TEST

Glucose screening tests during pregnancy

These blood tests check how your body handles glucose during pregnancy.

WHAT IT MEASURES
Blood sugar response after drinking a measured glucose solution

SAMPLE
Blood

FASTING NEEDED?
Sometimes; fasting is required for oral glucose tolerance tests

HOW LONG IT TAKES
About one to three hours, depending on protocol

RESULTS IN
Usually same or next day; laboratory timing differs

USED FOR
Screening and diagnosing diabetes during pregnancy

MAIN LIMITATION
Protocols and cutoffs differ, making results non-interchangeable

Overview

Glucose screening tests check how your body processes glucose, a type of sugar, during pregnancy. Pregnancy hormones can make insulin less effective. Insulin is the hormone that helps glucose move from your blood into your cells.

"Glucose screening" can refer to two related tests:

Healthcare systems use different approaches. Some start with the one-hour challenge and order an OGTT only if that result is raised. Others use a fasting OGTT as the first test.

Gestational diabetes means blood glucose first recognized as high during pregnancy. The test result must be interpreted using the criteria for the exact protocol you had.

- A glucose challenge test is usually a non-fasting screening test. You drink a glucose solution, then have a blood test one hour later.
- An oral glucose tolerance test , or OGTT, is a longer fasting test. It can diagnose gestational diabetes.

Why the test is ordered

The main purpose is to look for gestational diabetes. This condition often causes no noticeable symptoms, so testing may identify raised glucose that would otherwise be missed.

Finding raised glucose can guide decisions about food, activity, glucose monitoring, medicines, pregnancy care, and the timing of follow-up. Testing may also help distinguish gestational diabetes from diabetes that was already present but had not previously been recognized.

A screening test does not confirm a diagnosis by itself. If a glucose challenge result is above the laboratory's cutoff, a diagnostic OGTT may be needed.

Who should have the test

Testing practices differ between countries and healthcare systems. Many maternity services offer glucose testing at around 24 to 28 weeks of pregnancy. Some services test everyone, while others test people with particular risk factors.

Earlier testing may be offered if you have factors linked with a higher chance of diabetes, such as:

Earlier testing does not always replace testing later in pregnancy. Glucose regulation can change as pregnancy progresses.

If you have had weight-loss surgery, especially gastric bypass surgery, a standard glucose drink may cause unpleasant symptoms or give results that are difficult to interpret. Your maternity team may discuss another way to assess your glucose.

- Gestational diabetes in a previous pregnancy
- A previous blood glucose result above the expected range
- A close family history of diabetes
- Polycystic ovary syndrome
- A higher body mass index
- A previous baby with a high birth weight

How to prepare

Preparation depends on which test you are having. Follow the instructions from your laboratory or maternity service because protocols are not interchangeable.

For a one-hour glucose challenge, fasting is often unnecessary. You may be advised to eat normally beforehand, although some centres give specific instructions about the timing or type of food.

For an OGTT, you will usually need to fast overnight. This generally means having only plain water for a set number of hours before the appointment. The laboratory should tell you the exact fasting period.

In the days before an OGTT, continue your usual diet and normal activity unless you receive different instructions. A sudden reduction in carbohydrate intake can affect how your body responds to the glucose drink.

Tell the testing service about your medicines and supplements. Do not stop prescribed medicine unless the clinician responsible for it tells you to. Ask whether you should take morning medicines before or after a fasting test.

Contact the testing service if you are acutely unwell or cannot keep food or fluids down. The test may need to be rearranged.

What happens during the test

For a glucose challenge test, you drink a measured glucose solution. A blood sample is taken about one hour later. Depending on local arrangements, you may need to remain at the clinic while you wait.

For an OGTT, a blood sample is taken before the drink to measure your fasting glucose. You then drink a measured glucose solution within the allowed time.

Further blood samples are collected at set intervals. A 75-gram OGTT commonly lasts about two hours. A 100-gram OGTT commonly includes samples over three hours. The protocol used depends on local practice.

You will usually be asked to sit quietly and avoid eating, smoking, vaping, or exercising during the test. Plain water may be permitted in limited amounts. Tell staff if you feel sick, vomit, or cannot finish the drink because the test may not be valid.

Understanding your results

Results may be reported in milligrams per decilitre, written as mg/dL, or millimoles per litre, written as mmol/L.

For a glucose challenge, the laboratory compares the one-hour result with its screening cutoff.

A result below the cutoff usually means no further test is needed. A result at or above it does not necessarily mean you have gestational diabetes; it often means an OGTT is recommended.

For an OGTT, each result is compared with the diagnostic criteria used by that service. Some protocols diagnose gestational diabetes after one raised value. Others require more than one raised value.

