

Why your weight is all down to skinny genes

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The first large study of the genetics of skinny people has shown that they largely have their DNA to thank for it — and not “moral superiority”.

Researchers took DNA samples from about 2,000 healthy, very thin people who did a modest amount of exercise. They identified three regions of DNA, comprising hundreds of genes, linked to thinness. The subjects also had low levels of hundreds of other genes previously linked to being overweight.

In other words, in the genetic lottery of life they had both avoided fat genes and been given the gift of skinny ones.

Sadaf Farooqi, of the Wellcome Trust-MRC Institute of Metabolic Science at Cambridge University, who led the study, said: “This research shows for the first time that healthy thin people are generally thin because they have a lower burden of genes that increase a person’s chances of being overweight and not because they are morally superior, as some people like to suggest. It’s easy to rush to judgment and criticise people for their weight but the science shows that things are far more complex. We have far less control over our weight than we might wish to think.”

Functions performed by the genes are not yet known but some are likely to

be tied to appetite levels, how interested a person is in food and how quickly they can burn calories.

Professor Farooqi added: “Some people are just not that interested in food, whereas others can eat what they like but never put on weight. If we can find the genes that prevent them from putting on weight we may be able to target those genes to find new weight-loss strategies.”

The study, published in *PLOS Genetics*, looked at subjects with a body mass index (BMI) of less than 18, which the NHS would class as underweight. They had no eating disorders or medical conditions, and none exercised more than three times a week.

The thin genes were located by comparing their DNA with that of 12,000 obese and normal-weight subjects.

Other experts said that genes alone could not explain obesity. “Some of this is down to genes but other factors like individual differences in lifestyle or gut microbes are likely to also be responsible,” Tim Spector, professor of genetics at King’s College London, said.

More than six in ten adults in the UK are overweight, and one in four is obese. By age five, almost one in four children is either overweight or obese. Studies of twins have shown that body weight is largely influenced by genes but most research focused on overweight people.

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