BE PROACTIVE

Setting Goals

Consider different areas of your life and which of these are important to you

Relationships

Health and **physical well-being**

Work and **career**

Personal and **spiritual growth**

Recreation and **leisure**

Helpful ways to improve sleep quality

Maintain a regular bedtime and wake time routine.

Exercise regularly. Light exercise can be included in the evening.

Avoid large meals before bed.

Avoid nicotine, alcohol and caffeine 4-6 hours before bedtime.

Switch off or avoid using electronic device (e.g., mobile phone, computer or television) at least 30 minutes before bedtime.

Keep your bedroom dark, cool, quiet and comfortable.

Consider different areas of your life and which of these are important to you

Identify the areas of life that are important to you

- What are some lifestyle changes you are thinking of making or have made?
- How might/ did these changes contribute to important areas of your life?

Setting my goal

Example of healthy eating goal

Step 1:
Where do you want to be?

Where I am now:
"I love having fried chicken everyday!"

Where I want to be:
Manage my weight better
Eat more veggies and less fried food

This goal is important to me because:
I want to be healthier and look better

Setting my goal

Step 2:
Set your goal

I will ...

Action
Stick to My Healthy Plate

Day/Time
Lunchtime on Mondays and Thursdays

Location
At work

Time period
For the next 3 months

Start date
From 14 January

Step 3:
Identify and work around potential barriers

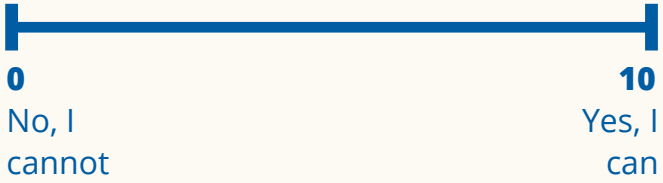
What might get in the way	What I can do	Person(s) who can help
1. Colleagues suggest having fast food for lunch	Suggest to try out eateries with healthier options	My colleague James likes vegetables
2. I have a particular craving for curry puffs when I'm stressed	Unwind in other enjoyable ways, like walking or listening to music	Walk and chat with my neighbour in the evening
3. There is a stall that sells delicious fried food, on my way home	Take an alternative path home	NIL

Setting my goal

- **Complete the "Setting my goal" handout to set a new goal**
- **Use the two rulers to check that the goal is doable**
  - ↳ If scores are less than 7, adjust the goal

Is reaching this goal important to you?

Do you think you can reach this goal?



Setting my goal

Example of physical activity goal

Step 1: Write down the original goal

I will ...

Action
Brisk walk for 30 minutes

Day/Time
Mondays, Wednesdays and Fridays after dinner at 8pm

Location
Along the park connector

Time period
For the next 4 weeks

Start date
From 18 June

Step 2: Solve the problem

	What got in the way?	How can I work around it?
1	I couldn't get off work on time	Do lunchtime exercises or pick a day without 5pm meetings
2	Poor weather	Do indoor exercises
3	Low energy level	I can sleep earlier the night before or pick a weekend day to exercise earlier

Step 3: Revise your goal

I will ...

Action
Do lunchtime exercises and brisk walk

Day/Time
- Lunchtime exercise on Mondays
- Brisk walk on Wednesdays and Saturdays

Location
Office gym, park connector

Time period
Another 4 weeks

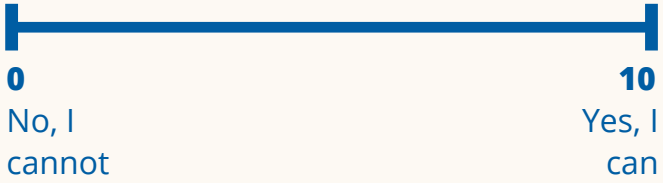
Start date
From 18 July

Keeping up with my goal

- **Complete the "Keeping up with my goal" handout if there were barriers to accomplishing the goal**
- **Use the two rulers to check that the goal is doable**
  - ↳ If scores are less than 7, adjust the goal

Is reaching this goal important to you?

Do you think you can reach this goal?



BE PROACTIVE

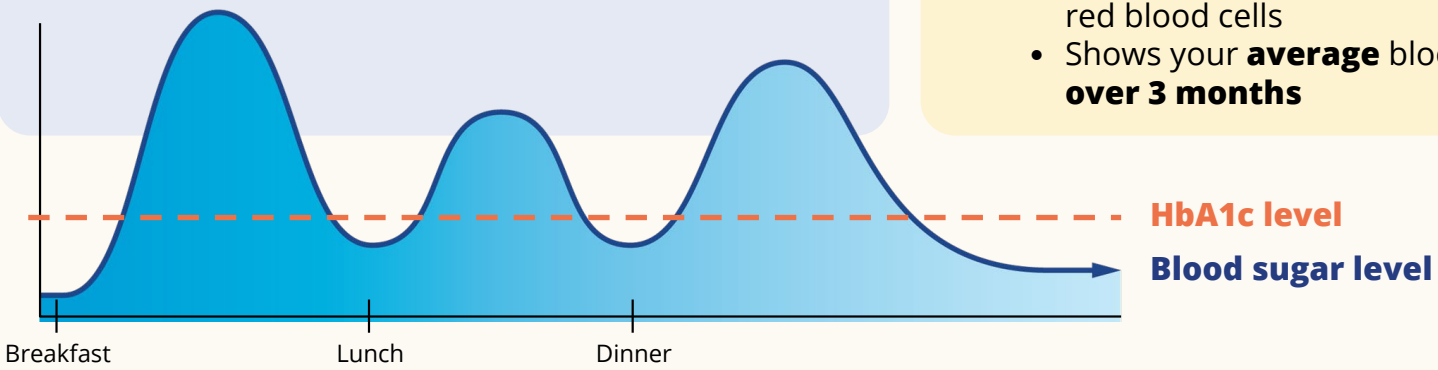
Treatment targets and monitoring

Different ways to test your blood sugar level

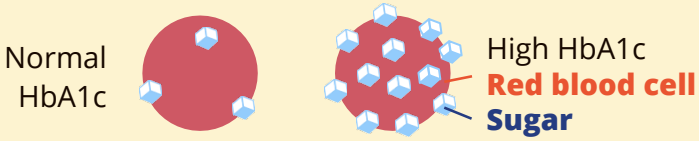
Done at home using a glucometer

What is blood sugar level?

