

Exercise can increase physiological stress responses in the obese

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The obese are advised to do physical exercise. But this can increase their physiological stress responses, and thereby make it more difficult to slim, according to a new Norwegian study.

This research may provide an explanation for the difficulties which many people encounter in losing weight despite energetic keep-fit efforts.

"It's often said [obese people](#) should change their diet and [exercise](#) to lose weight. But they may also need to deal with stress," observes Brynjar Foss.

An associate professor in the Department of Health Studies at the University of Stavanger (UiS), he is the lead author among the four scientists responsible for the study.

Entitled "Exercise Can Alter Cortisol Responses in Obese Subjects," it was published in the Journal of Exercise Physiology online during February.

The research covered 17 inactive people with a [body mass index](#) greater than 35 who took part in a 22 week programme for lifestyle change which involved exercise, diet and seminars.

Despite their efforts, the participants lost less weight than expected from the amount of keep-fit they did and the changes they made to their

eating habits.

The scientists believe this could be related to cortisol, since the level of this stress hormone rose in the programme participants and they became more stressed. Earlier research suggests that high levels of stress make weight loss difficult.

Still up after six months

Those who took part not only had more cortisol than the [control group](#) immediately after the programme ended, but also retained an enhanced level six months later.

And those participants who lost the most weight had the lowest level of morning cortisol, a follow-up study shows. The study will be published in Journal of Exercise Physiology Online in June.

It is by no means certain that exercise boosts production of the hormone [cortisol](#). However, these findings suggest that this is an issue which should be the subject of further research.

While the group which exercised contained 17 participants, the control group totalled 18 people. The scientists note that this is a small sample on which to base any conclusions.

Moreover, considerable differences existed between those who took part – not least with regard to the medication they were taking.

Fat and fit

Even with a small reduction in body [weight](#), increased exercise and a change in diet contribute to a better quality of life for obese people.

That conclusion has been drawn in a new study described in an article on changes in health-related quality of life through a one-year local authority drive to change lifestyles, published in the Norwegian

physiotherapy journal Fysioterapeuten.

"If you're physically active, you can be in good health even if you're overweight," says physiotherapist Martha Loland, who conducted the study for her MSc in health science at the UiS.

"The chances of suffering cardio-vascular disease are smaller for obese people who exercise than for those who don't make any effort to keep fit."

More information: "Weight Reduction in Obese Correlates with Low Morning Cortisol Increase". Foss, Brynjar, Sæterdal, Lars Rune, Dyrstad, Sindre Mikal. *Journal of Exercise Physiology Online*, scheduled for publication in volume 17, issue 3, June, 2014.

"Exercise Can Alter Cortisol Responses in Obese Subjects". Foss, Brynjar, Sæterdal, Lars Rune, Nordgård, Oddmund, and Dyrstad, Sindre Mikal. *Journal of Exercise Physiology Online*, volume 17, issue 1, February, 2014.

"Stress in Obesity: Cause or Consequence?" Foss, Brynjar, and Dyrstad, Sindre Mikal. *Medical Hypotheses*, volume 77, 2011. Abstract: www.ncbi.nlm.nih.gov/pubmed/21444159

Provided by University of Stavanger

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