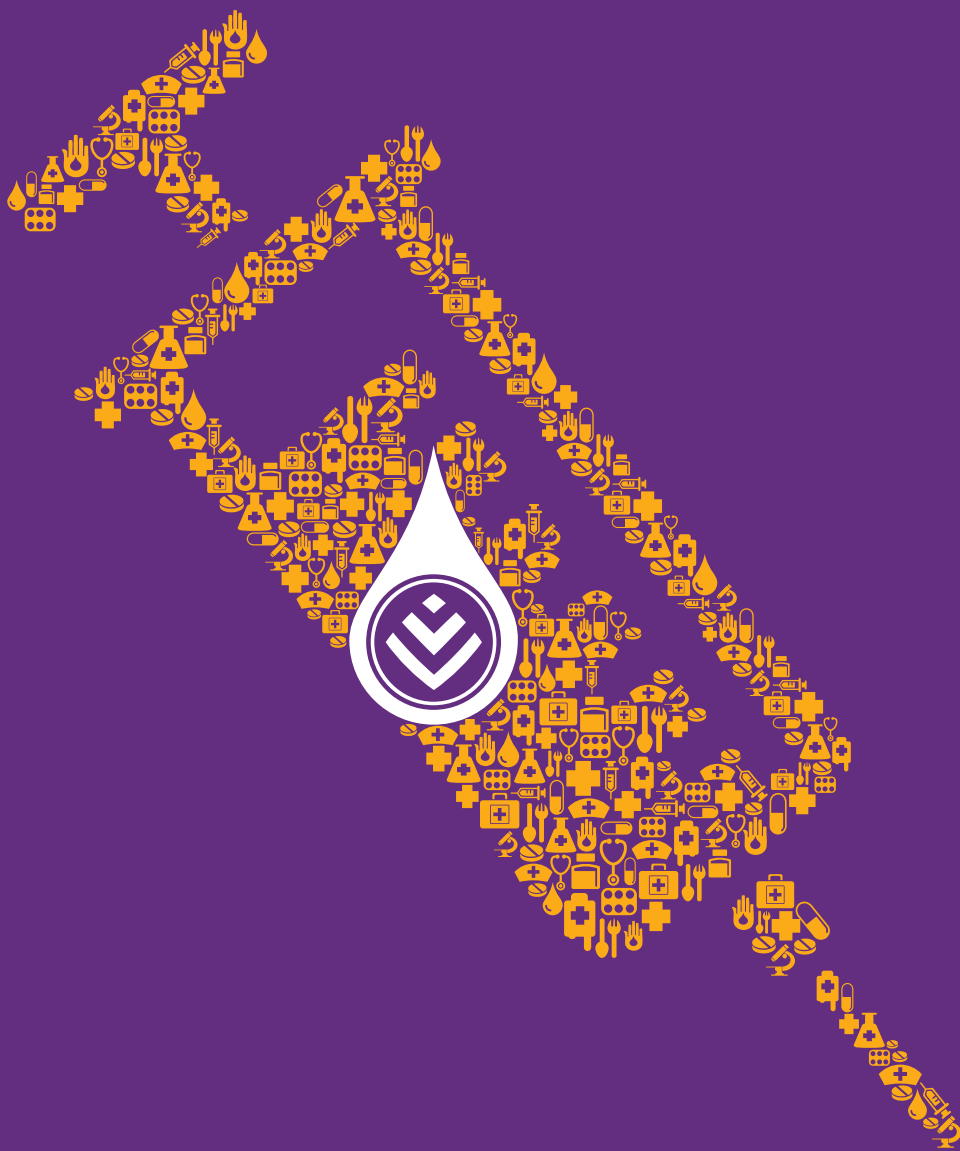


# + DISCOVERY HEALTH MATTERS

Diabetes -  
a growing  
problem

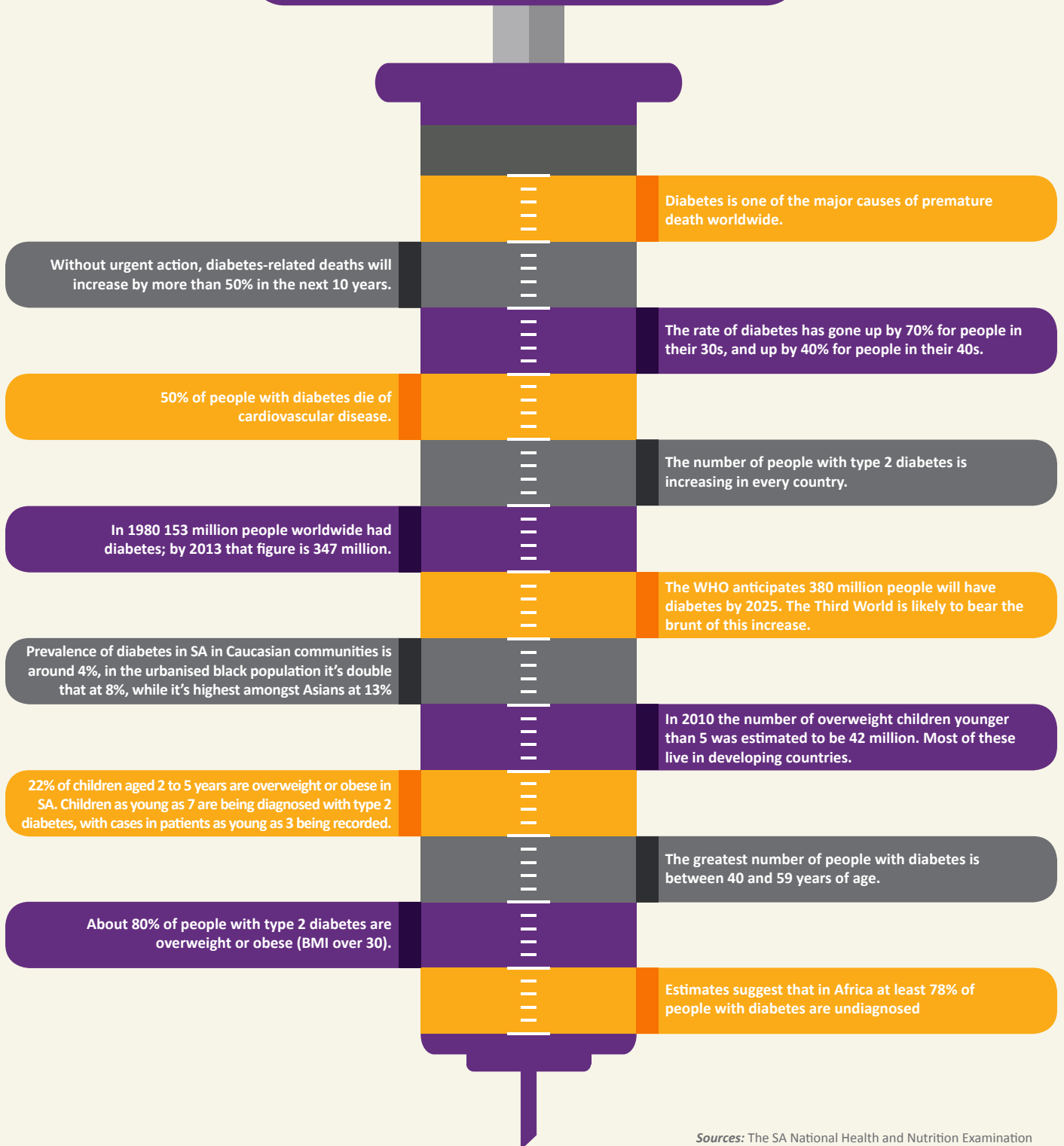




# Discovery Health Matters

Discovery Health Matters is a layman's guide to important, but often misunderstood topics in healthcare. The information contained in this document is for informational purposes only, and should not be used to replace professional medical advice, or be used to diagnose or treat a medical condition.

## Diabetes dashboard



**Sources:** The SA National Health and Nutrition Examination Survey 2013, World Health Organization, International Diabetes Federation (IDF), National Geographic, Scientific American, Centre for Diabetes and Endocrinology.



