

# LIVING WITH **DIABETES**

Easy Steps to Good Health



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# Living Well with Diabetes

Diabetes is a chronic condition that is becoming more common both in Singapore and all over the world.

Diabetes may lead to complications but there is a lot you can do to keep it under control, so as to live a long and active life.

This booklet will help you understand more about diabetes and teach you how to take care of yourself. It also explains how you can manage diabetes by following a daily routine of some simple steps.

Take charge of your health and live well with Diabetes!

*The information in this booklet is meant to serve as a guide for people with diabetes. It is not a substitute for professional medical advice and care.*



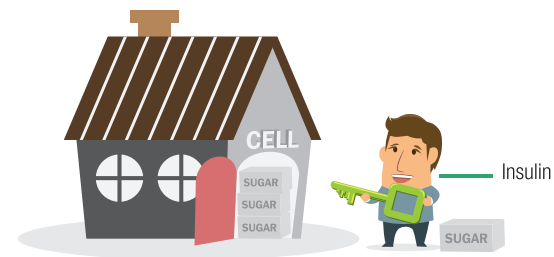
# What is Diabetes?

Diabetes is a condition in which there is too much sugar (glucose) in your blood.

Your blood sugar level is regulated by insulin, which is a hormone (chemical substance) made in the pancreas. When the food we eat is broken down to sugar and enters the blood, insulin is released. It helps bring sugar from the blood into the cells so that energy can be made to drive our body to work. When you have diabetes, the pancreas produces less or no insulin, resulting in high blood sugar level.

## In a person without diabetes:

Insulin key fits correctly and sugar enters cell normally



## In a person with Type 2 diabetes:

Insulin key cannot fit and sugar stays outside cell, causing high blood sugar levels



## There are two types of diabetes:

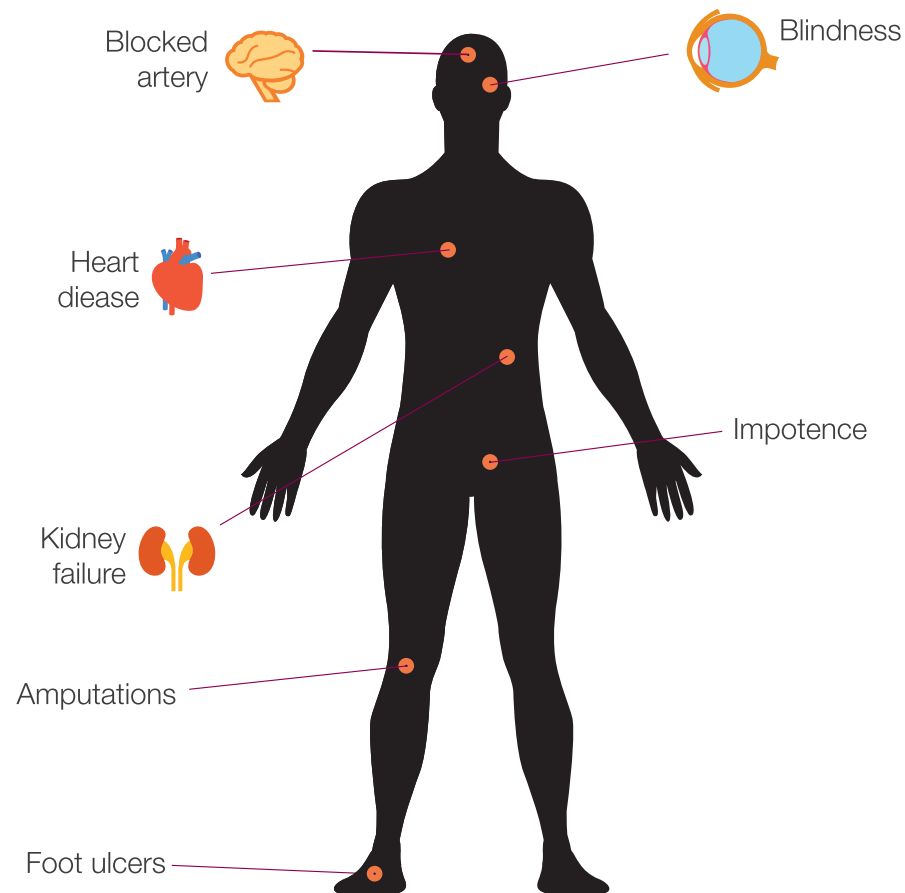
**Type 1** diabetes occurs mainly in children and young adults when the body produces little or no insulin.

