TYPE 2 DIABETES
WHAT IS IT AND HOW DO I MANAGE IT?

This PIL educates patients about the causes of type 2 diabetes, the risk of long-term complications and the possibilities of remission. The emphasis is on lifestyle and dietary changes, and information is also given about treatment options.

What is type 2 diabetes?

If you have type 2 diabetes, your blood glucose (sugar) levels keep rising, because of problems with a substance called insulin. Insulin is usually made by the pancreas, but with type 2 diabetes, your pancreas either doesn't make enough insulin, or the insulin it does make is not used well (this is called insulin resistance).
Glucose is a type of sugar which travels round your body in your blood stream. It's made by your liver and also when the sugary and starchy foods you eat (e.g. bread, rice, potatoes and cereals) are broken down in the stomach.

Insulin acts like a key that lets glucose from your blood into your cells, where it's used to give them energy. Without enough insulin, or if the cells in your body are unable to use insulin properly, glucose builds up in your bloodstream. Imagine a movie theatre where more and more people arrive in the reception area but the doors to the theatre never open!

What are the signs and symptoms of type 2 diabetes?

Sometimes you can have no symptoms or have such mild symptoms that you live with it for several years before being diagnosed.

Main symptoms of type 2 diabetes	Other symptoms of type 2 diabetes
• Feeling very tired and weak • Feeling unusually thirsty • Needing to pee a lot more than usual • Losing weight without trying to	• Itchiness around your penis or vagina • Blurring of your vision • Cuts and grazes on your body healing more slowly than expected

What causes type 2 diabetes?

It's caused by a number of factors, including being overweight or inactive or having a family history of diabetes. It usually begins with insulin resistance: your body needs more insulin to help glucose enter your cells. At first, your pancreas makes more insulin, but over time it can't make enough and your blood glucose levels rise.

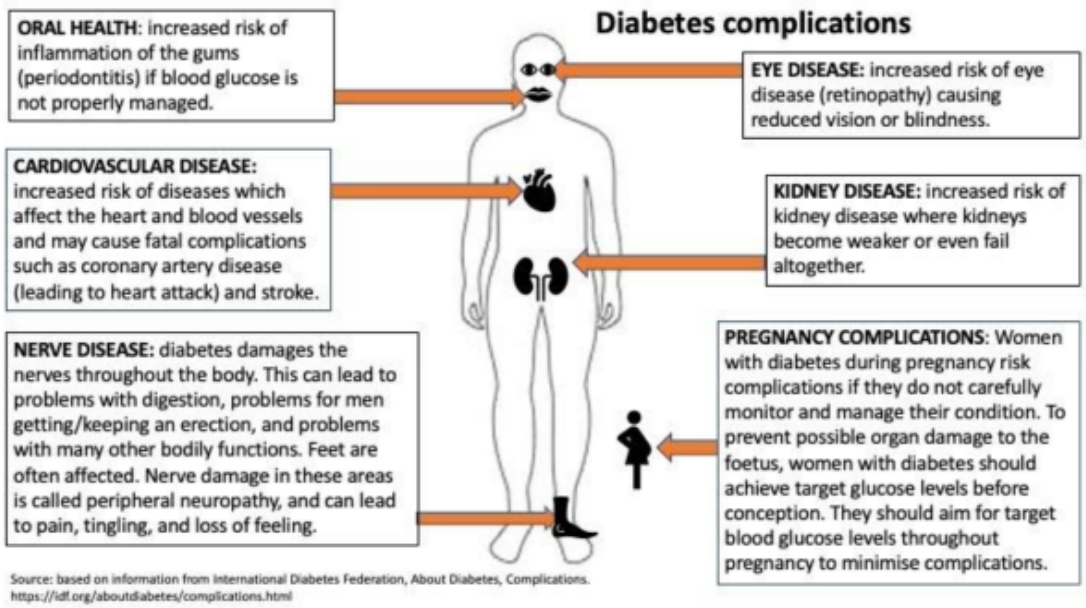
Type 2 diabetes risk factors	
• Being older than 40 • Being overweight or obese • Having diabetes during pregnancy (gestational diabetes)	• Having a close relative who has type 2 diabetes • Being physically inactive • Being Black African, Asian or African-Caribbean

How will type 2 diabetes affect my life?

You may have episodes of hyperglycaemia (sometimes called high blood sugar) and episodes of hypoglycaemia (sometimes called low blood sugar.

Hyperglycaemia (hyper): Blood glucose gets too high Can happen if you miss a dose of medication, have eaten more carbohydrate than your body can cope with, are stressed or unwell, or have over-treated a bout of hypoglycaemia	Symptoms include blurred vision, thirst, frequent urination and tiredness. Prompt treatment is needed. If left untreated for too long, hyperglycaemia can lead to diabetic ketoacidosis (DKA), a build-up of acids in the blood which can be serious. Warning signs include vomiting, dehydration and odd, sweet smelling breath. Call for medical help if you notice these symptoms. Severe dehydration and very high blood sugars in type 2 diabetes can lead to hyperosmolar hyperglycaemic state (HHS) – a life-threatening emergency .
Hypoglycaemia (hypo): Blood glucose drops too low Can happen when the balance of diabetes medication you take (especially insulin), the food you eat and the amount and intensity of physical activity you do isn't right	Symptoms include feeling very hungry, nervous, shaky, sweaty, dizzy or confused. If the symptoms are mild, take glucose tablets or gels, or drink milk or juice. Severe hypoglycaemia, however, is an emergency and requires prompt medical treatment (see Treating hypoglycaemia below).

