



Type of protein can affect diabetes risk

Does the type of protein you eat have anything to do with the development of diabetes?

Interestingly, there is some evidence that indicates a diet high in red meat — and even more, processed red meat — could increase the risk of developing Type 2 diabetes.

Research recently published in the *American Journal of Clinical Nutrition* adds substance to that claim.

In that study, researchers combed through findings from several existing studies that included over 440,000 people, more than 28,000 of whom developed diabetes at some point during their participation.

The studies found that a daily 50-gram serving of processed red meat (about 1.75 ounces — two slices of bacon or one hot dog or sausage) was associated with a 51 percent increased risk of developing diabetes. A daily 100-gram serving of unprocessed red meat (about 3.5 ounces — a serving about the size of a deck of cards) was associated with a 19 percent increased risk. Those increases in risk were found even after taking into account other risk factors, such as weight and age.

On a more positive note, the researchers also examined what kinds of protein might decrease a person's risk for diabetes. They found that substituting low-fat dairy (17 percent lower risk), nuts (21 percent lower risk) or whole grains (23 percent lower risk) for red meat all were beneficial.

It's not easy to tell why red meats and processed red meats are problematic. The researchers offer several possibilities. First, both contain iron, specifically heme iron, that can cause oxidant-related reactions in the body and possibly damage to pancreatic beta cells, where insulin is produced. Insulin helps the body move glucose from the bloodstream into cells, where it can be used for energy. High body stores of iron are associated with a higher risk of Type 2 diabetes.

In addition, processed red meats contain nitrates and nitrites, which can be converted in the body into nitrosamines, which have increased the risk of diabetes in animal studies and could be toxic to pancreatic beta cells.

The research could be helpful to millions of people. In the United States, more than 25 million adults, or 11 percent of those over age 20, have diabetes; globally, the condition affects nearly 350 million. While Type 2 diabetes can often be controlled with diet, exercise, weight control and medication, the disease can have life-altering impacts, including serious damage to sight, kidney function and nerves. It also plays a role in heart disease and stroke.

For more on diabetes prevention and control, see <http://www.nlm.nih.gov/medlineplus/diabetes.html>.

Chow Line is a service of Ohio State University Extension and the Ohio Agricultural Research and Development Center. Send questions to Chow Line, c/o Martha Filipic, 2021 Coffey Road, Columbus, OH, 43210-1044, or filipic.3@cfaes.osu.edu.



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AND DEVELOPMENT CENTER

For the week of
Sept. 4, 2011

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