



Can you blame your genes for tight jeans?

Many people eat all they want and stay thin, while others struggle with dieting and fail to lose fat despite years of trying to watch what they eat. Those fighting the fat battle often suggest that they were simply born with the wrong genes and it's not their fault.

Others point out that in the last 30 years the proportion of the population that is overweight or obese has rapidly increased, while the genetic make-up of humans has not changed, so genes can't be blamed for obesity.

Question: Is it all your fault that you fit into the overweight or obese category?

Answer: Maybe and maybe not. Scientists are beginning to find answers to this question. Overall, an individual's body fat is related to the balance between calories eaten and calories used to maintain and move the body.

But this balance is affected by many factors that regulate how the body handles and stores food sources of calories. A complex interrelationship among hormones and enzymes controls the burning and storing of dietary carbohydrate, fat and protein. If just one of these controllers is

slightly altered, it can have profound effects on whether calorie sources are burned or stored, and how they are stored.

Both obese animals and people have been identified that are clearly obese because of an abnormal gene that alters the function of one of the many controllers of food intake, calorie storage or energy expenditure. Just one genetic defect can result in unavoidable obesity.

Q: How likely is it that an obese person is overly fat due to their genes?

A: Researchers estimate that at least 5 percent of obese people can blame their condition completely on genetics. Those with this "genetic obesity" condition will be overly fat even when they live in an environment that would not lead to obesity in most people.

Q: What is the cause of excess body fat in other overweight and obese people?

A: The answer is not black and white. Obesity researcher Claude Bouchard has identified four genetic categories of obesity ranging from 1) genetic obesity to 2) strong predisposition to 3) slight predisposition and, finally, 4) ge-

netic resistance.

Unlike the clearly genetically obese person, those with a strong genetic predisposition to obesity are typically overweight even in an environment where highly palatable foods are limited and much physical activity is demanded. Most people who have a strong genetic predisposition for obesity and who live in an environment that allows a sedentary lifestyle and provides a plentiful food supply, will become obese, rather than just overweight.

About 70 genes have been identified that control various metabolic links associated with obesity. Consequently, obesity is not just one condition. Even when people have the same over-fat problem, the condition can be caused by very different genetic and metabolic triggers.

The bottom line is that some genes will drive the development of obesity in virtually any type of environment. Other genes only express obesity when the environment supports it. And those with genetically resistant genes won't be overweight even when the environment and lifestyle would tend to support that result.

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