

Diabetes can be predicted 7 years before pregnancy with blood sugar and body weight

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A woman's risk of developing diabetes during pregnancy can be identified up to seven years before she becomes pregnant based on routinely assessed measures of blood sugar and body weight, according to a Kaiser Permanente study published in the online issue of the *American Journal of Obstetrics and Gynecology*.

Researchers at the Kaiser Permanente Division of Research in Oakland, Calif., studied 580 ethnically diverse women who took part in a multiphasic health checkup at Kaiser Permanente Northern California between 1984 and 1996. The researchers looked at women who had a subsequent pregnancy and compared those who developed [gestational diabetes](#) mellitus (GDM) during pregnancy to women who did not have GDM.

The study found that the risk of GDM increased directly with the number of adverse risk factors commonly associated with diabetes and heart disease ([high blood sugar](#), hypertension and being overweight) present before pregnancy. In addition, the authors found that adverse levels of blood sugar and body weight were associated with a 4.6-fold increased risk of GDM, compared to women with normal levels.

The study is among the first to look at routinely measured cardio-metabolic risk factors before pregnancy in women who later became pregnant and developed GDM. The research provides evidence to support pre-conception care for healthy pregnancies as noted in a 2006 report by the [Centers for Disease Control and Prevention](#). That report

suggested that risk factors for adverse outcomes among women and infants can be identified prior to conception and are characterized by the need to start, and sometimes finish, interventions before conception occurs.

Women who develop GDM during pregnancy are more likely to develop [Type 2 diabetes](#) after pregnancy, previous research has shown. GDM is defined as [glucose intolerance](#) that typically occurs during the second or third trimester and causes complications in as much as 7 percent of pregnancies in the United States. It can lead to early delivery and Cesarean sections, and increases the baby's risk of developing diabetes, obesity and metabolic disease later in life.

"Our study indicates that a woman's cardio-metabolic risk profile for factors routinely assessed at medical visits such as [blood sugar](#), high blood pressure, cholesterol and body weight can help clinicians identify high-risk women to target for primary prevention or early management of GDM," said lead author Monique Hedderson, PhD, a research scientist at the Kaiser Permanente Division of Research.

Although the established risk factors for GDM are older maternal age, obesity, non-white race/ethnicity, giving birth previously to a very large baby and a family history of diabetes, these risk factors are absent in up to half of women who develop GDM. This study is significant because it gives a better understanding of pre-pregnancy predictors of GDM that may help identify women at risk and get them into intervention programs before pregnancy to prevent GDM and its associated risks, researchers said.

Provided by Kaiser Permanente

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