**Type 2** diabetes is the more common form of diabetes and is usually found in adults. It happens when the body does not use insulin properly or produce enough of it.

# Understanding Diabetes Complications

Complications arising from poorly controlled diabetes may take years to develop. However, they will cause serious damage to the body and also lead to financial burden.

Persistently high blood sugar level can damage blood vessels and nerves which will lead to:



# Taking Charge of Your Health!

Keeping to your doctor's appointment and taking your medicine regularly are important healthy lifestyle habits!

Following are ways that you can care for diabetes:

## Keeping Fit, Staying Active

Keeping a healthy weight is important and easy to achieve. To maintain a healthy weight/BMI in the range of 18.5 - 22.9 kg/m<sup>2</sup> or prevent heart disease or stroke, aim to do 150 minutes or more physical activity every week. The physical activity should be at least 10 minutes each time to gain health benefits.

### SOME BENEFITS OF STAYING ACTIVE

- Lowers your blood sugar levels
- Reduces your blood pressure and cholesterol
- Lowers your risk of heart disease
- Helps to relieve stress and makes you feel happier

It is important to talk to your doctor before starting on any new physical activity.

## Easy Health Tips!

- Brisk walk for at least 10 minutes to buy your grocery.
- Walk up the stairs instead of using the lift.
- Cycle to see your friends or family who stay near by.
- Get off the bus one stop earlier and walk to your destination.





## Eating for Good Health

A healthy meal plan is important as it brings about the following benefits:

- control weight, blood sugar and cholesterol levels
- reduce risk of heart disease
- improve general health and well-being

Your doctor or dietitian can recommend a meal plan based on your needs. A balanced diet includes the following food groups and serving sizes to match your daily needs:

- brown rice and whole meal bread (5-7 servings)
- fruit and vegetables (2 servings of fruits, 2 servings of vegetables)
- meat and others (3 servings)

Remember to eat a variety of food.



## Examples of one serving size for each food group:

**Brown Rice and Wholemeal Bread** (Eat 5 to 7 servings daily)



$\frac{2}{3}$  bowl\* of  
uncooked oatmeal



2 slices of  
wholemeal bread



2 chapatis



4 plain wholemeal  
crackers



$\frac{1}{2}$  bowl\* of  
cooked brown  
rice

\*1 bowl: 1 rice bowl \*\* 1 mug= 250 ml \*\*\* 1 glass= 250 ml

## Vegetables (Eat 2 servings daily)



$\frac{3}{4}$  mug\*\* of cooked leafy vegetables



$\frac{1}{4}$  round plate\* of cooked vegetables

## Fruit (Eat 2 servings daily)



1 small apple, orange, pear or mango



1 wedge of papaya, or pineapple



1 medium banana



10 grapes/ longans

## Meat & Others (Eat 3 servings daily)



2 slices reduced-fat cheese



1 palm-sized piece lean meat/fish/poultry



2 glasses\*\*\* reduced-fat milk



2 small blocks soft beancurd



$\frac{3}{4}$  cup cooked pulses (peas, beans, lentils)

### IN OTHER WORDS:

In the morning, when you consume 2 slices of whole meal bread with a thin spread of butter or peanut butter,

### OR

4 plain wholemeal crackers, you have taken 1 serving of brown rice and wholemeal bread equivalent.