# Diabetes basics

In a normal body, food is broken down into glucose, which provides energy. The hormone insulin, produced by the pancreas, enables the body to utilise glucose – and to regulate blood sugar levels.

When a person is overweight and inactive, the pancreas battles to produce enough insulin to control rising blood sugar levels and eventually the system fails.

Since your body can no longer use the glucose from your food as energy, it accumulates in your blood, leading to diabetes and serious health complications, such as heart disease, stroke, blindness, kidney failure, and nerve damage that can lead to amputation.

Type 1 diabetes occurs when the pancreas is unable to produce insulin at all, because the insulin-producing cells (called beta cells) of the pancreas are damaged. People with type 1 diabetes produce little or no insulin, so glucose cannot get into the body's cells for use as energy. This causes blood sugar to rise. People with type 1 diabetes need insulin injections to control their blood sugar.

Type 1 affects about 5-10% of the population with diabetes.

Type 2 diabetes occurs when the pancreas does not produce enough insulin or when the body is unable to respond normally to the insulin, and glucose cannot get into the body's cells to use as energy. This results in an increase in the level of glucose (sugar) in the blood. Type 2 diabetes is caused by genetics and often triggered by lifestyle factors. The majority of people with diabetes have type 2.

Gestational diabetes is when a high blood sugar level is first recognised during pregnancy. Hormonal changes during pregnancy affect the action of insulin, resulting in high blood sugar levels. Usually, blood sugar levels return to normal after the baby is born. Women who have had gestational diabetes have a higher risk of developing type 2 diabetes later in life. Gestational diabetes can increase complications during labour and delivery related to the increased size of the baby.



# Signs and symptoms

Look out for these early symptoms:

- Extreme thirst
- Fatigue
- Blurry vision
- Excessive urination
- Recurrent infections and
- Rapid weight loss.

See your doctor immediately if you notice any of these signs.

Because the signs of diabetes are non-specific, many people live with the condition for years without knowing it.

“It takes on average seven years for a person to be diagnosed with diabetes for the first time, worldwide. It’s probably longer than that here in South Africa,” says Professor Larry Distiller, founder and managing director of the Centre for Diabetes and Endocrinology in Johannesburg.

The result is that more than 30% of people with type 2 diabetes have already developed complications by the time they are diagnosed, he says.

Without urgent action, diabetes-related deaths will increase by more than 50% in the next 10 years. (There were 4.6 million deaths due to diabetes in 2011 according to the (International Diabetes Federation) – IDF.)



## Treatment

You may be diagnosed by your family doctor using recognised glucose tests. He or she may then refer you to a doctor who specialises in hormonal disorders, called an endocrinologist.

An **endocrinologist** is a doctor who treats people who have problems with their endocrine glands; the pancreas is an endocrine gland.

As your diabetes treatment is threefold and consists of medicine, exercise, and a healthy eating plan, your healthcare team may also include:

A **diabetes educator**: A healthcare professional who is certified to teach people with diabetes how to manage their condition; a **dietitian**: An expert in nutrition who helps people plan the type and amount of food to eat for special health needs; a **podiatrist** (foot doctor) and an **ophthalmologist** (eye specialist). Diabetes can damage the blood vessels in the eyes, leading to serious problems like cataracts, glaucoma, and retinopathy. If you have nerve damage in your feet, you may not feel small wounds that need treatment, and poor blood flow can also slow healing.



## Prevention and management

80% of type 2 diabetes can be avoided by following of a healthy eating plan and regular exercise.

Regular exercise helps control glucose levels, prevents complications and assists with cardiac and circulatory health. It also helps to maintain healthy weight. Remember: If you don't make time for exercise, you will need to make time for illness. "There is no doubt that exercise is the key to lowering risk, and exercise has been engineered out of our lives," says Distiller.

Include plenty of wholegrains, fresh fruit and vegetables in your diet. Read food labels and be aware of high glycaemic load foods – those that cause spikes in glucose levels.