There is no single cutoff that applies to every pregnancy glucose test. Ranges and interpretation vary by laboratory, test protocol, age, pregnancy stage, medicines, and clinical context. Sex-based differences are generally not relevant within pregnancy testing, but laboratories may still include sex in their reporting systems.

A result close to a cutoff may require careful interpretation. Small differences can reflect normal day-to-day variation rather than a major change in health.

What affects the results

Several factors can change the result even when the laboratory has performed the measurement correctly.

Eating during a required fasting period can raise the fasting result. Fasting for longer than instructed, restricting carbohydrates in the preceding days, or missing meals can also alter the response.

Recent vigorous exercise can temporarily change blood glucose. Exercise during the waiting period may lower the measured value, which is why you are usually asked to remain seated.

Acute illness, infection, pain, poor sleep, and physical or emotional stress can raise glucose temporarily. Vomiting or failing to finish the glucose drink makes the test incomplete.

Medicines can also affect glucose. Corticosteroids, including steroid injections sometimes given during pregnancy, may raise it. Other medicines may change glucose control or make fasting difficult. Always provide an up-to-date medicine list.

The stage of pregnancy matters because insulin resistance usually changes as pregnancy progresses. A normal result early in pregnancy may not reflect glucose handling later.

Previous stomach or weight-loss surgery can cause rapid glucose absorption followed by a sharp fall. This can make an OGTT misleading and may cause sweating, dizziness, cramping, or diarrhoea.

A recent blood transfusion, iron deficiency, or altered red blood cell turnover mainly affects HbA1c, a test of longer-term glucose exposure. HbA1c is not interchangeable with an OGTT and is not usually the preferred test for detecting gestational diabetes later in pregnancy.

Accuracy and limitations

The one-hour glucose challenge is designed to identify people who may need further testing. It can flag a raised result in someone who does not have gestational diabetes. It can also miss some cases, particularly when a higher screening cutoff is used.

An OGTT gives more information but is still a snapshot from one morning. Glucose responses vary from day to day. Results close to a cutoff may change if the test is repeated.

Different glucose doses, blood collection times, and diagnostic cutoffs can classify the same person differently. A result from one protocol should not be interpreted using the criteria for another.

The test may be unreliable if you did not fast as instructed, vomited, exercised during the test, or had altered glucose absorption after stomach surgery. In those situations, repeat testing or home glucose measurements may be more useful.

Urine glucose is not an accurate substitute. Glucose commonly appears in urine during pregnancy even when blood glucose is not in the diagnostic range, and urine testing can also miss raised blood glucose.

Risks and complications

Blood collection may cause brief discomfort, bruising, or light-headedness. Serious complications from a routine blood draw are uncommon.

The glucose drink can cause nausea, bloating, headache, or dizziness. Tell staff promptly if you feel faint or think you may vomit.

What happens next

A result within the expected range usually leads to routine pregnancy follow-up. Further testing may still be considered if later symptoms, ultrasound findings, or other glucose results raise concern.

If a screening result is raised, you may be offered an OGTT. If an OGTT meets the local diagnostic criteria, your maternity service will discuss glucose monitoring and pregnancy care with you. Follow-up after pregnancy is also commonly discussed because glucose levels may return to the expected range while the future risk of diabetes remains higher.

Most test results are handled through routine follow-up. Seek urgent medical advice if you are

pregnant and cannot keep fluids down, have signs of dehydration, or notice reduced fetal movement.

Seek emergency care for confusion, severe drowsiness, deep or unusually rapid breathing, or persistent vomiting with marked weakness. These symptoms are not a diagnosis, but they require prompt assessment.

Common questions

Can I drink coffee before the test?

Not before a fasting OGTT, even if it is black. Coffee and caffeine may affect glucose and do not count as plain water. For a non-fasting challenge, follow the instructions from your testing centre.

Can I drink water?

Plain water is usually allowed during fasting and may be permitted during the test. Avoid flavoured water, sweeteners, gum, and mints unless the testing service says they are acceptable.

Does the time of day matter?

Yes. Fasting OGTTs are usually performed in the morning after an overnight fast. Blood glucose and hormone levels change through the day, so attend at the scheduled time.

Can I exercise beforehand?

Avoid unusually strenuous exercise before the appointment. During the test, remain seated and do not exercise unless staff tell you otherwise.

What if I feel sick after the glucose drink?

Tell staff immediately. If you vomit or cannot finish the drink, the result may not be valid and the test may need to be repeated or replaced with another assessment.

Can I take my morning medicines?

Ask the testing service in advance. Some medicines can be taken with water, while others may need different timing. Do not stop prescribed medicine on your own.

Sources

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