\*1 bowl: 1 rice bowl \*\* 1 mug= 250 ml \*\*\* 1 glass= 250 ml + 1 plate = 10 inch plate

\*1 bowl: 1 rice bowl \*\* 1 mug= 250 ml \*\*\* 1 glass= 250 ml

## Food groups containing carbohydrates

Do you know that some food contains large amounts of carbohydrates in the form of sugars and starch? Eat these food items with care, spread out the intake throughout the day.

### Food items



Milk and yoghurt



Apple, orange, pear, papaya, pineapple, grapes, longans, bananas

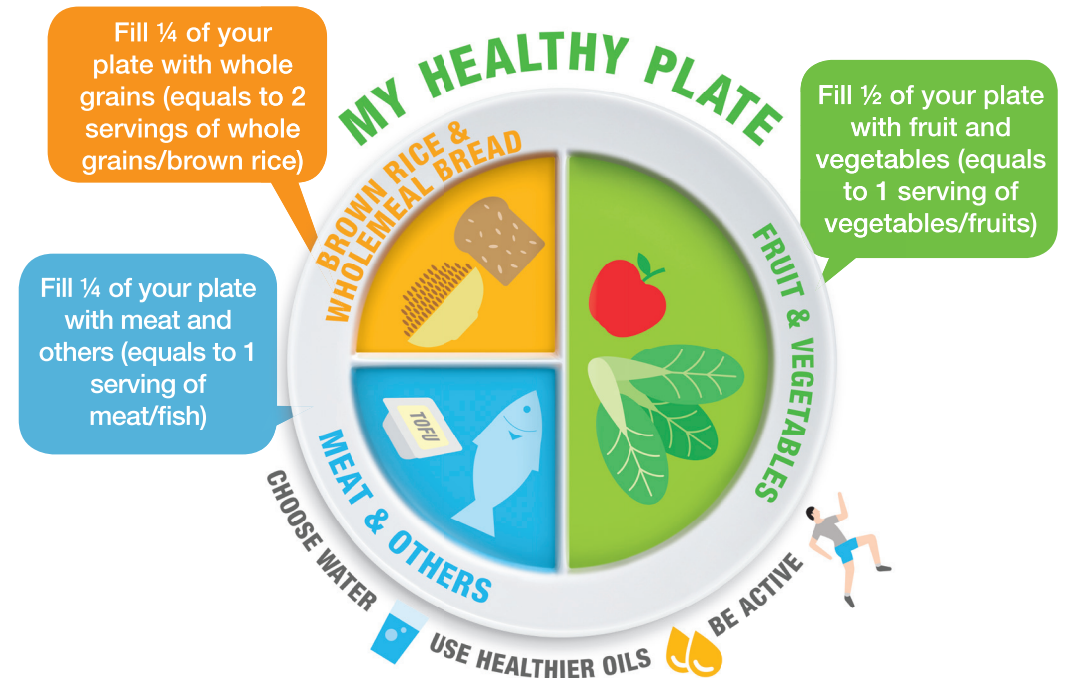


Potato, sweet potato, pasta, porridge, plain biscuits, cereals, bread, noodle/bee-hoon



Sweet corn and yam

While working towards a healthy diet, My Healthy Plate can help you determine how much to eat and what to eat at each meal.



- Make water your drink of choice
- When cooking at home, use healthier oils such as canola, sunflower, olive and peanut oils. Consume oil in moderation
- Stay active. Adults should aim for 150 minutes of physical activity each week









## 5 Sample Meal Plans for Good Diabetes Control

Blood sugar in the body will return to pre-meal level two hours after a meal. Include carbohydrates as part of smaller meals throughout the day. Choose a fruit or dairy product as light snacks in between your meals.

Ask your dietitian to determine the amount of carbohydrates to suit your daily needs and requirements. Remember to drink eight glasses of water every day.

What time to eat? The following is an example of how you can spread out your carbohydrate food every 3-5 hours.

