



# The Impact of Pre-existing Diabetes on Maternal and Fetal Health

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## DESCRIPTION

Diabetes and pregnancy is a topic of critical importance, as it involves managing both the health of the mother and the developing fetus. Diabetes during pregnancy can either be pre-existing known as pregestational diabetes or develop during pregnancy, referred to as Gestational Diabetes Mellitus (GDM). Both types require careful monitoring and management to reduce the risks of complications for both mother and baby.

Pregestational diabetes includes type 1 and type 2 diabetes that existed before conception. Women with pre-existing diabetes must ideally achieve good glycemic control before becoming pregnant, as high blood sugar levels during early pregnancy significantly increase the risk of miscarriage, congenital malformations, and complications such as preeclampsia and preterm birth. It is crucial that women with diabetes who plan to conceive undergo preconception counseling. This involves assessing their blood glucose control (usually aiming for a target HbA1c below 6.5%), reviewing medications for safety during pregnancy, and evaluating for existing diabetes-related complications such as retinopathy, nephropathy, or cardiovascular issues.

Gestational diabetes, on the other hand, develops during pregnancy, typically in the second or third trimester. It occurs when the body cannot produce enough insulin to overcome the insulin resistance caused by pregnancy hormones. Unlike type 1 or type 2 diabetes, gestational diabetes usually resolves after childbirth. However, it requires careful management during pregnancy to prevent complications such as macrosomia (large birth weight), birth trauma, neonatal hypoglycemia, and increased risk of cesarean delivery. Women diagnosed with GDM are also at a higher risk of developing type 2 diabetes later in life.

Screening for gestational diabetes is generally recommended between 24 and 28 weeks of pregnancy using an Oral Glucose Tolerance Test (OGTT), although earlier testing may be warranted for women with risk factors such as obesity, a history of GDM, polycystic ovary syndrome, or a family history of diabetes. If diagnosed, management begins with lifestyle interventions

particularly dietary changes and regular physical activity. Blood glucose monitoring becomes an essential daily task, often requiring women to check their levels multiple times per day, especially fasting and after meals. If lifestyle changes are not sufficient to maintain target blood sugar levels, insulin therapy is usually the preferred treatment, as many oral antidiabetic drugs are not recommended during pregnancy due to limited safety data.

Postpartum care is equally important. For women with gestational diabetes, blood sugar levels typically return to normal after delivery, but they should undergo follow-up testing usually a 75-gram OGTT 6 to 12 weeks postpartum to confirm whether diabetes has resolved or if there is persistent glucose intolerance. Long-term lifestyle changes and regular screening every 1 to 3 years are recommended to monitor for the development of type 2 diabetes. For women with pregestational diabetes, insulin requirements usually drop significantly after delivery, necessitating close monitoring to prevent hypoglycemia.

Breastfeeding is strongly encouraged for women with diabetes, as it offers numerous benefits for both mother and child. It can help improve insulin sensitivity in the mother, aid postpartum weight loss, and reduce the baby's risk of developing obesity and type 2 diabetes later in life. However, breastfeeding mothers with diabetes need to be aware of the risk of low blood sugar, especially if insulin doses are not appropriately adjusted postpartum.

## CONCLUSION

Diabetes and pregnancy is a complex intersection of maternal and fetal health that requires comprehensive care, tight glucose control, and multidisciplinary management. Whether it is pregestational or gestational diabetes, proactive planning, continuous monitoring, and individualized care plans are key to achieving healthy outcomes for both mother and baby. Advances in technology, such as continuous glucose monitoring systems and telemedicine, are also helping to ease the burden of self-management and improve maternal and fetal outcomes. With proper support and medical guidance, women with diabetes can experience healthy pregnancies and deliver healthy babies.

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