

# Exercising on an empty stomach burns 70% more fat, study finds

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Exercising on an empty stomach helped people to burn about 70% more fat than those who exercised two hours after eating, a study found.

Sports scientists at Nottingham Trent University also found that the participants—who undertook both fasted and fed [exercise](#) in the evening—did not overcompensate for the calories skipped earlier in the day.

While studies have suggested the [benefits of exercise](#) could be increased when done in the morning following an overnight fast, the team's own research found that evening exercise, between 4 p.m. and 8 p.m., is the most popular time for people due to other commitments.

Therefore, the researchers designed the study so that participants cycled on an [exercise bike](#) at 6:30 p.m. at moderate intensity for 30 minutes, before completing a time trial to cycle as far as they could in 15 minutes.

Participants did this twice on separate days—once after a seven hour fast and once after eating a meal two hours earlier. The researchers also measured how much food participants ate at dinner, after exercising.

The results showed that, similar to exercise after an overnight fast, fasted exercise in the evening increased the amount of fat burned during exercise.

The amount of fat burned during the 30-minute cycle increased by about 70% from 4.5g to 7.7g.

And, while [calorie intake](#) at dinner was about 100 kcal greater for those doing fasted exercise, calorie intake over the whole day was on average 440 kcal less, when exercise was performed fasted.

The researchers also found, however, that despite these benefits participants covered slightly less distance during the 15 minute time trial performance, had a lower motivation to exercise and enjoyed the exercise less when done.

"We wanted to explore the impact of fasted exercise in the early evening which we'd found was the most popular time for people to exercise during the week," said Tommy Slater, a sports science researcher in Nottingham Trent University's School of Science and Technology.

"Fasting before evening exercise might benefit some elements of health due to increasing the amount of fat burned during exercise, or by reducing the number of calories that are eaten during the day. If done regularly it may improve the way the body deals with spikes in blood sugar after eating.

"However, despite these benefits, fasting during the day does appear to reduce people's exercise performance, motivation and enjoyment, which may make it harder for some people to stick with it in the longer term.

Dr. David Clayton, an expert in nutrition and [exercise physiology](#) at Nottingham Trent University, said, "Combining exercise and fasting can be a potent way to increase the benefits of exercise, so we would like to assess this over a longer period of time and explore other ways in which we can make fasting easier and more convenient for people."

The study, which included Manchester Metropolitan University and Loughborough University, is reported in the *International Journal of Sport Nutrition and Exercise Metabolism*.

**More information:** Tommy Slater et al, Fasting Before Evening Exercise Reduces Net Energy Intake and Increases Fat Oxidation, but Impairs Performance in Healthy Males and Females, *International Journal of Sport Nutrition and Exercise Metabolism* (2022). [DOI: 10.1123/ijsnem.2022-0132](https://doi.org/10.1123/ijsnem.2022-0132)

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