# High animal fat diet increases gestational diabetes risk

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Women who consumed a diet high in animal fat and cholesterol before pregnancy were at higher risk for gestational diabetes than women whose diets were lower in animal fat and cholesterol, according to researchers at the National Institutes of Health and Harvard University.

Gestational diabetes is a form of diabetes seen during pregnancy. Gestational diabetes increases the risk for certain pregnancy complications and health problems in the newborn.

Women whose diets were high in total fat or other kinds of fats—but not in animal fat or cholesterol—did not have an increased risk.

Moreover, the increased risk for gestational diabetes seen with animal fat and cholesterol appeared to be independent of other, dietary and non-dietary, risk factors for gestational diabetes. For example, exercise is known to reduce the risk of gestational diabetes. Among women who exercised, however, those who consumed higher amounts of animal fat and cholesterol had a higher risk than those whose diets were lower in these types of fat.

"Our findings indicate that women who reduce the proportion of animal fat and cholesterol in their diets before pregnancy may lower their risk for gestational diabetes during pregnancy," said senior author Cuilin Zhang, M.D., M.P.H., Ph.D., of the Epidemiology Branch at the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD), one of three NIH institutes supporting the

study.

The researchers concluded that changing the source of 5 percent of dietary calories from animal fat to plant-derived sources could decrease a woman's risk for gestational diabetes by 7 percent.

The U.S. Department of Agriculture website, ChooseMyPlate.gov, contains information on healthy eating for children and adults, as well as health and nutrition information for pregnant and breast feeding women.

First author Katherine Bowers, Ph.D., conducted the research with NICHD colleagues Dr. Zhang and Edwina Yeung, Ph.D., and with Deirdre K. Tobias and Frank B. Hu, M.D., M.P.H., Ph.D., of Harvard University, in Boston.

Their findings appear online in the *American Journal of Clinical Nutrition*.

The research was also funded by the National Cancer Institute and the National Institute of Diabetes and Digestive and Kidney Diseases.

The researchers utilized information from more than 13,000 women participating in the Nurses' Health Study II. The women were 22 to 45 years old when they enrolled in the study. Every two years they responded to questions on their general health, pregnancy status, and lifestyle habits, such as consuming alcohol or smoking. In addition, every four years they completed a comprehensive survey about the kinds of food and drink they consumed.

About 6 percent of the participants reported having been diagnosed with gestational diabetes. The researchers calculated the amount of animal fat in participants' diets as a percentage of total calories and divided participants into five groups, or quintiles, based on those percentages.

Then the researchers compared the risk for developing gestational diabetes for each group. Women in the highest quintile of intake had almost double the risk for gestational diabetes compared to women in the lowest quintile.

They also observed that women in the highest quintile for cholesterol consumption were 45 percent more likely to develop gestational diabetes than were women in the lowest quintile.

"This is the largest study to date of the effects of a pre-pregnancy diet on gestational diabetes," Dr. Bowers said. "Additional research may lead to increased understanding of how a mother's diet before and during pregnancy influences her metabolism during pregnancy, which may have important implications for the baby's health at birth and later in life."

Provided by National Institutes of Health

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