

Diabetes is a lifelong condition that requires constant attention. If poorly managed, it can lead to potentially lethal complications including stroke, heart disease and kidney failure, blindness and lower limb complications.

About Diabetes

Diabetes is a chronic health condition that occurs when the body cannot utilise carbohydrate found in food because the pancreas does not make enough insulin, the insulin produced is ineffective, or a combination of both.

The body breaks down the carbohydrates from food into a type of sugar known as Glucose. To be able to utilise the glucose released from the carbohydrate breakdown our body produces a hormone called Insulin. Insulin helps the cells to absorb the glucose and transform it into energy for the body, glucose is also stored in the liver ready for use. If there is an excess of carbohydrates in our body the excess will be stored as fat.

There are two predominate forms of Diabetes. **Type I or autoimmune Diabetes** is where the pancreas' cells that produce insulin are destroyed by the body's immune system, leading to insulin deficiency. 10-15% of all people with diabetes have Type I, it often begins in childhood or early adulthood but can occur at any age. Treatment involves replacing the body's insulin by regular insulin injections. There is no cure for Type I diabetes...yet.

The second is **Type II Diabetes**, which is defined by the inability of the body to produce enough insulin to control glucose levels in the blood, it is also associated with hereditary factors and lifestyle risk factors including poor diet, insufficient physical activity and being overweight or obese. People with type II diabetes may be able to manage their condition through lifestyle changes; however, diabetes medications or insulin injections may also be required to control blood sugar levels.

Type 2 Diabetes

Hypoglycaemia – Blood glucose below 4.0 mmol/L – weakness, shaky, heart racing, sweat, dizzy/lightheaded, mood swings, numbness or tingling around lips or fingers.

Treatment for HYPO – 5-7 jelly beans, 1 glass of soft drink (not diet or sugar free) or 3t sugar dissolved in water. After 10mins, repeat if not feeling better otherwise have a sandwich, piece of fruit or glass of milk.

Hyperglycaemia – Blood glucose levels greater than 10 – signs include tiredness, blurred vision, thirst or passing more urine or sometimes no signs or symptoms experiences at all. Often caused by infection, stress levels, lack of exercise, not administering diabetes medication, other medication interactions and eating/drinking too much.

Diet & Diabetes

As with anyone, individuals with diabetes should ensure they maintain an adequate diet. Of particular importance is the quantity and type of carbohydrate intake, glycaemic Index and load, meal timing, use of sugar, fat and fibre intake.

Food Group	Daily Recommendation	Low GI Food Serves
Breads and cereals (Wholegrain and High fibre varieties)	3-6 serves daily	½ cup cooked rice or pasta, 2/3 cup cereal

Fresh Fruit	2 serves daily	
Non-Starchy Vegetables (Leafy greens, beans, zucchini)	5+ serves daily	½ cup cooked vegetables or 1 cup salad vegetables.
Starchy vegetables	1 serve most days	1/2 a medium sweet potato, ½ of a medium potato ½ cup corn kernels
Legumes Choose 'no added salt' or 'salt reduced' products if canned.	>1 serve a week	½ cup kidney beans, chickpeas, baked beans and lentils. Add to soups and casseroles.
Meat and alternatives (Red meat, chicken, fish, eggs, tofu, legumes)	2-3 serves daily (includes fish)	Palm of hand = 2 serves
Oily fish (Fresh salmon, mackerel, herring or tinned salmon or sardines)	3 serves a week	
Low fat dairy	2-4 serves daily	200g yoghurt, 250ml milk, 2 slices cheese

The Glycaemic Index (GI) is a measure of the rate at which a carbohydrate containing food or drink increases Blood Sugar Levels (BSL). You should ideally include some low GI foods (rating of 55 or less) at each meal to help manage levels. If GI is unknown avoid foods that list the following **high GI sugars in the first three items on Ingredients List:** Dextrose, glucose, glucose syrup, malt, malt extract, maltose, maltodextrin.

Fats and Oils – use margarines, reduce fat spreads and oils sparingly. Choose products that contain high portions of mono and polyunsaturated fats such as olive, grapeseed or avocado oil. No more than 1 ½ tablespoons per day.

Avoid foods which list the following fats in the first three Ingredients Lists: Animal fat, butter, cophera, cream, diglycerides, monoglycerides, lard, milk solids, palm oil, shortening, tallow, hydrogenated oil and partially hydrogenated oil.