Meal/ snack	Suggested timing
<b>Breakfast</b>	7.00 a.m. 
<b>Morning Snack</b>	10.00 a.m. 
<b>Lunch</b>	1.00 p.m. 
<b>Afternoon Snack</b>	4.00 p.m. 
<b>Dinner</b>	7.00 p.m. 
<b>Evening Snack</b>	10.00 - 11.00 p.m. 



The following are five options of breakfast, lunch, snacks and dinner for you to choose each day. Add variety to your daily food intake.


### Breakfast Choices

Option				
1	2	3	4	5
				
2 slices of whole meal bread  Thin spread of soft margarine/peanut butter	1 bowl of brown rice porridge with chicken and carrot	2/3 bowl raw oats cooked with low fat milk/water + 1-2 tsp dried fruits	4 pieces of whole wheat crackers	1 bowl of mee soto with wholegrain noodles
				
1 cup of coffee/tea with low fat milk and less sugar^	1 cup of kopi/teh 'o'/'c' kosong (without sugar) or kopi/teh 'o'/'c' siew dai (less sugar^)	1 cup coffee/tea with low fat milk and less sugar^	1 cup of coffee/tea with low fat milk and less sugar^	1 cup of coffee/tea with low fat milk and less sugar^

^ Less sugar= Less than 1 teaspoon of sugar



## Lunch Choices

Option				
1	2	3	4	5
				
1 bowl^^ of mixed rice	1 bowl of sliced fish noodles (eating out)	Sandwich: 4 slices of wholemeal bread	1 bowl of mee/bee-hoon soto (eating out)	1 bowl^^ of mixed rice
				
1 palm sized steamed fish	1 cup of sugar-free beverage^^^	Lettuce, tomato, cucumber, capsicums	1 cup of sugar-free beverage^^^	1 palm sized non-fried chicken/fish
				
¼ plate+ stir-fried vegetables		1 palm sized grilled or steamed chicken breast	¼ plate of non-coconut-based curry vegetables	¼ plate of non-coconut-based curry vegetables
				
1 cup of sugar-free beverage^^^		Lemon juice and pepper to flavour	1 cup of sugar-free beverage^^^	1 cup of sugar-free beverage^^^
				
		1 bowl of salad with Balsamic vinegar and a drizzle of extra virgin olive oil (eating out)		












^^ Chinese rice bowl ^^ Teal/coffee without sugar, or plain water

## Dinner Choices

Option				
1	2	3	4	5
				
1 bowl^^ of mixed rice	1 bowl^^ of mixed rice	1 bowl^^ of pasta cooked with tomato sauce and 1 palm sized minced meat	1 bowl^^ of mixed rice	2 chapatis
				
1 palm sized stir-fried chicken	2 types of vegetables	1 bowl of salad with small amounts of vinaigrette	1 palm sized fish in assam pedas sauce	1 bowl^^ of dhal/lentils
				
½ bowl^^ vegetables in soup	1 palm sized steamed meat or ½ plate stir-fried meat/fish		¼ plate+ stir-fried vegetables	¼ plate+ stir-fried vegetables
				
			4-5 tablespoon of tyro ( Indian yoghurt)	4-5 tablespoon of tyro ( Indian yoghurt)
				
				1 wedge of pineapple

^^ Chinese rice bowl + 1 plate = 10 inch plate

## Snacks Choices

Option				
1	2	3	4	5
<b>Morning</b>				
				
1 small apple	10 grapes	1 wedge of papaya	1 small pear	1 medium banana
<b>Afternoon</b>				
				
1 small pear	1 small apple	10 grapes	1 wedge of papaya	1 small orange
<b>Evening</b>				
 1 glass of low fat milk / high calcium soy milk with less sugar				

