

A tough day could erase the perks of choosing ‘good’ fat sources, study finds
Stress affects how the body processes different kinds of fat

COLUMBUS, Ohio – The type of fat you eat matters, but a new study suggests that the benefits of good fats vanish when stress enters the picture.

Unstressed women who ate a biscuits-and-gravy breakfast made mostly with saturated fat fared worse in blood tests looking for precursors to disease than those women who ate an identical breakfast made primarily with monounsaturated sunflower oil.

But when women in the study had a stressful event before the breakfast test, the hardships of the previous day appeared to erase any benefits linked to the healthy fat choice, say researchers from The Ohio State University.

“It’s more evidence that stress matters,” said Jan Kiecolt-Glaser, lead author of the study and a professor of [psychiatry](#) and [psychology](#).

This study is the first to show that stress has the potential to cancel out benefits of choosing healthier fats, said Kiecolt-Glaser, who directs the [Institute for Behavioral Medicine](#) at [The Ohio State University Wexner Medical Center](#).

The research appears in the journal *Molecular Psychiatry*.

Going into the study, Kiecolt-Glaser and her collaborators knew that both diet and stress can alter inflammation in the body. That’s important because chronic inflammation is linked to a litany of health problems including heart disease, diabetes and rheumatoid arthritis.

But they wanted to know more about the interplay between stress, diet and inflammatory markers they can measure in the bloodstream.

The researchers did not know which women were eating which meals. They were randomly assigned to one of the two breakfasts, which – in addition to biscuits and gravy – included eggs and turkey sausage. One was high in less-healthy saturated fat from palm oil, the other higher in healthier unsaturated fat from a sunflower oil high in oleic acid.

The women visited Ohio State on two different days and ate either of the two meals. The participants – 38 breast cancer survivors and 20 others – were, on average, 53 years old. (This research stemmed from a parent study looking at high-fat diets and depression in cancer survivors.)

The women were asked about the previous day's experiences and the researchers used the Daily Inventory of Stressful Events questionnaire to determine if the woman was under stress.

Minor irritants didn't count as a stressful day. Stressors included having to clean up paint a child spilled all over the floor and struggling to help a parent with dementia who was resisting help.

“They're not life-shattering events, but they're not of the hangnail variety either,” Kiecolt-Glaser said.

Thirty-one women had at least one recent stressor at one of the two visits; 21 had experienced stress before both visits and six of the women reported no significant stressful experiences prior to their visits.

Their blood was drawn multiple times during their visits. The researchers looked at two markers of inflammation – C-reactive protein and serum amyloid A. They also evaluated two markers called cell adhesion molecules that could predict a greater likelihood of plaque forming in the arteries.

All four unhealthy markers were higher following the saturated fat meal than the sunflower oil meal. The research team controlled for blood levels before the meals, age difference, abdominal fat and physical activity – all factors that could skew results.

In those women who had stressful days, the difference disappeared. Eating a breakfast with “bad fat” was just the same as eating one with “good fat.”

The researchers intentionally chose a high-calorie, high-fat meal to mimic a typical fast-food meal. Each breakfast contained 930 calories and 60 grams of fat, almost identical to the composition of a Big Mac and medium fries or a Burger King Double Whopper with cheese. The women were given 20 minutes to eat.

“We know that a less-healthy meal is going to have adverse effects on markers of inflammation, but we wanted to look at this meal type with different types of fat,” said researcher [Martha Belury](#), co-author of the study and a professor of [human nutrition](#).

This study leaves open questions about the connections between stress, fat source and healthier meals higher in fiber and fruits and vegetables and lower in calories, Belury said.

It’s believed that reduced inflammation could be the cornerstone of the benefits of eating healthier foods such as the Mediterranean diet – one that is high in oleic acid, usually from olive oil, Belury said.

Stressors raised levels of all four harmful blood markers in the sunflower oil group, but stress did not seem to budge the readings for those who ate saturated fat, Belury said.

Kiecolt-Glaser and Belury said it’s important to remember that inflammation creeps up over time to contribute to disease. The message here, they said, is *not* that you might as well eat whatever you want when you’re stressed.

Rather, Belury said, it could serve as a reminder to shoot for healthier choices every day so that when stress gets in your way you’re starting in a better place.

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Kiecolt-Glaser and Belury’s collaborators at Ohio State were Rebecca Andridge, Juan Peng, William Malarkey and Diane Habash. Christopher Fagundes of Rice University in Texas also worked on the research.

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