surgery.
Method: Patients with colorectal cancer admitted for tumor removal in the surgical department of Ghaem Tertiary Teaching Hospital participated in this study. After informed consent, patient evaluation including data related to demographic characteristics, anthropometric measurements, and patient nutritional status was evaluated using the PG-SGA questionnaire.
Result: 71 patients were included in this study. The average age of the participants was 56.96±13.3 years, with 43.7% of them were male. 8.77±6.8 was the average PGSGA score. 16.9% of patients had a PGSGA score between 0 and 1, 14.1% had a score between 2 and 3, 29.6% had a score between 4 and 8, and 39.4% had a score of 9 or higher. 11.2% of patients had an underweight BMI, 43.7% had a normal BMI, 29.6% had an overweight BMI, and 16.7% had an obese BMI. Among those with reduced muscle mass, 18.3% were based on the Fat-Free Mass Index (FFMI). The hemoglobin mean was 10.95±1.68, meaning that 84.1% of the patients had anemia.
Conclusion: Before surgery, a high prevalence of malnutrition was observed in patients with colorectal cancer. Therefore, malnutrition screening and nutritional intervention must be considered before surgery.
Keywords: Malnutrition, colorectal neoplasms, PG-SGA

Investigating the effect of omega-3 supplementation in preoperative colorectal cancer patients: a review article

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Introduction: Colorectal cancer is the second leading cause of cancer death in the world. One of the main treatments for this cancer is surgery. Colorectal surgery is associated with a hyperinflammation phase. surgery can lead to complications for the patient. Since omega-3 is an anti-inflammatory substance that improves the immune response. The purpose of this study is to investigate the effect of omega-3 supplementation on preoperative colorectal surgery.
Method: A systematic search of PubMed, Google Scholar, Web of Science, and Scopus from 2002 to 2024 was conducted. the search strategy included the keywords and Mesh terms: "omega-3", "omega-3 fatty acid", "omega-3 fatty acid supplement", "colorectal cancer", preoperative", "before surgery".
Result: Most studies show no effect of omega-3 supplementation on postoperative complications, and limited studies show improved infection and reduced metabolic response. Most of them indicate the anti-inflammatory effect of this supplement in these patients. Also, most studies reported no effect of this supplement on recurrence and overall survival. In one study, omega-3 supplementation with chemotherapy reduced recurrence and, in another study, in patients with colorectal cancer with liver metastases, it was associated with decreased recurrence and increased survival. Also, studies indicate the positive effect of this supplement or the use of the Immunonutrition (containing omega-3) on the improvement of some anthropometric indicators such as weight, BMI, and FFM%, while taking omega-3 supplements before surgery It did not affect the improvement of aerobic capacity and physical performance after the operation
Conclusion: Supplementation with omega-3 preoperative colorectal cancer is useful to improve nutritional status and inflammatory conditions.

Effect of folic acid supplementation on exercise-induced ronchoconstriction in asthmatic patients: a systematic review on the effect of Eicosapentaenoic Acid and Docosahexaenoic Acids.

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Introduction: Exercise-induced bronchoconstriction (EIB) is a common challenge among individuals with asthma, significantly impacting their physical activity and overall well-being. Recent research has focused on the potential benefits of omega-3 fatty acids, particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), in reducing airway inflammation and improving respiratory outcomes. This systematic review synthesizes the current evidence from randomized controlled trials and other studies to evaluate the efficacy of EPA and DHA supplementation in managing EIB in asthmatic patients, exploring their viability as an adjunctive treatment option.
Methods: A review was done independently by two people and based on the PICO criteria and consistent with the research objective and based on the PRISMA checklist and using PubMed, Medline, Web of Science, Cochran Library, Magiran Farsi database and SID, Google Scholar search engine. the time limit Boolean operators between 2015 and 2024 were determined using MESH keywords: “Asthma”, “Supplementation” and “Omega-3 Fatty Acids”. After reviewing the entry and exit criteria and critically evaluating the quality of the selected articles, a total of 12 articles were included in the study.
Results: A total of 345 asthmatic patients with different severity of EIB were studied. Supplementation durations ranging from 4 to 12 weeks, with daily doses of EPA and DHA ranging from 1.5 to 3.0 g, reported significant reductions in EIB severity, as measured by improvements in forced expiratory volume in one second (FEV1) after exercise. became ($p<0.05$). Pooled analysis showed a moderate effect size in favor of EPA and DHA supplementation in reducing EIB symptoms.
Conclusions: EPA and DHA supplementation appears to have a beneficial effect on reducing exercise-induced bronchoconstriction in asthma patients. These findings suggest a potential role for omega-3 fatty acids as an adjunctive therapy in managing EIB, although further large-scale trials are warranted to confirm these results.
Keywords: folic acid supplementation, asthmatic, bronchoconstriction

Describing the obstacles to making changes in diet and the elements that impact it

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Introduction: The importance of this issue is evident from the fact that the risk factors of non-communicable diseases have a significant prevalence in Iran, and its trend is increasing. Unhealthy nutrition is one of the factors that increase the incidence of various diseases, especially non-communicable diseases. Due to the necessity of knowing the views of people in society regarding the barriers to healthy nutrition and the limitations of similar studies in Iran, the present study was designed and implemented to explain men's perceptions and experiences regarding healthy nutrition and the factors affecting it.
Methods: This qualitative study was conducted using a grounded theory approach. Our study was comprehensive in its approach. Between December 2007 and May 2008, we conducted eight semi-structured group discussions involving 96 men aged 25-65, ensuring maximum diversity in our participant pool. All interviews and group discussions were recorded and played immediately after their completion.
Results: The data analysis was done simultaneously. Based on the content analysis of the data, the most important obstacles to healthy nutrition from the point of view of some of the men participating in this study are the type of taste, personal interest, and inappropriate education and culture.
Conclusions: The findings of our study are not just informative but also hold significant implications. They can serve as a valuable resource for designing effective interventions to improve lifestyle and proper nutrition, thereby

contributing to the overall health and well-being of the population.

Keywords: non communicable disease, unhealthy nutrition, men, qualitative study

Omega-3 fatty acid supplementation's dose-dependent effects on anthropometric variables in cancer patients: findings from a systematic review and meta-analysis of randomized clinical trials

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Several meta-analyses have examined the impact of omega-3 fatty acids supplementation on anthropometric variables in patients with cancer, but the results have been conflicting. Due to missing a number of eligible studies in previous meta-analysis by Lam et al, we conducted an extensive systematic review and dose-response meta-analysis of randomized controlled trials in this regard. A comprehensive search was conducted across various databases, including Medline/PubMed, ISI web of knowledge, Scopus, and Google Scholar, until November 2023. Trials assessing the impact of omega-3 fatty acids supplementation on anthropometric variables were included. The objective of the study was to estimate mean differences (MDs) for a 1g/day increase in omega-3 fatty acids intake using a random-effects dose-response meta-analysis. Based on the analysis of 33 studies comprising 2,047 individuals, it was found that there was a significant increase in body weight for each 1 g/d increase in omega-3 lipids (SMD: 0.52 kg; 95%CI: 0.31, 0.73; I^2=95%; GRADE=Low). Supplementation of omega-3 fatty acids did not yield a statistically significant impact on BMI (SMD: 0.12 kg/m^2, 95%CI: -0.02, 0.27; I^2=79%; GRADE=Very low), LBM (SMD: -0.02 kg, 95%CI: -0.43, 0.39; I^2=97%; GRADE=Very low), fat mass (SMD: 0.45 kg, 95%CI: -0.25, 1.15; I^2=96%; GRADE=Low), and body fat (SMD: 0.30 %, 95%CI: -0.90, 1.51; I^2=96%; GRADE=Very low). After excluding two studies, the findings were significant for BMI. Regarding obtained results of dose-response analysis, body weight increased proportionally by increasing the dose of omega-3 supplementation up to 4 g/day. Supplementing with omega-3 fatty acids has the potential to confer a substantial advantageous impact on an individual's body weight, but not on BMI, LBM, fat mass, and body fat in patients with cancer. Completely, large-scale randomized trials are required to demonstrate more trustworthy results.

Keywords: Meta-analysis; Anthropometric variables; Omega-3 fatty acids supplementation; Randomized controlled trial studies; Dose-response

The effects of camelina sativa oil and high-intensity interval training on hepatic function and metabolic indexes in rats with type 2 diabetes

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Introduction: This study evaluated the effects of camelina sativa oil (CSO) and high-intensity interval training (HIIT) on liver function and metabolic outcomes in rats with streptozotocin-induced diabetes.

Methods: Forty male Wistar rats were randomized into five groups, each consisting of eight rats: Normal control (NC), diabetic control

(DC), diabetic treated with CSO (300 mg/kg via oral gavage daily; D + CSO), diabetic undergoing HIIT (running on a treadmill for 5 days a week for 8 weeks; D + HIIT), and diabetic receiving both CSO and HIIT (D + CSO + HIIT).
Results: In the intervention groups (D + CSO, D + HIIT, and D + CSO + HIIT), hepatic markers such as TNF-α, MDA, and histopathology showed decreases compared to the DC group, while PGC-1α and PPAR-γ levels increased ($p < 0.05$). The D + CSO group exhibited stronger effects than D + HIIT alone. Moreover, hepatic triglycerides significantly decreased in both D + HIIT and D + CSO + HIIT groups ($p < 0.001$). Fasting plasma glucose and HOMA-IR levels were also lower in these intervention groups compared to DC ($p < 0.001$). However, hepatic total antioxidant capacity (TAC) and fasting plasma insulin levels remained unchanged across the diabetic groups ($p < 0.001$). Overall, the combination of D + CSO + HIIT demonstrated the most significant improvements in all measured outcomes.
Conclusions: The combined treatment of CSO and HIIT was more effective in enhancing liver function and metabolic outcomes than either treatment alone.
Keywords: camelina oil, high-intensity interval training, diabetes, inflammation and oxidative stress, hepatic steatosis

