

## Diabetes Mellitus Type 2

Diabetes mellitus is a group of illnesses that result in too much glucose (sugar that comes from the foods we eat) circulating in the blood and causing damage to blood vessels, nerves, and organs. The International Diabetes Federation estimates that over 4.2 million adults aged between 20 and 79 years in South Africa have diabetes; this number is expected to go up to over 7,4 million by 2045. It is further estimated that over 1.9 million people in South Africa between 20 and 79 years with undiagnosed diabetes.

Diabetes Mellitus Type 2 or Type 2 Diabetes Mellitus (T2DM) is caused by the body not having enough insulin or being resistant to insulin. When the body is resistant to insulin, the cells in the body do not respond normally to insulin.

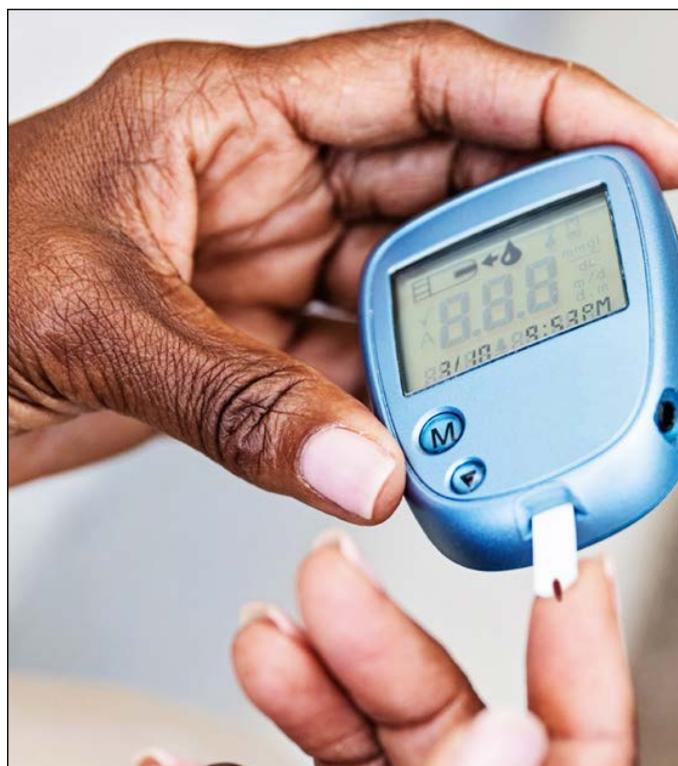
Insulin is a hormone produced in the pancreas (an organ in the body) to control blood glucose and is the key that your body uses to let the glucose go from the blood into the cells where it is used for energy. When the cells cannot respond normally to insulin, the glucose stays in your blood and cannot enter the cells. When the glucose in your blood is high, the pancreas produces more insulin to lower the amount of glucose. Over time, in people with untreated or uncontrolled diabetes, the pancreas cannot keep up and eventually stops making enough insulin.

When the glucose sits in the blood for a long time, it causes damage to blood vessels, nerves, and organs. This causes the complications of T2DM such as heart problems, kidney and vision problems, numbness in the feet and hands, and stroke.

### Risk factors for Type 2 Diabetes

The following lifestyle and health factors can increase a person's risk of developing T2DM:

- Having pre-diabetes – glucose levels in the blood are higher than normal but not high enough to be diagnosed as T2DM
- Being overweight or having a BMI that is more than 25kg/m<sup>3</sup>
- Being 45 years or older
- Having a parent, brother, or sister with T2DM
- Being physically active less than three times a week
- Having had gestational diabetes (diabetes during pregnancy) or having given birth to a baby who weighed over 4kg
- Having high blood pressure
- Having high cholesterol
- Having polycystic ovarian syndrome (a condition characterised by irregular menstrual periods, excess hair growth and obesity)
- Having a history of heart disease
- Storing fat mainly around the abdomen



## Signs and symptoms

Signs and symptoms of diabetes include:

- Polydipsia – feeling very thirsty no matter how much water or other fluids you drink
- Polyuria – passing large amounts of urine usually caused by the large amounts of water or other fluids you drink due to excessive thirst.
- Blurred vision
- Unexplained weight loss without any effort to lose weight
- Having numbness or tingling in your hands or feet
- Having very dry skin
- Feeling tired easily
- Having infections more frequently than usual
- Having sores that take a long time to heal
- Having areas of darkened skin, usually in the armpits and neck

Because T2DM usually occurs gradually and can take many years to develop, most people do not notice their symptoms or think other conditions cause them. If you have any risk factors for diabetes, it is essential to discuss screening with your doctor or health care provider.

