

Not all diabetes is the same.

> Type 1 diabetes

When someone has type 1 diabetes, their body does not produce enough insulin. The special cells in the pancreas, called beta (β) cells, which store and release insulin, are damaged by an autoimmune condition.

About 10% of all cases of diabetes are type 1. The onset of type 1 diabetes typically occurs in people under 30, but it can occur at any age. Overwhelmingly, diabetes in childhood is type 1 diabetes. Type 1 diabetes requires constant monitoring and is managed with insulin injections and a careful diet.

> Type 2 diabetes

The most common form of diabetes in Australia, type 2 diabetes, often produces no symptoms, especially in the early stages. It is estimated that about half of those people with type 2 go undiagnosed.

People with type 2 diabetes are insulin resistant, which means their body's cells don't respond properly to insulin. To compensate, the pancreas produces more and more insulin. The overworked β cells burn out and become dysfunctional. Because glucose isn't cleared from the bloodstream, the levels rise. Type 2 is progressive – without intervention it gets worse over time. It is treated with medication that helps reduce the amount of glucose in the blood. Sometimes insulin is needed as well.

> Gestational diabetes

This occurs in about 10-15% of pregnancies and results from the special hormonal environment and increased demands of pregnancy. It is usually detected at between 24 and 28 weeks of the pregnancy with a glucose tolerance test. After the baby is born, the mother's blood glucose levels usually return to normal. There can be no discernible symptoms and, if left untreated, it can pose a risk to both mother and baby. In general, all women not known to have diabetes (including early diagnosis of gestational diabetes) should have a 75g oral Glucose Tolerance Test (GTT) at 24 to 28 gestation. An early oral GTT (around 12 to 16 weeks gestation) is recommended for women at high risk of gestational diabetes.



How to have your test performed

Pathology is a medical specialty, so your doctor will need to complete a pathology request form to refer you for diabetes testing.

Where to have your tests

An appointment is not required for routine blood tests. However, due to the specialised collection for GTT an appointment is required. Please contact your nearest collection centre to arrange a suitable time for your GTT to be performed.

Locate our collection centres

For a full list of Clinpath collection centre locations and opening times, please visit www.clinpath.com.au.

More information

To calculate your risk of developing type 2 diabetes or to find out more information, please visit the Australian Government Department of Health website to access the Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK)

<http://www.health.gov.au/preventionoftype2diabetes>

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Testing for Type 2 Diabetes



Effects of Diabetes



Eyes

Can cause problems with the eyes including blindness



Heart

Can increase the susceptibility to heart attacks



Blood

Leads to elevated blood sugar level



Kidneys

Can cause damage to the kidneys



Nerves

Can cause nerve damage, making hands and feet tingle, hurt or feel numb

Testing to screen for, diagnose and manage type 2 diabetes

| TEST | WHY? | SCREEN | DIAGNOSIS | MANAGE |
|---|--|---------------------------------------|-----------|--------------------------------|
| MEASURING BLOOD GLUCOSE | | | | |
| HbA1c | Glucose naturally attaches to haemoglobin in the red blood cells. When this occurs, the haemoglobin is said to be glycated. The HbA1c test counts the percentage of haemoglobin that has become glycated. The amount of glucose that binds with haemoglobin is directly proportional to the total amount of glucose in the blood. Because blood cells live for about 120 days, the HbA1c test can show your glucose levels over that time. Whereas in the past, fasting glucose and the Glucose Tolerance Test (GTT) were standard for screening and diagnosis, HbA1c is now recommended for all patients at risk except for women in pregnancy. | ✓ Annually for people at high risk | ✓ | ✓ 3 monthly |
| Fasting Blood Glucose (FBG) | This test measures glucose levels in your blood at the time you give the sample – in 'real time'. Fasting is essential because any food you eat will influence the results. Discuss fasting with your doctor. | ✓ Annually for people at high risk | ✓ | ✓ When required |
| Random Blood Glucose | This test is often used to quickly check blood glucose levels when investigations into other conditions have suggested they may be too high. It measures glucose levels at a time when you haven't undergone fasting. | | | ✓ When required |
| Glucose Tolerance Test (GTT) | This test shows how well your body processes glucose by comparing the levels in the blood before, during and after you take a sugary drink (over the course of two hours). Fasting is essential because any food you eat will influence the results. Discuss fasting with your doctor. | For gestational diabetes | ✓ | |
| MONITORING CARDIOVASCULAR DISEASE | | | | |
| HDL with lipids | Someone with diabetes is at a much higher risk of cardiovascular disease (heart disease & stroke). A lipids test panel measures levels of fats and fat-like substances: triglycerides, total cholesterol, HDL & LDL. Fasting is not recommended if you are taking insulin. Discuss fasting with your doctor. | ✓ Annually for people at high risk | ✓ | ✓ Annually or when required |
| ASSESSING KIDNEY FUNCTION | | | | |
| Urine Albumin/Creatinine Ratio (ACR) | Diabetes can progressively damage the filtration system of the kidneys. This test measures the amount of albumin in your urine. Albumin is the main protein in your blood and when your kidneys are damaged it leaks into the urine. Too much albumin in the urine can be the first sign that your kidneys are damaged. | | | ✓ Annually |
| Serum creatinine | This test measures the amount of creatinine in your blood. Creatinine is a waste product, created as part of muscle metabolism, which is filtered from the blood by the kidneys. If the kidneys aren't working effectively, creatinine levels build up. | | | ✓ Annually |
| eGFR | This is derived from serum creatinine using age, sex and race of patient. It offers an estimate of renal function. The 'e' refers to the estimation based on the recommended equation. | | | ✓ Annually |

Notes: The tests you have will depend on your particular condition. Other tests may be needed for conditions related to diabetes such as urinary tract infection, polycystic ovarian syndrome, thyroid disease & fatty liver, or an emergency such as hyperglycaemia.