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# Study Shows Overweight People May Have Inactivity Gene

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Scientists report that people who are overweight may be genetically predisposed to inactivity, compared to lean individuals who always seem to squirm or tap their feet.

It is no secret that thinner people tend to exercise more. But researchers at Mayo Clinic in Rochester, Minnesota also believe that thinner people, unlike overweight individuals, tend to be much more active on a smaller scale. They fidget, tap their foot, pace the floor.

To find out whether the spontaneous motion affects body weight, James Levine and colleagues conducted a study with 20 volunteers, all of whom claimed to lead inactive lifestyles. During the study, the participants wore high-tech monitors that recorded their every move.

At the start of the study, Dr. Levine says obese participants were put on a diet and lost weight, while thinner volunteers ate food that made them gain weight.

"And what we found that was absolutely amazing was that people with obesity actually are very, very fixed in the number of minutes they are seated even when they lose weight. And in fact, people are very predictable themselves, in other words, they do not change. Somehow, this is biologically pre-regulated. And similarly we found that when lean people gain a lot of weight with overfeeding in our research center, they do not start sitting. They remain standing throughout the day," he says.

Obese people who lost weight during the course of the study remained seated 164 minutes per day longer than the participants in near constant motion. They,

in turn, stood more than two hours longer than the obese volunteers.

Mayo researchers calculate that the leaner participants burned an extra 350 calories per day just by fidgeting compared to the inactive participants. Calories are a measure of how well the body metabolizes food.

Since a little bit of fidgeting seems to yield significant results, experts say it is tempting to tell inactive people to pace while on the telephone.

But Eric Ravussin of the Pennington Biomedical Research Center in Baton Rouge, Louisiana says the tendency toward spontaneous physical activity such as toe tapping may be genetically programmed, and if so it would be hard to get some people moving.

"If people really go out and expend this 350 calories a day for a sustained amount of time it is going to work. But the question is you cannot tell them, 'Do it', because this is something they were born with to be less active or less fidgety or less, you know, [with less] spontaneous physical activity. And I think that is the problem. You can do it for an hour, maybe, or five minutes, but you cannot do it over months," he says.

The study was published in the journal *Science*.

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