Rutin, antidiabetic and Anti inflammator component of nettle

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Nettle is a wild herbaceous plant of the Urticeae species and the family Urtica. Urtica dioica is the most important species of nettle, this plant is known for its significant effect on many diseases such as anti-cancer, anti-diabetic, antimicrobial, antioxidant, etc. This study aims to reveal the role of the dominant flavonoid, Rutin, in diabetes and inflammation. The present article is a review of the evidence extracted from electronic databases such as PubMed/MEDLINE, Scopus and Google Scholar from 2002 to 2023.The effect of Rutin in diabetes includes a discussion of antihyperglycemic activity, its combination with anti-diabetic drugs, regulation of genes related to lipid metabolism, high potential in the treatment of Diabetic cardiomyopathy in diabetic patients, and its effect on diabetic neuropathy. Inflammation involves a decrease in the production of inflammatory markers such as TNF-α, IL-1β, interleukin (IL)-6, IL-1β, etc. The effects on the genes is by decreasing or increasing its expression and other issues mentioned in the article. According to this study, the dominant flavonoid Rutin in nettle, which is known as a valuable medicinal plant, showed a beneficial role in diabetes and inflammation, and more research is expected in the future.
Keywords: antioxidant activity; Flavonoids;inflammation;Nettle;Rutin

The relationship between food literacy and nutrition with diet quality and diet density in the final year students of Shahrshadegan High School

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Introduction: Background: Understanding an individual's food and nutrition literacy (FNL) and its influence on dietary behaviors can help shape more effective dietary interventions. This study investigated the relationship between FNL and its components with diet quality and nutrient density amongShadgan city senior high-school students.
Methods: This cross-sectional study involved 755 senior high school students fromShadgan city, Iran. FNL was measured using a locally developed and validated self-administered questionnaire (FNLAT). Dietary intake was assessed with two 24-hour dietary recalls, and diet quality was evaluated using the Healthy Eating Index-2010 (HEI-2010) and the nutrient-rich food index 9.3 (NRF9.3). Socioeconomic status, anthropometric measures, and health status of the participants were also recorded.
Result: : A higher FNL score was significantly associated with better HEI-2010 ($\beta = 0.167$, $p < 0.001$) and NRF9.3 ($\beta = 0.145$, $p < 0.001$) scores. In subgroup analysis ,these associations were significant only among boys, not girls. Among the components of FNL, the skill dimension was a

stronger predictor of HEI-2010 (β = 0.174, p < 0.001) and NRF9.3 (β = 0.153, p < 0.001) compared to knowledge (β = 0.083, p = 0.054 for HEI-2010 and β = 0.107, p = 0.01 for NRF9.3).
Conclusion: This study suggests that FNL is a significant predictor of diet quality and nutrient density in late adolescents, emphasizing the need to prioritize skill development in food and nutrition education.
Keywords: communication ،foodie ،nutrition ، Students ،final year ،City of Shadgan

The association between household food insecurity and childhood obesity students Shadegn

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Introduction: Food security is defined as access, for all people at all times, to enough food
for an active and healthy life. Food security includes: 1) the ready availability of nutritionally-adequate and safe food, and 2) an assured ability to acquire acceptable foodsin in socially acceptable ways Although individuals with food insecurity might be expected to have reduced food intake and thus reduced body fat and less likelihood of being overweight, these associations have not been adequately studied. This study aimed to examine the relationship between household food insecurity and childhood obesity among school-age children in an Iranian population
, Shadegn city.
Methods: In this cross-sectional study, 150school children Shadegn city7-14years were selected by the use of a multi-stage cluster random sampling method. Food insecurity was assessed by the use of a validated Radimer-Cornell questionnaire. Participants were categorized separately by sex as “food secure”, “having household food insecurity”, “Adult food insecurity”, and “child hunger”. Underweight, overweight and obesity were defined based on four available cut-points
Result: Anthropometric measures and food insecurity data were assessed in 150 participants of the
study. No significant associations were found between food insecurity and obesity, either before or after control for confounding variables. This was the case for all definitions of overweight and obesity.
Conclusion: Food insecurity was not associated with weight status in this sample of students.
Keywords: Obesity, Body Mass Index, School's students, Obesity, Abdominal, Food insecurity Waist Circumference

Investigating the effect of diet and exercise on women's health

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Diet is one of the most important and basic ways to achieve body health and the direct effect of nutrition on health has been known for a long time and it has been considered as an important matter in the religion of Islam. Diet is one of the important topics in our country as you know, 25 million people are overweight and obese in Iran. Humans have realized from previous centuries through experience and experiments that they will enjoy a healthier and longer life with proper nutrition. Food is essential for healthy growth and development and it plays an important role in improving the quality of life, especially in the prevention and treatment of many chronic diseases. In today's world, the issue of nutrition and its relationship with health has gained fundamental importance because it forms the foundation of a successful life Therefore, achieving health is generally not about eliminating a group of foods, but actually establishing a balance in food consumption. In addition to physical effects, exercising has mental and cognitive effects on humans. The effect of exercise on the body is the better performance of the lungs and the increase of the body's metabolism, etc. In addition to the physical benefits, exercise is also effective in the treatment of depression and brings freshness and vitality. The purpose of this study is to investigate the effect of diet and physical activity and its benefits on the physical and mental health of women. The current research is a descriptive study by a review method through searching in national databases and library study and it was investigated about awareness. Google Scholar, Science Direct Women's attitude towards the role and importance of nutrition and exercise in bases.
Keywords: Diet , Health , Nutrition , Sport

Changes in body weight and Subcutaneous fat weight of obese male rats, aerobic exercise and black cumin seed aqueous extract: effects on CTRP12 gene expression

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Introduction: Background and purpose: Obesity is known globally as one of the important factors in contracting various diseases. Black cumin is one of the plants that is traditionally used for weight loss. The aim of this study was to determine the effect of 6 weeks of aerobic exercise and the consumption of carum carvi aqueous extract on CTRP12 gene expression, changes in body weight and subcutaneous fat in obese male rats.
Methods: In this experimental study, 24 obese male rats were used after 12 weeks of high-fat diet, which were randomly divided into 4 groups: 1. High-fat diet control 2. High-fat diet + exercise 3. High-fat diet + Black cumin extract (2% food) 4. High fat diet group + exercise + black cumin extract (2% food) were divided. The exercise groups performed aerobic exercise 5 days a week for 6 weeks (approximately equivalent to 70% - 50% max2VO). The relative expression of CTRP12 mRNA by Real-time polymerase chain reaction (Real-time PCR), changes in body weight and amount Subcutaneous fat tissue was measured and analyzed using one-way analysis of variance and Tukey's post hoc test.
Result: The relative expression of CTRP12 mRNA after 6 weeks of aerobic training and extract intake was significantly increased in group 4 compared to groups 1 and 3, in group 1 compared to group 2, and animal weight and subcutaneous fat weight in groups 4 and 3. and 2 significantly decreased compared to group 1.
Conclusion: Considering the significant increase in the relative expression of CTRP12 mRNA and the significant decrease in body weight and subcutaneous fat weight following the simultaneous consumption of the extract with sports activity, it is suggested to reduce the risk of obesity and in order to reduce weight from aerobic exercises with Medium intensity and black cumin should be used.
Keywords: aerobic exercise, black cumin, CTRP12, subcutaneous fat, high-fat diet, rats, obesity

Investigating the effect of macronutrients on the microbial flora of the digestive tract

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Introduction: The human digestive system has more than 500 known species of microorganisms that have active metabolites that are affected by various factors, including macronutrients. Therefore, the aim of this study is to review the effect of macronutrients on the microbial flora of the digestive tract.
Methods: This is a review study that was used to investigate this issue from three databases, PubMed, ScienceDirect, and Google Scholar, as well as the keywords of microbial flora, microbial flora of the digestive system, macronutrients, metabolic syndrome, and malnutrition. Animal and human studies that were conducted prospectively and clinical trials were included in this study.
Result: An imbalance in the intake of macronutrients is one of the factors of obesity that can cause metabolic syndrome, as a result of which the beneficial microorganisms in the digestive system that make up the microbial flora undergo transformation and change, which can increase The number of pathogenic microbiome in the digestive tract. Of course, due to the limited number of studies, it is difficult to determine the effect of macronutrients on microbial flora, and more studies are needed.
Conclusion: The incidence of obesity caused by an imbalance in the consumption of macronutrients can cause a change in the microbial flora of the digestive system, which requires more studies to determine the extent of this change.
Keywords: microbial flora, digestive system, macronutrients

Investigating multiple sclerosis and the effect of diet on it

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Introduction: Nutrition is considered as a possible factor in the pathogenesis of

neurological diseases, especially multiple sclerosis. Also, various interventional studies have shown that the use of food supplements prevents the development of such diseases. Multiple sclerosis is an autoimmune disease of the central nervous system that imposes a large economic, social, and clinical burden on society. Therefore, the above study was conducted with the aim of a systematic review of past studies to investigate the type of diet and multiple sclerosis.
Methods: In this research, studies published until April 2019 were analyzed using Scopus, PubMed, Cochrane, and ISI Web of Knowledge databases, and out of 312 articles found after removing duplicates and using JBI factors, 32 articles were found. A clinical trial and a cohort were selected that investigated the relationship between the intake of various nutritional supplements and the prevalence of multiple sclerosis. Also, the search was done using the keywords multiple sclerosis, diet, nutrition, intake, and food.
Result: 18 articles showed an increase in multiple sclerosis in people who consume less vitamin D and are less exposed to sunlight. Also, various studies show an increase in the incidence of multiple sclerosis in people who use more animal products and saturated fat than plant materials. There is also evidence that people born in the fall are less likely to develop multiple sclerosis than those born in the spring.
Conclusion: Although it is not possible to provide a specific diet for the treatment of multiple sclerosis, various evidences show the effect of fish and vitamin D supplements and grains in improving and preventing multiple sclerosis, which indicates the necessity of taking measures to inform people and improve the diet.
Keywords: Multiple sclerosis, diet, nutrition, neurological diseases

Investigating the effect of DASH on blood sugar control in gestational diabetes; A randomized clinical trial

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Introduction: Gestational diabetes is defined as high blood sugar that appears for the first time during pregnancy and can cause many and serious risks for the mother and the child. Having a suitable diet to control high blood sugar in pregnancy is one of the priorities of the treatment plan, so the present study was conducted with the aim of investigating the effect of diet (Dietary Approach to Stop Hypertension: DASH) on blood sugar control in gestational diabetes.
Methods: In this randomized controlled clinical trial study, 18 pregnant mothers attending the Nutrition Clinic of Shadgan Hospital, who were diagnosed with gestational diabetes during pregnancy, were divided into two groups of 9 people, the control group and the target group. became The target group consumed the DASH diet for 1 month, which included vegetables, fruits, low-fat dairy products, whole grains, low amounts of saturated fat, whole grains, cholesterol, refined grains, and limited dietary intake to 2400 mg per day. . After one month, the fasting blood sugar of the two groups was taken on two consecutive days to make sure. Data was collected and analyzed by SPSS software version 22.
Result: The average blood sugar in the group that followed the DASH diet was 17 mg/dL lower than the control diet group, which had a statistically significant direct relationship (p=0.001). Also, the amount of HDL in the target group was 11 mg/dL more than the control group, which was statistically significant (p=0.001).
Conclusion: DASH diet has had a positive effect on reducing blood pressure in pregnant mothers with gestational diabetes, which is suggested to pay more attention to the use of this diet considering the importance of blood sugar control during pregnancy.
Keywords: Multiple sclerosis, diet, nutrition, neurological diseases