- **"At the moment"** level of sugar (glucose) in your blood



Done at the clinic



What is HbA1c?
(Glycosylated haemoglobin)

- **Sugar** (glucose) **attached to protein** in red blood cells
- Shows your **average** blood sugar level **over 3 months**

Different ways to test your blood sugar level

For individuals with Type 2 diabetes,
consider self-monitoring (using a glucometer), if you are

At increased risk of developing hypoglycaemia (low blood sugar)

Pregnant with pre-existing diabetes or Gestational Diabetes

Experiencing acute illness

Having difficulty achieving glycaemic goals

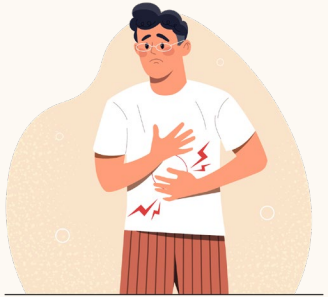
Fasting for religious reasons (e.g., Ramadan)

Monitor your blood sugar level before and after meals

Blood sugar	Before food	2 hours after food
Too high Risk of hyperglycaemia	**>7.0** mmol/L	**>10.0** mmol/L
Optimal	**4.0 to 7.0** mmol/L	**4.0 to 10.0** mmol/L
Too low Hypoglycaemia	**<4.0** mmol/L	**<4.0** mmol/L

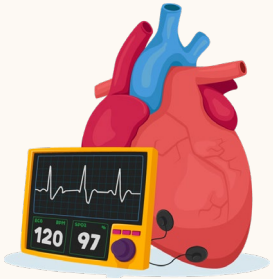
Your targets may vary depending on your condition; discuss this with your doctor or care team

Common signs and symptoms of HYPOglycaemia (low blood sugar of < 4 mmol/L)



Hunger

Hand tremors



Abnormally fast heartbeat

Fatigue

Mood changes
(e.g., anxiety, irritability, nervousness)

Dizziness or **headaches**

Changes in behaviour
(e.g., confusion, weakness, unclear speech)

Drowsiness

Follow the 15-15 rule if you experience HYPOglycaemia symptoms or your blood sugar level is low (< 4 mmol/L)

1

Take 15g of fast-acting sugars, e.g.,

Half a glass of fruit juice

OR

3 soft candies (sugar-containing) or sugar (glucose) tablets

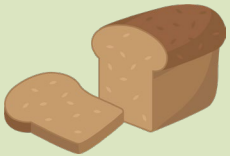
2

After 15 minutes, check blood sugar level

If **symptoms persist** or blood sugar level is low (< 4 mmol/L)

If symptoms **resolve** or blood sugar level is ≥ 4 mmol/L

3



Eat a light snack (e.g., bread, biscuits) or have your next meal earlier **to prevent blood sugar levels** from **dropping** again

Repeat steps **1 & 2**, one more time

If **symptoms persist after second attempt, seek medical advice** (if your doctor is unavailable and it is an emergency, head to the A&E)

- **Record what happened prior to experiencing hypoglycaemia**
- **If hypoglycaemia is frequent, do a medication check with your doctor**

These steps are only applicable if the person is conscious. If the person is unconscious, call an ambulance immediately.

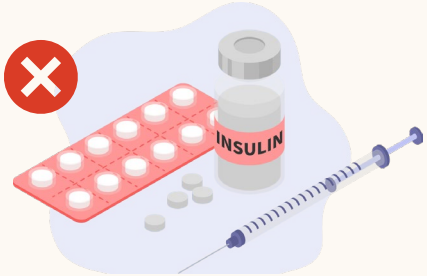
How can I prevent HYPOglycaemia (low blood sugar)

What to do

Do not skip meals even when busy

Bring a few sugar-containing sweets along whenever you go out

If needed, eat extra carbohydrates **before moderate** or **vigorous intensity activities**



Do not take diabetes or insulin injection in the morning when fasting for a blood test

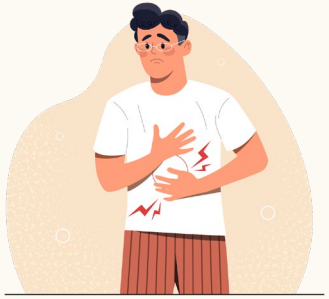
Closely **follow instructions** on when to take your medication, especially in relation to meals

If you experience **hypoglycaemia frequently, check with your doctor** as your medication may need adjusting

Common signs and symptoms of HYPERglycaemia (high blood sugar)