One study showed those who lost a modest amount of weight (7%) and exercised regularly reduced their risk of developing diabetes by almost 60%.



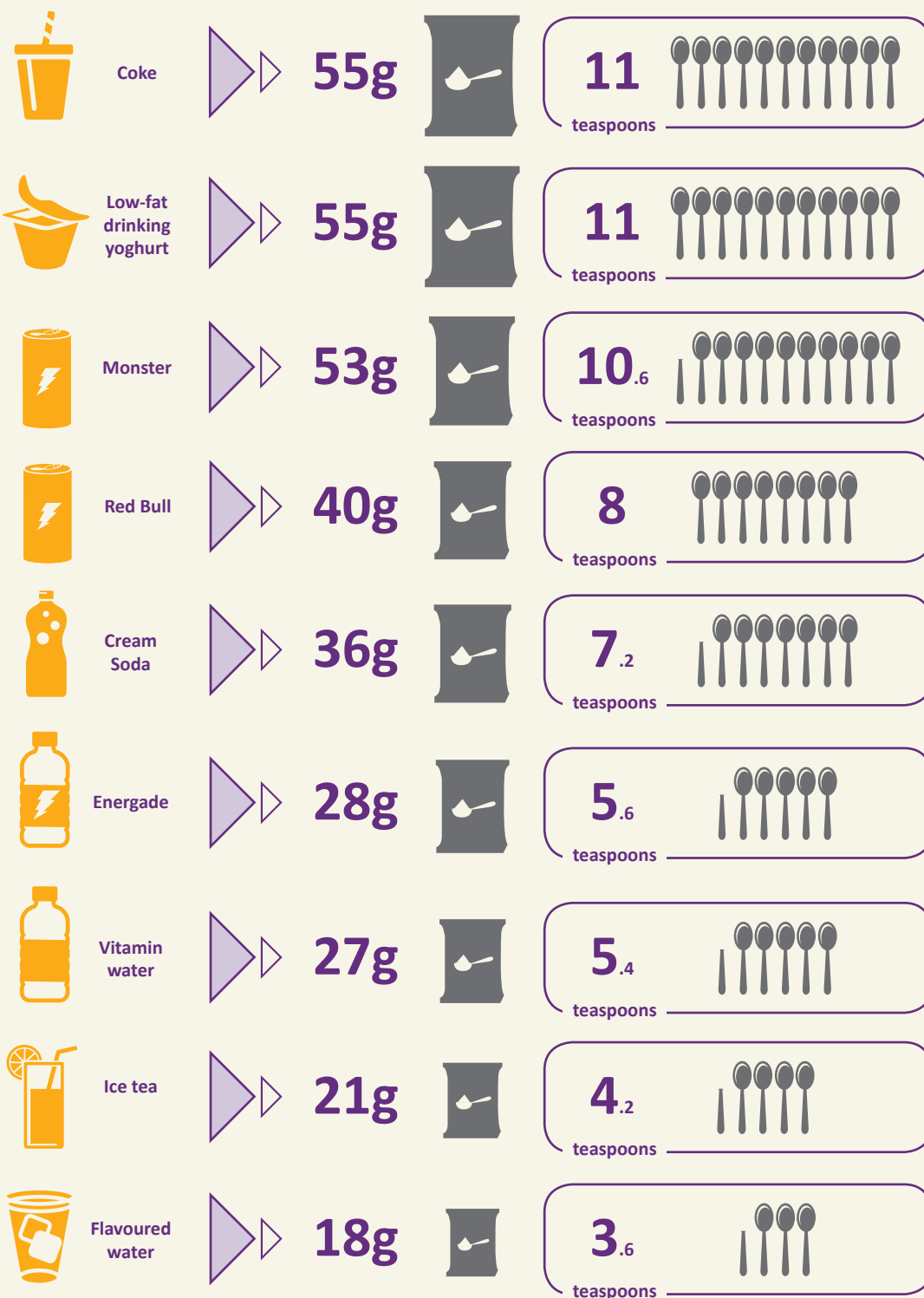


# The sugar trap

A review of research published in the journal *Diabetes Care* indicated that those who had one to two servings of soft drinks a day had 26% greater risk of developing type 2 diabetes than those who had no soft drinks or less than one a month.

