

Blood Glucose Monitoring – a guide for people with diabetes

Why should I test my Blood Glucose?

It is not necessary for everyone with diabetes to test their blood glucose on a regular basis but there are certain circumstances in which blood glucose testing can be very useful.

Examples are:

- to help you understand what factors affect your blood glucose, e.g. certain foods or activity, so that you can consider appropriate changes
- preventing, detecting and treating hypoglycaemia (low blood glucose) if you are taking certain treatments (see below)
- keeping safe, during periods of illness or when preparing for operations and procedures
- preparing for and during pregnancy to ensure that blood glucose control is as good as possible
- provide information to your nurse or doctor so that you receive appropriate treatment

Who needs to test?

- if your diabetes is treated with:
 - insulin
 - sulphonylurea tablets (Gliclazide, Glibenclamide, Glimepiride, Chlorpropamide or Tolbutamide)
- if your diabetes is newly diagnosed and you want to use the information obtained from blood testing to help you make lifestyle choices
- following a change in your treatment (to assess how effective the change has been)
- during a period of illness
- when preparing for an operation or procedure or planning pregnancy

What should my blood glucose readings ideally be?

You should discuss and agree your own personal blood glucose targets with your nurse or doctor, but as a guide:

- first thing in the morning and before meals: 4-7mmol/L
- two hours after meals: less than 10mmol/L
- before bed: 6-10mmol/L

When should I test?

This will be dependent on your individual treatment and circumstances; some people will not need to test their blood glucose very often (i.e. once or twice a week), others may need to test several times a day. Your nurse or doctor will advise you of your individual requirements. Recommended times of day for testing:

- first thing in the morning (fasting)
- before meals
- 2 hours after meals
- before bed

If your diabetes is managed with **insulin** or a **sulphonylurea** you should always test your blood glucose before **driving** and every two hours on long journeys to ensure your blood glucose is not low.

Usual recommended testing regimes:

If you are on a basal bolus (4 injections a day) insulin regime or an insulin pump

- a minimum of four times a day; more often when adjusting your insulin based on your blood glucose results
- before driving and every two hours on long journeys

If you are on a once or twice daily insulin regime

- once or twice daily; more often when adjusting your insulin based on your blood glucose results
- before driving and every two hours on long journeys

If you are on Sulphonylurea tablets

- usually once a day (twice when your treatment is being adjusted)
- before driving and 2 hourly on long journeys
- if you are unwell
- if you are preparing for an operation or procedure
- there may be periods of time when you do not need to test

How do I test?

- make sure your hands are warm; if they are really cold it is hard to draw blood, and finger-pricking will be more painful
- wash your hands beforehand with soap and water and rinse thoroughly - use water rather than wet wipes (wet wipes contain glycerine that could alter the result)
- prick the side of a finger avoiding the forefinger and thumb - try not to use the middle, or go too close to a nail, because this will be painful

- use a different finger each time and a different part; this will cause you less pain
- if you don't get much blood, hold your hand down towards the ground; this should make more blood flow to the fingers

Which blood glucose meter should I use?

Your healthcare team should help you to understand blood glucose monitoring and give you a suitable meter. As test strips are very expensive, in Northampton we recommend a particular meter to reduce costs. The company that produces them provides free meters and offers you 24 hour support.

How do I get my test strips?

You should get these on prescription; they usually come in pots of 50. The amount you will be prescribed will be dependent on how often you need to test. As an example, if you test twice a day, you should be prescribed two pots per month. If you have a surplus amount then you should miss ordering for a month as these strips are very expensive and have a limited use by date.

How else can my blood glucose levels be monitored?

Your HbA1c will show how well your blood glucose has been controlled over the previous two to three months; this blood test should be requested by your doctor or nurse at least every 6 months. Ideally for most people, this result should be around 7% or 53mmols/mol, but you can discuss and agree your own personal HbA1c target with your doctor or nurse. People taking insulin or a sulphonylurea should aim for an HbA1c in the 7.0-7.5% range as levels below this suggest that the blood glucose is too low at times. The blood glucose should be kept above 5 mmol/L wherever possible.

Personal plan for measuring and monitoring blood glucose
HbA1c Target:
Blood Glucose Targets:
Blood Glucose monitoring plan: