

# Blood Glucose Monitoring in type 2 diabetes (adults)

Blood glucose goes up and down during the day depending on carbohydrate intake, insulin doses, physical activity, time of day and general wellness. The blood glucose tends to be lower before meals and higher after meals.

Monitoring shows you what the blood glucose levels are and guides your self-care. The first step in blood glucose monitoring is knowing your blood glucose target ranges.

## Blood glucose targets

Blood glucose targets depend on your age, how long you have had diabetes, the type of medication you are taking and whether or not you have other medical conditions.

Time	Target BG
Fasting and before meals	6.0 – 8.0 mmol/L
2 hours after meals	6.0 – 10.0 mmol/L

People who have had diabetes for many years, are at risk of low blood glucose (hypoglycaemia) or have impaired hypoglycaemia awareness may have higher targets. If you are pregnant or trying to get pregnant, your blood glucose targets will be set lower.

## Blood glucose testing guide

Your blood glucose levels will identify if your diabetes is well managed and when changes are needed.

A blood glucose test before breakfast tells you how well your diabetes is controlled overnight. Blood glucose tests before lunch, before the evening meal and at bedtime are influenced by many things (eg carbohydrate intake, physical activity, medications) and tell you if your diabetes is well controlled during the day.

The frequency of testing will depend on how stable your diabetes is and the type of medication you are taking.

Testing four times (fasting, before lunch, before the evening meal and before bedtime) for a few days prior to seeing your doctor or credentialled diabetes educator can assist your assessment and guide treatment adjustments.

Extra tests are recommended if you:

- > feel that your blood glucose is low, as part of your **hypo action plan**
- > feel unwell, as part of your **sick day action plan**
- > are planning some physical activity, during and after physical activity
- > are using machinery
- > are about to drive
- > are concerned about unstable, unexpected or unexplainable results.



## How to blood glucose monitor

Blood glucose monitoring involves putting a blood glucose testing strip into a blood glucose testing meter and placing a drop of blood from a finger prick on to the strip. The blood glucose level is then displayed on the screen. To obtain an accurate result, it is important to:

- > wash your hands before pricking your finger and obtaining a blood sample
- > calibrate your meter to each new packet or bottle of strips (if required)
- > check expiry date of strips and don't use if out of date
- > store the strips and meter away from direct sun and moisture.

## Other methods of monitoring glucose

The **HbA1c** test is different to the finger prick test as it checks long term blood glucose. It measures how much glucose is in the blood over the last 8-12 weeks. This test is usually done 4 times a year by your doctor or endocrinologist. The general target for HbA1c is less than 53mmol/mol (7%), however this target may also be modified to suit your individual need.

**Continuous glucose monitoring (CGM)** and flash glucose monitoring (FGM) systems measure glucose in the interstitial fluid (not blood) and track glucose levels over a period of 7-14 days. Depending on the CGM or FGM system, your blood glucose levels can be viewed immediately or the results can be downloaded later.

## Supplies and equipment

Registration with the National Diabetes Services Scheme (NDSS) gives you access to cheaper blood testing strips. Blood monitoring meters and all of the equipment needed is available from NDSS community pharmacy and some diabetes centres.

On registration, you will receive an initial six month supply of blood glucose test strips. After six months, your doctor or credentialed diabetes educator must approve your access to another six months of blood glucose test strips at the NDSS price.

A further six months access to cheaper blood glucose testing strips will be available if:

- > your blood glucose levels is not in target
- > you are at risk of low blood glucose levels (hypoglycaemia)
- > you have an illness
- > you are using a medicine that effects your blood glucose levels
- > there has been a change to your diabetes management within the previous three (3) months.

Aboriginal and Torres Strait Islander people who are currently eligible for 'Closing the Gap arrangements' are not affected and will continue to receive similar subsidies.

## Key points to remember

- > know your blood glucose targets and have a plan for testing
- > dispose of sharps safely
- > your **action plans** will advise you on what to do if your blood glucose level is out of target
- > if you have **persistent high or low readings** talk to your doctor, endocrinologist, or credentialed diabetes educator.

## Where can I go for more information?

National Diabetes Services Scheme  
Diabetes Australia

[www.ndss.com.au](http://www.ndss.com.au)

[www.diabetesaustralia.com.au](http://www.diabetesaustralia.com.au)

## My monitoring action plan

<p>Contact details          Family / Friend: _____          Doctor: _____          Credentialed diabetes educator:          _____          Health Direct (24hr health advice line)          Phone: 1800 022 222</p>	<p><i>Affix Patient Identification Label</i></p>
<p>My blood glucose target range is:          ↓ Less than 15.0 mmol/L to avoid symptoms of high blood glucose          ↓ Less than 10.0 mmol/L to reduce risk of diabetes complications</p>	<p>Fasting: _____ mmol/L          Pre meals: _____ mmol/L          2 hours after meals: _____ mmol/L          Before bed: _____ mmol/L          Overnight (2:00 - 3:00am): _____ mmol/L</p>
<p>My blood glucose testing plan is:</p>	<ul style="list-style-type: none"> <li>&gt; fasting</li> <li>&gt; pre meals</li> <li>&gt; 2 hours after meals</li> <li>&gt; before bed</li> <li>&gt; overnight (2:00 - 3:00am)</li> </ul>
<p>Extra blood glucose testing plan is:</p>	<ul style="list-style-type: none"> <li>&gt; feel that blood glucose is low</li> <li>&gt; feel unwell</li> <li>&gt; before, during or after physical activity</li> <li>&gt; are using machinery</li> <li>&gt; are about to drive</li> <li>&gt; are concerned about unstable, unexpected or unexplainable results</li> <li>&gt; other _____</li> </ul>
<p>Blood ketone testing plan:          Blood ketone target is &lt; 0.6mmol/L</p>	<p>Applicable: Yes / No          _____</p>
<p>HbA1c target is:</p>	<p>_____ mmol/mol _____ %</p>
<p>Hypo action plan</p>	<p>Dated: _____</p>
<p>Sick day action plan</p>	<p>Dated: _____</p>
<p>School care plan</p>	<p>Applicable: Yes / No                      Dated: _____</p>
<p>Supplies</p>	<p>NDSS Community Pharmacy / Diabetes Service</p>
<p>Sharps disposal</p>	<p>NDSS Community Pharmacy / Council / Diabetes Service</p>
<p>Dated: _____</p>	<p>Name: _____                      Sign: _____</p>

### For more information

**CHSA Diabetes Service**  
**Country Health SA LHN**  
 PO Box 287, Rundle Mall  
 ADELAIDE SA 5000  
 Telephone: (08) 8226 7168  
[www.chsa-diabetes.org.au](http://www.chsa-diabetes.org.au)

