

New study highlights perils of snack-filled diet

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A high-fat diet can be bad for your health. However, a snack-based "cafeteria"-style diet of highly palatable, energy-dense foods is even worse, according to new research.

A study by researchers at the University of North Carolina at Chapel Hill found that [rats](#) that ate [snack foods](#) commonly consumed by children and adults in the U.S. ate more, gained more weight, had more [tissue inflammation](#) and were intolerant to [glucose](#) and [insulin](#) (warning signs of diabetes) than rats whose diets were high fat from lard.

The study, the cover story of the June 2011 issue of the journal [Obesity](#), showed that the "cafeteria [diet](#)" (an experimental system for studying obesity, also known as CAF, that mimics buffet-style access to junk food such as cookies, chips and processed meats) contributed more to diet-induced obesity than common high-fat diets typically used in rodent studies.

The results suggest that researchers can get more accurate information from animal models that eat a diet that may resemble what humans consume. Use of the CAF model also may be useful for identifying novel options for preventative interventions or therapeutics to treat obesity in humans, the study noted.

"Obesity has reached epidemic levels in the United States," said Liza Makowski, Ph.D., assistant professor of nutrition at the UNC Gillings School of Global Public Health and the study's senior author. "These

findings provide us with a better animal model to help explore what factors are contributing most to this dangerous trend, and what strategies for prevention and treatment of obesity will be most successful.”

Using obese rats in laboratory experiments has been a common practice for decades, but rodents are typically made obese on manufactured lard-based, high-fat diets, Makowski said. Her team showed that feeding the rats a diet that more closely resembles a typical American diet filled with snacks revealed even more severe risks and emphasized the potentially harmful nature of excessive snacking.

“Although we can’t pinpoint what component of these snacks is causing these pre-diabetes conditions, we show that the ‘cafeteria diet’ provides a more severe animal model of metabolic syndrome than lard-based high-fat diets,” she said. Metabolic syndrome is the cluster of factors that increase a person’s risk for coronary artery disease, stroke and [Type 2 diabetes](#).

“The rapid gain in weight, extensive obesity and multiorgan dysfunctions observed in the CAF model more closely reflect what is happening to humans who eat these snack foods regularly,” Makowski said.

The researchers noted that rats fed the tasty, highly palatable “cafeteria diet” ate more food – about 30 percent more calories – than those eating high-fat or high-sugar diets.

“By the second week, rats on the lard-based high-fat diet actually ate less, dropping their caloric intake to the same intake as rats on a standard, or healthy, diet,” Makowski said. “However, the CAF-fed rats continued to eat more, and gained almost double the weight of rats on the standard diet.”

More information: For more information, see

www.nature.com/oby/journal/v19...full/oby201118a.html

Provided by University of North Carolina at Chapel Hill

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