

## Study finds diabetes doubling before motherhood

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Diabetes before motherhood more than doubled in six years among teenage and adult women, according to a Kaiser Permanente study published in the May issue of *Diabetes Care*.

While previous studies have looked exclusively at gestational diabetes (diabetes that develops during pregnancy, then usually disappears after the baby is born), this is the largest and most diverse study to examine pre-pregnancy type 1 and type 2 diabetes, which is more dangerous than gestational diabetes and potentially harder to treat, as well as gestational diabetes.

Researchers at Kaiser Permanente's Department of Research & Evaluation in Pasadena looked at 175,249 women who gave birth in 11 Kaiser Permanente hospitals in Southern California between 1999 and 2005. Researchers found that there were twice as many births to women with diabetes in 2005 as there were in 1999. Fifty-two percent of the women in the study were Hispanic, 26 percent were White, 11 percent were Asian/Pacific Islanders and 10 percent were African-American.

This study found significant jumps in pre-pregnancy diabetes in every age, racial and ethnic group:

-- Diabetes increased fivefold among 13- to 19-year-olds giving birth

- -- Diabetes doubled among women 20- and 39-year-olds giving birth
- -- Diabetes increased by 40 percent among women 40 and older giving birth



-- African-American, Hispanic, and Asian/Pacific Islander women were more likely to have diabetes before pregnancy than White women.

"More young women are entering their reproductive years with diabetes, in part due to the fact that our society has become more overweight and obese," said lead author Jean M. Lawrence, ScD, MPH, MSSA, a research scientist at Kaiser Permanente's Department of Research & Evaluation. "While we currently don't know how to prevent type 1 diabetes, the steps to reducing risk of type 2 diabetes must start before childbearing years: healthy eating, active living and maintaining a healthy weight. These habits should begin in childhood and continue through adulthood."

Given that two-thirds of Americans are overweight or obese, and nearly 15 million children are overweight or obese, these study findings are especially relevant.

The health risks of having diabetes before becoming pregnant are greater to mother and baby than gestational diabetes, which occurs in 8 percent of pregnancies. Gestational diabetes occurs when pregnancy triggers insulin resistance in the second trimester and raises a woman's blood glucose level and is associated with larger babies, childhood obesity, and increased maternal risk of developing type 2 diabetes. Women with preexisting diabetes are more likely to have miscarriages, stillbirths, and babies with birth defects because they may have elevated blood sugar during the critical first trimester of pregnancy when the infants' organs are developing.

"My advice to women who have type 1 or type 2 diabetes and are thinking about becoming pregnant is: work with your health care professional to get your blood sugar in good control. If you are prediabetic or have type 2 diabetes and are overweight, work on reducing your weight by a few pounds before becoming pregnant," Lawrence said.



"And women with gestational diabetes should have their blood sugar level tested after they've given birth to make sure it returns to normal."

Limiting obesity is the best way to reduce the rising incidence of type 2 diabetes in young women, says study co-author David Sacks, MD, a Kaiser Permanente perinatologist who specializes in maternal fetal medicine and treats up to 50 diabetic moms-to-be a year. "We've become a more sedentary and obese society so naturally type 2 diabetes has risen too. For Latina women, the risk is even higher for developing type 2 diabetes, so it's really important to defy family history and work on achieving a healthy weight."

Sacks said Kaiser Permanente's electronic health record, Kaiser Permanente HealthConnect<sup>TM</sup>, makes it easier for physicians to monitor and treat their patients' diabetes.

"KP HealthConnect<sup>™</sup> gives me an immediate record of my patient's prepregnancy performance, and how compliant she has been with her diabetes protocol and follow-up," Sacks said.

Source: Kaiser Permanente Division of Research

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