Fizzy drinks are energy dense (high in kilojoules) but low in nutrition and it's easy to drink too many. It's true that fruit and fruit juices are also high in sugar, but, getting in 50g of sugar is not easily achieved by eating fruit, but it is with sweetened drinks, says Dr Louise van den Berg, of the department of nutrition and dietetics at the University of the Free State.

## The amount of sugar in 1 bottle or can of:





# Glossary of diabetes terms

**Autonomic neuropathy:** Nerve damage to the part of the nervous system that we cannot consciously control. These nerves control our digestive system, blood vessels, urinary system, skin, and sex organs.

**Basal rate:** The amount of insulin needed to manage normal daily blood glucose fluctuations. Most people produce insulin continuously to manage normal glucose fluctuations during the day. In someone with diabetes, an insulin pump mimics this function.

**Beta cell:** A type of cell in an area of the pancreas called the islets of Langerhans. Beta cells make and release insulin, which helps control glucose levels in the blood.

**Blood glucose monitoring or testing:** A method of testing how much sugar is in your blood. You prick your finger with a lancet and put a drop of blood on a test strip and place the test strip into a glucose meter, which then shows your blood glucose level on a screen. Blood sugar testing can also be done in a laboratory. Depending on your specific needs, glucose checks before meals, two hours after meals, at bedtime, in the middle of the night, and before and after exercise, may be recommended.

**Blood pressure:** The measurement of the force of blood against the blood vessels. Blood pressure is written as two numbers: the top number (systolic) measures pressure when the heart beats and the bottom number (diastolic) refers to pressure in the arteries between beats. High blood pressure strains the heart, harms the arteries, and increases the risk of heart attack, stroke, and kidney problems. The ideal blood pressure for people with diabetes is 130/80 or less.

**Coma:** An emergency in which a person is not conscious; this can happen to people with diabetes when their blood sugar is too high or too low.

**Diabetic ketoacidosis:** A severe, life-threatening condition that results from hyperglycaemia (high blood sugar), dehydration, and acid build-up that needs emergency fluid and insulin treatment. Ketoacidosis happens when there is not enough insulin and cells become starved for sugars, and ketones become activated as an alternative source of energy. The system creates a build-up of acids. Ketoacidosis can lead to coma and even death.

**Fasting plasma glucose test (FPG)/ Glucose tolerance test:** This is the preferred method of screening for diabetes. The FPG measures a person's blood sugar level after fasting for at least 8 hours. A diagnosis of diabetes is made when the fasting blood glucose is greater than 7mmol/l

**Glaucoma:** An eye disease associated with increased pressure within the eye. Glaucoma can damage the optic nerve and cause impaired vision and blindness.

**Glucagon:** A hormone that raises the level of sugar in the blood by releasing stored glucose from the liver. Glucagon is sometimes injected when a person has lost consciousness from low blood sugar levels.

**Glucometers:** Portable machines used to measure blood glucose

**Glucose:** A simple sugar found in the blood. It is the body's main source of energy.

**Glycated haemoglobin test (HbA1c):** This is an important blood test to determine how well you are managing your diabetes. Haemoglobin is a substance in red blood cells that carries oxygen to tissues. It can also attach to sugar in the blood, forming a substance called glycated haemoglobin or a Haemoglobin A1C. The test gives an average blood sugar measurement over a 8- to 12-week period and is used along with home glucose monitoring to make treatment changes. The ideal range for people with diabetes is below 7%.

**Hyperglycaemia:** High blood sugar. This condition is fairly common in people with diabetes. Many things can cause hyperglycaemia. It occurs when the body does not have enough insulin or cannot use the insulin it does have.



# Glossary of diabetes terms

**Hypoglycaemia:** Low blood sugar. The condition also often occurs in people with diabetes. Most cases occur when there is too much insulin and not enough glucose in your body.