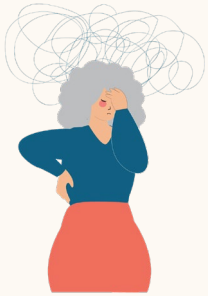
Increased thirst

Frequent urination



Increased hunger

Blurred vision



Headaches

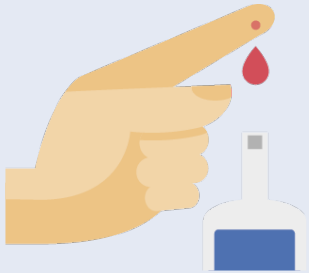
Weight loss

Slow-healing cuts

Blood sugar level
> 16 mmol/L

If you experience HYPERglycaemia symptoms or your blood sugar level is high (> 16 mmol/L)

1

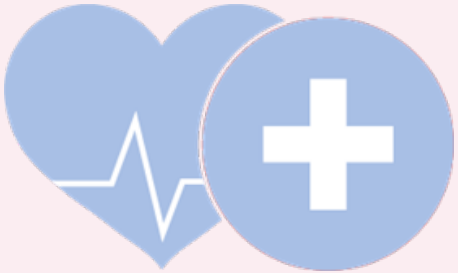


Check your blood sugar level more often

2

Drink plenty of **plain water**

3



Seek medical advice if symptomatic, or if blood sugar level remains persistently high **> 16 mmol/L**

How can I fast safely (for religious reasons)?

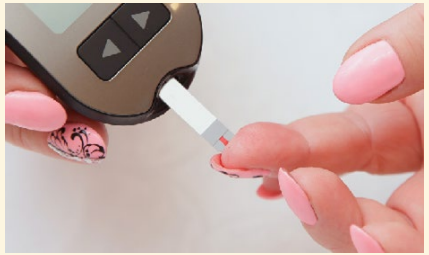
Before fasting

Consult your doctor if it is safe for you to fast

Adjust your diet with your healthcare professional

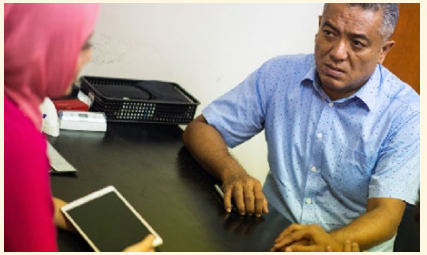
Adjust your medication or insulin dose with your doctor

During fasting



Self-monitor blood sugar levels regularly and **check for symptoms of hypoglycaemia** (low blood sugar)

If your blood sugar level is low (< 4 mmol/L), **stop your fast** and take a sweetened drink

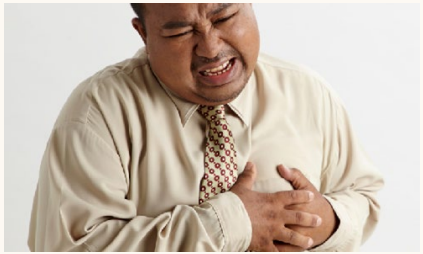


If symptoms of low or high blood sugar persist, **stop your fast and seek medical attention**

When should I not fast?

When you are or have any of the following

Frequent hypoglycaemia (low blood sugar) or **poorly controlled diabetes**



Serious conditions such as nerve disorders, heart problems or uncontrolled hypertension

Pregnant or **breastfeeding**

Sick

Not been following your prescribed medication, diet and physical activities

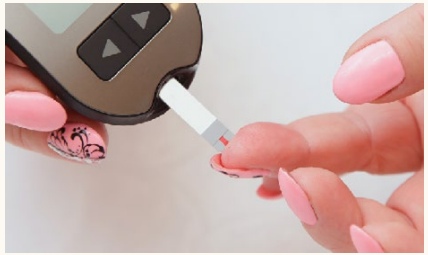
What to do when I am sick*?

*Feeling unwell, e.g., fever, cough, runny nose, vomiting and diarrhoea

See your **doctor**

Discuss with your healthcare team if **dose adjustments** need to be made

Get plenty of **rest**

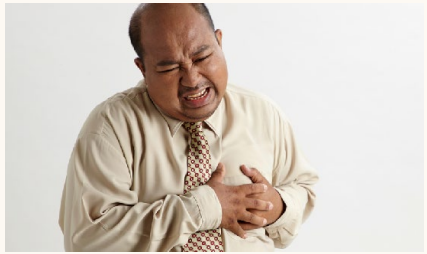


Check your blood sugar level more often

Drink plenty of **water**

Have small, frequent meals or fluids (e.g., soups, diluted juices or sweetened drinks)

When do I have to see my doctor?



Chest pain, shortness of breath, fruity breath, dry lips or tongue or abdominal pain

Severe vomiting or diarrhoea for more than 6 hours

Recurrently low blood sugar levels (< 4 mmol/L) **or persistently high** (> 16 mmol/L) for more than 24 hours

Loss of appetite

Skin sores

Go for your regular check up to detect and prevent complications

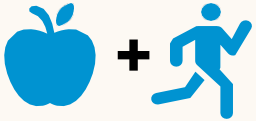
Assessment/Test	Frequency	Possible Complications
 • Weight and height (BMI) • Blood pressure • HbA1c (blood sugar) • Stress, emotional well-being	**At least every 3 to 6 months depending on your condition**	**Kidney Failure** **Blindness** **Amputation** **Heart attack** **Stroke**
 • Lipid profile (cholesterol) • Kidneys • Eyes • Feet	**At least once a year depending on your condition**	

Manage diabetes well

	HbA1c^ (%)	Blood pressure (mmHg)	LDL cholesterol (mmol/L)
	≥ 8	≥ 160/100	≥ 3.4
	7.0 – 7.9	140/80 to 159/99	2.6 to 3.3
	< 7	< 140/80	< 2.6

Speak with your care team as your targets may vary

^HbA1c tells you how your blood sugar control has been like the past 3 months.