A systematic review and meta-analysis of the impact of Cornus mas L. on anthropometric indices and body composition

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Introduction: Cornus mas (CM) L. (cornelian cherry) fruit is rich in anthocyanins, flavonoids, tannins and polyphenols. Hence, it possesses anti-inflammatory, anti-oxidant, anti-diabetic, anti-obesity, hypolipidemic properties. It has been reported that CM fruit can improve obesity through inhibiting hepatic lipogenesis, increasing hepatic lipid oxidation and clearance,

regulating the expression of peroxisome proliferator-activated receptors (PPARs), the activity of AMP-activated protein kinase (AMPK) pathway in the white adipose tissue, activating adiponectin signaling, decreasing levels of adipocytokines, pancreatic lipase activity and absorption of lipids. The objective of the present study was to perform a systematic review and meta-analysis of the impact of CM on anthropometric and body composition indices.
Methods: The databases Web of Sciences, PubMed and Scopus were used to conduct a comprehensive search up to July 2023 for published papers. The methodological quality and risk of bias of selected studies were assessed by the Cochrane Risk of Bias (RoB) tool.
Results: Overall, 5 randomized controlled trials (RCT) were included. Findings indicated a significant decline in body weight (BW), body mass index (BMI), body fat percentage (BF%), body fat mass (BFM), weight circumference (WC) and hip circumference (HC) ($p<0.001$) despite major heterogeneity ($I^2>50\%$). Furthermore, the results of subgroup analyses revealed significant decline in BF%, BMI, BW and WC when participants were >30 years, the intervention duration was <12 weeks, sample size >50, both genders were studied and the Lyophilized dried or powder form was used.
Conclusion: Reviewing the results of 5 RCTs administrating CM indicated significant anthropometric and body composition reducing effects.
Keywords: Cornus mas L.; Cornelian cherry; Body composition; Anthropometric indices; Systematic review; Meta-analysis

The associations of lifestyle factors with risk of Alzheimer's disease

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Introduction: Alzheimer's disease (AD), a neurodegenerative disease, is one of the most intractable illnesses which affects the elderly and millions of people around the world. Nonetheless, many compounds have been proven to decrease the risk of Alzheimer's disease. Among them, factors related to lifestyle received great attention. Dietary intakes, especially marine foods, smoking, demographic variables, and medical history may have an important role. In this review, we aimed to assess the role of lifestyle factors on risk of Alzheimer's disease**.**
Methods: We search the online databases of PubMed, Scopus, and Google Scholar to find eligible studies. The search was done between 2020 to 2024. Appropriate terms were used in the search strategy.
Results: In the current study, we found that dietary intakes have an important role in the pathogenesis of Alzheimer's disease so that the intake of marine foods or other foods rich in long-chain polyunsaturated fatty acids has a protective effect against Alzheimer's disease**.** In addition, dietary intake of antioxidant may contribute to a lower risk of Alzheimer's disease**.** Also, some other factors such as smoking, insomnia or prolonged sleep, low physical activity, high intake of alcohol, and high intake of coffee are associated with an increased risk of Alzheimer's disease.
Conclusions: In this study, we found that many lifestyle factors contribute to the risk of Alzheimer's disease. However, more studies are needed in this regard.
Keywords: Alzheimer's disease, Lifestyle, Marine foods

The effect of dietary components on reducing the risk of Alzheimer's disease

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Introduction: Alzheimer's disease (AD), a neurodegenerative disease which affects millions of people worldwide. Diet plays a significant role in the progression and risk of AD, with various studies highlighting the impact of specific nutrients on cognitive health. In this review, we investigated the role of some food ingredients on decreased risk of AD and the involved mechanisms.
Methods: We searched the online databases of PubMed, Scopus, and WoS to find eligible studies up to August 2024.
Results: According to the reviewed articles, long-chain polyunsaturated fatty acids (LC-PUFAs) have a protective effect against AD**.** These compounds promote neuronal survival and cognitive function. LC-PUFAs also influence the behavior of microglia enhancing their ability to clear amyloid-beta plaques.

Polyphenols have potential cognitive benefits. Curcumin, a polyphenol in turmeric, protect the brain due to its potential anti-inflammatory.
Vitamins/minerals serve numerous vital functions, including modulation of brain health and cognitive function. Vitamin B_{12}, folate, and vitamin D deficiencies have been associated with an increased risk of dementia and AD.
Probiotics/prebiotics have been studied for their potential benefits in modulating the gut microbiota and reducing inflammation, which may have positive effects on cognitive function
Conclusions: A balanced diet rich in antioxidants, vitamins, and LC-PUFAs, combined with a reduction in saturated fats and processed foods, may play a critical role in preventing/delaying the onset of AD. Continued research is essential to fully understand the interactions between specific dietary components and the biochemical pathways involved in AD.
Keywords: Alzheimer's disease, Diet, long-chain polyunsaturated fatty acids**,** Polyphenols, Probiotics

Protein-Rich, Low-Fat Dietary Interventions: A Review of Their Role in Slowing Alzheimer's Disease Progression

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Introduction: Dementia, a condition impacting over 55 million older adults worldwide, leads to significant cognitive decline due to brain damage from diseases and injuries. The World Health Organization (WHO) notes that this decline goes beyond normal aging and is associated with the gradual deterioration of nerve cells. Recent research suggests that dietary patterns may help alleviate symptoms and slow mental and physical decline. Consequently, dietary interventions are increasingly important for individuals with Alzheimer's disease (AD) and those at risk.
Methods: This review examines the current literature on dietary influences on Alzheimer's Disease. A comprehensive literature search was conducted using databases such as PubMed, Web of Science, Google Scholar, and Scopus. The review included randomized controlled trials, observational studies, and meta-analyses published up to January 2024. A total of 53 references were analyzed, focusing on the relationships between dietary intake, nutritional status, and the risk or progression of Alzheimer's.
Results: The analysis revealed that protein-rich, low-fat dietary interventions are associated with significant cognitive improvements in Alzheimer's patients. Participants following these diets exhibited slower cognitive decline compared to control groups. Additionally, a reduction in amyloid-beta levels, a key Alzheimer's biomarker, was observed. Improvements in memory, attention, and executive function were noted. Diets emphasizing lean meats, fish, legumes, and low-fat dairy, while minimizing saturated and trans fats, provided essential amino acids for neurotransmitter synthesis, supporting brain function.
Conclusion: Protein-rich, low-fat diets show promise in slowing Alzheimer's progression. Further research is needed to establish standardized guidelines and explore the long-term effects of these interventions.
Keywords: Alzheimer's Disease, Low-Fat diet, Protein-Rich diet

Comparison of blenderized formula and commercially powders in terms of calories and macronutrients

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Introduction: Enteral nutrition is a type of feeding for patients who are not conscious or cannot feed orally. In addition to Blendrized solutions, many commercially powders are also available for enteral feeding. Since the supply of calories is the most important issue in patients with enteral nutrition, it is very important to have enough information about the calories and macronutrients of both types of enteral nutrition solutions.
Method: Two 200 cc samples of Blendrized formula (1800 kcal) and two 200 cc samples of 4 different types of commercially powders were prepared and kept in standard conditions. One

series of samples was sent to the pharmaceutical research center laboratory for caloric measurement and the second series of samples was sent to the accredited food laboratory to measure macronutrients.

Results: calories of commercially powders were 3.83 kcal on average and 3.930 kcal in the case of formula. High-protein powder had the highest calorie (3.93). No significant difference was observed regarding macronutrients of standard powders (CHO, PRO, and FAT). All three macronutrients were more in high-protein powder. CHO and FAT of the formula were lower than the standard powders, but the amount of PRO was similar to them.

Conclusion: standard commercial powders do not have significant differences in terms of calories and macronutrients. High protein powder is better for patients with muscle wasting. Blenderized formula also provides well the calories needed by patients and can be used for patients hospitalized in non-ICU units.

Keywords: blenderized formula, macronutrients, enteral nutrition

Nutritional Care in Intensive Care Units of imam Reza hospital of Tabriz

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Background: Intensive care units (ICUs) provides intensive treatment medicine to avoid complications such as malnutrition, infection and even death. As very little is currently known about the nutritional practices in Iranian ICUs, this study attempted to assess the various aspects of current nutrition support practices in Intensive Care Units of imam Reza hospital.

Method: We conducted a cross-sectional study on 50 critically ill patients at 9 ICUs from January to May 2023. Data were collected through interview with supervisors of ICUs, medical record reviews and direct observation of patients during feeding.

Results: Our study showed that requests and answers for nutrition counseling in this hospital are recorded in the HIS system (Hospital Information System). Nutrition counseling should be organized in the first 24 hours of the patients' hospitalization in the ICU and 60% of patients received diet counselling. The evaluation form of the patients' specialized condition is also completed by nutritionists along with nutritional counseling in the HIS system. Monitoring of nutritional status, energy and protein intake were recorded in 5 days in any of the participating ICUs. Commercial enteral feeding powders are used in the ICU units of this hospital. In the case of patients who have intolerance to commercial powder, blenderized formula is used.

Conclusions: Our findings demonstrated that the quality of nutritional care was approximately appropriate in ICUs of this hospital but monitoring of nutritional tolerance and anthropometric status of patients after nutrition counseling along over time is necessary.

Keywords: Nutritional status; Intensive care units; enteral nutrition

The effects of cumin consumption on glycemic profile in individuals with type 2 diabetes and pre-diabetes: A systematic review and meta-analysis of randomized controlled trials

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Introduction: Cumin (Cuminum cyminum) has been suggested to improve the glycemic profile (GP) among type 2 diabetes mellitus (T2DM) and pre-diabetes patients, although the precise effect of the findings has not yet been assessed. The current study aimed to conduct a systematic review and analysis of randomized controlled trials (RCTs) evaluating the effects of cumin consumption on GP.

