

'Obesity genes' may influence food choices, eating patterns

May 23 2012

Blame it on your genes? Researchers from The Miriam Hospital's Weight Control and Diabetes Research Center say individuals with variations in certain "obesity genes" tend to eat more meals and snacks, consume more calories per day and often choose the same types of high fat, sugary foods.

Their study, published online by the [American Journal of Clinical Nutrition](#) and appearing in the June issue, reveals certain variations within the FTO and BDNF [genes](#) - which have been previously linked to obesity - may play a role in [eating habits](#) that can cause obesity.

The findings suggest it may be possible to minimize genetic risk by changing one's eating patterns and being vigilant about food choices, in addition to adopting other healthy lifestyle habits, like regular physical activity.

"Understanding how our genes influence obesity is critical in trying to understand the current obesity epidemic, yet it's important to remember that genetic traits alone do not mean obesity is inevitable," said lead author Jeanne M. McCaffery, Ph.D., of The Miriam Hospital's Weight Control and [Diabetes](#) Research Center.

"Our lifestyle choices are critical when it comes to determining how thin or heavy we are, regardless of your genetic traits," she added. "However, uncovering genetic markers can possibly pinpoint future interventions to control obesity in those who are genetically predisposed."

Previous research has shown individuals who carry a variant of the fat mass and obesity-associated gene FTO and BDNF (or brain-derived neurotrophic factor gene) are at increased risk for obesity. The genes have also been linked with overeating in children and this is one of the first studies to extend this finding to adults. Both FTO and BDNF are expressed in the part of the brain that controls eating and appetite, although the mechanisms by which these gene variations influence obesity is still unknown.

As part of the Look AHEAD (Action in Health and Diabetes) trial, more than 2,000 participants completed a questionnaire about their eating habits over the past six months and also underwent genotyping. Researchers focused on nearly a dozen genes that have been previously associated with obesity. They then examined whether these genetic markers influenced the pattern or content of the participants' diet.

Variations in the FTO gene specifically were significantly associated with a greater number of meals and [snacks](#) per day, greater percentage of energy from fat and more servings of fats, oils and sweets. The findings are largely consistent with previous research in children.

Researchers also discovered that individuals with BDNF variations consumed more servings from the dairy and the meat, eggs, nuts and beans food groups. They also consumed approximately 100 more [calories per day](#), which McCaffery notes could have a substantial influence on one's weight.

"We show that at least some of the genetic influence on obesity may occur through patterns of dietary intake," she said. "The good news is that eating habits can be modified, so we may be able to reduce one's genetic risk for obesity by changing these eating patterns."

McCaffery says that while this research greatly expands their knowledge

on how genetics may influence [obesity](#), the data must be replicated before the findings can be translated into possible clinical measures.

Provided by Lifespan

Citation: 'Obesity genes' may influence food choices, eating patterns (2012, May 23) retrieved 20 May 2023 from <https://medicalxpress.com/news/2012-05-obesity-genes-food-choices-patterns.html>

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