Healthy eating habits and regular physical activity and exercise can help you achieve target levels of blood sugar control, blood pressure and cholesterol

Weight management in diabetes

Weight management is an important part of diabetes care. It helps you achieve better blood sugar levels, so keeping within your optimal weight range is important.

How do I know if my weight is within the optimal range?

Body Mass Index (BMI) screens for weight categories that may lead to increased risk of cardiovascular health problems, but it does not diagnose the body fatness or health of an individual. BMI is one of the many useful tools individuals can use to track their health.

For Asians, a BMI 23 and greater is considered of increased risk. You can use the formula to calculate your BMI, then check against the table.

If you are overweight (BMI 23 and more), even losing 5 – 10% of your weight can help lower your blood sugar levels, blood pressure and cholesterol levels.

Speak to your healthcare team for personalised advice on how best to achieve or maintain an optimal weight.

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m)} \times \text{Height (m)}}$$

WHO Asian classification of BMI risk category

BMI (kg/m2)	Health Risk
27.5 and above	High risk for cardiovascular diseases^
23.0-27.4	Moderate risk for cardiovascular diseases^
18.5-22.9 [optimal]	Low risk for cardiovascular diseases^
Below 18.5	Risk of nutritional deficiency diseases and osteoporosis

^Cardiovascular diseases affect the heart or blood vessels, and include heart disease and stroke.

BE PROACTIVE

Self-Monitoring of Glucose

Self-monitoring of Blood Sugar

- **Keeping your blood sugar levels within the target range** can help reduce your risk of diabetes-related complications. Self-monitoring your glucose levels can help you better understand how food, physical activity and insulin dose affect your blood sugar levels, and make the necessary changes to optimise your diabetes control.

- **Blood sugar targets can be individualised** in order to prevent risk of hypoglycaemia (too low levels of blood sugar) or other adverse effects associated with blood sugar control that is too tight.

- **Discuss with your healthcare team** if you need to self-monitor your blood sugar, which tools you should use and how often to use it.

- **Your target blood sugar range can depend on:** age, lifestyle and overall health.

When to check blood sugar levels:

Before meals

Two hours after a meal

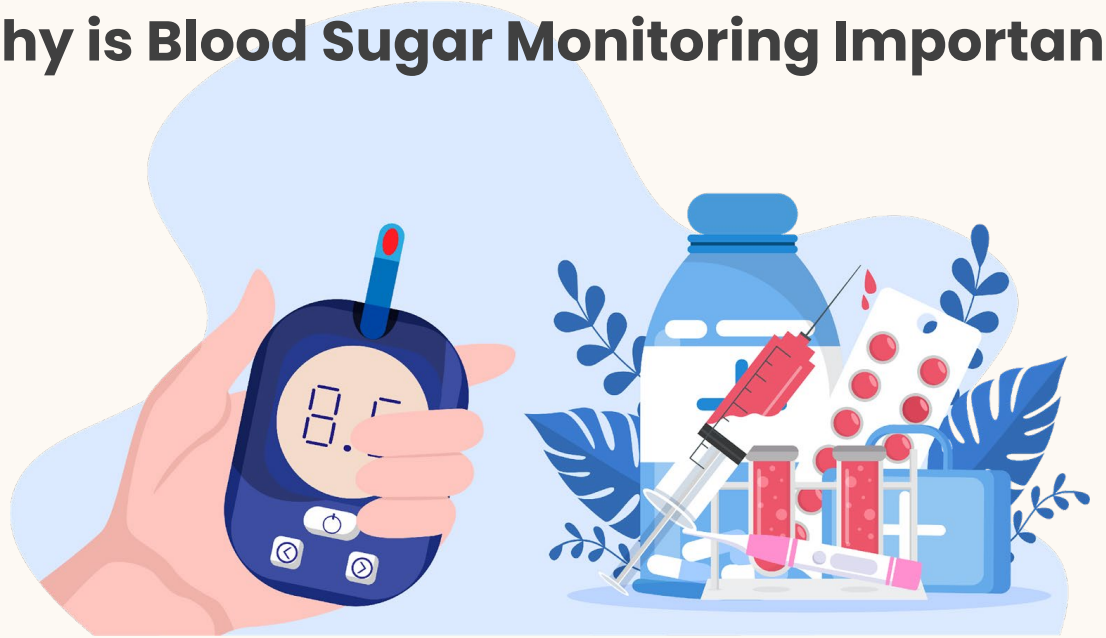
Before bedtime

Before and after exercise

When feeling unwell

Other times as necessary, as discussed with your healthcare professional

Why is Blood Sugar Monitoring Important?



1. Gives you a clear idea of your blood sugar level at a given time
2. Informs if you have hypoglycaemia (blood sugar too low) or hyperglycaemia (blood sugar too high) at a given time
3. Tells you how your lifestyle and medication regimen is affecting your blood sugar levels
4. Helps you and your diabetes healthcare team evaluate and determine the best management strategy for you

How to Monitor Blood Sugar

Blood Glucose Meter

- Blood sugar level can be easily monitored using a Blood Glucose Meter.
  - ↳ Wash your hands with soap and water and dry with tissue
  - ↳ Prick your finger and put a small drop of blood on the meter's test strip
  - ↳ Your blood sugar level will appear on the meter within seconds
  - ↳ A blood glucose meter is usually the least expensive home testing option, but it only reveals your blood sugar level at the time of check
- Blood sugar and interstitial fluid (fluid found in spaces around body cells) glucose levels are usually similar to each other, and glucose levels can also be measured from the interstitial fluid. There are two types of monitors that measure interstitial fluid glucose: flash glucose monitors and continuous glucose monitors.