## The general guidelines to healthy eating/cooking for diabetes management:

- ✓ Eat a variety of food from different food groups and within each food group.
- ✓ Eat a balanced diet. This means eating the recommended number of servings of food from the different food groups daily.
- ✓ Eat in moderation. Eat the right amount of food, neither too much not too little.
- ✓ Choose Healthier Choice Symbol (HCS) products and eat in moderation.
- ✓ Look out for Healthier Dining identifiers when you eat out. Choose dishes which are lower in calories and higher in wholegrain.
- ✓ Choose lean meat, poultry, fish, pulses like beans and peas.
- ✓ Use low fat cooking methods such as boiling, steaming, baking, roasting and grilling.
- ✓ Use natural herbs and spices and reduce intake of salt, sauces, Mono-sodium Glutamate (MSG), canned, preserved and other processed food.
- ✓ Cut down on saturated fat (fatty meat, skin, deep fried food), trans fat (cakes and pastries), cholesterol (organ meats) and sodium (processed and canned food) to help reduce the risk of developing heart disease and stroke.
- ✓ Avoid adding sugar to your beverage and choose plain water as a healthier drink.





## Keeping Track of Blood Sugar Levels

Checking on your blood sugar (glucose) can be easily done at home with a glucometer. The result will guide you and your doctor in planning your diet, level of physical activity and treatment types.

Ask your doctor if you need to check on your blood sugar levels at home. If required, record the details to share with him on your visits to the clinic. Your doctor will advise you on how to manage yourself when you have too high or too low sugar in your blood. See your doctor if you still feel unwell after managing your high/low sugar symptoms.

## Maintaining a Normal Blood Pressure

Keep your blood pressure below 130/80 mmHg. Controlling your blood pressure is as important as controlling your blood sugar level. Have your blood pressure checked regularly by your doctor.

## Reducing Blood Cholesterol (lipids) Levels

Check your fasting blood cholesterol levels at least once a year as part of good diabetes management.

For prevention of heart complications (for example, Coronary Heart Disease), it is important to manage your LDL cholesterol (commonly known as “bad” cholesterol) by keeping it below 2.6 mmol/L.

## Regular Follow-ups

See your family doctor at least once every three to four months or as advised. It is important to monitor your condition regularly to detect early signs of complications. The doctor will advise on the necessary checks that are part of the care-plan for diabetes.

Frequency	Assessment
Once every 3 - 4 months	BMI Assessment
	Blood Pressure Measurement
Once every 3 - 6 months	HbA <sub>1c</sub> Test
Once a year or as advised	Fasting cholesterol (Lipids) Test
	Kidney Function Test
	Eye check
	Foot check
	Flu Vaccination

The key to keeping diabetes under control is to maintain your blood sugar level within the targets advised by your doctor.

Besides blood sugar level, it is important to maintain healthy blood pressure and cholesterol levels. Talk to your doctor on how to achieve your targets.



Below are the targets for good diabetes control:

	<b>Good-Excellent targets for diabetes control</b>
HbA <sub>1c</sub> <sup>+</sup>	7.0% or lesser
Blood Pressure	less than 130/80 mmHg
Blood Cholesterol <sup>++</sup>	less than 2.6 mmol/L
BMI <sup>+++</sup>	18.5 - 22.9 kg/m <sup>2</sup>

**BMI =**

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

<sup>+</sup>HbA<sub>1c</sub>: A blood test that measures how well blood sugar level has been controlled in the last 2-3 months

<sup>++</sup>Cholesterol: Refers to LDL or "bad" cholesterol that clogs up blood vessels causing reduced blood flow to important organs

<sup>+++</sup>BMI: Determined by weight (kg) / [height (m) x height (m)]

You can use Medisave to pay for part of your outpatient treatment for diabetes under the Chronic Disease Management Programme (CDMP). To find out more about the CDMP, visit [www.moh.gov.sg](http://www.moh.gov.sg). For healthcare financing using CHAS cards and Pioneer Generation Package, please see <http://www.chas.sg/> for more information.



