



## Air Pollution and Nutrition

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### Dear Editor

Air pollution is the fourth leading cause of premature death after hypertension, smoking and malnutrition and is the second leading cause of death from non-communicable diseases after smoking (1-3).

Increased air pollution can increase the vulnerability of the respiratory system, and poor air quality is a serious risk for acute and chronic respiratory diseases and cardiovascular disease. Also Exposure to air pollution causes underlying diseases such as high blood pressure, diabetes, cardiovascular and respiratory diseases, and as a result these underlying diseases increase the vulnerability to Coronavirus disease 2019 (4).

People with the underlying disease and living in contaminated areas are at higher risk for coronary heart disease, and studies show that air pollution is a contributing factor to diseases such as the flu and covid-19. Airborne particles increase Coronavirus disease 2019 mortality by up to 6%, ozone up to 7% and nitrogen dioxide up to 15%. When different dust particles increase in the air and the virus spreads in the air; For example, The virus has more chance to spread to other people when talking, coughing and sneezing(5).

Polluted air usually consists of carbon monoxide, sulfur dioxide, nitrogenous oxides, unburned hydrocarbons, fine suspended particles, lead bromide and other lead compounds. Although polluted air can be dangerous for everyone, children, the elderly, pregnant mothers, and heart and lung patients are more at risk. It is better to follow a number of nutritional tips that

play an important role in reducing the effects of air pollution (6).

Eating fresh fruits and vegetables and consuming less fast food and prepared foods can reduce the harmful health effects of air pollution to some extent. One of the fruits that is recommended to be eaten during times of increased air pollution is apple. Apples are rich in pectin. Pectin is an anti-toxin and absorbs lead and prevents damage to body cells. Of course, oranges and strawberries, lemons, grapefruits, carrots and whole grains also have this property (7).

Consumption of food sources of vitamin E and vitamin D can neutralize the toxic effects of polluting gases. Vitamin E is found in vegetable oils, walnuts, almonds, olives, and wheat germ, liver and green leafy vegetables. Suitable sources of vitamin D are milk, butter and egg yolks, which should be consumed more on days of air pollution. In fact, milk and dairy products, especially cheese and yogurt, can reduce the absorption of heavy elements such as lead due to the calcium they contain. Milk enriched with bacteria called probiotics balances the level of beneficial bacteria in the human intestine. Vegetables such as cantaloupe, mango, pumpkin, pepper, spinach, cabbage and apricot have beta-carotene. Beta-carotene is also one of the important carotenoids and the precursor of vitamin A, which is converted into vitamin A in the body, and includes yellow and orange fruits and vegetables. These fruits and vegetables have high beta-carotene, which helps the body to reduce the harmful effects of fine dust. Selenium is necessary for the functioning of enzymes in the body that can deal with bad and damaging

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environmental conditions. This nutrient can be obtained through food sources such as fish, red meat, grains, legumes, eggs, chicken, and garlic.

In the conditions of air pollution, it is recommended to eat foods that contain selenium and beta-carotene antioxidants. (5).

The consumption of more antioxidants provides a basis for the body to easily eliminate harmful free radicals. Foods that contain vitamin E and C are a rich source of antioxidants. On the other hand, vitamin C can help eliminate lead that enters our body with polluted air. Citrus fruits, green peppers, broccoli, cauliflower, kale, tomatoes, green leafy vegetables, spinach, kiwi, cantaloupe and strawberries have a lot of vitamin C. Of course, it is better to eat these foods raw and fresh (4).

Green tea or pomegranate juice are suitable for days of increased air pollution, green tea is rich in vitamin C and antioxidants. Pomegranate juice can also remove toxic substances from the body. Oily fish, which are rich in omega-3 fatty acids, reduce shortness of breath and the harmful effects of inflammatory compounds (6).

When faced with air pollution, it is necessary to take measures to deal with the adverse effects of this condition. One of these actions that can have positive and useful effects in dealing with this

condition is the importance of proper nutrition in polluted air.

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