



Blood Glucose Monitoring

Self blood glucose monitoring is a snapshot of a person's blood glucose level at the time that it was taken.

Self blood glucose monitoring enables people to check their blood glucose levels as often as is needed and to test how different foods, medications, physical activity and stress affect their levels.

Quite simply, after washing your hands using soap and water the side of the finger is pricked with a lancet device to obtain a very small drop of blood.

The blood is placed on the test strip as per instructions of the blood glucose meter. The results are displayed within a matter of seconds.

Where to prick

Correct (less painful) – side of finger
Incorrect (more painful) –pulp of finger



X Ouch!

Why Test your Blood?

Regular blood testing allows you to:

- Monitor the effectiveness of your medication, eating plan and physical activity program

- To gauge the affect of stress on blood glucose levels
- Develop a sense of control
- Relate aspects of your lifestyle to the effect this has on your blood glucose levels
- Decide when to seek medical assistance
- Actively assist in the prevention of short and long terms complications of diabetes.

Testing your blood is the most immediate way of finding out if your blood glucose level is high (hyperglycaemia) or low (hypoglycaemia).

In Australia, blood glucose levels are measured in millimols of glucose per litre of blood (mmol/L).

What blood glucose levels should you be aiming for?

It is important to discuss the blood glucose levels that are appropriate for you with your diabetes health care professional.

Sometimes it may be necessary to individualise these levels. The elderly for example can be at greater risk of hypoglycaemia and therefore a higher target range of BGL may be set for these individuals.

Self blood glucose monitoring may help you to feel more in control of your diabetes. This helps you to make informed decisions about your health and to become a self manager.

Blood glucose levels generally range between 4-8mmol/l in those people without diabetes.

Only people with diabetes who are taking insulin or certain oral diabetes medications are at risk of hypoglycaemia if blood glucose levels fall below 4 mmol/L. Check with your diabetes health care professional to see if you are at risk of hypoglycaemia.

The following is a **very** general guide to blood glucose levels only. Individual targets need to be discussed with your diabetes health care professional.

Fasting/before meals	6-8mmol/l
2 hours after meals	6-10mmol/l

NHMRC National Evidence Based Guideline for Blood Glucose Control in type 2 diabetes (2009)

Type 1 diabetes: Guidelines for testing

- A basic guide is to test four times per day – fasting (before breakfast), before lunch, before dinner and at bedtime.
- Testing times may vary with individual insulin regimens. It is important to discuss the best testing times for you with your doctor or diabetes educator.

Test at extra times if you:

- Have symptoms of hyperglycaemia or hypoglycaemia
- Are unwell
- Experience night sweats or morning headaches or strange dreams
- Test before, during and after physical activity, particularly if it is a new activity or if the duration or intensity has changed.

Type 2 diabetes: Guidelines for testing

- Test twice per week, twice per day two days per week. Initially your GP may ask you to test more frequently
- Suggested times are fasting (before breakfast), and two hours after the **start** time of eating the main meal.
- Vary the days you test each week e.g. Monday and Thursday, Tuesday and Friday or Wednesday and Saturday/Sunday

- Testing can be done at other times; e.g. checking foods, monitoring the effect of physical activity or stress, during illness.
- When on insulin injections check with your doctor or diabetes educator when to test As it will depend on which insulin regimen you are on

Test at extra times if you:

- Have symptoms of hyperglycaemia or hypoglycaemia
- Are unwell
- Experience night sweats or morning headaches or strange dreams

Type 1 and type 2

Log all readings into a diary/exercise book and take this with you to all appointments with your doctor or diabetes educator.

Common factors that increase or decrease blood glucose levels

- Physical activity/exercise
- Stress
- Illness, pain and surgery
- Food
- Diabetes medication
- Testing techniques
- Other medications
- Alcohol

A quick checklist when you're not sure the result is correct

- Did you wash your hands first (don't use alcohol or disinfectants)?
- Is the strip the right one for the meter?
- Is the calibration code correct?
- Is the meter clean?
- Is the battery low or flat?
- Have the strips expired?
- Have the strips or meter been affected by climate, heat or light?
- Is the strip inserted the right way?
- Is there enough blood on the strip?

Take another test to rule out any of these problems

Why I won't get the same results if I do two tests in a short period of time

It is worth remembering that not even the most sophisticated, expensive meter can claim 100% accuracy 100% of the time.

Diabetes organisations around the world recommend that meter error be less than 10% at blood glucose levels of 1.7 – 22.0 mmol/L 100% of the time.

A true blood glucose reading of 9 mmol/L could be shown on the meter as anywhere between 8mmol/L and 10.0mmol/L

A1c (previously HbA1c)

This is a slow continuous process in which glucose attaches to the haemoglobin (red blood cells) and remains there for the life of the red blood cell, approximately 120 days. The A1c gives an average of the blood glucose level over the past 6 – 8 weeks (the ideal range is below 7%). The result of the test will be given as a **percentage** not in mmol/L. The A1c together with regular blood glucose monitoring is the best way to see the overall picture of your blood glucose levels.

It is recommended that people with type 1 and type 2 diabetes have their A1c tested every 3-6 months. Blood for this test is taken at a laboratory and your doctor must order the test.

Sharps Disposal

Sharps are objects or devices having acute rigid corners, edges, points or protuberances capable of cutting or penetrating the skin eg hypodermic needles, pen needles and finger pricking lancets.

Why should I use a sharps container?

If you use sharps either a needle for insulin or a lancet for blood glucose monitoring then you **are** responsible for the correct disposal of those sharps. You must protect council workers and others from needle stick injuries.

Needle stick injuries are the term used for anyone sustaining an injury from a 'sharps'. Having a sharps injury can lead to emotional distress and turmoil not only for the person injured but also their partners and family as they endure a three month wait to ensure they have not contracted a blood borne disease

What diseases can spread from used needles?

- Hepatitis B and C
- HIV

Who is at risk of accidentally pricking their fingers or feet?

- Children and families in playgrounds and public areas, who accidentally prick their fingers or feet
- Council workers employed for waste disposal duties
- Relatives
- Health workers/carers

What happens to your sharps if you don't dispose of them correctly?

- If you dispose of sharps in your household rubbish and a council worker injures themselves, the council has the right to refuse rubbish collection
- Sharps in household rubbish are disposed in landfill areas. This continues to present a danger to council workers and members of the public using landfill areas. It is important to remember that heavy earth moving equipment can rupture containers exposing needles



What is the correct way to dispose of sharps?

In an approved SHARPS container that is:

- Labelled SHARPS
- Displays the Bio-Hazard symbol
- A non penetrable plastic that is yellow in colour
- One port entry that cannot be removed and can be sealed when the container is $\frac{3}{4}$ full.

How do I dispose of my sharps container?

- Check with your local council and how they accept sharps containers for disposal
- Check with your local hospital, particularly if you are in a rural/remote area
- Check with your local pharmacy
- Check with your local community health centres
- Diabetes WA has a limited size range of containers for mail order and can receive full sharps containers for disposal

Sharps Disposal is a long standing issue that can lead to confusion. If you have difficulties with the disposal of your sharps container, please contact your local Federal Member of Parliament. You can find your local member's contact details through www.aph.gov.au/house/members/mi-elctr.asp or www.aph.gov.au/senate/senators/homepages/index.asp?sort=state

While this issue is often at a Local Government level, sharps disposal is a nation wide problem. The Commonwealth Government may be able to assist removing the confusion from this issue. It is also more than an issue for people with diabetes as there are more and more people with medical conditions that will need to be able to dispose of sharps correctly.

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