

# Green tea helps mice keep off extra pounds

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Green tea may slow down weight gain and serve as another tool in the fight against obesity, according to Penn State food scientists.

Obese [mice](#) that were fed a compound found in [green tea](#) along with a high-fat diet gained weight significantly more slowly than a control group of mice that did not receive the green tea supplement, said Joshua Lambert, assistant professor of [food science](#) in [agricultural sciences](#).

"In this experiment, we see the rate of body weight gain slows down," said Lambert.

The researchers, who released their findings in the current online version of [Obesity](#), fed two groups of mice a high-fat diet. Mice that were fed Epigallocatechin-3-gallate -- EGCG -- a compound found in most green teas, along with a high-fat diet, gained weight 45 percent more slowly than the control group of mice eating the same diet without EGCG.

"Our results suggest that if you supplement with EGCG or green tea you gain weight more slowly," said Lambert.

In addition to lower [weight gain](#), the mice fed the green tea supplement showed a nearly 30 percent increase in fecal lipids, suggesting that the EGCG was limiting fat absorption, according to Lambert.

"There seems to be two prongs to this," said Lambert. "First, EGCG reduces the ability to absorb fat and, second, it enhances the ability to use fat."

The green tea did not appear to suppress [appetite](#). Both groups of mice were fed the same amount of high-fat food and could eat at any time.

"There's no difference in the amount of food the mice are eating," said Lambert. "The mice are essentially eating a milkshake, except one group is eating a milkshake with green tea."

A person would need to drink ten cups of green tea each day to match the amount of EGCG used in the study, according to Lambert. However, he said recent studies indicate that just drinking a few cups of green tea may help control weight.

"Human data -- and there's not a lot at this point -- shows that tea drinkers who only consume one or more cups a day will see effects on body weight compared to nonconsumers," said Lambert.

Lambert, who worked with Kimberly Grove and Sudathip Sae-tan, both graduate students in food science, and Mary Kennett, professor of veterinary and biomedical sciences, said that other experiments have shown that lean mice did not gain as much weight when green tea is added to a high fat diet. However, he said that studying mice that are already overweight is more relevant to humans because people often consider dietary changes only when they notice problems associated with obesity.

"Most people hit middle age and notice a paunch; then you decide to eat less, exercise and add green tea supplement," said Lambert.

Provided by Pennsylvania State University

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