

# Eating more red meat associated with increased risk of Type 2 diabetes

June 17 2013

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Eating more red meat over time is associated with an increased risk of type-2 diabetes mellitus (T2DM) in a follow-up of three studies of about 149,000 U.S. men and women, according to a report published Online First by *JAMA Internal Medicine*.

[Red meat](#) consumption has been consistently related to an increased risk of T2DM, but previous studies measured red meat consumption at a baseline with limited follow-up information. However, a person's eating behavior changes over time and measurement of consumption at a single point in time does not capture the variability of intake during follow-up, the authors note in the study background.

An Pan, Ph.D., of the National University of Singapore, and colleagues analyzed data from three Harvard group studies and followed up 26,357 men in the Health Professionals Follow-up Study; 48,709 women in the Nurses' [Health Study](#); and 74,077 women in the Nurses' Health Study II. Diets were assessed using food frequency questionnaires.

During more than 1.9 million person-years of follow-up, researchers documented 7,540 incident cases of T2DM.

"Increasing red meat intake during a four-year interval was associated with an elevated risk of T2DM during the subsequent four years in each cohort," according to the study.

The results indicate that compared with a group with no change in red

meat intake, increasing red [meat intake](#) of more than 0.50 servings per day was associated with a 48 percent elevated risk in the subsequent four-year period. Reducing red meat consumption by more than 0.50 servings per day from baseline to the first four years of follow-up was associated with a 14 percent lower risk during the subsequent entire follow-up.

The authors note the study is observational so causality cannot be inferred.

"Our results confirm the robustness of the association between red meat and T2DM and add further evidence that limiting red [meat consumption](#) over time confers benefits for T2DM prevention," the authors conclude.

In an invited commentary, William J. Evans, Ph.D., of GlaxoSmithKline and Duke University, Durham, N.C., writes: "The article by Pan et al confirms previous observations that the consumption of so-called red meat is associated with an increased risk of [type 2 diabetes mellitus](#) (T2DM)."

"Perhaps a better description of the characteristics of the meat consumed with the greatest effect on risk is the saturated fatty acid (SFA) content rather than the amount of oxygen-carrying proteins," Evans continues.

"A recommendation to consume less red meat may help to reduce the epidemic of T2DM. However, the overwhelming preponderance of molecular, cellular, clinical and epidemiological evidence suggests that public health messages should be directed toward the consumption of high-quality protein that is low in total and saturated fat. ... These public health recommendations should include cuts of red meat that are also low in fat, along with fish, poultry and low-fat dairy products. It is not the type of protein (or meat) that is the problem: it is the type of fat," Evans concludes.

**More information:** *JAMA Intern Med.* Published online June 17, 2013. [doi:10.1001/jamainternmed.2013.6633](https://doi.org/10.1001/jamainternmed.2013.6633)

*JAMA Intern Med.* Published online June 17, 2013.

[doi:10.1001/jamainternmed.2013.7399](https://doi.org/10.1001/jamainternmed.2013.7399)

Provided by The JAMA Network Journals

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