

# Antepartum Fetal Monitoring in Pregnant Women with Diabetes: A Systematic Review

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# Abstract

**Background** Diabetes in pregnancy affects approximately 15.5% of pregnant women worldwide the majority of these women are in low- and middle-income countries. Current guidelines recommend additional fetal monitoring for pregnant women with diabetes, particularly during the third trimester, though there is limited evidence supporting these recommendations.

**Objectives** Our objective was to identify the optimal methods and regimens for antepartum fetal monitoring for pregnant women with diabetes, to inform recommendations for future clinical practice.

**Methodology** CENTRAL, Embase, MEDLINE and LILACs databases were searched through 23 July 2024. There were no restrictions on language or publication type. We included randomized controlled trials (RCTs) or non-randomized studies of interventions (NRSIs) involving pregnant women with diabetes (whether gestational, type 1 or type 2). Eligible studies were those investigating fetal monitoring in these women, such as fetal growth monitoring, fetal well-being monitoring or Doppler ultrasonography. Our comparisons of interest were 1) monitoring versus no monitoring/usual care; 2) monitoring versus a different type of monitoring; 3) different regimens of the same type of monitoring. Meta analysis was not possible due to heterogeneity of the included studies; narrative synthesis was conducted and the synthesis without meta-analysis (SWiM) guidelines were followed. The GRADE approach (Grading of Recommendations, Assessment, Development and Evaluations) was used to assess the certainty of evidence for each outcome.

**Results** Five studies with 4,440 pregnant women with diabetes were included; two were RCTs (239 women) and three were NRSIs (4,201 women). A single ultrasound growth scan over no ultrasound growth scan probably increases the risk of caesarean section (RR 1.71, 95% CI 1.46 to 2.01, 1 study, n=2,357, *moderate certainty*).

**Discussion/conclusion** There is a paucity of data regarding optimal antepartum fetal monitoring for pregnant women with diabetes. Robust, high-quality studies are urgently needed to inform clinical guidelines.