

Study: When you eat affects weight gain

By Gretchen Reynolds, New York Times

Scientists, like mothers, have long suspected that midnight snacking is inadvisable. But until a few years ago, there was little in the way of science behind those suspicions. Now, a new study shows that mice prevented from eating at all hours avoided obesity and metabolic problems – even if their diet was sometimes unhealthful.

Researchers at the Salk Institute for Biological Studies in San Diego and elsewhere began experimenting with the eating patterns of laboratory mice in a previous study. On that occasion, some mice consumed high-fat food whenever they wanted; others had the same diet but could eat only during an eight-hour window. None exercised. The mice that ate at all hours soon grew chubby and unwell, with symptoms of diabetes. But the mice on the eight-hour schedule gained little weight and developed no metabolic problems. Those results were published in 2012.

For the new study, which appeared in the journal *Cell Metabolism* in December, Salk scientists fed groups of adult males one of four diets: high-fat, high-fructose, high-fat and high-sucrose, and regular mouse kibble. Some of the mice in each dietary group were allowed to eat whenever they wanted throughout their waking hours; others were restricted to feeding periods of nine, 12 or 15 hours. The caloric intake for all the mice was the same.

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