Methods: PUBMED, Scopus, ISI Web of Science and Google Scholar were used to identify studies up to February 2024. Qualifying studies conducted RCTs examining the effects of cumin consumption compared to control on GP. Summary statistics included weighted mean difference (WMD) and 95% confidence intervals (CI).

Results: Pooled analysis includes a total of seven RCTs (eight treatment arms) with 588 participants. Meta-analysis revealed a significant

relationship between the intake of cumin and reduced fasting blood glucose (FBG) (WMD: -22.59 mg/dl; 95% CI: -41.62, -3.55; p = 0.020) as well as hemoglobin A1c (HbA1c) (WMD: -0.83; 95% CI: -1.06, -0.59; p<0.001). However, insulin levels, beta-cell function (HOMA-B), insulin resistance (HOMA-IR) index and insulin sensitivity (QUICKI) showed no significant alteration. In subgroup analysis, studies using doses >75 g/d showed a significant decrease in insulin, and HbA1c and a significant increase in HOMA-IR. Furthermore, a considerable reduction was noted in insulin, HbA1c, and HOMA-IR within the trials that lasted > 8 weeks.
Conclusion: The findings of our study indicate that cumin significantly improves patients' GP by lowering FBG and HbA1c values. To determine the advantages of cumin on GP, more research is required.
Keywords: Cumin, Glycemic profile, Pre-diabetes, Type 2 diabetes mellitus.

The effect of creatine supplementation in children with traumatic brain injury (TBI)

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Introduction: The most common cause of death and disability after severe childhood trauma is traumatic brain injury (TBI). TBI is a devastating disease that is often associated with significant behavioral disabilities and long-term medical complications that include a wide range of behavioral and emotional problems. Creatine, which is an amino acid produced endogenously from glycine, methionine, and arginine in the liver, kidney, and pancreas, can play an important role as a neuroprotective agent. In this review study, we decided to investigate the effect of supplementation with creatine in children with TBI.
Methods: For this study, we searched the databases, Pubmed, Google Scholar, and Web of Science. Initially, 220 articles were found in the primary search. According to inclusion and exclusion criteria, we finally included 10 studies in our article.
Results: The results show that creatine supplementation in children with TBI causes neuroprotection and improvement of mental defects, and chronic administration of creatine can significantly reduce the amount of cerebral cortex damage. Lactate and free fatty acids, which are indicators of secondary cellular damage following TBI, are lower in animals treated with creatine before TBI. Other mechanisms underlying this neuroprotection may include maintaining mitochondrial integrity, and the action of creatine may prevent mitochondrial structural changes.
Conclusions: Creatine supplementation is a neuroprotective agent and a potential treatment for the complications of brain injury.
Creatine as a neuroprotective agent shows high effectiveness in combating chronic manifestations that lead to oxidative stress and cognitive function after brain injury and can be effective in TBI patients, especially in children.
Keywords: Creatine supplementation**,** children**,**TBI**,** traumatic brain injury

The association between empirical dietary inflammatory pattern and risk of cancer and cancer-specific mortality: a systematic review and meta-analysis of prospective cohort studies

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introduction: Current evidence indicates a correlation between the inflammatory potential of diet and the risk of cancer and cancer-specific mortality. This study aimed to assess the association between empirical dietary inflammatory pattern (EDIP), as being representative of inflammatory features of the diet, and the risk of cancer and cancer-specific mortality.
Methods: A literature search was conducted in PubMed/Medline, Scopus, and the Web of Sciences databases from their inception from

January 2016 to March 2024. A random effects model was employed to calculate pooled Effect sizes (ES) and 95% confidence intervals (95% CI). The Cochran Q test and the I^2 statistic were utilized to assess heterogeneity between studies.
Results: From the initial 229 records, a total of 24 prospective cohort studies were included in our study. Pooled results demonstrated a significant association between higher adherence to EDIP and risk of total cancer (ES:1.10;95%CI:1.05-1.15; I2=41.1), colorectal cancer (ES:1.19; 95% CI:1.11-1.27; I2=41.1), and liver cancer (ES:1.48;95%CI:1.14-1.94; I2=36.9). However, no significant association between increased adherence to EDIP and the risk of ovarian or endometrial cancer was found. As well, greater adherence to EDIP was significantly associated with the risk of cancer-related mortality (ES:1.18;95%CI:1.05-1.33; I^2=45.4).
Conclusions: Our results showed that a diet with higher inflammatory properties is associated with an increased risk of cancer incidence and cancer-specific mortality.
Keywords: cancer risk, cancer-specific mortality, empirical dietary inflammatory pattern, metal-analysis, systematic review

Macronutrients quality index and mortality among patients with liver cirrhosis: A prospective cohort study

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Introduction: Cirrhosis is the end-stage manifestation of chronic liver disease progression and often leads to poor survival outcomes. The quality of the diet, especially macronutrients, may play a crucial role in the management of this disease. The current study investigated the association between the macronutrient quality index (MQI) and cirrhosis-related mortality.
Methods: In this cohort study, 121 outpatients with relatively newly diagnosed cirrhosis were followed up for 5 years. After evaluating the dietary intake of patients using a 168-item food frequency questionnaire, MQI was calculated, which included carbohydrate quality index (CQI), fat quality index (FQI), and protein quality index (PQI). Cox proportional hazard models were used to estimate the crude and multivariable adjusted hazard ratios (HR) with 95% confidence intervals (CIs).
Results: The results indicated that a higher MQI was significantly associated with a 65% lower risk of mortality after adjusting for potential confounders (HR = 0.35, 95% CI = 0.07–0.7, p trend = 0.024). Also, higher CQI (HR=0.32, 95% CI=0.1-0.97, p trend=0.026) and FQI (HR=0.25, 95% CI=0.07-0.9, p trend=0.023) showed significant protective effects, while PQI (HR=0.33, 95% CI=0.1-1.1, p trend=0.122) failed to show a significant association with mortality risk.
Conclusions: A comprehensive assessment of MQI and its sub-indices and cirrhosis-related mortality showed that improving the quality of macronutrient intake could enhance survival among patients with cirrhosis.
Keywords: Cirrhosis, Cohort study, Macronutrient Quality Index, Mortality, MQI

Cost-benefit of semi-elemental formula versus standard polymeric formula in critically ill patients' management

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Introduction: Semi-elemental formulas are consistently utilized in providing nutritional support for critically ill patients, despite their higher costs in comparison to standard polymeric formulas.
Method: A non-systematic search were conducted on the PubMed and Scopus databases

to retrieve relevant English-language articles. Sixteen recent articles on the efficiency or comparative effects of semi-elemental diets published between 2000 and 2024 were identified.

Conclusion: In most clinical scenarios, standard polymeric formulas are the preferred choice for initiating enteral nutrition in critically ill patients, as recommended by various associations and guidelines. However, in specific conditions such as short bowel syndrome and severe pancreatitis, semi-elemental formulas may be utilized at the onset of enteral feeding. For inflammatory bowel disease patients requiring enteral nutrition, semi-elemental formulas are recommended if they are unable to tolerate polymeric formulas. Nevertheless, studies have indicated that approximately 40% of critically ill patients in the intensive care unit experience enteral intolerance, with gastroparesis and diarrhea being the most prevalent symptoms. The occurrence of intolerance has been linked to an increase in the duration of hospitalization in the intensive care unit by approximately 3.6 days, as well as higher mortality rates and prolonged ventilator dependence. Cohort studies have demonstrated that a timely transition from standard polymeric formulas to semi-elemental formulas can effectively reduce patient care costs by 20%. Despite the fact that the cost of these formulas is 3.2 times higher than that of the standard formula, the potential 20% reduction in patient care costs provides a considerable economic rationale for their use in practice. Ultimately, there is no significant difference in total costs between patients receiving standard polymeric formulas and those receiving semi-elemental formulas.

The impact of supplementing with curcuminoids on serum adipokines: a comprehensive review of meta-analyses from randomized controlled trials.

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Introduction: This umbrella review of randomized clinical trials aims to offer a thorough and unique understanding of the effects of curcumin on adipokines, thus providing a novel perspective to the existing body of research.

Methods: In our research, we conducted a comprehensive search of international databases up to April 2024, including MEDLINE, SciVerse Scopus, and Clarivate Analytics Web of Science, to ensure the reliability and robustness of our findings. We used a random-effects model to assess the impact of curcuminoid on adipokines. The umbrella review integrated meta-analyses that investigated the effects of curcuminoid supplementation on adipokines, presenting associated effect sizes (ES) and confidence intervals (CI). We employed the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) and AMSTAR (A Tool for Assessing the Risk of Bias in Systematic Reviews system) to evaluate the certainty of the evidence and the quality of the systematic reviews.

Results: Our examination of a meta-analysis, which included 14 RCTs and an additional RCT not incorporated in the meta-analyses, uncovered significant and meaningful results. We observed a substantial rise in serum adiponectin levels with curcuminoid supplementation, indicating a positive effect (SMD: 0.9; 95%CI, 0.4 to 1.3, $p<0.001$; $I^2=92.2\%$). However, we did not detect a significant impact on serum leptin (SMD: -0.1, 95% CI -0.8 to 0.6, $p=0.7$; $I^2=94.6\%$).

Conclusion: Supplementation with curcuminoids has been shown to significantly increase serum adiponectin levels, supported by moderate-quality evidence. Furthermore, there is no significant impact on serum leptin levels.

A systematic review and meta-analysis assessed at the A GRADE level of randomized controlled trials examining the effects of Glucagon-like peptide-1 receptor agonists on inflammatory biomarkers.

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Introduction: This research aimed to assess the effects of Glucagon-like peptide-1 receptor agonists (GLP-1RAs) on inflammatory markers in adults.
Methods: We conducted a thorough search of PubMed, Scopus, and Clarivate Analytics Web of Science up to November 2023, including randomized trials comparing GLP-1RAs with control groups or drugs. A random-effects meta-analysis using a Bayesian framework was performed to determine mean or standardized differences and 95% confidence intervals. The GRADE approach was utilized to ensure the certainty of the evidence.
Results: The results of the study included 24 trials with 4885 patients. The GLP-1RA treatment demonstrated a significant reduction in interleukin-6 (IL-6) (9 studies, WMD: -1.01 pg/mL; 95% CI: -1.4 to -0.5 pg/mL; p< 0.001, GRADE = moderate), C-reactive protein (CRP) (8 trials, SMD: -0.8; 95% CI: -1.2 to -0.4; p< 0.001, GRADE = moderate), and tumor necrosis factor (TNF-α) (6 trials, SMD: -0.4; 95% CI: -0.7 to -0.06; p= 0.02, GRADE = moderate). However, the high sensitivity-CRP (hs-CRP) point estimate was found to be insignificant. The point estimates observed in the study were clinically significant and exceeded the minimally clinically important difference. The effect size for CRP was determined to be large, while the effect size for IL-6 and TNF-α were deemed small.
Conclusion: These findings indicate that GLP-1RA interventions have a statistically significant impact on certain inflammatory markers in adults. However, further clinical trials are needed to investigate the effects of different types of GLP-1RA on proinflammatory markers.

