

Blood glucose testing for diabetes

Blood glucose ('sugar') testing is not usually necessary for people who have newly diagnosed type 2 diabetes. It is, however, important for those who have type 1 diabetes, those changing medications or starting insulin.

Good reasons to test your blood glucose levels regularly

- Testing your blood is a quick and easy way to find out whether your blood glucose levels are high (called hyperglycaemia) or low (called hypoglycaemia). Blood glucose levels are measured in millimoles of glucose per litre (mmol/L).
- Regular blood glucose testing helps you see how well your medication, current diet and physical activity are keeping your diabetes under control. It can give you more of a sense of control over your diabetes.
- It can help you relate aspects of your lifestyle to their effects on blood glucose levels. You can then use this information to learn how to improve your blood glucose levels.

If you improve your blood glucose levels, you are actively helping reduce the likelihood of developing the following complications of diabetes:

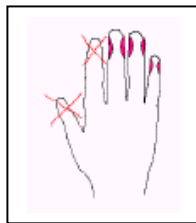
- Heart disease, stroke and circulation problems (cardiovascular diseases)
- Damage to the eyes (called retinopathy)
- Nerve damage (called neuropathy), foot problems, erection problems in men
- Damage to the kidneys (called nephropathy)

What am I aiming for?

Ideal blood glucose levels are **between 4 and 8 mmol/L before meals and two hours after a meal**; however, individual targets should be set in discussion with your doctor.

How do I test?

- Wash your hands in warm water (to clean them and encourage blood flow), and dry them before you test.
- Spirit-based swabs can affect your test results and, therefore, should not be used.
- Use a lancet device to prick the **sides** of the fingers, rather than the tip, because these sites are less painful.
- Change the finger used at each test.
- For hygiene reasons, do not allow anyone else to use your finger-pricking device.
- It is best to change your lancet each time, or at least once a day.
- To dispose of lancets, use a needle-safe or sharps disposal bin, which are both available on prescription.



Avoid using your first finger or thumb to test, and use the sides of fingertips

When to test and how often

- Your surgery or diabetes team at the hospital can advise you about when to test and how often. For example, until your blood glucose levels become stable, you might be asked to test before each meal and at bedtime.
- Suggested times to test include before breakfast, before other meals and/or two hours after meals.

- It is useful to vary the times when you test to help you find out when your blood glucose levels are going too high or low.
- Once your blood glucose levels have reached your target, you might be able to reduce how often you test - discuss this with your GP, practice nurse or diabetes team.

Blood-testing meters

- You need to calibrate your meter every time you change your test strips. Follow the instructions provided with your meter, because all meters have different procedures.
- Meters are affected by extremes of temperature; they work best at room temperature.
- The test strips are affected by moisture, so ensure the container is closed after use.
- The manufacturers of the meter often supply batteries free of charge, so contact the manufacturers before buying new ones.

You might be asked to increase the frequency of (how often) your tests if:

- There are any changes to your treatment.
- You are ill. For further information see *Illness and diabetes*.
- You think your blood glucose levels are going too low or too high.
- You are pregnant. During pregnancy, you will have to monitor your glucose levels very closely. For further information please see *Planning your pregnancy and your diabetes*.

Causes of high and low blood glucose levels:

Too high:

Too little insulin or tablets
Too much carbohydrate
Less activity than usual
Illness or infection
Worry or other stress

Too low:

Too much insulin or tablets
Too little carbohydrate
More activity than usual
 Skipped or delayed meal

Symptoms of high blood glucose levels

- You might feel thirsty, tired, pass a lot of urine, have difficulty breathing, experience stomach pain, moodiness, nausea, or feel general unwell.
- If your glucose levels are consistently above your targets (set by yourself and your doctor or nurse), seek help to sort this out soon – don't wait until your next annual review.

Symptoms of low blood glucose levels

- You might feel intense hunger, shaky or dizzy, pale and sweaty, have irrational behaviour, or even feel confused.
- Blood glucose levels are considered too low if they fall **below 4 mmol/L**. This is called hypoglycaemia ('hypo'). For further information see *Hypoglycaemia*.

For further information contact:

- **Diabetes UK:** 10 Parkway, London NW1 7AA; Careline 0845 1202 960;
www.diabetes.org.uk
- **Your GP:**
- **Your nurse:**
- **Your dietitian:**