

Is more weight protective? Weight gain and high BMI linked to lower risk of ALS

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People who have a high body mass index (BMI) or who gain weight as they get older may have a lower risk of amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease, according to a large study published in the June 26, 2019, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

ALS is a rare, progressive neurodegenerative disease that affects nerve cells in the brain and the spinal cord. People with ALS lose the ability to initiate and control muscle movement, which often leads to total paralysis and death. The average life span after diagnosis is two to five years.

BMI is a measure of a person's body size based on their height and [weight](#). People are considered underweight if they have a BMI lower than 18.5 kg/m², healthy if it is between 18.5 and 24.9, overweight if they have a BMI of 25 to 29 and obese with a BMI 30 or higher.

"It is important to note that while our study found a link between high BMI and a [lower risk](#) of ALS, it is possible that genetics could make a person more likely to have both a low BMI and a higher risk of ALS without one causing another," said study author Ola Nakken, MD, of the University of Oslo in Norway. "People must not interpret the results of our study as a suggestion that gaining weight may prevent ALS. Plus, the [health risks](#) of having a high BMI would be greater than any [protective effect](#)."

For the study, researchers reviewed a Norwegian database that included BMI measurements for the majority of people living in Norway between 1963 and 1975. Researchers included nearly 1.5 million people in the study, identifying 2,968 people who later developed ALS over an average of 33 years. Many people in the database also completed follow-up surveys about lifestyle and health, including weight change.

Researchers found that for every five-point increase in BMI from the low-normal BMI range, from the start to the end of the study, there was a 17-percent lower risk of developing ALS later. Of the 468,853 people in the low-normal range, 1,002 people developed ALS, or 0.21 percent. Of the 139,158 people in the obese range, 182 people developed ALS, or 0.13 percent.

After 50 years, participants had a 31-percent lower risk of developing ALS for every five-point increase in BMI.

The researchers also found that people who had a BMI in the obese range at the start of the study had a 34-percent lower chance of developing ALS compared to people in the low-normal BMI range, and people who had a BMI in the overweight range had an 18-percent lower risk.

Participants who gained the most weight had a 37-percent lower risk of ALS than those who didn't gain weight or lost weight.

The results remained the same after adjusting for smoking, cholesterol levels and physical activity.

"While some cases of ALS are genetic, most cases do not appear to have a genetic cause, and an increasing body of evidence suggests that there may be a link between a fast metabolism that can lead to a low BMI and ALS," said Nakken. "Much more research is needed to further examine

the relationship between BMI and ALS."

A limitation of the study was that most participants were white, so the results may not be the same for other populations.

Provided by American Academy of Neurology

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