

Diabetes Mellitus

Diabetes Mellitus is a chronic medical condition in which blood glucose levels remain persistently higher than normal. Insulin, a hormone produced by the pancreas (an organ), allows your body to use blood glucose for energy.

There are 3 main types of diabetes:

- Type 1 Diabetes: The body has absolute insulin deficiency.
- Type 2 Diabetes: The body does not make enough or does not respond well to insulin.
- Gestational Diabetes: Women without pre-existing diabetes develop high blood glucose levels during pregnancy.

Importance of Maintaining Blood Glucose Levels Within Target Range

It is important to keep blood glucose levels as close to normal as possible. In the long term, **hyperglycaemia (high blood glucose level)** can cause damage to various organs such as the eyes, heart, kidneys and brain. It also increases the risk of infection, amputation, heart disease and stroke. On the other hand, **hypoglycaemia (low blood glucose level)** – below 4mmol/L can lead to loss of consciousness. In severe cases, it can lead to coma and death.



Aims of Treatment

- Maintain blood glucose levels **4-8mmol/L (before meal)** and **5-10mmol/L (2 hours post meal)**.
- Maintain **HbA1c below 7%**, unless otherwise specified by your doctor. HbA1c is blood test that reflects your average blood glucose levels over the past 3 months.
- Maintain an **ideal body weight (BMI 18.5-22.9kg/m²)**. Aim for weight reduction if your BMI is above 23kg/m². Extra body fat not only makes it difficult for the body to use insulin, but also increases the risk of heart disease and stroke.




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

Healthy Eating Tips for Managing Diabetes

1. **My Healthy Plate** is a visual guide for creating balanced and healthy meals. It shows you what to eat in the right amounts for each meal, so that you can plan your portions accordingly.
 - ✓ Fill half your plate with fruit and vegetables.
 - ✓ Fill a quarter with wholegrains.
 - ✓ Fill a quarter with meat and others.



2. Know the foods that contain carbohydrates and evenly distribute them throughout the day.

Food Group	Carbohydrate Containing Foods
Brown rice and wholemeal bread	Rice, noodles, pasta, cereals, oats, bread, biscuits, chapati, thosai 
Meat and others	Milk, yoghurt, soymilk Beans, lentils, peas 
Fruits and vegetables	All fruits Starchy vegetables e.g. potato, sweet potato, yam and corn 

3. Ensure regular meals and snacks (if required) at similar timings each day. This provides a regular and constant amount of glucose from the foods that you eat and prevents fluctuations in your blood glucose levels.

4. **Increase fibre intake.** Fibre helps to slow down the absorption of glucose into the blood and keeps you full.
- ✓ Aim for 2 servings of fruits and 2 servings of vegetables daily.
 - ✓ Choose wholegrains e.g. brown rice, oats and wholemeal bread.
 - ✓ Incorporate plant-based proteins e.g. beans and lentils during cooking.
 - ✓ Choose healthy snacks e.g. nuts and seeds.

5. **Reduce fat intake, especially saturated and trans fat.** They increase the risk of fat deposit in the blood vessels. Also, too much fat can lead to weight gain.

- ✓ Choose healthier fats such as polyunsaturated and monounsaturated fat e.g. soybean oil, rice bran oil, sunflower oil, canola oil, sesame oil, peanut oil and olive oil.
- ✓ Choose healthier cooking methods e.g. steaming, stir-frying and grilling.
- ✓ Choose lean meat or remove visible fat and skin.
- ✓ Choose fat-free or low-fat products.



6. **Limit intake of refined sugars.** They are quickly absorbed, causing your blood glucose level to rise quickly.

- ✓ Limit consumption of sweetened beverages, fruit juices, cakes, kuehs, desserts, ice cream, chocolates and sweets
- ✓ Opt for sugar-free beverages or water.



7. **Limit alcohol consumption.** If you do so, drink in moderation. Women should drink no more than one standard drink per day and men should drink no more than two. 1 standard drink = 1 can (330ml) of beer, ½ glass (100ml) of wine or 1 nip (30ml) of spirit.



Where Can I Get More Information?

To find a dietitian, please call 6357 8322 for an appointment. You will need to obtain a referral from your doctor for a dietitian consultation.

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