

Study: Gene mutation linked to obesity

By Elizabeth Lopatto, Bloomberg

A genetic mutation linked to obesity in mice can cause weight gain without overeating, a discovery researchers at Boston Children's Hospital say suggests the gene may govern how the body uses energy.

Mice altered to silence the gene, called *Mrap2*, had to be underfed by 10 percent to 15 percent to keep their weight gain as low as normal mice, according to the study released yesterday in the journal *Science*. An analysis of 500 people found the equivalent human gene mutation in four people with severe, early onset obesity.

The mutant mice grew to twice the normal size and the weight gain was exaggerated further when they ate a high-fat diet. The finding suggests the body's mechanisms for energy use and weight gain among some obese people may be different than among skinnier peers.

"These mice aren't burning the fat, they're somehow holding onto it," Joseph Majzoub, the chief of endocrinology at Boston Children's Hospital and a study author, said in a statement.

Of the 500 obese humans whose genes were sequenced, the four people with the mutation had become obese at an early age. Only one had a mutation that totally disabled the gene. That suggests the mutation induced in the mice is responsible for less than 1 percent of the obese population.

Obese people have too much body fat, which increases the risk of diabetes, heart disease, stroke, arthritis, and certain cancers, according to the National Institutes of Health. Obesity is calculated using body mass index, which is measured

by height and weight. A person with a BMI higher than 30 is considered obese. That means a person who stands 5 foot 9 inches is obese if he or she weighs 203 pounds or more.