Preexisting Diabetes and Pregnancy: An Endocrine Society and European Society of Endocrinology Joint Clinical Practice Guideline

This patient leaflet is based on the Endocrine Society and European Society of Endocrinology Joint Clinical Guideline on Preexisting Diabetes and Pregnancy. The aim of this guideline is to help clinicians managing pregnant women with diabetes, and is published in the *European Journal of Endocrinology* (2025) 193(1):G1–G48, as well as in the *Journal of Clinical Endocrinology & Metabolism* (2025) 110(9):2405-2452. The information in this leaflet is not intended to replace your doctor's advice.

ENDOCRINE SOCIETY
Hormone Science to Health

European Society of Endocrinology

Background

Diabetes can cause unique challenges during pregnancy. But with careful planning and support, mothers with diabetes can have healthy pregnancies and healthy babies.

High blood sugar levels can increase the risk of complications for both mother and baby. Some risks of high blood sugar during pregnancy may include:

- Increased chance of high blood pressure during pregnancy (preeclampsia)
- Increased chance of miscarriage or stillbirth
- Increased chance of birth defects, if blood sugar is high early in pregnancy
- Babies may grow too large (macrosomia), increasing risk for injuries during delivery
- Increased chance of premature birth
- Increased chance of needing a cesarean delivery (C-section)
- Babies may have low blood sugar (hypoglycemia) after birth
- Long-term risk of obesity and type 2 diabetes in the child

This guide aims to give you the information you need help you prepare for a healthy pregnancy and baby.

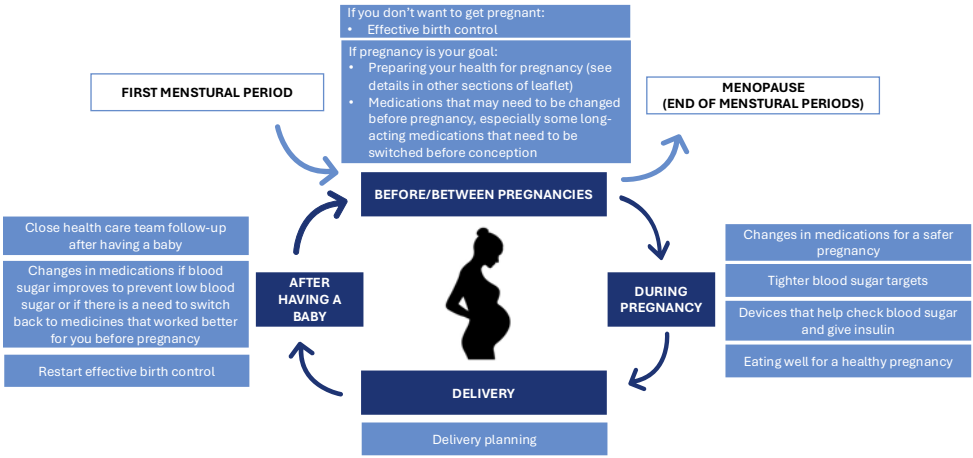

Figure 1: Key Conversations with your Health Care Provider for Each Stage of Reproductive Life

Preconception planning

Planning for a healthy start

• Why it's important:

Pregnancy outcomes are better when blood sugar is well managed before conception. High blood sugar levels early in pregnancy increase the chance of birth defects and miscarriage.

• What you can do:

- Preconception counseling: Meet with your diabetes care team to talk about what you need to do before trying to conceive so you and baby stay healthy.
- Target glycated hemoglobin (Hemoglobin A1c): Aim for a level below 6.5%
- Healthy weight: Starting at a healthy weight before getting pregnant can keep you and baby healthy. Making small steps towards healthy eating and increased exercise can have big impacts. Discuss with your provider what a healthy weight means for you.
- Folic acid: Take folic acid daily to reduce the risk of neural tube defects in your baby.
- Medication review: Some medication may need to be stopped before you conceive. If they are used for diabetes, you may need to switch to ones that are safer in pregnancy. It can take time to make sure blood glucose levels are well managed after switching. Review your medications with your doctor to make sure they are safe for pregnancy.
- Use contraception: Use a reliable means of preventing pregnancy until your blood sugar is well managed and you're ready to become pregnant.

During pregnancy

Staying healthy while expecting

• Why it's important:

Pregnancy changes how your body responds to insulin. Blood sugar management becomes even more critical to avoid complications like preeclampsia (high blood pressure during pregnancy), large birth weight for your baby, early delivery, or stays in the neonatal intensive care unit (NICU).

• What you can do:

- Check blood sugar: You'll need to check your blood sugar more often to make sure you stay in target range. The target range for blood sugar levels in pregnancy is tighter since babies are easily affected by even small changes in your blood sugar levels. Staying in target range will help keep your baby healthy and safe.

Target blood glucose (BG) values during pregnancy

Fasting BG	1hr after eating	2hrs after eating
<95mg/dL (<5.3 mmol/L)	<140mg/dL (<7.8mmol/L)	<120mg/dL (<6.7mmol/L)

- Frequent baby monitoring: Being pregnant with diabetes will also mean additional ultrasounds or tests to keep a close eye on how your baby is doing.
- Technology: Insulin pumps and continuous glucose monitors (CGMs) can help your blood sugar stay in target range. Hybrid closed-loop systems (a pump that automatically adjusts insulin), may be helpful if you have type 1 diabetes. Talk with your diabetes care team to decide what is right for you.
- Healthy eating: Eat a balanced diet with fruits, vegetables, complex carbohydrates, proteins and healthy fats; avoid simple sugars and saturated fat. There's no one-size-fits-all diet. Aim for healthy choices throughout the day. You may choose to work with a dietitian to help you come up with food options to maintain blood sugar levels and overall health.
- Medication adjustments: When you become pregnant, some medications may need to be stopped. Your doctor may also suggest starting additional medications. Insulin needs change often during and after pregnancy. Your diabetes care team will help you make frequent insulin dose adjustments to keep blood sugar levels in range.
- Delivery planning: Talk to your obstetrician (OB) provider about early delivery around 38 weeks. This is often recommended to reduce risks for both you and baby.