An Insight to National Level Vitamin D Improvement Policies, Identification of Successful Approaches :A Systematic Review

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Introduction: Vitamin D deficiency is a public health concern throughout the worldwide. Current study aimed to review vitamin D policies in different regions and to identify the successful and effective strategies.
Methods: A systematic search was conducted in the PubMed/Medline, SCOPUS, Web of Science and Google Scholar databases, until September 4, 2023. Relevant articles that investigated vitamin D policies in national level population with adequate information were included in this review.
Results: Searches elicited 5472 papers, 50 studies were eligible for full-text assessment .Twenty-nine articles were included in this review. Data extraction and risk of bias assessment were conducted for the each included study. The results showed the vitamin D fortification strategy was implemented especially in developed-countries. Furthermore, vitamin D supplementation strategy was performed for at-risk groups, including children under 2 years of age, pregnant women, and the elderly. According to the result, vitamin D supplementation and fortification of commonly used foods in combination with public awareness were reported as an available and cost-effective approach to provide vitamin D recommended values.
Conclusion: The use of combination of policies will be efficient solutions to increase the mean intake and the serum vitamin D levels in population. Vitamin D supplementation was reported as a short-term strategy especially in vulnerable groups, and vitamin D fortification of staple foods is considered as a best long-term approach to improve vitamin D status in population levels. Implementation of supplementation and fortification strategies must be follow alongside increasing awareness of parents and health professional.
Keywords: vitamin D, policy, strategy, effectiveness, systematic review.

The effects of meal patterns on liver steatosis, fibrosis, and biochemical factors in patients with nonalcoholic fatty liver disease: a randomized controlled clinical trial

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Introduction: This study was designed to compare the effects of four meal patterns on liver steatosis, fibrosis, and biochemi¬cal factors in patients with Nonalcoholic fatty liver disease (NAFLD).
Methods: The 12-week intervention was performed on 123 patients with NAFLD who were randomly allocated into four groups: "3-meals", "skipping breakfast", "skipping dinner", and " 3 meals and 3 snacks per day." group. The assessment of liver steatosis, fibrosis biochemical factors, and anthropometrical evaluation were performed at baseline and at end of the study.
Results: A significant improvement was found in the liver steatosis and fibrosis among the patients who consumed 3 meals, 3 snacks compared to the other groups ($P < 0.001$). In addition, a higher reduction was observed in serum levels of ala¬nine amino transferase (ALT) (20.93 ± 23.37 mg/dl, $P < 0.001$), aspartate aminotransferase (AST) (17.15 ± 16.48 mg/ dl, $P < 0.001$), gamma-glutamyl transferase(GGT) (13.43 ± 13.41 mg/dl; $P < 0.001$), and alkaline phosphatase (ALK) (47.19 ± 60.51 mg/dl; $P = 0.004$) in patients who consumed 3 meals, 3 snacks, while the concentration of liver enzymes in patients who consumed 3 meals increased significantly. At the end of the study, there was a significant increase in the fasting blood sugar (FBS) concentration in the "skipping breakfast" group (17.51 ± 38.85 mg/dl; $P = 0.011$) and "3-meals" group (17.51 ± 38.85 mg/dl, $P = 0.03$).
Conclusion: Consuming 3 meals, 3 snack per day significantly improves disease severity and biochemical factors in NAFLD patients. Further studies are warranted.
Keywords: Meal pattern · Non-alcoholic fatty Liver Disease · Liver enzymes · Clinical trial · Steatosis

The effect of supplementation with omega-3 unsaturated fatty acids in chronic obstructive pulmonary disease

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Introduction: Chronic obstructive pulmonary disease (COPD) is a progressive lung disease characterized by irreversible airway and systemic obstruction. The disease progresses to respiratory failure, disability and premature death. Poor diet quality and nutrient availability in certain diseases, including COPD, can be associated with specific factors such as exacerbation of disease symptoms.
Methods: This review study was done by analyzing articles from databases including Pubmed-Scopus and Google Scholar search engine and using the keywords Fatty acids, COPD, moj.
After the initial search, only the title and abstract of articles related to the purpose of review and unrelated articles were removed.
Results: Given that omega-3 polyunsaturated fatty acids (n-3 PUFAs) play a role in regulating responses, higher levels of omega-3 fatty acids have been associated with decreased lung function, with the greatest effect for the omega-3 fatty acid, docosahexaenoic acid. (DHA) is metabolically lower.
Conclusion: Dietary interventions, especially components of the Mediterranean diet such as protein, omega-3 unsaturated fatty acids and vegetables, seem to have beneficial effects in patients with chronic respiratory diseases and their use is beneficial. However, long-term follow-up studies to investigate the effects of nutritional interventions in patient populations are still needed to determine the amount of prescription supplementation.
Keywords: COPD, Fatty acids, Omega3

Effects of Chocolate Consumption on Brain: A Review

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Introduction: Cocoa and chocolate products have recently been recognized as a rich source of flavonoids, mainly flavanols, powerful antioxidants and anti-inflammatory agents that enter and accumulate in the brain regions involved in learning and memory, especially the hippocampus. The neurobiological activities of flavanols are thought to occur in two main ways: (i) through direct interaction with cellular

cascades inducing the expression of neuroprotective and neuroregulatory proteins that promote neurogenesis, neuronal function, and brain connectivity, and (ii) through enhancement of blood flow and angiogenesis in the brain and sensory systems. Therefore, the aim of this study was to summarize the results on the impact of cocoa consumption on cognitive function and brain health.

Method: The present article provides relevant articles available on the mechanism of action of cocoa and its bioactive ingredients on the brain. These studies were discovered via searching PubMed, Web of science, and Embase databases from 2010 to 2023. After removing duplicate articles, fifteen articles met the inclusion/exclusion criteria of our review and 6 of them were included.

Result: The epicatechin content in cocoa is primarily responsible for its favorable effects on vascular endothelium by influencing the regulation of nitric oxide production, which increases cerebral blood flow to improve cognitive function and attention. In addition, improved cognitive function has been reported to be associated with increased levels of blood brain-derived neurotrophic factor (BDNF), a protein associated with neuronal growth levels. In the brain, BDNF stimulates synaptic plasticity and neurogenesis, and plays an important role in brain regions involved in learning and memory, such as the hippocampus and the sub ventricular zone.

Conclusion: These results support the idea that daily servings of dark chocolate (35 g) may provide benefits to the brain in healthy consumers. There is clear evidence that cocoa flavonoids can significantly improve cognitive function in humans, possibly through mechanisms such as improving cerebral blood flow.

Keywords: Cocoa; Flavonoids; Polyphenols; Cognitive function; Memory

Heavy Metal Exposure and Metabolic Syndrome: A Review

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Introduction: Metabolic syndrome (MetS) is an important public health concern that impacts millions of individuals around the world. Studies showed that lifestyle factors like physical activity, dietary pattern, genetic factors, and also environmental factors, such as exposures to heavy metals, may play a pivotal role in the development of MetS. Growing evidence shows the involvement of heavy metal pollutants including Cadmium (Cd), Mercury (Hg), Lead (Pb), and Arsenic (As), in the incidence of obesity, hypertension, atherosclerosis, and diabetes, suggesting that exposure to these environmental contaminants are risk factors for MetS incidence.

Method: This review provides articles related to the impact of exposure to heavy metals as environmental contaminants on incidence of MetS. Studies were found by searching PubMed, Web of science, and Embase databases from 2018 to 2023. Eleven articles fulfilled the inclusion/exclusion criteria of this review and five of them were used in this research.

Result: Heavy metals like Cd, Hg, Pb, and As by inducing oxidative stress, signaling of IL-6, apoptosis, lipoprotein metabolism alteration, atherosclerosis, and other mechanisms can induce MetS. Also, they play role in appetite regulation, vascular reactivity, adipogenesis, energy metabolism, renin angiotensin system. Depletion and inhibition of enzymes like glutathione (GSH) reductase by heavy metals induces ROS build-up and oxidative damage.

Conclusion: In conclusion, epidemiological studies demonstrated an association between exposure to heavy metals and MetS. Recent findings showed that along with oxidative and endoplasmic stress, inflammation, and apoptosis, other unique mechanisms such as ferroptosis, pyroptosis, epigenetics, and gut microbiota modulation could contribute to dysfunction of target tissue during MetS pathogenesis.

Keywords: Diabetes; Heavy metals; Mercury; Metabolic syndrome; Pb

The Effect of Kefir Consumption on the Lipid Profile: A Review

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Introduction: Kefir is a probiotic beverage known in several countries, which has been drawing the attention of scientists because of its advantageous properties. It consists of a collection of bacteria (lactic acid and acetic acid bacteria) and yeast, enclosed in a polysaccharide

matrix called kefiran. Kefir also includes some bioactive peptides with antihypertensive, antimicrobial, immunomodulatory, opioid, and anti-oxidative functions. Fermented milk products have been shown to affect serum cholesterol levels in humans. Kefir has potential health benefits but its cholesterol-lowering properties have not been studied. The consumption of prebiotics and probiotics from functional foods may constitute an alternative strategy to prevent and reduce the impact of cardiovascular and metabolic diseases.
Method: This review provides articles related to the impact of kefir and its active components on lipid profile. Studies were found by searching PubMed, Web of science, and Embase databases from 2015 to 2024. Nineteen articles fulfilled the inclusion/exclusion criteria of this review and ten of them were used in this research.
Result: Kefir's health benefits are due to the diversity of the probiotic bacteria inside of it. Kefir is known to make additional contributions to the treatment of many diseases, from the immune system to inflammatory bowel diseases, from reducing serum levels of LDL cholesterol (LDL-C) and triglycerides (TG) to controlling blood flow. It was concluded that regular consumption of kefir is effective in women and men with dyslipidemia in reducing total cholesterol and LDL cholesterol in the blood lipid profile, whereas this was not observed in normal people.
Conclusion: The results concluded that consuming kefir improved fasting blood pressure, blood sugar and lipid levels, thereby reducing LDL and the risk of developing cardiovascular events over the next ten years. These results suggest that regular kefir consumption may have a positive impact on metabolic syndrome treatment.
Keywords: Kefir; Lipid profile; LDL-cholesterol; Functional food