While the symptoms of hyperglycaemia may not come on as suddenly or as dramatically as those of hypoglycaemia, high blood glucose levels can damage your blood vessels over time. That's why people with type 2 diabetes have a higher chance of developing certain serious health problems, called diabetes complications.



Source: based on information from International Diabetes Federation, About Diabetes, Complications. https://idf.org/aboutdiabetes/complications.html

These complications are serious, but with the right treatment and care you can live well with type 2 diabetes and reduce your risk of developing them.

Can type 2 diabetes be cured?

It's not possible to cure type 2 diabetes, but some people do manage to put it into remission – if your blood sugar levels are healthy, you don't need to take diabetes medication.

How is type 2 diabetes treated?

Self-care: The single most important part of your type 2 diabetes care is how you look after your own condition.

Exercise regularly to help keep your blood glucose under control and your weight down – and to make you feel more happy and relaxed! Aim to do some aerobic exercise (e.g. brisk walking, running, cycling) and some resistance training (e.g. lifting weights). Talk to your healthcare practitioner before starting or changing an exercise programme and find an exercise you enjoy so it's easier to keep at it!

Reduce the amount of time you spend sitting down in your daily life and generally be more active. Take the stairs rather than a lift, take phone calls standing up and go for a walk in your lunch break.

Eat a healthy diet:

- Reduce the calories in your food if you are overweight
- Replace saturated fats (e.g. cream, cheese, butter) with unsaturated fats (e.g. avocados, nuts, olives, oils from these sources)
- Eat dietary fibre (e.g. fruit, vegetables, whole grains)
- Drink less than 14 units of alcohol per week
- Avoid added sugar and, particularly, sugary drinks

Stop smoking, lose weight if you are overweight and take all your medication as prescribed. Attend your medical appointments and look after your feet carefully: consult your doctor if you develop any corns, callouses (bits of hard, rough skin on your feet), ulcers, foot infections or other foot problems.

Medication: You may give you medication to prevent heart attacks, a stroke or circulation problems.

Main types of medication for controlling blood glucose	
Tablets	
Biguanides (metformin)	Reduce insulin resistance and allow the body to use its own insulin more effectively. Usually prescribed if a healthy diet and more exercise doesn't improve blood glucose levels
Sulphonylureas	Make cells in the pancreas produce more insulin
Prandial glucose regulators	Make cells in the pancreas produce more insulin. Act more quickly than sulphonylureas, but only last for a short time
Thiazolidinediones (glitazones)	Reduce insulin resistance and improve how the body reacts to insulin, allowing insulin to work better. Help protect cells in the pancreas
GLP-1s (incretin mimetics)	Increase the level of incretin, helping the body to produce more insulin when needed and reduce the amount of glucose production when it's not needed

DPP-4 inhibitors (gliptins)	Block the action of DPP-4, an enzyme that destroys a hormone called incretin
SGLT2 inhibitors	Reduce the amount of glucose absorbed by the kidneys and blood (the excess glucose is then passed out in pee)
Alpha glucosidase inhibitor (acarbose)	Slows the intestine's absorption of starchy foods so blood sugar levels don't rise so fast after meals

Injectables	
GLP-1	Helps the body produce more insulin when it's needed and reduces the amount of glucose produced by the liver when it's not needed. Slows the rate at which the stomach digests food and reduces appetite
Insulin	If other medications can't enable your body to produce enough insulin to control your blood glucose levels, insulin injections may be prescribed

When should I contact my doctor?

If you have type 2 diabetes you'll probably go for regular appointments: tell your doctor about any new symptoms or changes. Your doctor may need to be contacted urgently if you have severe hypoglycaemia or DKA, so make sure their contact are easy to find.

How can friends and family help?

Support from family and friends can help make the difference between you feeling overwhelmed or empowered instead. Share the useful suggestions from the Diabetes UK and Centers of Disease Control and Prevention websites and teach family and friends to recognise the symptoms of low blood glucose (low blood sugar) and how to treat it:

TREATING HYPOGLYCAEMIA (LOW BLOOD SUGAR)

If you have your meter, check your blood glucose. If you don't have your meter, treat the symptoms anyway. Have an easy-to-eat, quickly absorbable form of sugar, such as 3 glucose sweets, 125 ml (half a cup) non-diet cooldrink or 3 teaspoons of honey. Then have at least 15 g of slowly absorbed carbohydrate, such as a cheese or peanut butter sandwich, or 5 or 6 high-fibre biscuits like ProVita.

TREATING SEVERE HYPOGLYCAEMIA (LOW BLOOD SUGAR)

If your blood glucose gets very low, you may become confused or unconscious or have a seizure (fit). Consider wearing a Medic-Alert bracelet or similar so people know you have diabetes. If you are unable to eat or drink to raise your blood glucose level, you'll need a glucagon injection instead.

Think positive!

Type 2 diabetes is a complex condition and there is a lot to understand, but you don't need to put your life on hold – you should still be able to live a full and active life with your condition.

Where can I find out more? | Websites

- Diabetes SA
- Centre for Diabetes and Endocrinology
- Diabetes Education Society of South Africa
- American Diabetes Association's very helpful Diabetes Self-Care Manual
- International Diabetes Federation
- Diabetes UK

Support groups / Helplines:

- Diabetes SA 086 111 3913
- Diabetes SA's local support groups