MedicalXpress

Common mutations linked to common obesity in Europeans

July 7 2008

Common forms of obesity depend on variations in a number of genes.

Scientists have discovered two common genetic mutations in people of European ancestry, which affect the production of several hormones controlling our appetite. The mutations have a significant effect on the risk of common obesity, according to research published today in *Nature Genetics.*

The PCSK1 gene codes for the proconvertase enzyme, which is responsible for producing fully functioning versions of hormones such as insulin, glugagon and melanocortin. These are all involved in controlling the rate of metabolism.

Changes in the PCSK1 gene cause relatively minor abnormalities in the proconvertase enzyme that it codes for. But the effect on the hormones is significant, as they all play a major role in regulating weight.

Scientists from Imperial College London collaborated with teams from France, Denmark, Sweden and Germany to test the genomes of over 13,000 people. They discovered a significant association between the genetic mutations in PCSK1 and a tendency to develop obesity in both adults and children.

"This is the first time that we have found a strong link between common mutations and common obesity in the PCSK1 gene," says Professor Philippe Froguel, leading author of the research from the French National Research Institute and the Department of Genomic Medicine at Imperial College London.

"We know that common forms of obesity depend on variations in multiple genes, so this is an important addition to the list of genes we need to consider as therapeutic targets for treatment in the future."

These new results build on the previous discovery from Professor Froguel's group that the receptor for the hormone melanocotrin 4 also plays a significant role in obesity.

Source: Imperial College London

Citation: Common mutations linked to common obesity in Europeans (2008, July 7) retrieved 19 April 2024 from https://medicalxpress.com/news/2008-07-common-mutations-linked-obesity-europeans.html

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