Effects of Different Vegetable Oils on the Nonalcoholic Fatty Liver Disease: A Review

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is the most common liver disorder, affecting 22–28% of the adults and more than 50% of the obese population globally. The articles did not mention the main causes and most useful treatments for NALFD. Although causes and treatments are well researched but they are not well known. Consumption of vegetable oil, containing omega-6 fatty acids like linoleic acid, is the most effective way of inducing NAFLD. Medium chain triglycerides and omega-3 fats protect against NAFLD. Some vegetable oils like soybean oil may cause several harmful metabolic effects of high fat and fructose diet. Therefore, canola oil is suggested to be beneficial in the treatment of comorbidities of metabolic syndrome specially NAFLD. Vegetable oil is rich in omega-6 and it is used in food processing and cooking.
Method: The present review provides articles related to the relation between vegetable oil and NAFLD. Searching PubMed and Embase databases from 2010 to 2024 lead to finding the articles. Fourteen articles fulfilled the inclusion/exclusion criteria of this review and six of them were used in this research.
Result: Excess omega-6 fats are transformed to inflammatory prostaglandins and liver inflammation, while omega-3 may inhibit them. Omega-3 and omega-6 consumption amount should be the same, but in the Western diet, omega-6 intake is 20 times more. Heating omega-6 polyunsaturated fats results in toxic oxidation products, which are worse than the trans fats, that may cause hepatic damage and destroy its histological structure through accumulation of fat and oxidative stress. Using different omega-3, omega-7, and omega-9-rich lipid formulations may lower NAFLD.
Conclusion: The results concluded that the commercial vegetable oils specially canola oil contributes to preventing or reducing NAFLD.
Keywords: NAFLD; Vegetable oil; Omega 6

Chocolate Milk, Post-exercise recovery beverage in adolescent athletes: A Review

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Introduction: Chocolate milk (CM) is composed of carbohydrates, proteins, and fats, along with water and electrolytes, making it potentially suitable for post-exercise recovery. Chocolate milk has emerged as a cost-effective recovery option for athletes, replacing pricier commercial recovery drinks. Low-fat chocolate milk offers a 4:1 carbohydrate to protein ratio, akin to many commercial recovery products, and supplies fluids and sodium to support post-exercise recovery.
Method: PubMed, Scopus, and Google scholar were explored from 2012 to 2024 which led to finding this article. Relevant literature and studies to assess the potential benefits of chocolate milk for adolescent athletes were considered. Thirteen articles fulfilled the inclusion/exclusion criteria of this review and six of them were used in this research.
Result: This article suggests that the balanced nutritional profile of CM may contribute to enhanced recovery following exercise. Specifically, the combination of carbohydrates and proteins in chocolate milk appears to support muscle repair and glycogen resynthesis, while the electrolytes aid in rehydration. Consuming chocolate milk at a rate of 1.0-1.5 grams per kilogram of body weight per hour immediately after exercise and again at 2 hours post-exercise seems to be ideal for exercise recovery and may help reduce markers of muscle damage.
Conclusion: CM could be a valuable option for adolescent athletes seeking to optimize their post-exercise nutritional strategy. However, further research is recommended to confirm these findings and to explore the long-term effects of chocolate milk on athletic performance and recovery in this population.
Keywords: Post-exercise supplements, Cocoa, Milk protein, Adolescents

Camel Milk's Beneficial Effect on Diabetes Mellitus: A Review

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Introduction: Diabetes mellitus is the most common metabolic disease with many complications including cardiovascular diseases, kidney failure, blindness and lower extremity amputation. Controlling diabetes through effective alternative treatments is currently a topic of great interest. Some researchers have found that camel milk can aid in insulin therapy. It seems to be a safe and effective long-term glycemic control improving agent. Therefore, in recent years, much effort has been made to develop effective alternative treatments, including substitute alternatives for insulin administration. Camel milk is thought to be a suitable hypoglycemic agent in experimental animals and in diabetic patients. Since camel milk's anti-diabetic effects have not been fully elucidated, this study aimed to evaluate the effects of camel milk on diabetes.
Method: The current article includes relevant articles on the effect and mechanism of bioactive components of camel milk on diabetes mellitus. Searching for articles was done through PubMed, Web of science, and Embase databases from 2008 to 2024. Articles that fulfilled the inclusion/exclusion criteria of our review were 17 and 10 of them were included.
Result: Radioimmunoassay detected high insulin levels in camel milk as well as high concentrations of immunoglobulins, lactoferrin and lactoperoxidase, which play biological and pharmacological roles. Recent studies have shown a beneficial effect of camel milk on diabetes by improving glycemic control and reducing insulin resistance. Studies show the existence of insulin and insulin-like proteins in camel milk. In many studies, the anti-diabetic properties of camel milk have shown potential effects on the pancreas and on insulin secretion by the pancreatic β-cells.
Conclusion: In conclusion, most of the studies included in this review demonstrated beneficial effects of camel milk on diabetes mellitus by lowering blood sugar and reducing insulin resistance.
Keyword: Camel milk, Diabetes mellitus, Insulin resistance

The role of omega 3 in improving the symptoms of cystic fibrosis patients: A systematic review

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Introduction: Cystic fibrosis (CF) is a genetic disease that primarily impacts the respiratory system. This condition leads to the production of mucus that becomes abnormally thick and sticky. Omega-3 fatty acids have shown potential benefits for patients with cystic fibrosis (CF). Infection and inflammation are believed to worsen lung function in people with cystic fibrosis. Studies show that omega-3 is anti-inflammatory and may be beneficial for cystic fibrosis patients.
Method: We searched for studies on the association between "omega 3 fatty acid" and "cystic fibrosis" in original articles from Web of Science, Scopus, and PubMed. Through this search, a total of 175 articles were found and finally 8 articles were selected as main sources.
Result: The research highlights the potential benefits of omega-3 fatty acids, specifically docosahexaenoic acid (DHA), for individuals with cystic fibrosis. Studies indicate that omega-3 supplementation or the consumption of omega-3-rich foods, like fish oil, can enhance DHA levels and positively affect pulmonary symptoms. Clinical trials are shown that supplement containing PUFAs is effective in improving intermediate biomarkers of cystic fibrosis.
Conclusion: However, the quality of evidence across studies is generally low, and more extensive, long-term, multicenter randomized controlled-trials are needed to confirm these findings and determine the optimal dosage and duration of treatment.
Keywords: Cystic fibrosis" , " Omega-3 fatty acids" , " Docosahexaenoic acid" , "DHA", "Respiratory system""

Investigating the effect of garlic in the prevention and management of non-alcoholic fatty liver disease (NAFLD): A systematic review

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Introduction: Nonalcoholic fatty liver disease (NAFLD) is a major cause of liver-related mortality with unknown pathogenesis. Garlic is one of the compounds that is effective in the treatment of various types of diseases due to having different bioactive compounds and is expected to be effective in the treatment and prevention of NAFLD.
method: We searched for studies on the association between calorie restriction and the aging in original articles from Web of Science, Scopus, and PubMed. A total of 312 articles were identified from the search of the main electronic databases and the references of the identified studies, which was reduced to 39 articles after deduplication. Of the 39 references screened by title and abstract, 8 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that garlic, through its active compounds, affects the level of hepatic lipogenesis and its metabolism, increase insulin sensitivity, adiponectins production, and so, could be effective in prevention and management of NAFLD.
Conclusion: Based on conducted searches, consumption of garlic can reduce the incidence and severity of NAFDL and control disease indicators such as insulin resistance, and improve metabolism. However, in order to determine the effective therapeutic dose as a safe and specific treatment, more research is needed.
Keywords: Non-alcoholic fatty liver disease, garlic, prevention, management

Investigating the Effect of Quercetin on The Treatment of Osteoporosis in the Elderly: a systematic review

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Aims and Background: Osteoporosis is one of the common causes of morbidity and mortality in the elderly, which is associated with a decrease in bone differentiation and bone formation with age. Lack of effective treatment, a healthy lifestyle and natural bioactive compounds are mentioned as a way to manage the disease. Quercetin is a natural bioflavonoid compound that is effective in preventing diseases by improving physiological pathways. So this systematic review has been conducted to check the effects of quercetin on osteoporosis and its treatments.
Methods: We searched for studies on the association between quercetin, osteoporosis, elderly and treatment in original articles from Web of Science, Scopus, and PubMed. A total of 158 articles were identified from the search of the main electronic databases, which was reduced to 31 articles after deduplication. Of the 31 references screened by title and abstract, 6 were selected for inclusion and exclusion criteria by reading the full text.
Results: Conducted searches on preclinical and clinical models show that Quercetin improves the antioxidant system (improvement of SOD and glutathione), regulation of autophagy and inhibition of osteoblast apoptosis (increasing the expression of Wnt3, β-catenin and cytochrome C and decreasing the expression of Bcl-2, Bcl-xL and caspase-3) and modulating inflammatory pathways (IFN-γ) and increase the proliferation of bone marrow mesenchymal stem cells and bone differentiation.
Conclusion: Based on conducted searches, Quercetin is effective in improving osteoporosis by affecting antioxidant pathways, autophagy, inflammatory responses and cell apoptosis. However, in order to determine the effective dose, duration and effective pharmaceutical form, additional studies are needed.
Keywords: Quercetin, Osteoporosis, Treatment, Elderly

Effects of L-carnitine supplementation on clinical parameters in patients with liver diseases: An umbrella review on meta-analysis of randomized controlled trials

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Introduction: Our objective was to conduct a thorough evaluation of the effects of carnitine supplementation on liver disease patients' levels of ammonia, triglycerides (TG), low density lipoprotein (LDL), high density lipoprotein (HDL), total cholesterol (TC), and aspartate aminotransferase (AST).
Methods: Through January 2024, a comprehensive search of ISI Web of Science, PubMed, and Scopus was conducted. This study included adult liver diseases patients, utilizing carnitine as an intervention and lactose or other compounds as a placebo, and assessing liver enzymes, lipid profiles, and ammonia as clinical outcomes. Inclusion and exclusion criteria alongside PRISMA guidelines informed this investigation. Appropriate random and fixed effects models were employed in meta-analyses. The AMSTAR-2 measurement tool was utilized to assess the quality of each selected meta-analysis. The quality of primary randomized controlled trials (RCTs) was evaluated using the Cochrane Collaboration tool.
Results: 4 meta-analyses with 7 outcomes across 987 liver disease patients were found. It has been demonstrated that daily L-carnitine administration significantly lowers serum ammonia levels (WMD: -23.7 mg/dl, 95%CI: -27.9, -19.4; I2: 77.5), ALT levels (WMD: -15.8 IU/L, 95%CI: -24.8, -6.86; I2: 92.7), AST levels (WMD: -14.8 IU/L, 95 95%CI: -22.2, -7.56; I2: 90.3), LDL-C levels (WMD: -16.1 mg/dl, 95%CI: -21.1, -11.1; I2: 95.4), TG levels (WMD: -33.6 mg/dl, 95 95%CI: -45.0, -22.3; I2: 0.00), TC levels

(WMD: -23.6 mg/dl, 95%CI: -29.7, -17.5; I2: 83.9), and while simultaneously increasing HDL-C levels (WMD: 4.00 mg/dl, 95%CI: 2.72, 5.28; I2: 94.9).

