

# Do genes doom some kids to obesity? Probably not, study finds

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(HealthDay)—While childhood obesity is a significant challenge,

German researchers have uncovered some hopeful news while investigating the impact of genes.

Though some "[obesity genes](#)" do play a minor role in the success of weight loss interventions, environmental, social and behavioral factors make the biggest difference, according to a new study from the Technical University of Munich.

Those are far more important to consider in obesity treatment strategies for children, the researchers suggested.

"Distinguishing individuals who are more likely or unlikely to respond to obesity treatment based on their [genetic predisposition](#) may not necessarily lead to better treatment success," said study author Melanie Heitkamp. She's a researcher in the university's department of prevention, rehabilitation and sports medicine.

Even individuals who carry risk variants of obesity-related [genes](#) will benefit from a [healthy lifestyle](#), including a calorie-balanced diet and regular physical activity, Heitkamp said.

The study included more than 1,400 [young people](#), aged 6 to 19, who were overweight or obese. They were enrolled in a four- to six-week program that included daily physical activity, a calorie-restricted diet and behavioral therapy. The researchers also studied the genes of close to 1,200 participants.

Heitkamp said some people have a rare form of obesity caused by single-gene defects, but in most people no single gene can be identified as the cause. The complex interaction between genetics and unhealthy lifestyle contributes to obesity, she said.

Studies have identified more than 900 gene variants associated with

obesity, Heitkamp said.

At the time of her team's statistical analysis, genome studies had identified 97 locations, or loci, on human chromosomes related to obesity, Heitkamp said. Further study has narrowed those down to 56.

"The most significant finding is that known obesity-related genetic variants appear to play only a minor role in short-term weight reduction in children with overweight and obesity," Heitkamp said.

The researchers were surprised to find that three of the five statistically significant gene variants were associated with greater weight loss during the study's intervention. That meant carriers of the more at-risk genes lost even more weight than expected with these lifestyle changes.

The findings were published online Dec. 14 in *JAMA Pediatrics*.

Further research is needed to determine whether other genes not related to obesity may also affect weight loss, according to the study.

In high-income countries, nearly 25% of boys and girls are overweight or obese, the study authors noted.

Dr. Marie-France Hivert, an associate professor at Harvard Medical School in Boston, co-wrote an editorial that accompanied the findings.

"Childhood obesity is one of the most common chronic conditions that affect our children," she said. "It's also very important because children with excess weight are more likely to keep that excess [weight](#) and develop cardiovascular and cardiometabolic complications, such as type 2 diabetes, earlier in life. And the earlier conditions such as type 2 diabetes happen in our life course, the more likely we are to develop complications of type 2 diabetes in middle age."

Childhood [obesity](#) should be addressed in multiple ways, she said. While genetics are part of it, the environment is a big component that needs to be addressed with social, individual, family and school measures, Hivert said.

At a [population level](#), that could include encouraging people to adopt a healthier lifestyle, with more whole foods and more activity in daily life, such as taking the stairs instead of the elevator.

"Overall, if we adopt a healthier lifestyle it is possible to dampen or reduce the tendency of our genetic burden to a lower level," Hivert said. "What I tell my patients is we are not doomed by our genes. We still have a very high impact by our choices and our [lifestyle](#), but some of our behaviors are not only determined by us, but a lot by our environments."

**More information:** The U.S. Centers for Disease Control and Prevention offers [tips to help children maintain a healthy weight](#).

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