

New study shows why people gain weight as they get older

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Many people struggle to keep their weight in check as they get older. Now, new research at Karolinska Institutet in Sweden has uncovered why that is: Lipid turnover in the fat tissue decreases during aging and

makes it easier to gain weight, even if we don't eat more or exercise less than before. The study is published in the journal *Nature Medicine*.

The scientists studied the fat cells in 54 men and women over an average period of 13 years. In that time, all subjects, regardless of whether they gained or lost weight, showed decreases in lipid turnover in the fat tissue, defined as the rate at which lipid (or fat) in the [fat cells](#) is removed and stored. Those who didn't compensate for that by eating fewer calories gained weight by an average of 20 percent, according to the study which was done in collaboration with researchers at Uppsala University in Sweden and University of Lyon in France.

The researchers also examined lipid turnover in 41 women who underwent [bariatric surgery](#), and how the lipid turnover rate affected their ability to keep the weight off four to seven years after surgery. The result showed that only those who had a low rate before the surgery managed to increase their lipid turnover and maintain their [weight loss](#). The researchers believe these people may have had more room to increase their lipid turnover than those who already had a high-level pre-surgery.

"The results indicate for the first time that processes in our fat tissue regulate changes in [body weight](#) during aging in a way that is independent of other factors," says Peter Arner, professor at the Department of Medicine in Huddinge at Karolinska Institutet and one of the study's main authors. "This could open up new ways to treat obesity."



Kirsty Spalding, senior researcher at the Department of Cell and Molecular Biology, Karolinska Institutet. Photo: Stefan Zimmerman. Credit: Stefan Zimmerman

Prior studies have shown that one way to speed up the lipid turnover in the fat tissue is to exercise more. This new research supports that notion, and further indicates that the long-term results of [weight](#)-loss surgery would improve if combined with increased physical activity.

"Obesity and obesity-related diseases have become a global problem," says Kirsty Spalding, senior researcher at the Department of Cell and Molecular Biology at Karolinska Institutet and another of the study's main authors. "Understanding [lipid](#) dynamics and what regulates the size of the fat mass in humans has never been more relevant."

More information: Adipose lipid turnover and long-term changes in body weight, *Nature Medicine* (2019). [DOI: 10.1038/s41591-019-0565-5](https://doi.org/10.1038/s41591-019-0565-5), [nature.com/articles/s41591-019-0565-5](https://www.nature.com/articles/s41591-019-0565-5)

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