LOW GI (55 or less)		MEDIUM GI (56-69)		HIGH GI (70 or more)	
Fruit loaf	Pasta (most)	Crumpet	Polenta	Bagel	Sultana bran
Sour dough	Wild rice	Croissant	Couscous	Dark rye	Coco pops
Apple muffin	Quinoa	Spelt bread	Udon noodles	Doughnut	Sao
All-Bran/ Special K	Legumes- kidney, soy, lentils	Wholemeal rye bread	Arborio, Basmati, Doongara rice	Gluten free bread	Calrose and Jasmine rice
Pumpnickel	Taro	Pita bread	Tapioca	Pretzels	Brown rice
Porridge	Yoghurts	Light n' Tasty	Broad Beans	Wonderwhite	Rice cakes
Muesli, natural	Soy milks	Just right	Sweet potato	Turkish bread	Sushi rice
Barley/ Rye	Custards	Weet-bix	Milk, condensed	Lamingtons	Frozen fries
Semolina	Smoothies	Ryvita	Ice cream, full fat	Rice milk	Kumara

Fibre

There are two forms of fibre; soluble and insoluble. Soluble fibre is soft and easily digested, it reduces cholesterol and helps control blood sugar levels whilst managing diarrhoea. Present in oatmeal, bran, legumes, root vegetables and fruits such as apples and strawberries. Insoluble fibre is bulky and helps prevent constipation. Present in wheat bran, wholegrain cereals, fruit and vegetables.

Fibre helps control blood sugar by delaying gastric emptying, reducing glucose entering the bloodstream and reducing the post-meal rise in blood sugar. As fibre slows the digestion of food and can blunt the sudden spike it may lessen insulin requirements in those with type 1 diabetes. The cholesterol-lowering effect of soluble fibres may also help those with diabetes by reducing heart disease risks.

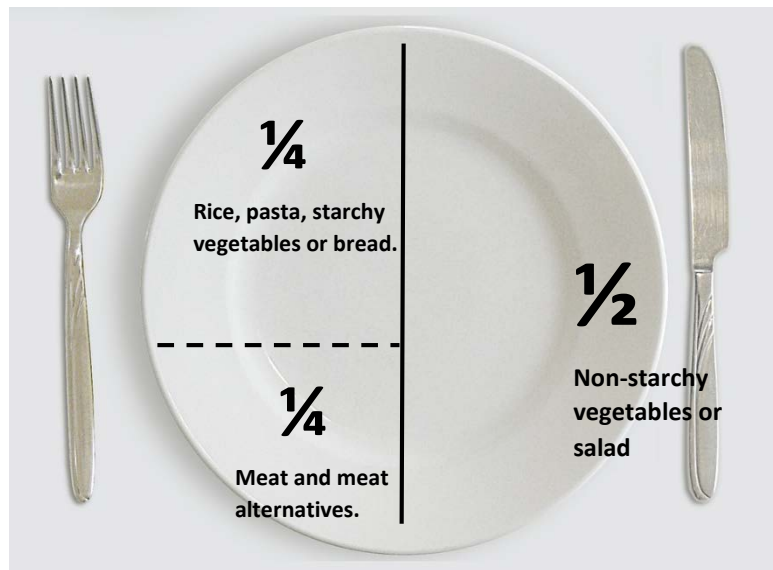
Understanding labels

When purchasing snack foods look for products which contain:

≤5g fat/100g – May contain 5-10g of total fat provided that saturated fat is less than 1/3 of this total. **≥3g fibre/100g, ≤450mg sodium/100g, ≤600kj/serve**

Portion Control

Eating smaller meals can help control your blood glucose levels and can help you to lose weight. Try using a smaller plate and space out meals throughout the day.



Your plate: $\frac{1}{4}$ = Rice, pasta, starchy vegetables or bread. $\frac{1}{4}$ = Meat and meat alternatives. $\frac{1}{2}$ = Non-starchy vegetables or salad.

Eating out

Living with Diabetes does not mean you should miss out on social gatherings or feel awkward in situations revolving around food. If eating out regularly, just pay close attention to your meal sizes and food choices ensuring they are lower in saturated fats, sugars and contain wholegrain breads/cereals and fresh fruits and vegetables (including legumes) to manage your weight and diabetes. Consume alcohol in moderation; it provides empty kilojoules and can hinder your weight loss journey.

Diabetes Australia offers a great guide to cuisine specific healthy food choices.

