

Consuming high-protein breakfasts helps women maintain glucose control

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In healthy individuals, the amount of glucose, or sugar, in the blood increases after eating. When glucose increases, levels of insulin increase to carry the glucose to the rest of the body. Previous research has shown that extreme increases in glucose and insulin in the blood can lead to poor glucose control and increase an individual's risk of developing diabetes over time. Now, a University of Missouri researcher has found that when women consumed high-protein breakfasts, they maintained better glucose and insulin control than they did with lower-protein or no-protein meals.

"For women, eating more protein in the morning can beneficially affect their glucose and [insulin levels](#)," said Heather Leidy, an assistant professor of nutrition and exercise physiology. "If you eat healthy now and consume foods that help you control your [glucose levels](#), you may be protecting yourself from developing diabetes in the future."

Kevin Maki, of Biofortis Clinical Research, completed the study in collaboration with Leidy. They studied women aged 18-55 years old who consumed one of three different [meals](#) or only water on four consecutive days. The tested meals were less than 300 calories per serving and had similar fat and fiber contents. However, the meals varied in amount of protein: a pancake meal with three grams of protein; a sausage and egg breakfast skillet with 30 grams of protein; or a sausage and egg breakfast skillet with 39 grams protein. Researchers monitored the amount of glucose and insulin in the participants' blood for four hours after they ate breakfast.

"Both protein-rich breakfasts led to lower spikes in glucose and insulin after meals compared to the low-protein, high-carb breakfast," Maki said. "Additionally, the higher-protein breakfast containing 39 grams of protein led to lower post-meal spikes compared to the high-protein breakfast with 30 grams of protein."

These findings suggest that, for healthy women, the consumption of protein-rich breakfasts leads to better [glucose control](#) throughout the morning than the consumption of low-protein options, Leidy said.

"Since most American women consume only about 10-15 grams of protein during [breakfast](#), the 30-39 grams might seem like a challenging dietary change," Leidy said. "However, one potential strategy to assist with this change might include the incorporation of prepared convenience meals, such as those included in this study."

Leidy said the study provides a good model to initially examine the effect of higher-protein breakfasts on glucose and [insulin](#) responses since only healthy, non-diabetic women with appropriate [glucose](#) control were included in the study. Based on the study's findings, the researchers are hopeful that the consumption of [protein](#)-rich breakfasts also would benefit individuals with pre-diabetes, although future research is needed to confirm.

The research, "Acute Effects of Higher Protein, Sausage and Egg-based Convenience Breakfast Meals on Postprandial Glucose Homeostasis in Healthy, Premenopausal Women," will be presented at the 2014 Experimental Biology meeting this week in San Diego, Calif. Leidy collaborated with researchers Tia M. Rains, Kristen D. Sanoshy, Andrea Lawless and Kevin C. Maki, of Biofortis Clinical Research, a division of Mérieux NutriSciences in Chicago. Hillshire Brands funded the research.

Provided by University of Missouri-Columbia

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