## Taking Care of Your Foot

Foot care is important as foot problems are a common complication of diabetes. Your blood supply to the feet may be affected, resulting in slower recovery during an injury (such as sores, cuts, infected toenails or ulcers). You may also lose some feeling in your feet due to nerve damages. Therefore, taking good care of your feet should be part of your daily routine.

- Wash your feet every day with soap and water and dry them well, especially between your toes.
- Moisturise dry skin, especially cracked heels with cream.
- Keep your toenails short by trimming them straight across to avoid ingrown toenails. Cut your toenails when they are soft after a shower.
- Look for swelling, and redness as these may be signs of infection.







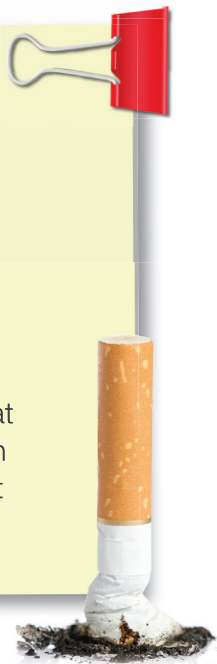
- Never go barefooted and avoid open-toed shoes. Wear covered shoes that fit well to protect your feet from injuries.
- Check the insides of the shoes to make sure there are no sharp edges.
- Wear clean socks which have loose fitting elastic tops.
- Report any foot problems to your doctor or podiatrist (experts looking after feet and lower limbs) and go for foot screening at least once a year.

### Some facts about Smoking and Diabetes

It is well known that smoking has many harmful effects, especially for people with diabetes. Smoking increases the risk of developing complications.

Quitting smoking will bring good health, save money and improve one's fitness.

If you need help to quit smoking, call the QuitLine at 1800 438 2000. Quit Advisors will help you through the quitting process and tell you where you can get more help.



## Taking Your Diabetes Medicine

For those who cannot adequately control their blood sugar with just healthy eating and exercise, your doctor may prescribe medicine. Take your medicine as instructed by your doctor.

Medication helps lower blood sugar level by:

- Making your body produce and release more insulin.
- Making insulin work better.
- Slowing down the absorption of sugar into the intestine.



## Caring for Your Teeth, Gum and Mouth

Oral hygiene is also important. People with diabetes tend to have higher risk of gum disease, tooth decay and dry mouth due to the high blood sugar levels. Brush your teeth at least twice a day and floss your teeth to clean up areas that are hard to reach with a toothbrush. Visit a dentist at least once a year or when you experience swelling and pain in your gum or teeth. Remember to let your dentist know that you have diabetes.





## Keeping a Happy Mind, Managing Your Stress

Day to day routine, work, and care for diabetes can be stressful for some people. Changes in life can result in stress. Here are some tips to reducing stress:

- **Manage your time**, as planning helps you deal with situations that can be stressful.
- **Stay active**, as a regular exercise routine can improve sleep. Make time for family and friends. Make efforts to spend time with family and friends, and to pursue hobbies and other activities that help you “switch off” from work stress.
- **Limit the use of alcohol and caffeine**. Alcohol and caffeine can lead to poor sleep.

If you are unable to manage your stress, talk to your doctor or a counsellor.

## Diabetes Care

Remember to make small changes each day to reach your targets. Caring for diabetes requires you to:

- ✓ Be physically active everyday
- ✓ Eat healthily
- ✓ Maintain a healthy BMI 18.5 - 22.9 kg/m<sup>2</sup>
- ✓ Take diabetes medicine regularly
- ✓ Quit smoking
- ✓ Go to the doctor for regular follow up
- ✓ Monitor your blood sugar level



## More Information

See your family doctor for more information about diabetes and how you can keep your condition under control. Keep to one doctor for continuity of care.

For more information on diabetes:

- Visit [letsbeatdiabetes.sg](https://letsbeatdiabetes.sg)
- Call Healthline at **1800 223 1313** to speak to HPB's nurse counsellor during office hours. It is available in 4 languages.

## Notes

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