

# Effects of Fasting on Blood Pressure in Normotensive Males

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## Communication

Muslims all over the world fast in the holy month of Ramadan. Fasting means abstinence from drinking any liquids, eating, smoking and taking anything parenterally. It is intermittent in nature from the start of dawn to end at dusk. Fasting has various physiological effects on different biological parameters of the human body. Previous studies that look at effect of Ramadan fasting on blood pressure have focused mainly on hypertensive patients and patients with already established heart disease (1,2). There is very limited data regarding the effect of fasting on the normal population (3,4). A few previous studies have advocated a hypotensive role of fasting (5).

In our study published in Journal of Ayub Medical College Abbottabad (JAMC) in 2015, "Effects of Ramadan Fasting on Blood pressure in normotensive males", we investigated the effect of Ramadan fasting on blood pressure of normotensive men. We conducted a repeated measure observational study in Karachi, Pakistan on 70 individuals who were normotensive, non-smokers between the ages of 18–50 years. Blood pressure, pulse, BMI of each participant was recorded one week before the start of Ramadan and in the first, second and third week of Ramadan.

The results of our study show that intermittent fasting has a hypotensive effect in normotensive males as proven in animal models and certain human population. There was an average drop of 8/3 mmHg and while the results

are significant, their clinical relevance needs to be analysed.

Studies on animal models have suggested atrial natriuretic peptide, catecholamines, opiates and body mass index as possible reasons for the decrease in blood pressure due to fasting (3, 6). Dewanti et al suggested that the cause of drop in blood pressure was the drop in BMI however in our study we found that a drop in BMI only occurred before Iftar towards the end of the fast. There was no significant drop in post-Iftar BMI although there was a significant drop in blood pressure post-Iftar. At the same time ANP has been investigated and found to have no relationship with the phenomenon. We observed a drop in both pre and post Iftar period blood pressure readings. From the community health perspective these results cast doubt on the results of screening for hypertension in the month of Ramadan.

Our study has some limitations. First of all, our results cannot be generalized to women and individuals suffering from chronic diseases. Secondly, one cannot exclude the confounding effect of the type of food taken during the breaking of the fast for example individuals taking stimulants like coffee and tea might have yielded readings that were confounded.

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