Obesity gene's role revealed in mice study

Researchers believe they have identified why a mutation in a particular gene can lead to obesity.

Mice experiments suggested the body's message to "stop eating" was blocked if the animal had the mutation.

The study, published in Nature Genetics, says the brain's response to appetite hormones was being disrupted.

The Georgia Institute of Technology researchers hope their findings could lead to new ways to control weight.

Many genes have been linked to obesity, one of them - brain-derived neurotrophic factor gene - has been shown to play a role in regulating weight in mice and some human studies.

However, scientists at the Georgia Institute of Technology said the explanation for this link was uncertain.

Overeating

In studies on mice which had been genetically modified to have the mutation, the mice consumed up to 50% more food than normal.

After a meal, hormones such as insulin and leptin should tell the brain that the body is full and should start eating. The researchers showed that in the mutated mice this message was not being passed on from the hormones in the blood to the correct part of the brain.

One of the researchers, Prof Robert Reardon, said: "If there is a problem with the BDNF gene, as people can't talk to each other, and the appetite and insulin signals are ineffective, and appetite is not modulated.

He said the discovery "may open up new strategies to keep the brain control body weight", such as finding a "drug that can stimulate BDNF expression".

Prof Rujul Patel, who studies the relationship between genes and obesity at the University of Cambridge, said the BBC "Genes have a symphony of roles, it's often under-recognised. Between 15 and 31% of the difference in weight between two individuals is due to genetics."

She said completely disrupting the brain-derived neurotrophic factor gene had been shown to lead to severe obesity. However, she cautioned that if the study was "very nice" and the mutation was "very rare" it was a good one.

More on This Story

Related Stories

Genes may "spark childhood obesity" in December 2006, Health

Clear obesity gene linked to 'oatmeal' says agency

Study links snacking to obesity in children, mice

Related Internet Links

Nature Medicine

Germans answer the question of whether they are eating too much.

The BBC is not responsible for the content of external internet sites.

Share this page

More Health stories

"Drugs may work by blocking connection"

Electronic nicotine therapy for those suffering from smoking disease.

Researcher's could spot cancer

Many cases of cancer are now diagnosed early.

About BBC News

Editor's Blog

Collage of Journalists

More sources

Mobile Action

BBC Help

Accessibility

Terms of Use

News RSS

Contact Us

Charity Action

© 2013 The BBC is not responsible for the content

Engage with the BBC on the following social media platforms:

Mobile

Email us