Exercise alone does not lead to weight loss in women—in the medium term

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Knowing whether or not exercise causes people to lose weight is tricky. When people take up exercise, they often restrict their diet – consciously or unconsciously – and this can mask the effects of the exercise. In our

latest study, we avoided this bias and discovered that exercise, on its own, does not lead to weight loss in women.

For our research, we concealed the true objective of our investigation (investigating weight loss response to exercise) from the participants, and used bogus objectives instead (cognitive performance and cardiovascular fitness improvement). We also excluded women who intended to lose weight from the study because there was a higher risk that they would restrict their diet.

In two training studies, over four and eight weeks, women aged 18 to 32 attended circuit-training classes three times a week. We recorded the women's body weight, muscle and fat mass at the start and at the end of the study. We also took blood samples so that we could measure appetite hormones (insulin, leptin, amylin, ghrelin and PYY), as they can alter appetite and food intake.

Results showed that neither lean nor obese women lost weight, including the 34 finishers of the four-week training programme, and the 36 finishers of the eight-week exercise programme. Although, lean women did gain muscle mass.

Appetite hormones

When we looked at individual weight responses to the exercise programmes, we noticed that the levels of appetite hormones leptin and amylin helped explain why some people gained or lost weight by the end of the study. Changes in appetite hormones as a result of exercise make it much harder for some people to lose weight than for others. In other words, the energy they burned during the exercise class was replaced in their diet. Their body was effectively defending against weight loss, regardless of whether they were lean or obese.

This somewhat frustrating outcome does not mean that exercise is not good for people. There is no doubt that exercise has health benefits on many levels, whether it is for prevention of lifestyle diseases, such as type 2 diabetes or cardiovascular disease, or mental health issues, like depression. But we need to consider that our ancestors evolved to survive over millennia in environments where food was scarce, so our bodies are better adapted to defending against weight loss than defending against weight gain. Our bodies adjust and try to preserve our body weight if we take up exercise, but they don't adjust to help us lose weight if we gain a few pounds.

However, exercise can help to control weight in indirect ways. It may help us develop more self-control and not give in to food temptations easily. We can also transfer some skills learned from regularly taking part in exercise, such as time management and overcoming periods of low motivation, to other behaviours, such as eating.

People need to work on their diet if they want to achieve weight loss. Combining a healthy diet – such as avoiding processed and sugary foods, eating lots of veg and other high-fibre foods, avoiding snacking and having regular meals – with exercise will certainly produce results.

More information: Matthew Jackson et al. Exercise training and weight loss, not always a happy marriage: single blind exercise trials in females with diverse BMI, *Applied Physiology, Nutrition, and Metabolism* (2017). DOI: 10.1139/apnm-2017-0577