How to Monitor Blood Sugar

Flash Glucose Monitor (FGM)

- It consists of a sensor and a reader, and depending on the type of sensor, it is placed either at the back of the upper arm, on the abdomen or the upper buttocks.

- FGMs can be used up to 14 days. It allows you to view interstitial fluid glucose levels at the time of check and can tell you if your glucose levels are rising, falling or stable. FGMs can also give you a report on the daily pattern of your glucose levels.

Pros

- **Does not require** blood sugar (finger prick) calibration

Cons

- Some do not have alarms
- Sensor readings are not automatically synced with the reader. You will need to flash the reader over the sensor to record your glucose readings.

How to Monitor Blood Sugar

Continuous Glucose Monitoring (CGM)

- It consists of a sensor, a transmitter and a receiver. The sensor typically needs to be replaced every 3 to 7 days. As it collects glucose readings every few minutes, the CGM is able to give you a more complete picture of your glucose profile compared to a blood glucometer.

Pros

- Triggers **alarms if glucose levels are too high or low**

Cons

- **Some types of CGMS need calibration with blood glucose meter** (i.e., will require **finger prick**)

Glucose level targets

These should be tailored to your condition.
Please discuss with your healthcare team.

Test	Targets
Pre-meal glucose^ (mmol/L)	**4.0 – 7.0**
2-hour post-meal glucose^ (mmol/L)	**< 10.0**

^Values pertaining to capillary blood sample

Low Blood Sugar: Hypoglycaemia

What is Hypoglycaemia?

- Also known as low blood sugar, Hypoglycaemia occurs when your blood sugar level falls below 4.0 mmol/L

Causes

- Imbalance between insulin intake and body's physiological needs
- Insulin overdose – injecting too much insulin but not eating enough carbohydrates
- Ill-timed insulin intake or using the wrong type of insulin
- Increased sensitivity to insulin
- Increased glucose utilisation (during or shortly after exercise)
- Mismatch between food intake timing and sulphonylureas (e.g., Glipizide) consumption

Hypoglycaemia: Symptoms and Severity

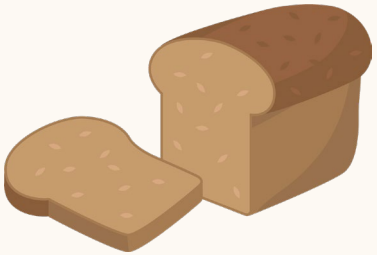
Mild	Moderate	Severe
Fast heartbeat	**Unceasing hunger despite having a full and balanced meal**	**Weakness**
Dizziness	**Irritable**	**Blurred vision**
Headache		**Slurred speech**
Sweating		**Confusion and abnormal behaviour**
		Seizures
		CANNOT self-treat

If the individual has **lost consciousness, please call an ambulance immediately!**

Hypoglycaemia is when the blood sugar levels are lower than the normal. This usually occurs at blood sugar levels less than 4 mmol/L.
Mild: 3.1-3.9 mmol/L
Moderate: less than 3.1 mmol/L
Severe: Less than 2.2 mmol/L or needs help to treat (CANNOT self treat)

Hypoglycaemia: Treatment

What type of food to take if the person is <u>conscious</u>:



Fast-acting sugars	Long-acting sugars
• 3 teaspoons of dextrose powder/ table sugar in 120ml of water • ½ can of regular soft drink • 1 can of low-sugar soft drink • ½ glass (150ml) of fruit juice • 3 soft/jelly sweets	• 3 pieces of biscuits • 1 slice of bread

Avoid using the following items to rescue hypoglycaemia

- Diet/no sugar soft drinks
- Sugar-free sweets
- High fat snacks such as chocolate – fat slows down the movement of sugar into blood!

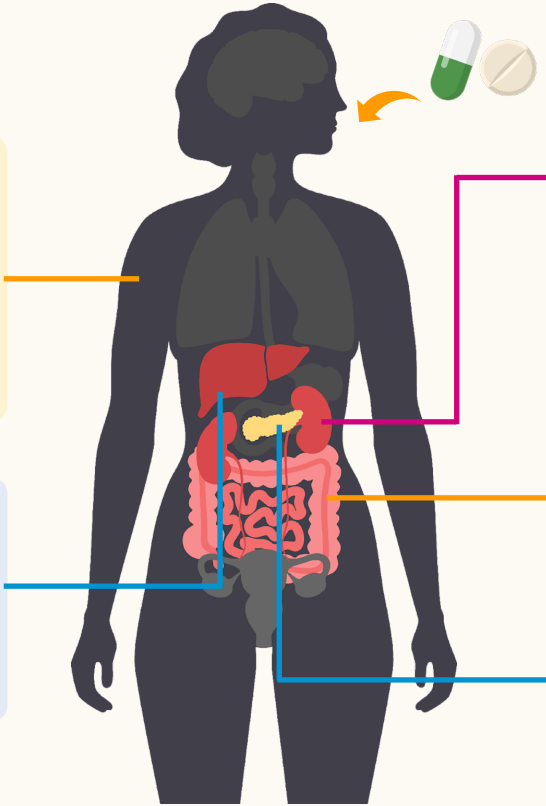
BE PROACTIVE

Medication

Medications work in different ways, on different body parts

Liver, fat tissues and muscles
E.g., Pioglitazone, metformin
- Reduces amount of sugar made by the liver, and increases the sensitivity of fat, liver and muscle cells to insulin

Liver and pancreas
E.g., Linagliptin, sitagliptin
- Helps the pancreas produce more insulin and reduce amount of sugar made by the liver



Kidneys
E.g., Dapagliflozin, empagliflozin
- Prevents the kidneys from re-absorbing sugar

Intestines
E.g., Acarbose
- Slows down breakdown of starch and absorption of sugar from the intestines

Pancreas
E.g., Glipizide, tolbutamide, gliclazide
- Helps the pancreas produce more insulin

Please visit knowyourmeds and ndf.gov.sg for more information on medication.

