High-Glycemic Carbohydrates Linked to Women’s Heart Risk

When it comes to women’s heart health, all carbohydrates are not created equal: Consuming too many “carbs” that quickly boost blood sugar may raise women’s risk of heart disease, according to a new Italian study.

Scientists know that high-carbohydrate diets increase blood glucose and triglyceride levels while reducing protective HDL cholesterol. But carbohydrates differ in their effects on blood glucose levels. The glycemic index (GI) is a measure of how much a food raises blood glucose levels compared with the same amount of sugar or white bread. A related measure, the glycemic load (GL), is calculated based on the glycemic index of a given food as well as the total amount of carbohydrates it contains.

Sabina Sieri, PhD, of Fondazione IRCCS Istituto Nazionale dei Tumori, and colleagues studied 47,749 Italian adults—15,171 men (ages 35-64) and 32,578 women (ages 35-74)—originally recruited for the long-running European Prospective Investigation into Cancer and Nutrition (EPIC). Based on dietary questionnaires, the researchers calculated participants’ overall carbohydrate intakes as well as the average glycemic index of the foods they consumed and the glycemic loads of their diets. During

Calcium in Diet, But Not Pills, May Help You Live Longer

Does extra calcium—which many people take to boost bone health—also protect against heart disease and death? Science continues to answer with a firm “maybe, maybe not.” A pair of new studies, however, suggest that while calcium supplements may not have such protective benefits, a diet rich in foods containing calcium might.

In a review published in Annals of Internal Medicine, Howard D. Sesso, ScD, of Brigham and Women’s Hospital in Boston and colleagues looked at 17 previous studies designed with other purposes in mind, in hopes of extracting fresh answers about prevention of cardiovascular disease. “The existing evidence is quite sparse,” they noted. The research they analyzed included both prospective studies and randomized clinical trials that focused on calcium supplementation, vitamin D supplementation, or both. All, however, included data on participants’ subsequent cardiovascular health.

Sesso and colleagues concluded, “Calcium supplements seem to have minimal cardiovascular effects.” As other research has found, though, vitamin D may be a different story: “Evidence from limited data suggests that vitamin D supplements at moderate to high doses may reduce cardiovascular disease risk,” the researchers wrote.

(Another review in that same journal, however, similarly screened 21 previous studies of vitamin D supplementation and concluded, “The association between vitamin D status and cardiometabolic outcomes is uncertain. Trials showed no clinically significant effect of vitamin D supplementation at the dosages given.”)

Overall, researchers cautioned against taking calcium or vitamin D supplements specifically for cardiovascular disease prevention until more randomized clinical trials are completed. “Any questions or concerns you may have about taking calcium, vitamin D or other supplements should be discussed with your personal physician,” Sesso added.

Meanwhile, a new Swedish study of dietary, rather than supplemental, calcium intake reported that men with the highest consumption of calcium were 25% less likely to die of all causes. Alicja Wolk, MD, of the Karolinska Institute and colleagues looked for associations of dietary calcium, as well as magnesium, with cardiovascular disease and death from cancer and all causes among 23,266 men, ages 45 to 79. Over almost 10 years, 2,358 of the men died.

Researchers divided the men into

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three groups based on dietary calcium intake; none of the men used supplements. The group consuming the most calcium averaged 1,953 mg per day—nearly double the Daily Value (DV) of 1,000 mg—while the lowest-calcium group averaged 990 mg daily. When the highest group was compared with the lowest, dietary calcium was associated with a statistically significant lower rate of death from all causes and a nonsignificantly lower rate of cardiovascular disease. No similar link was found for dietary magnesium intake. The findings were published in the American Journal of Epidemiology.

So, should you load up on foods high in calcium? Previous studies have suggested calcium might play a role in combating hypertension, although the evidence for such a benefit remains weak. Hopes that calcium might help prevent colorectal or prostate cancer have led to mixed results, and the new Swedish study failed to find an association with reduced cancer deaths.

It's also possible to get too much of a good thing. Since kidney stones are commonly composed of calcium oxalate, might extra calcium encourage this excreting condition? The National Institutes of Health (NIH) advises, “For most individuals, other risk factors for kidney stones, such as high intakes of oxalates from food and low intakes of fluid, appear to play a bigger role than calcium.”

Excessively high levels of calcium in the blood can also impair kidney function, but this is usually caused by other conditions rather than dietary or supplemental calcium intake. The Tolerable Upper Intake Level (UL) for calcium, set by the Institute of Medicine, is 2,500 mg daily.

Until science produces more definitive answers, the best advice is to make sure you’re getting enough calcium (1,000 mg/day, 1,200 mg after age 50)—preferably from your diet—and that it’s coupled with enough vitamin D to protect your bones (recent research suggests at least 800 IU/day). If there’s any benefit from calcium against heart disease or death, consider it a bonus.

To LEARN MORE: Annals of Internal Medicine, March 2, 2010; abstract at <www.annals.org/content/152/5/315.abstract>. American Journal of Epidemiology, online before print; abstract at <aje.oxfordjournals.org/cgi/content/abstract/kwp467v1>. NIH Dietary Supplement Fact Sheet <ods.od.nih.gov/factsheets/calcium.asp>.

Carbs

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almost eight years of follow-up, 463 participants—158 women and 305 men—developed coronary heart disease.

Sieri and colleagues found that women who consumed the most total carbohydrates were twice as likely to develop heart disease as those eating the least. But a closer look revealed that increased intake of carbs with a high glycemic index was linked to greater heart risk, while low-GI carbs were not. Women with the highest

Higher glycemic-index foods include:
- White bread
- Jam and jelly
- Doughnuts
- Sugar or honey
- Pizza
- Rice
- Corn flakes
- White flour
- Flour tortillas

Lower glycemic-index choices include:
- Whole-wheat bread
- Beans
- Lentils
- Nuts
- Most fruit
- Oatmeal
- Whole-wheat flour
- Corn tortillas

glycemic load were 2.24 times more likely to develop heart disease than those with the lowest GI. Even women in the middle groups ranked by glycemic load were more likely to develop heart disease than those in the lowest-GI group.

“Thus, a high consumption of carbohydrates from high-glycemic index foods, rather than the overall quantity of carbohydrates consumed, appears to influence the risk of developing coronary heart disease,” the researchers concluded in Archives of Internal Medicine.

No similar associations for heart disease with total carbohydrate intake, glycemic index or glycemic load were seen in men. Sieri and colleagues speculated that the gender difference could be because adverse changes linked to high-GI carbohydrates might be stronger risk factors for women.

Fully understanding the impact of glycemic index on health remains elusive. Tufts research, for example, has failed to back claims that low-GI foods are better for weight loss, while supporting connections between carbohydrate quality and risk of vision loss (see March 2009 Spécial Report).

To LEARN MORE: Archives of Internal Medicine, April 12, 2010; abstract at <archinte.ama-assn.org/cgi/content/abstract/170/7/640>.