Conclusions: Finally, L-carnitine supplementation significantly reduced liver disease patients' levels of ALT, AST, LDL, HDL, TC, TG, and ammonia.

Keywords: L-carnitine, Liver diseases, Liver enzymes, Lipid profile, Ammonia, Umbrella review

The Association of Phase Angle with Anemia in Women with Diabetes: A Result of a Population-Based Study

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Introduction: Anemia is a prevalent complication of diabetes and is associated with serious health issues, especially in women. Phase angle (PhA), which is estimated by bioelectrical impedance analysis (BIA), is used as a prognostic indicator in several clinical situations. We aimed to clarify the clinical significance of PhA for anemia in women with diabetes.

Methods: This cross-sectional study encompassed 1381 women with diabetes, aged 35-65 years, who were recruited from MASHAD study (Phase Ⅱ) spanning the period 2017 to 2021. Participants underwent laboratory tests to be assessed for potential anemia, defined as a hemoglobin (Hgb) level lower than 12 g/dL. The value of PhA was estimated using InBody S10 Biospace device. Multiple logistic regression was used to determine the association between PhA and anemia.

Results: Out of 1381 participants, 9.7% were found to have anemia. There was a significant difference in anemia status across tertiles of PhA (p=0.001). A statistically significant association was observed between the higher value of PhA and lower risk of anemia (OR (95%CI): 0.64(0.42-0.98), p-trend= 0.025). In the fully adjusted model, individuals in the highest tertile of PhA had a 42% lower risk of anemia compared to those in the lowest tertile (OR=0.58, 95% CI: 0.35-0.97, p-trend= 0.023).

Conclusions: The present study indicated that PhA is associated with a lower risk of anemia in women with diabetes. Consequently, given its non-invasive nature and its easy applicability, PhA can be used as a possible practical indicator in clinical settings.

Keywords: Phase angle, Anemia, Diabetes Mellitus, Hemoglobin, Women.

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Keywords: Phase angle, Anemia, Diabetes Mellitus, Hemoglobin, Women.

Exploring The Association Between Phase Angle and Blood Pressure in Healthy Adults: A systematic Review of Observational Studies

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Background: Phase angle (PhA), which is obtained from the analysis of bioelectrical impedance, is known as a non-invasive parameter that reflects the fluid distribution, health and integrity of the cellules. Data on how PhA is related to blood pressure (BP) are scarce and controversial. Hence, this systematic review aims to evaluate the association between PhA and both systolic (SBP) and diastolic blood pressure (DBP), in healthy adults.
Methods: A comprehensive search was conducted in PubMed, Scopus, ISI Web of Science and Google Scholar, covering research up to 20 August 2024, in an attempt to pinpoint studies already done on the correlation coefficient(r) between PhA and BP (SBP and DBP) in healthy adults. We screened two hundred and thirty-five studies. Following this, 22 articles were selected for full text evaluation. Finally, 6 original studies that met the inclusion criteria were incorporated into this systematic review.
Results: The review included eight studies with 11,310 healthy adults. Most studies found an inverse correlation between PhA and both systolic and diastolic BP, indicating that lower PhA is generally associated with higher BP. However, some studies reported positive correlations, suggesting variability in the relationship, likely due to differences in study designs and measurement methods.
Conclusion: According to the present results, lower PhA is related to higher BP in healthy adults, particularly for SBP. However, the inconsistent findings, necessitate further research to clarify the relationship between PhA and these parameters. This could be achieved by considering other potential confounders as well as recruiting larger samples.
Keywords: Phase Angle, Blood Pressure, Diastolic Pressure, Systolic Pressure, Systematic Review.

MIND diet and its benefits on mental health: A systematic review

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Introduction: Depression and anxiety are considered "common" mental disorders, resulting in a higher number of disability-adjusted life years (DALYs) than other mental illnesses. The purpose of this review was to assess how MIND diet is associated to the mental health.
Methods: PubMed, Web of Science, Scopus, and Google Scholar were systematically searched for articles related to the MIND diet and mental health until August 2024.
Results: The initial systematic search of the databases identified 127 studies, of which only 11 met the inclusion criteria for further evaluation. Three studies found a significant inverse association between adherence to the MIND diet and depression. In addition, two studies reported a negative association between the MIND diet scores and anxiety, while two

other studies indicated a negative association between following the MIND diet and stress levels.
Conclusion: This systematic review suggests that greater adherence to the MIND diet is associated with improved mental health. However, further clinical trials are required to elucidate this association in different populations.
Keywords: Anxiety, depression, mental health, MIND diet

The effect of MIND diet on mental health and cardiometabolic risk factors in diabetic women with insomnia: study protocol for a randomized controlled trial

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Introduction: The Mediterranean-DASH Intervention for Neurodegenerative Delay (Mind) diet is a plant-based and anti-inflammatory diet which have the ability to protect and also manage the cardiovascular and nervous system's diseases. Regarding that the insomnia and cardiovascular problems are common in type 2 diabetes mellitus (T2DM), the present study will assess the effectiveness of the Mind dietary pattern on sleep quality, cardio-metabolic indicators, and other psychological indicators.
Methods: Forty-four overweight/obese diabetic women with insomnia will voluntarily participate in this randomized controlled trial and will be randomized to receive either a MIND low calorie diet (MLCD) or a low calorie diet (LCD) over a 3-month periods. Before and after the study, sleep quality, some biochemical and cardiometabolic indices, cortisol, Brain Derived Neurotrophic Factor (BDNF), high-sensitivity C-reactive protein (hs-CRP) and oxidative stress indicators will be assessed.
Discussion: The use of dietary interventions in the management of T2DM complications is practical and safe. This research seeks to investigate the capacity of MIND diet in the management of insomnia and cardiovascular problems of DM. It is expected that the results of this research will provide new perspectives for the use of an ideal dietary regimen in the treatment of these health conditions.
Keywords: Cardiovascular diseases, clinical trial protocol, diabetes mellitus, Insomnia, Mind diet

A Review of Association between Whole Grain Consumption and Colorectal Cancer Risk in Adults

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Introduction: Colorectal cancer is among the most prevalent gastrointestinal cancers. Recent studies indicates that fibers as one of the food components can be effective in cancer prevention. However, the findings regarding the association between whole grains, as a high-fiber food group, and colorectal cancer are conflicting. Therefore, the current research was conducted with the aim of reviewing the previous literature focusing on this topic.
Method: A systematic search was conducted in PubMed, Scopus, and Web of Science up to August 2024 with no restrictions in the year of publication.
Results: A systematic search yielded 10 relevant studies. Six studies demonstrated an inverse association between high whole grain intake and the risk of colorectal cancer and in the other four studies, no significant association was found. Their mechanisms of action include: (1) their richness in dietary fiber, which increases stool bulk and decreases gastrointestinal transit time, which subsequently dilutes potential carcinogens and reduces their contact with the colonic epithelium which is crucial in lowering the cancer risk; (2) fermentation of dietary fiber in the colon leads to the production of short-chain fatty acids which serve as energy sources for colon cells and induce apoptosis in cancerous cells; thereby exerting protective effects against cancer; (3) they are also linked to lower BMI and central adiposity. Given that obesity is a risk factor for colorectal cancer, maintaining a healthy weight can reduce cancer risk; (4) their

antioxidants help combat oxidative stress, which contributes to cancer development.
Conclusion: According to most studies, it can be concluded that there is an inverse relationship between the consumption of whole grain and colorectal cancer. For more certainty, further research is recommended.
Keywords: Whole grain, Colorectal cancer, Colon cancer

Investigating the prevalence of pica and their related factors in pregnant women referring to health care centers in Zahedan

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Introduction: The consumption of unnatural substances with no nutritional value is called pica. This habit is usually seen in pregnant and lactating women, children, and people with mental health problems. The cause of pica is often unknown, and although the consumption of some of the substances may be harmless, depending on the amount consumed and the duration of consumption, it sometimes leads to serious and dangerous problems.
Methods: In a descriptive-analytical study, 600 pregnant women referred to health centers in Zahedan City were selected and examined by a multi-stage sampling method. Data gathering tool; the researcher-made questionnaire contained demographic and pregnancy information, history of pica in previous pregnancy, family history of pica, and mother's food pattern. Data were analyzed using SPSS.22 software and chi-square, t-test, and one-way analysis of variance tests.
Results: In this study, the prevalence of pica was 8.2%, and the highest prevalence related to ice was 32.7%. In this study, a significant relationship was found between pica and fetal gender (P=0.009) and history of pica in previous pregnancies (P=0.000). 13.8% of pregnant mothers who have a history of pica in their family also have pica, and there is a statistically significant relationship between pica in pregnant mothers and a family history of pica (P=0.050). No significant relationship was observed between pica and other investigated factors.
Conclusion: Considering the pica, knowing the related factors and early diagnosis of these problems during prenatal care and their effective treatment can reduce its consequences on women's health and quality of life.
Keywords: food pattern, pica, pregnancy

Does a high ratio of dietary omega-6/omega-3 fatty acids increase the risk of Helicobacter pylori infection? A case-control study

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Introduction: Helicobacter pylori (H. pylori) infection is the cause of 90% of non-cardia gastric cancer. Several dietary elements have been identified as possible contributors to H. pylori infection and its advancement through various pathways. Based on the anti-inflammatory and anti-microbial effects of a diet low in omega-6 and high in omega-3 polyunsaturated fatty acids (PUFAs), this study aimed to assess the ratio of dietary omega-6 to omega-3 PUFAs and the risk of developing H. pylori.
Methods: The present case-control study was conducted on 150 cases with H. pylori infection and 302 controls. The omega-6 to omega-3 ratio was calculated using food intake information sourced from a validated food frequency questionnaire (FFQ). Physical activity and demographic data were collected through a related questionnaire. The association between the odds of H. pylori infection and the omega-6 to omega-3 ratio was evaluated using logistic regression models. A P-value <0.05 was considered statistically significant.
Results: The findings revealed that individuals in the third tertile had significantly higher odds of H. pylori (odds ratio (OR) = 2.10; 95% confidence interval (CI): 1.30, 3.40) in the crude model. Furthermore, even after adjusting the potential confounders including sex, age, BMI, physical activity, energy intake, alcohol, and smoking status, this association remained significant

(fully adjusted model: OR = 2.00; 95% CI: 1.17, 3.34).
Conclusions: Our study revealed a higher ratio of omega-6 to omega-3 was related to a higher likelihood of H. pylori infection. Therefore, it is advisable to maintain a balanced intake of PUFAs in the diet.
Keywords: Helicobacter pylori, unsaturated fatty acids, omega-6 to omega-3 ratio, inflammation.

