

Obesity study reports the heritability of adipose tissue composition

September 7 2018, by Birgitte Svennevig



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A multi-institutional team of researchers led by Jan-Wilhelm Kornfeld, Elena Schmidt and Martin Bilban has made a groundbreaking discovery in obesity research.

The team discovered a new function of the gene H19. This gene proves to have a unique protective effect against the development of overweight and consequently could affect the onset of overweight-associated disease such as diabetes, overweight and cardiovascular diseases.

H19 is among the genes inherited exclusively from either the mother or father, the so-called monoallelic genes. As a result of extensive studies, the researchers have also discovered how genes derived primarily from the father lead to the development of white [fat tissue](#), which is most often found on the stomach, thighs and backside, and which can lead to metabolic diseases.

Likewise, it appears that genes from the mother primarily lead to the development of brown fat tissue, which is characterized by a [protective effect](#) against [obesity](#).

According to the researchers, the results could constitute a first step toward the development of better treatments of obesity.

"By using mouse models, we have identified that the gene H19 performs a form of [gene control](#) in [brown fat cells](#). We have been able to demonstrate that an overexpression of the H19 gene in mice protects against obesity and insulin resistance. In addition, we have been able to detect similar patterns of gene control in obese people. We therefore believe that our results can be the first step toward developing groundbreaking new and improved treatments for obesity-related diseases," says Professor Jan-Wilhelm Kornfeld.

The team has published the research results in the journal *Nature Communications*.

More information: Elena Schmidt et al. LincRNA H19 protects from dietary obesity by constraining expression of monoallelic genes in brown

fat, *Nature Communications* (2018). [DOI: 10.1038/s41467-018-05933-8](https://doi.org/10.1038/s41467-018-05933-8)

Provided by University of Southern Denmark

Citation: Obesity study reports the heritability of adipose tissue composition (2018, September 7) retrieved 11 May 2024 from <https://medicalxpress.com/news/2018-09-obesity-heritability-adipose-tissue-composition.html>

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