

Study: Intermittent fasting 'no magic bullet for weight loss'

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Logo reflecting molecular and genetic responses to meal timing. Credit: James Betts

New research published this week challenges a popular belief that intermittent fasting diets such as alternate day fasting or the '5:2' are the most effective ways to lose weight.

Over recent years, diets which see people fast on a few days each week have increased in popularity, reinforced by images of people's miraculous [weight](#) transformations, and backed by celebrity endorsements.

However, evidence to date about the effectiveness of fasting compared with more [traditional diets](#) which aim to reduce calorie intake over the course of a full week has been limited.

Published in the prestigious journal *Science Translational Medicine*, the new study from a team of physiologists at the University of Bath builds this evidence and indicates that there is 'nothing special' about fasting.

Participants in their randomised control trial lost less weight when fasting in comparison with those

following a traditional diet—even when their calorie intake was the same overall.

The trial, organised by a team from the University's Centre for Nutrition, Exercise & Metabolism (CNEM), saw participants allocated into one of three groups:

- Group 1 which fasted on alternate days with their fast day followed by a day of eating 50% more than usual.
- Group 2 which reduced calories across all meals everyday by 25%.
- Group 3 which fasted on alternate days (in the same way as Group 1) but followed their fast day with one day eating 100% more than usual.

Participants across all three groups were consuming a typical diet of around 2000-2500 kcal per day on average at the start of the study. Over the course of the three-week monitoring period, the two energy restricted groups reduced this to be between 1500-2000 kcal on average. Whereas groups 1 and 2 reduced their calorie intake by the same amount in different ways, group 3's diet saw them fast without reducing overall calories.

Their results found that the non-fasting dieting group (Group 2) lost 1.9 kg in just three weeks, and DEXA body scans revealed this weight loss was almost entirely due to a reduction in body fat content.

By contrast, the first fasting group (Group 1) who experienced the same reduced [calorie intake](#) by fasting on alternate days and eating 50% more on non-fasting days, lost almost as much body weight (1.6 kg) but only half this weight loss was from reduced body fat with the remainder from muscle mass.

Group 3, who fasted but increased their energy intake by 100% on non-fasting days, did not need

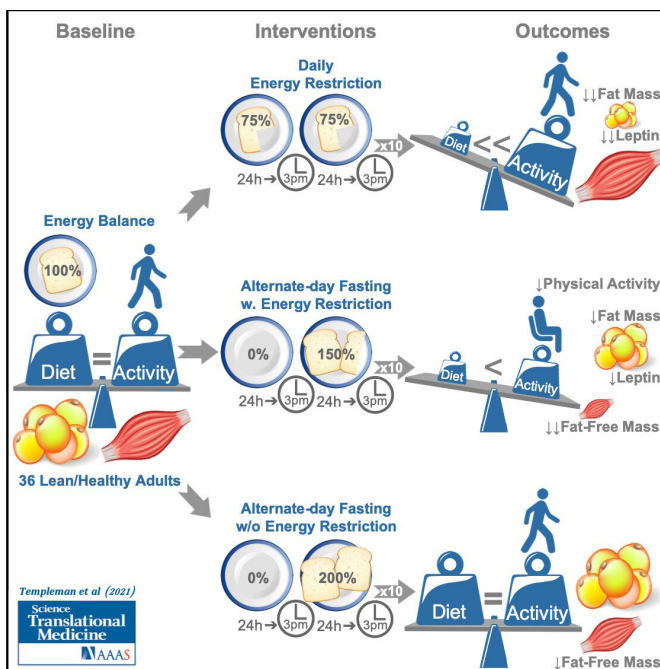
to draw on their body's fat stores for energy and therefore weight loss was negligible.

Professor James Betts, Director of the Centre for Nutrition, Exercise & Metabolism at the University of Bath who led the research explains: "Many people believe that diets based on fasting are especially effective for weight loss or that these diets have particular metabolic health benefits even if you don't lose weight.

kg/m²). 36 people participated in the study which was conducted between 2018—2020 and funded by the University of Bath.

The full study "A [randomized controlled trial](#) to isolate the effects of [fasting](#) and energy restriction on [weight loss](#) and metabolic health in lean adults" is published in *Science Translational Medicine* on Wednesday 16 June.

More information: I. Templeman et al., "A randomized controlled trial to isolate the effects of fasting and energy restriction on weight loss and metabolic health in lean," *Science Translational Medicine* (2021). stm.sciencemag.org/lookup/doi/10.1126/scitranslmed.abd8034



Provided by University of Bath

Visual abstract. Credit: James Betts

"But intermittent fasting is no magic bullet and the findings of our experiment suggest that there is nothing special about fasting when compared with more traditional, standard diets people might follow.

"Most significantly, if you are following a fasting [diet](#) it is worth thinking about whether prolonged fasting periods is actually making it harder to maintain [muscle mass](#) and physical activity levels, which are known to be very important factors for long-term health."

These results focused on participants who were defined as 'lean' (i.e. body mass index 20-25

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