

People with genetic predisposition to obesity may have lower risk of cardiovascular disease

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The risk of developing cardiovascular disease is lower in people with obesity who have a genetic predisposition for high BMI than people with obesity influenced mainly by environmental factors such as lifestyle,

researchers from Karolinska Institutet report in *eClinicalMedicine*.

There has been a global increase in the incidence of overweight and obesity over the past few years. Almost one-third of the world's population now lives with overweight or obesity.

"The figure is alarming, since it is well-established that a high BMI in middle-age increases the risk of developing cardiovascular disease and other conditions," says Ida Karlsson, assistant professor at the Department of Medical Epidemiology and Biostatistics, Karolinska Institutet.

However, according to this new study, the risk of developing cardiovascular diseases varies widely among people with obesity. The researchers used data from over 15,000 twins from the Swedish Twin Registry, gathering information about their BMI and their [genetic predisposition](#) for high BMI. They also used data from medical registries to establish the incidence of cardiovascular disease in this group.

By analyzing this information, the researchers were able to study how overweight and obesity as a result of genetic versus environmental and [lifestyle factors](#) influenced the risk of cardiovascular disease.

"The link between obesity and cardiovascular disease was twice as strong in those with a genetic predisposition to a low BMI as it was in those with obesity driven by genetic factors," says the study's last author, Ida Karlsson.

Dr. Karlsson stresses that a [healthy lifestyle](#) is always important for everyone, and that the risk of [cardiovascular disease](#) was higher in all people with overweight or obesity compared to people with a healthy weight. However, the findings also indicate that obesity mainly driven by [genetic factors](#) might not have the same adverse impact on health as

obesity driven by other factors, such as lifestyle.

"Obesity is a complex common disease that can have many different causes," she says. "Since it's so stigmatized, the results can help us understand that its effects on health differ from one individual to the next," she says.

"Even though we all know that it takes more than exercise and diet to combat obesity, there's still a large stigma attached to it. I think much could be gained by focusing on what has caused the obesity and what we can do to reduce the risk of comorbidities in each individual instead of mainly focusing on BMI," she continues.

The next step of Dr. Karlsson's research is to examine how individuals with overweight and [obesity](#), caused respectively by genetic and lifestyle factors, differ with regard to blood glucose levels, cholesterol and inflammation markers.

More information: Genetically and environmentally predicted obesity in relation to cardiovascular disease: a nationwide cohort study, *eClinicalMedicine* (2023). [DOI: 10.1016/j.eclinm.2023.101943](https://doi.org/10.1016/j.eclinm.2023.101943)

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