Take your medication as prescribed

Take your medication(s) regularly at the correct time(s)

If you miss a dose, take it as soon as you remember; if it is time for the next dose, skip the missed dose

Eat meals regularly to prevent hypoglycaemia (low blood sugar)

Avoid taking alcohol with medication

Inform your healthcare professional if you are:

Taking metformin before going for any scans (e.g., CT scans) or procedures

Pregnant or planning to get pregnant before taking medication

Experiencing **persistent symptoms of hypoglycaemia** (low blood sugar)

Take your medication as prescribed

Inform your healthcare professional if you are pregnant

- Your oral medications may not be recommended for use during pregnancy and your doctor may prescribe a different medicine or insulin

BE PROACTIVE

Insulin Treatment

Types of insulin

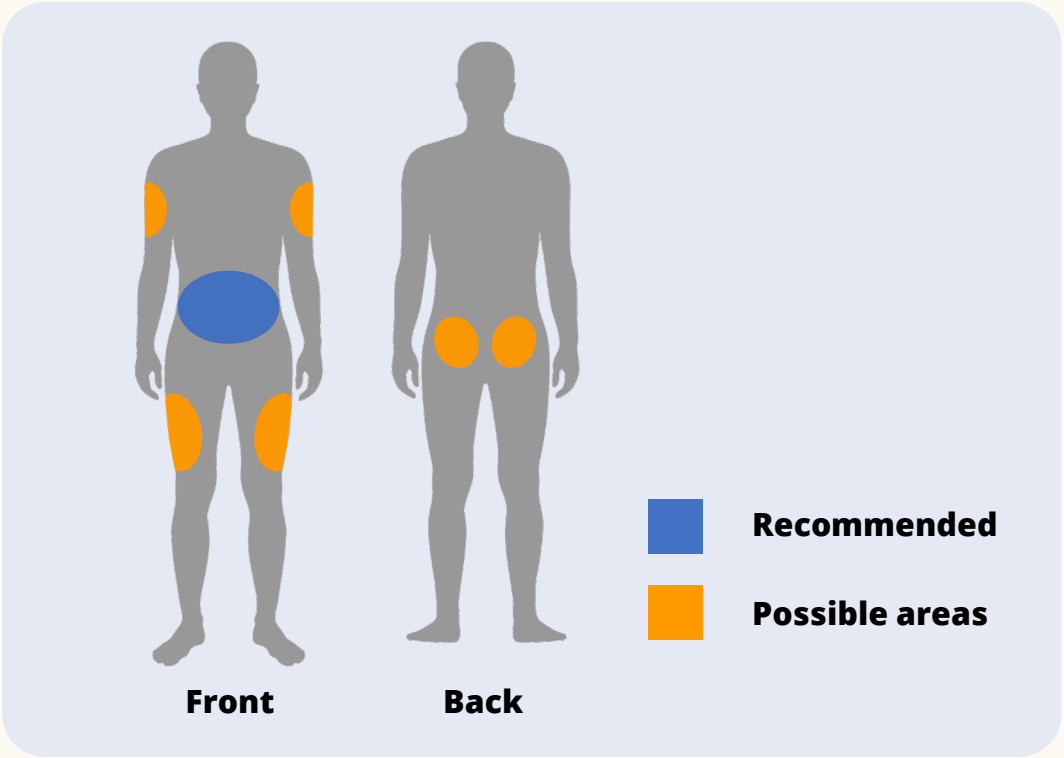
Rapid-acting
- Starts to work within 15 minutes and lasts 1-2 hours

Regular- or short-acting
- Starts to work within 30 min and lasts 3 to 4 hours

Intermediate-acting
- Starts to work within 1-2 hours, maximally at 4-6 hours and lasts up to 12 hours

Long-acting
- Can work for an entire day (depending on the type of long-acting insulin)

Types of insulin

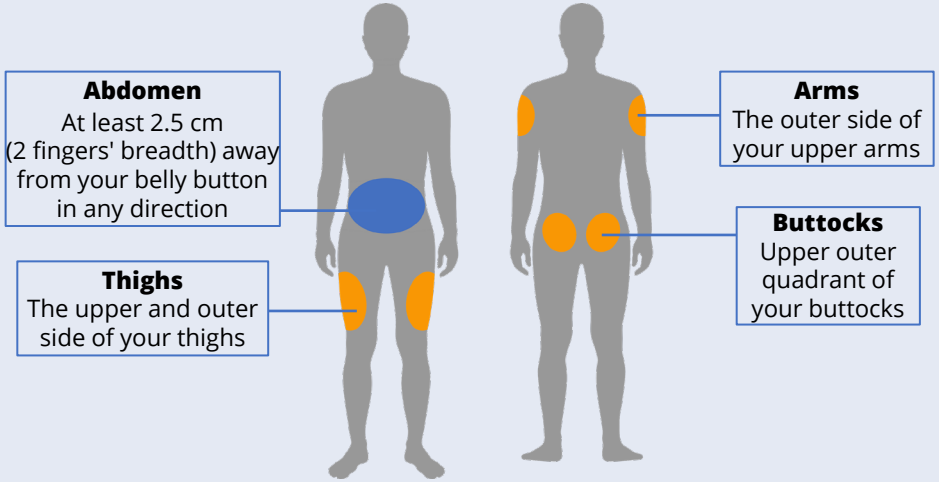


- Inject insulin into the fatty layer beneath the skin (subcutaneous).
- The belly absorbs insulin the fastest and most consistently, followed by the arms, thighs and buttock.
- Pick the proper needle length and gauge to reduce pain.
- Use a new needle for every injection.

