Type 1 and Type 2 Diabetes

This sheet is about having diabetes in a pregnancy or while breastfeeding. This information is based on published research. It should not take the place of medical care and advice from your healthcare provider.

What is diabetes?

Diabetes is a medical condition in which the body either does not make enough insulin or cannot use insulin correctly. Insulin is a hormone that helps sugar (glucose) move from the bloodstream into the cells of the body, giving the cells energy to function. When glucose cannot enter the cells, it builds up in the blood (high blood sugar, or hyperglycemia). Higher than normal blood sugar levels can lead to damage of the blood vessels, nerves, and organs like the eyes and kidneys.

Is there more than one type of diabetes?

There are different types of diabetes. This sheet is about type 1 and type 2 diabetes.

- Type 1 diabetes is a condition where the body does not make enough insulin or might not make any insulin at all. People with Type 1 diabetes need insulin injections and close monitoring to control their blood sugar levels.

- Type 2 diabetes is a condition where the body does not produce enough insulin or the insulin the body does make is not able to work well. Some people with type 2 diabetes can manage their condition with exercise and changes to their diet. Others may need insulin or other medications.

- Gestational diabetes is another kind of diabetes that is diagnosed for the first time during pregnancy. MotherToBaby has a separate fact sheet on gestational diabetes at: https://mothertobaby.org/fact-sheets/diabetes-pregnancy/

I have diabetes. What should I talk about with my healthcare team before I get pregnant?

Planning your pregnancy and having well-controlled blood sugar levels before getting pregnant increases the chances of a healthy baby. Make an appointment with your healthcare providers before becoming pregnant to talk about the best treatment plan to keep your blood glucose levels well-controlled before and during pregnancy. The treatment plan might include medications, a personalized diet, and exercise. During this visit, your healthcare provider can also talk about other ways to prepare for pregnancy, such as taking a prenatal vitamin and/or folic acid. If you are already pregnant, make an appointment with your healthcare providers as soon as possible to go over the best pregnancy plan for you and the baby.

Your healthcare provider might order a hemoglobin A1c (HbA1c) blood test to look at glucose levels in your blood over the past 2 to 3 months. Ideally, HbA1c levels should be within the normal range before pregnancy. Some healthcare providers will recommend blood glucose testing at home during pregnancy to check sugar levels more often during pregnancy.

Well-controlled glucose levels are levels in the range that works best for a person. Uncontrolled or poorly-controlled glucose levels mean blood sugar levels are too high, even if the condition is being treated. What are considered well-controlled, poorly-controlled, or uncontrolled glucose levels can vary from person to person. According to the American Diabetes Association, ideal blood glucose levels for people with pre-existing type 1 diabetes or type 2 diabetes who become pregnant are:

- HbA1c below 6%

- Fasting glucose below 95 mg/dL (5.3 mmol/L) and

- Glucose 1 hour after eating below 140 mg/dL (7.8 mmol/L) or

- Glucose 2 hours after eating below 120 mg/dL (6.7 mmol/L)

However, because every person and every pregnancy are different, it is important to work with your healthcare team to determine what your own blood glucose goals are and how to meet them during pregnancy.

I take medication for diabetes. Should I stop if I find out I am pregnant?

Sometimes when people find out they are pregnant, they think about changing how they take their medication, or stopping their medication altogether. However, it is important to talk with your healthcare providers before making any changes to how you take your medication. Untreated diabetes increases risks to a pregnancy. Your healthcare providers can talk with you about the benefits of treating your condition and the risks of untreated illness during pregnancy. You can contact a MotherToBaby specialist to learn more about your specific medication(s) in pregnancy and/or breastfeeding.

I have diabetes. Can it make it harder for me to get pregnant?

Having diabetes can make it harder to get pregnant. Different factors that can be related to diabetes, such as having obesity, being underweight, having diabetes-related complications, and/or having conditions such as polycystic ovary syndrome (PCOS) can also affect a woman's ability to get pregnant. Having good blood sugar control and a healthy body weight may help with conception. For more information on obesity, please see the MotherToBaby fact sheet: https://mothertobaby.org/fact-sheets/obesity-pregnancy/.

Does having diabetes increase the chance of miscarriage?

Miscarriage is common and can occur in any pregnancy for many different reasons. Women with type 1 or type 2 diabetes whose glucose levels are not well-controlled have an increased chance of miscarriage.

Does having diabetes increase the chance of birth defects?

Birth defects can happen in any pregnancy for different reasons. Out of all babies born each year, about 3 out of 100 (3%) will have a birth defect. We look at research studies to try to understand if an exposure, like diabetes, might increase the chance of birth defects in a pregnancy.