<https://www.diabetesaustralia.com.au/eating-out>

Exercise & Diabetes

Why exercise?

Physical activity is essential to everyone to stay healthy. For people with diabetes, being regularly physically active has even greater benefits. Physical activity helps to:

- Improve the body’s response to insulin which can lower blood glucose levels
- Lower blood pressure and cholesterol levels, reducing the risk of cardiovascular disease such as heart attack and stroke
- Control weight
- Reduce the risk of developing diabetes complications.
- Other positives include:
 - Stronger bones
 - Improved mood
 - Increased energy levels
 - Reduced stress and tension
 - Improved sleep

Exercises for management of Diabetes

What type of activities are recommended?

People with Type I diabetes who do not have diabetics complications can be involved in most types of exercises and physical activities. Activities such as resistance exercise (e.g. weight training) and aerobic exercise (e.g. walking, running or cycling) can be performed by people with diabetes type I.

Exercises recommendations for people with type I Diabetes.

Type of exercise	Recommendation
Aerobic Exercises	Should be performed on most days of the week, at moderate to high intensity, for between 20 and 60 minutes. Alternatively, the total exercise time can be broken into smaller parcels throughout the day.
Resistance training	Should be performed on 2 or 3 days a week. Exercise the major muscle groups with 8–10 different exercises. Repeat each exercise 8–12 times in a set, and perform 2 or 3 sets at moderate to high intensity (50–80% of 1 repetition maximum).

It is important to remember, when you start an exercise program, your insulin requirements may change depending on the time of the exercise in relation to your meal and insulin injection, as well as the duration and intensity of the exercise. It is important to discuss this with your Doctor, Sports Nutritionist or Accredited Exercise Physiologist.

Exercises recommendations for people with type II Diabetes.

Studies show that exercise can help prevent or delay Type II diabetes, improve control of blood glucose, decrease the proportion of body fat, decrease the risk of heart disease, and increase heart and lung fitness in people with Type II diabetes. Poorly controlled blood glucose leads to earlier onset of associated diseases and complications such as heart, kidney and eye diseases, and an increased risk of death. Better blood glucose control often means people can reduce their T2DM medications.

Type of exercise	Intensity	Duration	Frequency
Aerobic Exercises	Moderate to Vigorous	Total of 210 min per week Total of 125 min per week	On at least 3 days a week with no more than two consecutive days without exercising
Resistance training	Moderate to vigorous	60 minutes per week (included in totals above)	2 or more times per week (2–4 sets of 8–10 repetitions)

- Wear good quality, well fitting, closed-in footwear as recommended by your podiatrist.
- Start slowly, gradually increasing the pace and length of each session.
- Aim to do your activity sessions at regular times and on set days.
- Do not be physically active if you are unwell.
- Stay well hydrated. Drink enough water to avoid thirst and remember you will need a bit more than usual whilst being active.
- Take short breaks along the way if active for long periods.
- Wear sunscreen, protect your head and layer your clothing so you can add or remove clothes as needed.
- Wear diabetes identification (eg: Medic Alert® bracelet).

It is also important after your exercise to:

- **Check your feet** (or at least once a day) looking for signs of redness, blisters, cracks and calluses. If your feet perspire, change your socks after activity.
- **Physical activity can lower your blood glucose level for up to 48 hours afterwards**, so check your blood glucose levels often after exercise. You might notice a temporary rise after activity. This rise varies between individuals and is due to the release of hormones during periods of intense muscle activity.

Diabetes Monitoring Tips:

- **Know your blood glucose/closely monitor your blood glucose levels** – Too high (≥ 11.0) too low (≤ 4.0). Regular checks can measure the effect of food, exercise, diabetes tablets and insulin on blood glucose.
- **Check your blood glucose regularly** and check HbA1c every 3-6 months.
 - Too Low (Hypo); less than 4.0mmol/L – categorised by
- **Do not Smoke** or try to quit.
- **Eat healthily**; maintain a healthy eating plan to suit your needs.
- **Drink in moderation**; no more than 2 standard alcoholic drinks on any day, with some alcohol free days each week.
- **Maintain a healthy weight.**
- **Be physically active**; everyday

Look after yourself and you can stay well with diabetes.

Know Your Blood

Spotscreen’s Corporate, Basic and Executive Health Assessments provide a comprehensive evaluation of an individual’s overall health and wellbeing.

For more information, please visit www.spotscreen.net.au.

References:

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