Insulin sites

Suitable sites for insulin injection

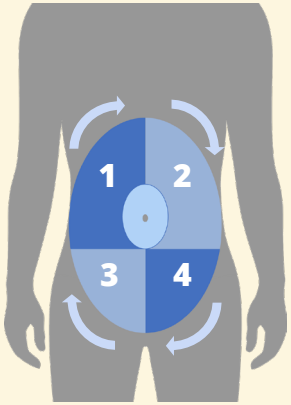
Visual guide to show where you can inject insulin



To note

- Different sites absorb insulin at different rates. Insulin is absorbed the fastest in the abdomen and slowest in the thighs
- Rotate sites (e.g., right and left thigh) to avoid swelling as this may affect insulin absorption

Site rotation



Move 2 fingers along from your last insulin injection site

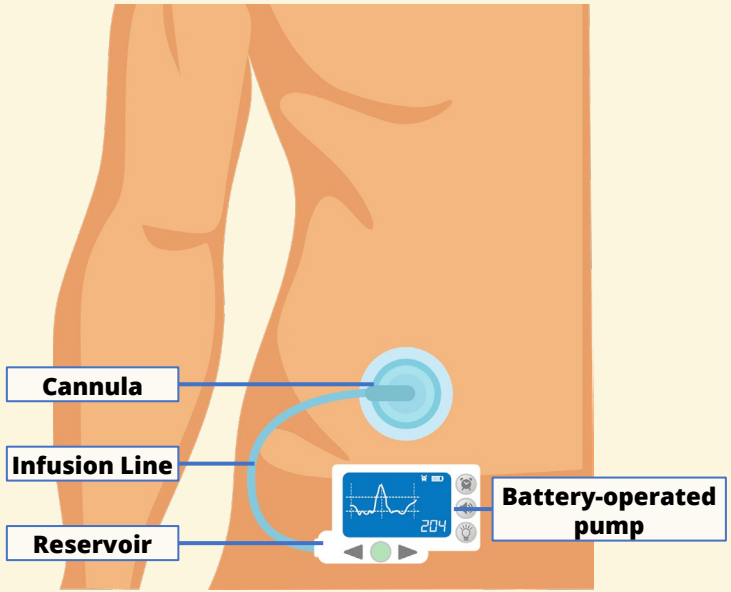
- Rotate injection sites by moving 2 fingers' breadth along from your last injection site until you have used an entire area
- Move to a new injection area every 1 to 2 weeks

Rotate your injection spots

Rotate injection sites by moving 2 fingers' breadth apart from the last injection site. Use an entire area before moving to a new area.

By rotating the spots where you inject Insulin, you can prevent fat lumps (lipohypertrophy) from forming just under the skin

Insulin pump therapy



Insulin is delivered via an infusion set and cannula into the subcutaneous layer of the abdomen*

* For illustration purposes only. Actual device may differ.

Insulin pump therapy is another way of providing insulin to your body that mimics the function of the pancreas.

A small device with an insulin reservoir that delivers both basal (continuous release over 24 hours) and rapid-acting insulin doses to match higher glucose levels during mealtimes.

It usually improves diabetes control by helping to avoid glucose levels that are “too high” or “too low”.

You can adjust the insulin dose to suit your needs (e.g., change dose at mealtimes depending on what you choose to eat).

BE PROACTIVE

Foot Care

Poorly controlled diabetes can lead to foot complications

Nerve damage can make your foot feel numb and change its shape, increasing your risk of getting **calluses** and **ulcers**

Extremely **poor blood circulation** (vasculopathy) can cause wounds to heal poorly; an **amputation** may be required to save your life

Poorly controlled diabetes can lead to foot complications

Nerve damage (neuropathy)

- Uncontrolled blood sugar levels damage nerves over time leading to decreased foot sensation and deformity, e.g., mid-foot collapse, toe deformities, extremely arched foot
- Decreased foot sensation, deformity, and improper or inadequate footwear increase risk of calluses and ulcers (wounds)

Poor blood circulation (vasculopathy)

- Extremely poor blood circulation (vasculopathy) can cause problems in your extremities (hands or feet) such as cell death, tissue damage or infections
- Surgeries such as angioplasty (unblocking blood vessels), removal of damaged tissue or amputation may be required

Good foot care practices

Monitor feet every day

Maintain **good foot care and hygiene**

Moisturise hard skin areas regularly

Wear well-fitting and covered footwear

Apply simple first aid for small wound

Seek medical help if wound is **not healing well**, or **worsens**

Good foot care practices

Monitor feet every day

- **Watch out for:**
  - Blister, wound, corn, and callus
  - Redness, swelling, bruise, or increased warmth
  - Toenail anomaly or change in foot shape

Maintain good foot care and hygiene

- Clean feet daily with mild soap and water
- Dry thoroughly between each toe
- Use a pumice stone or foot file to gently remove hard skin
- Avoid cutting nails too short; cut them straight across and file corners

Moisturise hard skin areas regularly

- Avoid using harsh soap
- Apply moisturiser daily but not between each toe
- Avoid scratching skin as it may lead to wound or bleeding

Good foot care practices

Wear well-fitting and covered footwear

- Wear well-fitted covered shoes with socks
- Home sandals are recommended
- Check and remove any stones or sharp objects inside shoes before wearing them

