# To what extent do growth abnormalities increase the risk of stillbirth near term in pregnancies complicated by diabetes?

In pregnancies complicated by pregestational diabetes mellitus (PG-DM) or gestational diabetes mellitus (GDM), stillbirth risk was increased in fetuses that were large for gestational age (LGA) or small for gestational age (SGA) as compared with fetuses that were appropriate for gestational age (AGA), according to a retrospective cohort study. **The highest conditional stillbirth rate occurred in pregnancies with PG-DM and LGA fetuses at 39 weeks' gestation,** and these pregnancies had a 21-times higher relative risk of stillbirth compared with pregnancies with GDM and AGA fetuses (the lowest-risk group) at 37 and 38 weeks' gestation.

**FAST TRACK**

*In pregnancies with PG-DM, fetuses that were LGA or SGA had a higher relative risk of stillbirth compared with their AGA counterparts at each gestational age*

*McElwee ER, Oliver EA, McFarling K, et al. Risk of stillbirth in pregnancies complicated by diabetes, stratified by fetal growth. Obstet Gynecol. 2023;141:801-809. doi:10.1097/AOG.0000000000005102.*

**EXPERT COMMENTARY**

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Stillbirth is defined as intrauterine demise at or beyond 20 weeks' gestation. Pregestational DM and GDM significantly increase the risk of stillbirth. Both fetal growth restriction and macrosomia are common complications of pregnancies affected by diabetes, and they further increase the risk of stillbirth. While maternal variables such as glycemic control and medication requirement are currently used to assess the risks of expectant management and inform delivery timing, abnormal fetal growth is not.

Investigators sought to evaluate the stillbirth rates per week of expectant management during the late third trimester stratified by birth weight (as a surrogate for fetal growth) in pregnancies complicated by PG-DM or GDM.

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## Details of the study

McElwee and colleagues used the US National Vital Statistics System to identify nonanomalous singleton pregnancies complicated by PG-DM or GDM from 2014 to 2017.[1] Pregnancies were stratified by birth weight and categorized as being LGA (birth weight > 90th percentile for gestational age), SGA (birth weight < 10th percentile for gestational age),

or AGA. Stillbirths were identified from 34 0/7 through 39 6/7 weeks of gestation, and conditional stillbirth rates per 10,000 pregnancies were calculated for each week of gestation.

**Results.** Among 834,631 pregnancies complicated by PG-DM (13.1%) or GDM (86.9%), there were 3,033 stillbirths, of which 61% were in pregnancies with PG-DM. Stillbirth rates increased with advancing gestational age for both PG-DM and GDM regardless of birth weight. In pregnancies with PG-DM, fetuses that were LGA or SGA had a higher relative risk of stillbirth compared with their AGA counterparts at each gestational age. This stillbirth risk was highest in pregnancies with PG-DM that were LGA. At 39 weeks, the stillbirth rate in this population was 96.9/10,000 ongoing pregnancies and was 5 times higher than pregnancies with PG-DM that were AGA. When the GDM-related AGA group was selected as the referent (as the lowest-risk comparison group), pregnancies with PG-DM that were LGA had a 21-times higher relative risk of stillbirth at 37 and 38 weeks of gestation.

## Study strengths and limitations

Decisions on the optimal timing of delivery seek to strike a balance between the increased neonatal morbidity with delivery before 39 weeks' gestation and the increased risk of stillbirth with expectant management. In pregnancies complicated by diabetes, current guidelines from the American College of Obstetricians and Gynecologists recommend consideration of maternal variables, such as medication requirement, glycemic control, and vascular sequelae, to inform decisions on delivery timing, as these factors have been postulated to influence the risk of stillbirth with pregnancy prolongation.[2] These recommendations are based largely on expert opinion and retrospective data.

The question of *how* fetal growth abnormalities factor into this complicated decision making is also an area of low-quality evidence despite studies that demonstrate that both SGA and LGA fetuses in pregnancies complicated by diabetes are at increased risk of stillbirth.[3]

The large population-based study design by McElwee and colleagues allowed the investigators to examine a rare event (stillbirth) with multiple stratification levels and sufficient statistical power and to contribute to this literature.

Significant limitations, however, must be considered before generalizing these results. The data were restricted to variables available on birth and death certificates, and more granular information—such as the type of DM, level of glycemic control, frequency of antenatal testing, and stillbirth work-up—could not be assessed. Ultrasonographic estimations of fetal weight also were not included. Birth weight data were used as a proxy, although we know that these variables do not always correlate well given the limited accuracy of ultrasonography in assessing projected birth weight, particularly later in pregnancy. The authors also did not control for highly prevalent variables (for example, hypertension, obesity) that are likely associated with abnormal fetal growth and stillbirth in these populations. ●

### WHAT THIS EVIDENCE MEANS FOR PRACTICE

The present study demonstrates that both SGA and LGA are significant risk factors for stillbirth in pregnancies with either PG-DM or GDM in the late preterm and early term periods, and this risk should be considered when making decisions on appropriate timing of delivery. The conditional stillbirth rate was highest in pregnancies with PG-DM with LGA fetuses, and this risk increased with each week of expectant management. This population may benefit the most from critical assessment of the risk of stillbirth with ongoing pregnancy. **Notably, the quality of evidence is not sufficient to universally alter delivery timing guidelines in this population. We recommend individual assessment of each clinical scenario when making these decisions.**

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**FAST TRACK**

*Significant limitations must be considered before generalizing these study results*


**References**

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