Most babies born to women with type 1 or type 2 diabetes do not have birth defects. However, having high glucose levels during the first trimester of pregnancy increases the chance of birth defects. The chance is thought to be highest when HbA1c levels are at or above 8% or the average blood glucose is >180 mg/dL. As HbA1C levels go above 8%, the chance of birth defects continues to increase. When blood glucose levels are not well-controlled in pregnancy, the chance for a baby to be born with birth defects is about 6% to 10% (about 1 in 16 to 1 in 10). With extremely poorly controlled levels in the first trimester, there may be up to a 20% (1 in 5) chance for birth defects. These can include birth defects of the spinal cord (such as spina bifida), heart, skeleton, urinary, reproductive, and digestive systems.

Would having diabetes increase the chance of other pregnancy related problems?

When glucose levels are not well-controlled during pregnancy, there is a higher chance of stillbirth, preeclampsia (high blood pressure and problems with organs, such as the kidneys), too much amniotic fluid around the baby (polyhydramnios), and preterm delivery (delivery before week 37). At birth, the baby can have trouble breathing, low blood sugar (hypoglycemia), and jaundice (yellowing of the skin and the whites of the eyes).

In addition, having poorly-controlled diabetes increases the chance of having large babies (macrosomia), some weighing over 10 pounds. In some cases when ultrasound shows macrosomia, the healthcare provider might discuss the option of delivery by C-section rather than by vaginal delivery, in order to reduce the chance of injuries to the mother and the baby. There is also a chance for the baby to be smaller than expected when blood glucose levels are not well-controlled. This is because some babies might not get the nutrition they need to grow well before birth. Chances for growth issues in the baby (being bigger or smaller) go down when blood sugar levels are in the normal range in pregnancy.

People with type 1 or type 2 diabetes who also have other medical issues like high blood pressure or obesity have a higher chance for pregnancy complications.

Does having diabetes in pregnancy cause long-term problems or affect future behavior or learning for the child?

Infants born to women with diabetes have higher chances of childhood obesity and developing diabetes later in life. These outcomes are thought to be influenced by both genetics and blood sugar levels during pregnancy. Some studies suggest that poorly-controlled diabetes during pregnancy could affect development of the central nervous system (CNS) in the fetus. If this happens, it could increase the chance of problems with learning, behavior, and development for the child later in life, However, data from these studies are limited.

What kinds of tests are recommended during pregnancy for people with diabetes?

Your healthcare providers will follow you and your developing baby's health closely during the pregnancy. They will talk with you about the screenings that are recommended to help monitor your diabetes and pregnancy. Some might include:

- Blood tests and ultrasounds to screen for certain birth defects such as spina bifida.
- Ultrasounds to look at growth of the baby, the placenta, and the fluid around the baby. Women who have type 1 or type 2 diabetes may need to have more prenatal ultrasounds than women without diabetes.
- Glucose level monitoring throughout pregnancy.
- Nonstress tests in the third trimester to monitor the baby and amniotic fluid levels.
- Eye exam before pregnancy and in the first trimester. People with diabetes may develop an eye problem called retinopathy, which can lead to vision problems. People with poorly-controlled diabetes may find that this condition worsens during pregnancy.

Breastfeeding while I have diabetes:

Having diabetes is not considered a reason to discourage breastfeeding. Keeping glucose levels well-controlled is important when breastfeeding. Some research has found that high glucose levels in the mother's blood can overflow into the breast milk as sugar. This could cause hypoglycemia (low blood sugar levels) in the infant.

Having diabetes might slow down the production of breast milk. Insulin is necessary for milk production, which may partly explain why some women with diabetes are slower to produce milk.

Insulin is a normal part of breast milk. Insulin taken as medication does not enter the breast milk in large amounts, and is not expected to cause problems for the breastfed baby. Some oral (swallowed) medications used to treat diabetes might enter the breast milk. If you take an oral medication for diabetes and suspect the baby has any symptoms such as jitteriness (a sign of low blood sugar), contact the child's healthcare provider. You can also contact a MotherToBaby specialist to learn more about your specific medication(s) during breastfeeding. Be sure to talk to your healthcare provider about all of your breastfeeding questions.

Will breastfeeding affect my blood sugar levels?

Breastfeeding can lower blood sugar in women with diabetes. Some women need less insulin to treat their diabetes if they are breastfeeding. Your healthcare team can talk with you about how often to monitor your blood sugar and work with you to adjust your medications dose, if needed. Be sure to talk to your healthcare provider about all of your breastfeeding questions.

If a man has diabetes, can it affect fertility or increase the chance of birth defects?

Having diabetes can decrease the number and motility (movement) of sperm and affect ejaculation in some men. This could cause problems with a man's fertility (ability to get a woman pregnant). However, a study looking at couples undergoing fertility treatment compared almost 1,000 couples in which the male partner had diabetes to other couples in which the man did not have diabetes. The study found no differences between pregnancy rates and live births between the groups. There is no evidence to suggest that a man having diabetes would increase the chance of birth defects in a pregnancy. Some research suggests that children born to fathers who have diabetes have a higher chance of developing diabetes or other metabolic disorders (conditions in which the body has trouble processing and using energy and nutrients) later in life. For more information, please see the MotherToBaby fact sheet Paternal Exposures at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/.

Please click here for references.

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