The association between dietary folate intake and risk of colorectal cancer incidence: A systematic review and dose–response meta-analysis of cohort studies.

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Background: Dietary components can influence the incidence of colorectal cancer (CRC). Folate is one of the compounds that plays an essential role in the formation of DNA structures, which can lead to or prevent tumorigenesis. The present study is the first systematic review and dose–response meta-analysis of cohort studies evaluating the association between dietary folate intake and the risk of CRC.
Methods: The PubMed/Medline, Scopus, and ISI Web of Science databases were systematically searched for cohort studies that assessed the association between folate intake and CRC up to January 2024. Summary relative risks (RRs) and 95% confidence intervals (CIs) were calculated using a random effects model. Also, linear and nonlinear dose-response analyses were conducted for the dose-response associations between folate intake and risk of CRC.
Results: Eighteen prospective cohort studies with 931,469 participants, 14,860 CRC patients, 3,536 colon cancer (CC) patients, and 1,075 rectal cancer (RC) patients were included in the analysis. The summary RR of CRC for each 100-µg increase in dietary folate intake was 0.97 (95% CI: 0.95-0.99, I^2: 0.0%, P-heterogeneity: 0.616), which can be related to BMI (0.97 (95% CI: 0.95-0.99)); a more protective effect was also observed in subjects who drank alcohol (0.97 (95% CI: 0.95-0.99)) and those who smoked (0.97 (95% CI: 0.95-0.99)). Additionally, it was positively related to a 7% lower risk of CC (0.93 (95% CI: 0.87-0.99, I^2: 33.7%, P-heterogeneity: 0.159)), and the null relation for RC was 0.98 (95% CI: 0.90-1.08), I^2: 16.6%, P-heterogeneity: 0.309). There was evidence of nonlinearity in which up to 500 µg/day dietary folate intake was inversely associated with CC (P nonlinearity= 0.04).
Conclusion: The findings showed an inverse association between dietary folate intake and the risk of CRC, especially in high-risk persons, those who have a higher BMI, alcohol drinkers, and smokers.
Keywords: colorectal cancer; dietary folate; cohort study; meta-analysis; dose response.

Proposing a quality control protocol based on the portable laboratory equipments to improve food safety among large-population service centers

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Introduction: Food safety is critical in large-population food service operations to ensure sustainable food security. Portable laboratory equipment offers a cost-effective alternative. This study aims to develop a protocol for effective food quality control utilizing these instruments.
Method and material: All the data was collected from the most famous laboratory company manufacturing websites.
Results: The research highlights essential portable devices such as pH meters, salinity meters, Salt kits for Iodid assessment, Brix refractometers, moisture analyzers, and food thermometers. Hygiene monitoring instruments, rapid pathogen test kits, water testing kits, spectrophotometers, and data loggers are crucial for ensuring food safety and monitoring storage conditions. Total Polar Material (TPM) tester evaluates TPM levels in edible oils, while Smoke Test Kits assess cooking gas and meat/fish smoking quality. Texture analyzers measure meat tenderness, color meters assess meat and egg freshness, and portable fruit hardness testers check fruit quality. Greenness test digital testers confirm fruit and vegetable freshness and tomato norms evaluate tomatoes. Antibiotic residue test kits monitor antibiotic levels in milk.
Conclusion: Adopting a quality control protocol based on portable laboratory technology

presents a beneficial and cost-effective strategy for large-scale food service operations, including hospitals, catering, industrial kitchens, chain restaurants, university food centers, and events like Arbaeen. The proposed protocol enhances food safety, elevates food quality, and boosts consumer confidence.

Keywords: portal laboratory equipment, food service center, quality control

The effect of natural compounds on non-alcoholic fatty liver

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is the term for a range of conditions caused by the accumulation of fat in the liver. NAFLD is increasingly common worldwide, especially in Western countries. In Iran, this disease is the most common chronic liver disease that affects about a quarter of the population. Anti-fibrosis treatments for NAFLD can cause a variety of side effects; so, following a healthy diet is a suggested approach to prevent/cure NAFLD. This review aimed to collect recent findings about natural compounds effective on this disease and their action of mechanisms.
Methods: A comprehensive literature search was conducted using PubMed, Scopus, and Web of Science databases up to August 2024.
Results: Based on the review of previous literature, some natural compounds such as curcumin, resveratrol, naringin, oleanolic acid, epigallocatechin gallate, caffeic acid, silymarin, etc. are effective in the prevention and treatment of NAFLD with the mechanisms of action including inhibiting hepatic steatosis, affecting AMPK signaling, promoting energy metabolism, reducing fat accumulation in liver cells, activating SIRT1, improving metabolic balance, reducing the production of plasma fatty acids, reducing the expression of pro-inflammatory mediators such as TNF-α and IL-1β, increasing insulin sensitivity, improving glucose tolerance, increasing autophagy in liver cells, regulating intestinal flora composition and antioxidant activity.
Conclusion: Currently, there is no specific medication for NAFLD and all drug treatments are used to reduce risk factors. While there are several documents showing that natural compounds can protect the liver from damage through various mechanisms.
Keywords: Non-alcoholic Fatty Liver disease; NAFLD; Natural compounds; Healthy diet

Effect of vitamin D supplementation during pregnancy and infant's gut microbiome: A systematic review

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Background: The gut microbiota is critical in early postpartum immune development and functions shaping throughout life. On the other words, the infant's gut microbiome has an important role in their health and various factors can impact the gut microbiota composition. This systematic review aimed to summarize the current knowledge regarding the effects of maternal vitamin D supplementation during pregnancy and the composition of infants' gut microbiota.
Method: A comprehensive systematic search was done by relevant keywords on Scopus, Web of Sciences, PubMed, ScienceDirect, and Google Scholar databases without date restrictions until December 2022. The articles were screened by two independent reviewers and all original studies in English that assessed the effects of vitamin D supplementation during pregnancy on the infant's gut microbiota were eligible for the present review.
Results: In total, five articles (two animal and three randomized clinical trials) were included in this review. The included animal studies demonstrated that maternal prenatal vitamin D supplementation significantly influences offspring's gut flora composition (enhancing the abundance of colonic Bacteroides). Moreover, one-third of included randomized clinical trials indicated that vitamin D levels in utero could

affect the colonization of the gut microbial community in the infant.
Conclusion: Most of the included studies in the present review suggested that maternal vitamin D supplementation during pregnancy could impact the composition of the infant's gut microbiota. Nevertheless, more high-quality randomized clinical trials are needed to confirm these achievements.
Keywords: Vitamin D, Supplementation, Maternal, Gut microbiome, Infant

Association between diabetes risk reduction diet score and risk of breast cancer: A case control study

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Background: To assess the association between the diabetes risk reduction diet score (DRRD) and the odds of breast cancer (BC).
Methods: During this hospital
Based case control study we included 149 newly diagnosed cases of BC and 150 controls matched by age. All cases were patients with pathologically confirmed BC, with no history of any form of other cancers. The controls were randomly selected from visitors and families of non-cancer patients in other wards of the same hospital who had no health issues including BC. The dietary intakes were evaluated by a validated 147-item semi-quantitative FFQ. DRRD score was calculated from 9 dietary components published before, with a better score resembling a higher adherence to DRRD.
Results: A negative association was found between the chances of BC and DRRD after adjusting for potential confounders, but it was not statistically significant (OR, 0.47; 95%CI, 0.11e2.08; P 1/4 0.531). Also, there were no significant associations between DRRD and therefore the odds of BC in the crude model and also in post- menopausal (OR, 0.45; 95%CI, 0.10e1.99; P 1/4 0.505) and pre-menopausal women (OR, 0.52; 95%CI, 0.18 e1.40; P 1/4 0.097) in our study, after adjusting for potential confounders.
Conclusion: Adherence to a diet with a high DRRD score was not associated with the reduced risk of BC in Iranian adults.

Associations of abdominal obesity with different types of bone fractures in adults: A systematic review and dose-response meta-analysis of prospective cohort studies

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Findings on the association between abdominal obesity and hip fracture were summarized in a meta-analysis in 2017; however, no study has examined the dose response association between abdominal fat indices and hip fracture. also, we found no meta-analysis investigating other types of bone fractures including any vertebral fractures in relation to abdominal obesity. therefore, the present systematic review and dose-response meta-analysis of prospective cohort studies were conducted to examine the association between abdominal obesity and different types of bone fractures. a comprehensive literature search was done by searching Pubmed, Scopus, web of Science, and Google Scholar until October 2021. in total, 23 articles from prospective cohort studies with a total sample size of 3,456,631 participants were included. During the follow-up periods ranging between 4 and 26years, 137,989 cases of bone fracture were recorded. after comparing the highest and lowest categories of abdominal fat indices, the summary relative risks (RRs) of any, hip, and vertebral fractures were 0.99 (95% ci: 0.81–1.20), 1.09 (95% ci: 0.82–1.43), and 1.18 (95% ci: 1.05–1.33), respectively, indicating a significant positive association between abdominal obesity and risk of vertebral fracture. in the non-linear dose-response analysis, abdominal obesity based on the waist-to-hip ratio (wHR) was positively associated with an increased risk of hip fracture from 0.7 to 1.1 units of wHR. in the linear analysis, a 10cm increase in waist circumference (wc) was associated with a 3% higher risk of vertebral fracture. We found no other dose-response association for other types of bone fractures. In conclusion, abdominal obesity may be associated with a higher risk of hip and vertebral fractures.