Apply simple first aid for small wound

- Clean small wound with saline before applying antiseptic and covering with a plaster
- Seek medical help if there is no improvement after two days or if there are signs of infection

Seek medical help if wound is not healing well, or worsens

- If signs of infection are present, such as redness, swelling, increased pain, pus, fever, or the wound starts to smell, seek medical help as soon as possible

BE PROACTIVE

Dental Care

Keep your mouth healthy

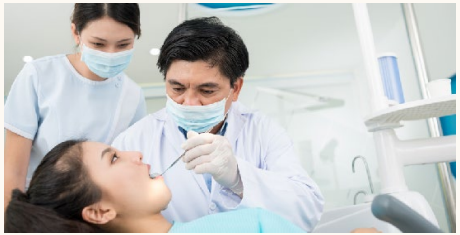
Brush your teeth and **tongue** at least twice a day (in the morning and before sleeping) for 2 minutes with fluoride toothpaste

Use a soft-bristled toothbrush; change every 3 months or when bristles spread out

If you wear **dentures**, clean them after **every meal;** remove, clean and soak dentures in water before sleeping

Clean **in between your teeth** with a floss or interdental brush at least once a day

Tilt the **brush at an angle** to your gum line, moving it in small circular motions across all front, back and chewing surfaces of your teeth, not forgetting the back molars



Visit a dentist every 6 months to 1 year to check your teeth; let the dentist know about your blood sugar control and the medication you are taking

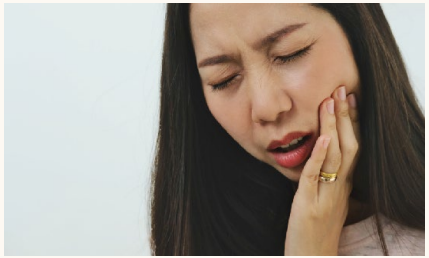
See your dentist if you have ...

Persistent bleeding gums

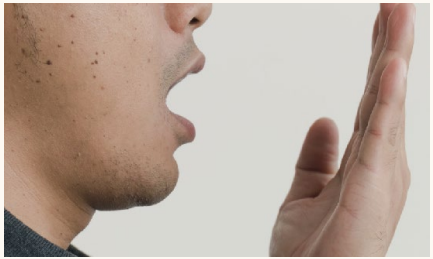
White patches in your mouth

Receding gum lines

Loose or shaky adult teeth and/or **widening gaps between** your adult teeth



Pain in your mouth



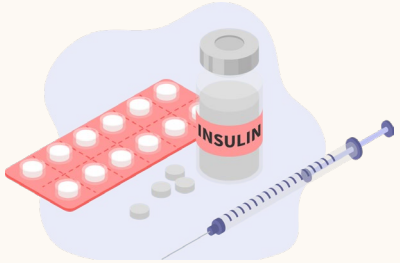
Bad breath or **dry burning sensation** in your mouth

BE PROACTIVE

Travelling

How can I prepare for travel?

See your doctor for a **vaccination, if possible**



Check with your care team on **medication and insulin dosage**

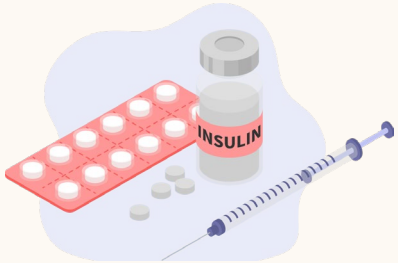
Bring a **medical letter or diabetes** card regarding your diagnosis and medication

Get **insurance** coverage

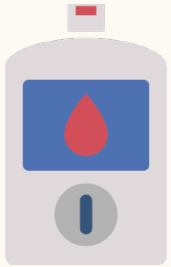
Put necessary **medication or insulin** items in your carry-on bag

How can I prepare for travel?

Pack these in your carry-on bag



Medication or insulin items (e.g., insulin pens, vials, pen needles, syringes, swabs)



Glucometer with test strips, finger-pricking device and lancets

Medication for common illnesses

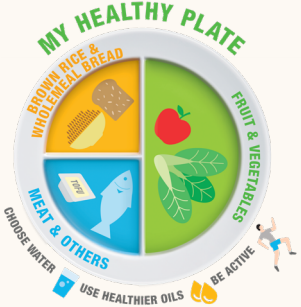
Sweets to prevent hypoglycaemia (low blood sugar)

For short-haul flight or time zone difference of 1 to 2 hours
- Maintain your medication schedule and insulin dosage

For long-haul flight or time zone difference of more than 2 hours
- Discuss with your doctor regarding possible adjustments to your medication schedule and insulin dosage

How can I manage my diabetes while abroad?

Drink plenty of **water**

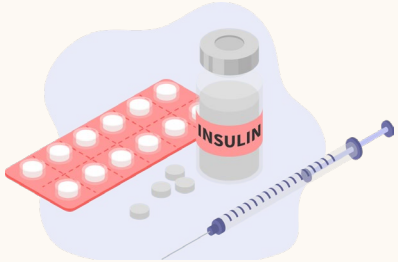


Watch your **food** and **calorie intake**

Hand carry **sugar-containing sweets**

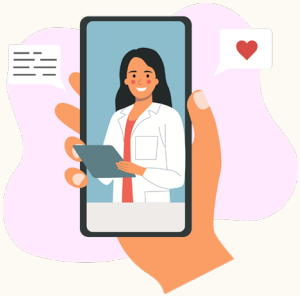
Always wear **protective shoes**

Hand carry **medication** or **insulin items**



Take **medication** as prescribed

Self-monitor your **blood sugar level** regularly



Know where to **seek help**