

New study gives a more accurate picture of pregnancy-related diabetes risks

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Diabetes in pregnancy (known as gestational diabetes mellitus) is associated with increased odds of a range of complications for both mother and baby, including cesarean delivery, severe breathing problems, and excessive birth weight, finds a study published by *The BMJ* today.

The researchers say their findings "contribute to a more comprehensive understanding of the adverse outcomes of pregnancy related to [gestational diabetes mellitus](#)."

Gestational diabetes develops when the body can't produce enough [insulin](#) to control blood sugar levels during pregnancy, which can cause problems for both mothers and babies during pregnancy and after birth.

In 2008, a large study assessed the risks of adverse outcomes associated with gestational diabetes, but it did not adjust for some potentially influential (confounding) factors, and other important pregnancy outcomes were poorly reported, making it difficult to draw firm conclusions.

To address this uncertainty, researchers at Central South University in China analyzed data from 156 studies involving over 7 million participants that reported complications of pregnancy in women with gestational diabetes.

Studies were considered adjusted if they took account of at least one of

seven confounding factors (mother's age, pre-pregnancy body mass index, weight gain during pregnancy, number of previous pregnancies, number of previous births, smoking history, and chronic high blood pressure).

To assess the effect of different severities of gestational diabetes, the researchers categorized studies by insulin use (considered standard treatment for gestational diabetes when adequate blood sugar levels are not achieved with diet and exercise).

They then performed analyses based on study country (developed or developing), quality of the study, diagnostic criteria, and screening method used.

In studies with no insulin use, when adjusted for confounders, they found that women with gestational diabetes had increased odds of [cesarean section](#), preterm delivery, low one-minute Apgar score (a measure of an infant's condition at birth), excessive birth weight, and infant born large for gestational age than those without diabetes.

In studies with insulin use, when adjusted for confounders, they found the odds of having an infant large for gestational age, or with [respiratory distress syndrome](#), neonatal jaundice, or requiring admission to the neonatal intensive care unit were higher in women with gestational diabetes than in those without diabetes.

They found no clear differences in the odds of several other outcomes, including instrumental delivery (such as use of forceps), heavy bleeding after giving birth (postpartum hemorrhage), stillbirth, neonatal death, and low birth weight between women with and without gestational diabetes, after adjusting for confounders.

These are observational findings, so can't establish cause, and the

researchers cannot rule out the possibility that other unmeasured factors may have affected their results. Differences in study definitions of diabetes and some pregnancy outcomes may also have had an impact.

Nevertheless, this is the most in-depth analysis of its kind to date, which the researchers say "contribute[s] to a more comprehensive understanding of adverse outcomes of pregnancy related to gestational diabetes mellitus."

As such, they conclude, "These findings support the need for an improved understanding of the pathophysiology of gestational diabetes mellitus to inform the prediction of risk and for precautions to be taken to reduce adverse outcomes of [pregnancy](#)."

And they say future primary studies "should routinely consider adjusting for a more complete set of prognostic factors."

More information: Gestational diabetes mellitus and adverse pregnancy outcomes: systematic review and meta-analysis, *The BMJ* (2022). [DOI: 10.1136/bmj-2021-067946](https://doi.org/10.1136/bmj-2021-067946)

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