

Study Finds Virus Contributes to Obesity

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WASHINGTON - In the buffet of reasons for why Americans are getting fatter, researchers are piling more evidence on the plate for one still-controversial cause: a virus.

New research announced Monday found that when human stem cells — the blank slate of the cell world — were exposed to a common virus they turned into fat cells. They didn't just change, they stored fat, too.

While this may be a guilt-free explanation for putting on pounds, it doesn't explain all or even most of America's growing obesity problem. But it adds to other recent evidence that blames expanding waistlines on more than just super-sized appetites and underused muscles.

For several years, researchers have looked at a possible link between obesity and this common virus, called adenovirus-36, from a family of viruses that cause colds and pinkeye in people. They had already found that a higher percentage of fat people had been infected with the virus than nonfat people. They had exposed animals to the virus and got them to fatten up and even found a gene in the virus that causes animals to get obese.

But ethical restraints kept researchers from exposing people to the virus to see what happens. So they did what would be considered the next best thing, said Nikhil Dhurandhar, who headed the research at the Pennington Biomedical Research Center in the Louisiana State University system.

They took fat tissue from people who had liposuction, removed adult stem cells from the tissue and exposed the cells to the virus in the lab. Adult stem cells can regenerate and turn into different types of specialized cells to help the body heal itself.

More than half the stem cells exposed to the virus turned into fat cells and accumulated fats, while only a small percentage of the non-exposed stem cells did the same, said researcher Dr. Magdalena Pasarica, who presented the results Monday at the American Chemical Society's annual meeting in Boston.

"It's the first time we see an effect in human cells," Pasarica said in a phone interview.

If a viral cause of obesity can be confirmed, a vaccine could be developed, maybe within five to 10 years, to prevent the virus from making some people fat, Dhurandhar said. However, it wouldn't help people already obese, he said.

Outside experts are intrigued but worry about people blaming all obesity on viruses, when this may be just one of many causes. It doesn't mean it's OK to overeat, blame a bug or wait for some kind of antiviral medicine, they said.

"The cause for obesity in everyone is the same," said Dr. Samuel Klein, director of the Center for Human Nutrition at the Washington University School of Medicine in St. Louis. "You eat more calories than you burn up; You can't get away from that basic law of physics."

But there are many causes that trigger overeating and extra storage of fat in the body, including the virus, Klein said. However, he said he considers the virus only a small factor, easily outweighed by genetics and even childhood eating habits.

Dhurandhar said some of his earlier research found that 30 percent of obese Americans had developed antibodies to the virus, showing they had been exposed to it at some point. But for non-obese people, only 11 percent had antibodies, he said.

That means for some people it is not their fault they are fat, Dhurandhar said.

But Klein said that's not completely right.

"We don't want obese people to feel that it's all their fault because it is not all their fault ... but clearly the buck finally lies with the person," Klein said.

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