

## Exercise more beneficial on an empty stomach, research shows

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Exercising before breakfast is better for you than exercising afterwards according to new research by scientists at the University of Glasgow.

Dr Jason Gill and Nor Farah of the Institute of Cardiovascular and Medical Sciences conducted a study to compare the effects of [exercise](#) performed before and after breakfast on fat loss and metabolic health.

Ten overweight men who were not regular exercisers took part in the study. Each man underwent three trials, 1-2 weeks apart, involving performing no exercise then eating breakfast; walking briskly for 60 minutes before eating breakfast; or doing the same walk after eating breakfast.

Participants were given lunch three-and-a-half hours after breakfast and the amount of fat their body burned, and the levels of fat, sugars and [insulin](#) in the blood were measured over an eight-and-a-half hour period on each occasion.

Over the course of the day with no exercise the men were left with an average of 49kcal unburnt fat while exercising after breakfast burned 216kcal more of fat on average than the control trial and 298kcal more than the control group when exercising before breakfast.

The results indicated that both timings of exercise increased [fat burning](#) over the day and improved the [metabolic profile](#) in the blood. But, exercise before breakfast resulted in greater fat loss and larger

reductions in the level of fat in the blood.

Dr Gill said "Any exercise you do is beneficial, but the indications are that there might be an extra benefit associated with exercising before eating, compared to after. However, further study is needed to determine whether the present findings extend over the long term.

"In the end, we would like to encourage everyone to do some form of exercise everyday – the difference between exercising before compared to after breakfast was much smaller than the difference between exercising at either time compared to not exercising at all."

The research paper, 'Effects of exercise before or after meal [ingestion](#) on [fat](#) balance and postprandial metabolism in overweight men' is published in the latest edition of the *British Journal of Nutrition*.

Provided by University of Glasgow

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