

# Missing gene of big eaters who stay thin

Helen Puttick  
Scottish Health Correspondent

They seem able to eat what they want without putting on an ounce and are often the envy of their peers.

Scientists have now found that the secret of men with an unrestrained appetite who nevertheless fail to gain weight may be a certain missing gene.

A team at the University of Edinburgh has discovered male mice without the gene can feed on a high-calorie food without suffering health consequences. Normal mice on the same diet became obese, developed fatty deposits on their liver and, in some cases, were at risk of diabetes. Those missing the gene did not.

The researchers have now launched a detailed study to investigate the gene, hoping the work could ultimately lead to the development of a treatment to ward off obesity.

Nicola Gray, principal investigator at the university's MRC Centre for Reproductive Health, said diet and exercise were still the best way to stay slim, noting that mice with and without the gene remained the same when they ate healthily.

However, she added: "Some people struggle a lot more than others in achieving these things. We have things like bariatric surgery which is quite a drastic step. Perhaps there is a better way for people that might not be so drastic. We know that both gender and

genetics can influence your response to being on a high calorie diet. Some people are less predisposed to put on weight or become obese."

Experiments found that deleting one gene protected male mice from obesity but not the females. It was possible, she said, that the lack of function in the same gene was helping thin men.

Supported by £650,000 from the Biotechnology and Biological Sciences Research Council, her research team will now investigate what the gene does and how it works.

Professor Gray said: "I think it is a master regulator of other genes and it is changing the ways the cells of the body respond to the high fat diet. What we hypothesise, based on our pilot data, is it is changing their metabolic rate [how quickly calories are burned] so they are using the calories differently."

The latest survey shows two thirds of adults in Scotland are overweight or obese. Worldwide, obesity has nearly tripled between 1975 and 2016.

Professor Gray described obesity and linked health problems such as heart disease and type two diabetes as a "massive global health epidemic".

Tam Fry, chair of the National Obesity Forum, said: "We will have obesity for at least another 10 to 15 years without a doubt. Therefore that gives time for the research to be done and for the trials to be looked at to make absolutely sure that what happens with mice can happen in humans too."