Postpartum

Caring for yourself and your baby

• Why it's important:

Caring for yourself after birth is just as important as during pregnancy. Your insulin needs may drop immediately after birth and then gradually increase over time. You'll also need to monitor for postpartum depression and other health changes.

• What you can do:

- Check blood sugar: Continue checking blood sugar often, especially if breastfeeding.
- Breastfeeding: Breastfeeding is encouraged for most women.
  - Breastfeeding can help your baby to be healthy as an infant as well as later in life.
  - Your blood sugar may be lower during breastfeeding – be sure to check often and talk with your care team about adjusting insulin as needed.

– Most medications are safe while breastfeeding. Talk to your doctor.
- Contraception: Discuss safe options for preventing unplanned pregnancies with your provider. Talk about future pregnancy early so you are best prepared to have a healthy future baby.
- Ongoing care: Stay connected with your diabetes care team for ongoing support.

Care team

You are not alone on this journey! There are many care providers to support you before, during and after pregnancy.

Your care team may include:

- Endocrinologist/Diabetologist: Your endocrinologist or diabetologist helps you manage your diabetes and diabetes medications.
- Certified diabetes care and education specialist (CDCES): Your CDCES is an educator who can teach you about diabetes and pregnancy and provides you with information and resources to help you on this journey.
- Obstetrician: Your obstetrician works with pregnancy and childbirth. You may see an obstetrician who additionally specializes in high-risk pregnancies (Maternal-Fetal Medicine specialist).
- Dietitian: Your dietitian specializes in meal planning and nutrition.
- Mental health professional: Mental health professionals such as psychiatrists, psychologists, and social workers, focus on your emotional well-being. These professionals can help you navigate conditions such as post-partum depression.

Having a healthy pregnancy with diabetes may have additional challenges, but it is possible. Early preparation and planning are important steps in keeping you and your baby healthy during pregnancy and after birth.

Q & A

Q1: I have diabetes and can become pregnant – what should I do?

A1: • If your goal is to become pregnant, let your health care team know. They can help you to:
- Switch over to pregnancy-safe medications
- Aim to have blood sugars in target ranges before conceiving

• If you do not want to become pregnant, use effective birth control.

Q2: Is my diabetes medication safe during pregnancy?

A2: • Not many medications have been well studied
- One factor in medicine safety during pregnancy is whether the drug can reach the baby through the placenta, the organ that connects the mother to the baby.
- This guideline reviewed research on metformin when added to insulin for women who already have diabetes and become pregnant.
  - Insulin does not easily cross the placenta to the baby and is considered the safest to use. It also can be easily adjusted to keep your blood sugars in the target range.
  - Metformin crosses the placenta and gets to the baby, especially after 1st trimester. How this can affect the baby is still being studied, but most should switch over to insulin-only while pregnant.
- Certain long-acting glucagon-like peptide-1 receptor agonists (GLP1RA) can stay in your system for several weeks and their safety during pregnancy is not known.
  - Talk to your health care provider about switching to a different medication to manage your blood sugars before trying to conceive.
  - If you find out you are pregnant while on a GLP1RA, reach out to your health care provider right away. When you stop the GLP1RA, there should be a plan to start a safer medication in pregnancy, such as insulin, and follow-up closely to keep your blood sugars in target range while you are pregnant.

Q3: Should I be on a low-carb diet during pregnancy?

A3: Every individual is different, so a lower carb (< 175g/day) or usual diet (>175g/day) may be appropriate during pregnancy, but having extremely high or extremely low carbs may be harmful.

Q4: I have Type 2 diabetes. What's the best way to measure my blood glucose levels?

A4: • Blood sugar can be checked with fingersticks or a continuous glucose monitor.
- Blood sugar targets are different during pregnancy than when you're not pregnant.

Q5: I am using a continuous glucose monitor – how do I know my readings are in range?

A5: Document the time you eat your meals and target the same levels you would with a fingerstick glucose monitor:
- Fasting blood sugar (before eating anything with calories in the morning): < 95 mg/dL (<5.3 mmol/L)
- 1 hour after a meal: < 140 mg/dL (<7.8mmol/L)
- 2 hours after a meal: < 120 mg/dL (<6.7mmol/L)

Q6: Can I use a hybrid closed loop pump (a pump that automatically adjusts insulin) during pregnancy?

A6: If you have type 1 diabetes, a hybrid closed loop pump may be a better option than multiple daily insulin injections or an insulin pump that can't make automatic changes – talk to your provider to see which system may be best for you.

Q7: Is it better to wait for the baby to come naturally instead of having the baby at a specific time?

A7: For most who have diabetes before pregnancy, giving birth around 38-39 weeks may reduce risks.

Q8: I just delivered my baby and am being discharged home. What medical appointments do I need?

A8: In addition to follow-up visits with your obstetrician, you need regular visits with your endocrinology / diabetes team since your medication needs will keep changing weeks to months after your baby is born.

Read the full guidelines here:
www.ese-hormones.org/guidelines

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