## Diagnosis

T2DM can be diagnosed in people with or without symptoms of diabetes by measuring the amount of glucose in the blood. The following tests are used to diagnose diabetes:

- **Random plasma glucose test** – this test can be done at any time, and it does not matter when someone last had something to eat or drink.
- **Fasting plasma glucose test** – this test is done when someone has not had anything to eat or drink for at least 8 hours before the test is done.
- **HbA1C test** – this test can be done even if you have eaten or drank anything. It measures the amount of glucose attached to your red blood cells. It usually helps health care professionals know how much sugar has been attached to your red blood cells over three months at a time.
- **2 Hour post-load glucose test or oral glucose tolerance test** – this test is done by measuring the amount of glucose in the blood at two separate times on the same day. Like in the fasting plasma glucose test, someone must not eat or drink anything for at least 8 hours before the test is done. At the start of the test, blood is taken from the person, and the glucose in the blood is measured. The person is then given a glucose mixture to drink. After two hours, blood is retaken, and the glucose in the blood is measured again.

When someone does not have symptoms of diabetes, the test(s) may need to be repeated on another day to confirm the diagnosis of diabetes.

## Treatment

T2DM is usually treated in three main ways:

1. **Lifestyle modification** – eating healthy, exercising regularly, getting enough rest, and lowering your stress levels.
2. **Oral medication** – these are medicines taken by mouth and many diverse types of oral medications used to treat T2DM. Oral medications are used by people whose bodies are still producing insulin.
3. **Insulin** – insulin is used when the body is not producing insulin, and it is usually self-injected via a syringe, pen, or pump.

All these treatment options can be used at the same time. Still, they are usually done stepwise, starting with lifestyle modification, adding oral agents, and then adding insulin until the blood glucose levels are controlled.

## Prevention

By changing your diet and physical activity levels, you can reduce your risk of T2DM by losing weight, exercising regularly (at least 30mins of exercise five times a week) and eating healthy food. These changes can prevent or delay the onset of T2DM.

## What is covered as PMB level of care?

T2DM is one of the conditions included in the [Chronic Disease List](#) (CDL) of the Prescribed Minimum Benefit (PMB) regulations. This means that medical schemes must fully fund the diagnosis, treatment, and care of T2DM.

The minimum care and management of T2DM must be funded according to the algorithm in the PMB regulations, which is available [here](#). Medical schemes are allowed to put in place managed care protocols and formularies to fund the diagnosis, treatment and care of T2DM.

Protocols are guidelines that medical schemes use to decide how to treat certain conditions that members and beneficiaries of the scheme may have. In these protocols, medical schemes can allow for only a specific number of consultations with your treating provider or a specific number of times a test can be done per year.

Formularies are lists of medicines that the medical scheme has chosen to treat certain conditions. Both formularies and protocols should be available to medical scheme members

and their treating health providers on request. If there is a clinical reason or a need for benefits beyond what is specified in the protocol or formulary, the medical scheme cannot completely refuse to fund these.

The items that the scheme should fund include:

- Consultations with your treating provider
- Lifestyle modification interventions
- Annual eye examination for retinopathy
- Annual comprehensive foot examination
- Pathology/blood tests at 3-6 monthly intervals
- A disease identification card or disc
- Home glucose monitoring – is glucose test strips, a device to read the glucose strips, lancing needles and lancing devices. Continuous glucose monitoring devices and technology are funded at the medical scheme's discretion and are not part of the PMB level of care.

If a member or beneficiary of a medical scheme chooses to use medicines that are not in the formulary or to have procedures or items not in the scheme's protocol, or use a treating provider who is not a designated service provider, the medical scheme may require that the member or beneficiary pay a co-payment.

## References:

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