

Choice of protein and carbohydrate-rich foods may have big effects on long-term weight gain

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Making small, consistent changes to the types of protein- and carbohydrate-rich foods we eat may have a big impact on long-term weight gain, according to a new study led by researchers at the Friedman School of Nutrition Science & Policy at Tufts University. The results were published on-line this week in *The American Journal of Clinical Nutrition*.

Based on more than 16 years of follow-up among 120,000 men and women from three long-term studies of U.S. health professionals, the authors first found that diets with a high glycemic load (GL) from eating refined grains, starches, and sugars were associated with more weight gain. Previous research has linked GL of the diet, a reflection of how much a [food](#) causes a rise in blood glucose, to chronic diseases like type 2 diabetes but it had not been established how GL is related to weight-gain over many years.

Next, the authors determined whether changes in GL impacted the relationship between major protein-rich foods and long-term weight gain.

"There is mounting scientific evidence that diets including less low-quality carbohydrates, such as white breads, potatoes, and sweets, and higher in protein-rich foods may be more efficient for [weight loss](#)," said first and corresponding author Jessica Smith, Ph.D., a visiting scholar at

the Friedman School and a research fellow at the Harvard T.H. Chan School of Public Health. "We wanted to know how that might apply to preventing weight gain in the first place."

Smith and colleagues first looked at the relationship between changes in protein foods and weight gain during every four-years of follow-up. Several key results were seen:

- Increasing intakes of red meat and processed meat were most strongly associated with weight gain.
- Increasing intakes of yogurt, seafood, skinless chicken, and nuts were most strongly associated with weight loss - the more people ate, the less weight they gained.
- Increasing other [dairy products](#), including full-fat cheese, whole milk, and low-fat milk, did not significantly relate to either weight gain or weight loss.

"The fat content of dairy products did not seem to be important for weight gain," Smith said. "In fact, when people consumed more low-fat dairy products, they actually increased their consumption of carbs, which may promote weight gain. This suggests that people compensate, over years, for the lower calories in low-fat dairy by increasing their carb intake."

Next, the authors noted several synergistic relationships between changes in protein-rich foods and changes in GL of the diet. For example, increasing servings of foods linked to weight gain, like red meat, and at the same time increasing GL by eating more low quality carbohydrates like white bread, strengthened the foods' association with weight gain. But decreasing GL by eating, for example, [red meat](#) with vegetables, mitigated some of that weight gain.

For fish, nuts, and other foods associated with weight loss, decreasing

GL enhanced their weight loss effect, while increasing GL decreased their weight loss effect. Notably, although other foods like eggs and cheese were not linked to weight change on average, when servings of these foods were increased in combination with increased GL, they were linked to weight gain. On the other hand, when servings of eggs and cheese were increased in combination with decreased GL, the participants actually lost weight.

"Our study adds to growing new research that counting calories is not the most effective strategy for long-term weight management and prevention," said senior author Dariush Mozaffarian, M.D., Dr.P.H., dean of the Friedman School. "Some foods help prevent weight gain, others make it worse. Most interestingly, the combination of foods seems to make a big difference. Our findings suggest we should not only emphasize specific protein-rich foods like fish, nuts, and yogurt to prevent weight gain, but also focus on avoiding refined grains, starches, and sugars in order to maximize the benefits of these healthful protein-rich foods, create new benefits for other foods like eggs and cheese, and reduce the [weight gain](#) associated with meats."

The [researchers](#) relied on validated self-reported food questionnaires from three studies that enrolled doctors, nurses and other healthcare professionals from across the U.S. Further studies investigating the relationships of protein and carbohydrate-rich foods to weight management in the other populations would be useful.

More information: Smith JD, Hou T, Ludwig DS, Rimm EB, Willett W, Hu FB and Mozaffarian D. "Changes in intake of protein foods, carbohydrate amount and quality, and long-term weight change: results from 3 prospective cohorts." *The American Journal of Clinical Nutrition* 2015;101:1-9. Published online ahead of print April 8, 2015.

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