Moderate-intensity exercise with appetite suppressant supplement could boost fat loss

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Moderate-intensity exercise combined with a supplement which suppresses appetite could boost the rate at which fat is burned in the human body, new research suggests.

The new findings, published in the journal *Metabolism*, build on promising previous studies which showed that a substance known as inulin-propionate ester (IPE) reduced cravings for high-calorie foods and boosted rates of fat oxidization—the process by which the body "burns" fat.

This study, conducted by the Scottish Universities Environmental Research Centre, the Universities of Glasgow and the West of Scotland, and Imperial College London, recruited a total of 20 women aged between 25 and 45 with a body mass index greater than 25.

Over the course of four weeks, they took on a program of moderate intensity exercise training and were given regular supplements to take of either IPE or a placebo made from cellulose. During the study, their usual diets remained unchanged.

The researchers measured the change in the participants' levels of resting fat oxidation by taking blood and expired gas samples before the study began and again after it was over. Samples were taken from participants before breakfast, after breakfast and after lunch.

They found that while the rate of fat-burning in the placebo group remained unchanged from the beginning of the study to the end, it was significantly higher in those who took the IPE supplement. The effect was still present seven hours after the participants took their IPE supplement.

Dr. Douglas Morrison, of the Scottish Universities Environment Research Centre, is the paper's corresponding author. Dr. Morrison said: "Adding moderate exercise to your daily routine is a good thing for your cardiovascular and general health, but the effects it has on the amount of fat which you burn while at rest and after a meal can be inconsistent and these effects don't easily translate through to changes in body

composition and body mass.

"That's backed up by the results from the placebo group in this test, but it's interesting that those who took the IPE supplement saw a significant and long-lasting boost to the rate which they burned fat.

"There's a great deal of interest at the moment in how our gut microbiota affects our health and wellbeing. Our own research has shown that IPE can encourage people to feel full while eating less, and that it encourages the human body to burn fat faster. What we've been able to show for the first time is that this latter effect continues when exercise is added to regular IPE intake. We're keen to explore these effects further in more comprehensive randomized controlled trials in the future."

Propionate is found naturally in the human gut and is produced when food is eaten. When food's dietary fiber is broken down by gut microbes, propionate is released, which helps signal the brain that the stomach is full and no more food is required. Inulin-propionate ester was developed as a food supplement to provide the gut with a much larger dose of propionate than could be readily provided by a normal diet, producing the feeling of fullness more quickly and thus suppressing the appetite.

Previous research conducted by some of the team found that inulin-propionate ester reduced volunteers' cravings for high-calorie foods. It also caused them to eat 10 percent less pasta when given the opportunity to eat as much as they wanted in a single sitting.

Dr. Dalia Malkova, senior lecturer in medicine at the University of Glasgow's School of Medicine, Dentistry & Nursing, is a co-author on the paper.

Dr. Malkova said: "While these initial results are promising, we should stress that there are limitations to this study, which was conducted with a

small group over just four weeks. For example, we can't yet draw any conclusions about how the increased fat oxidation, combined with exercise, might affect participants' body composition and body mass.

"However, the results are encouraging enough that we're looking to secure funding for a longer study with a larger group of volunteers. This will allow us to draw more detailed conclusions on how IPE might affect body fat stores and body weight."

The team's paper, titled "Moderate intensity exercise training combined with inulin-propionate ester supplementation increases whole body resting fat oxidation in overweight women," is published in *Metabolism*.

More information: Dalia Malkova et al. Moderate intensity exercise training combined with inulin-propionate ester supplementation increases whole body resting fat oxidation in overweight women, *Metabolism* (2019). DOI: 10.1016/j.metabol.2019.154043

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