

The '3-hour rule' may help lower blood pressure and improve cardiovascular health.

New research shows that stopping eating and reducing light exposure three hours before bedtime helps lower blood pressure, heart rate, and improve blood sugar control without cutting calories.

A new study shows that simply stopping eating and reducing light three hours before bedtime can significantly improve cardiovascular health without cutting calories.

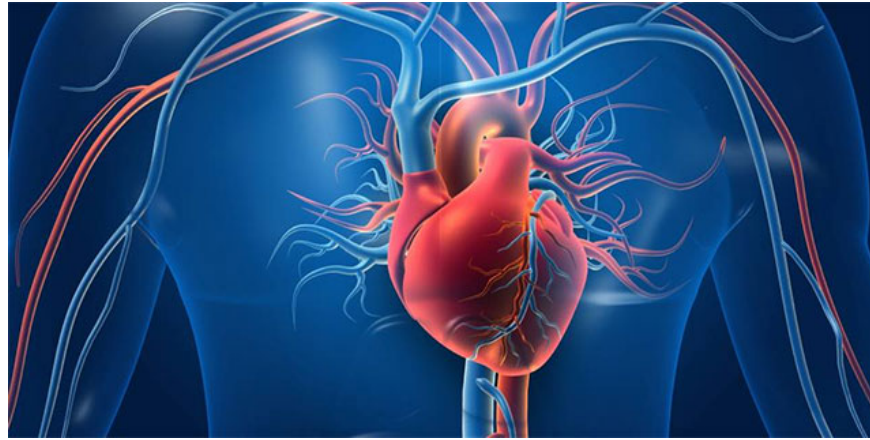
In the study, participants stopped eating earlier and extended their overnight fast by about two hours compared to normal. They didn't eat less, they just changed when they ate. Compared to the control group, their nighttime blood pressure decreased by 3.5%, while their heart rate decreased by 5%. This indicates that their cardiovascular circadian rhythms during sleep became healthier.

Notably, nearly 90% of participants adhered to this plan. Scientists suggest that adjusting meal times to match the body's natural sleep-wake cycle could be a simple, drug-free solution to improve cardiovascular and metabolic health.

As the research team emphasized, the benefits lie not only in how much or what you eat, but also in when you eat in relation to bedtime.

The study, conducted by scientists at Northwestern Medicine, focused on personalizing nighttime fasting times to suit each individual's circadian rhythm. This rhythm plays a crucial role in regulating cardiovascular activity and metabolism. Notably, participants did not reduce their calorie intake, but simply changed their eating times.

The results showed that middle-aged and older adults at high risk of cardiovascular and metabolic disease significantly benefited from extending their nighttime fasting period by approximately two hours. Simultaneously, they also turned off or dimmed lights three hours before bedtime. This adjustment improved cardiovascular and metabolic indicators both during the night and the following day.



Dr. Daniela Grimaldi, co-lead author of the study and associate professor of neuroscience research at the Feinberg School of Medicine (Northwestern University), said that adjusting the 'fasting window' to match the body's natural sleep-wake cycle could help better synchronize heart, metabolism, and sleep, thereby protecting cardiovascular health.

The study was published on February 12 in the journal *Arteriosclerosis, Thrombosis, and Vascular Biology* of the American Heart Association.

Previously, studies showed that only about 6.8% of adults in the US during 2017–2018 achieved optimal cardiovascular and metabolic health. This poor health status in this group increases the risk of chronic diseases such as type 2 diabetes, non-alcoholic fatty liver disease, and cardiovascular disease.

Time-restricted eating is becoming increasingly popular because many studies show it can improve metabolic indicators, even achieving results comparable to traditional calorie-restricted diets in some cases. However, much of previous research has focused on the length of the fasting period, rather than considering whether that timeframe aligns with sleep times – a crucial factor in metabolic regulation.

In this 7.5-week study, scientists tracked 39 overweight or obese adults, aged 36 to 75. One group extended their nighttime fasting to 13–16 hours, while the other group maintained their usual 11–13 hours. Both groups reduced light three hours before bedtime. Eighty percent of the intervention group were female.

The results showed that the group adjusting their meal times experienced significant improvements. Blood pressure and heart rate decreased at night, creating a healthier circadian rhythm: appropriately increasing during the day for activity and decreasing at night for rest. Such stable circadian rhythms are generally associated with better cardiovascular outcomes.

In addition, their ability to control daytime blood glucose levels also improved. When glucose was supplemented, their pancreas responded more effectively, showing better insulin secretion and more stable blood glucose levels.

The research team said they will continue to refine the method and test it on a larger scale, in multiple centers.

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