**Insulin:** A hormone produced by the pancreas that helps the body use sugar for energy. The beta cells of the pancreas make insulin.

**Insulin pump:** A small, computerised device – about the size of a small cell phone – that is worn on a belt or put in a pocket to help make insulin treatment more convenient. Insulin pumps have a small flexible tube with a fine needle on the end. The needle is placed under the skin of the abdomen and taped in place. A carefully measured, steady flow of insulin is released into the body.

**Insulin resistance:** When the effect of insulin on muscle, fat, and liver cells becomes less effective; this effect occurs with both insulin produced in the body and with insulin injections. Therefore higher levels of insulin are needed to lower the blood sugar.

**Ketones:** One of the products of fat burning in the body. When there is not enough insulin, your body is unable to use sugar (glucose) for energy and your body breaks down its own fat and protein. When fat is used, acid ketones turn up in your urine and blood. A lot of ketones in your system can lead to the serious condition called ketoacidosis.

**Kidney disease (nephropathy):** Changes in the very small blood vessels in the kidneys cause scarring of the kidneys, which can eventually lead to kidney failure. People who have had diabetes for a long time may develop nephropathy. An early sign of nephropathy is when proteins can be detected in the urine.

**Lancet:** A fine, sharp needle for pricking the skin for blood sugar monitoring.

**Neuropathy:** Nerve damage. People who have had diabetes that is not well controlled may develop nerve damage.

**Obesity:** A term used to describe excess body fat. It is defined in terms of a person's weight to height ratio or body mass index (BMI). A BMI over 30 is classified as being obese. Obesity makes your body less sensitive to insulin's action. Extra body fat is a risk factor for diabetes.

**Pancreas:** An organ behind the lower part of the stomach that is about the size of a hand. It makes insulin so the body can use sugar for energy.

**Periodontal disease:** Damage to the gums and tissues around the teeth. People who have diabetes are more likely to have periodontal disease than people who do not have diabetes.

**Peripheral neuropathy:** A type of nerve damage most commonly affecting the feet and legs.

**Retina:** The centre part of the back lining of the eye that senses light. It has many small blood vessels that can be affected when a person has diabetes for a long time.

**Retinopathy:** A disease of the small blood vessels in the retina of the eye.



# How Discovery Health Medical Scheme covers diabetes

If you are diagnosed with diabetes your diagnostic tests can be covered by the Chronic Illness Benefit.

Approved medicine, insulin, test strips and lancets are also paid from the Chronic Illness Benefit, following a review process. Depending on your plan option you may need to use a healthcare provider from the Discovery Health network.

To apply for the Chronic Illness Benefit, go to [www.discovery.co.za](http://www.discovery.co.za) or call Discovery Health on 0860 99 88 77 to get an application form. You and your healthcare provider need to complete the application form and submit it to us for approval.

Glucometers and pathology blood tests are paid from your day-to-day benefits.

Consulting a dietitian at their rooms is paid from your Allied, Therapeutic and Psychology Benefit. You have automatic access to this benefit through your regular plan benefits, depending on the plan you have chosen.

Executive and Comprehensive plan members have access to the Diabetes Management Programme at the Centre for Diabetes and Endocrinology.



## Useful contacts

The Centre for Diabetes and Endocrinology  
[www.cdcentre.co.za](http://www.cdcentre.co.za)

Diabetes SA  
[www.diabetessa.co.za](http://www.diabetessa.co.za)

Psychological Society of South Africa  
[www.psyssa.com](http://www.psyssa.com)

South African Depression and Anxiety Group (SADAG)  
[www.sadag.org](http://www.sadag.org)

The International Diabetes Federation (IDF)  
[www.idf.org](http://www.idf.org)

World Diabetes Foundation  
[www.worlddiabetesfoundation.org](http://www.worlddiabetesfoundation.org)

Diabetes Care  
[www.diabetescare.net](http://www.diabetescare.net)

American Diabetes Association  
[www.diabetes.org](http://www.diabetes.org)

Children with Diabetes (USA)  
[www.childrenwithdiabetes.com](http://www.childrenwithdiabetes.com)





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