

# Diabetes

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Diabetes is a condition where the amount of glucose in the body is too high because the body cannot use it properly.

Diabetes exists in two forms: Type 1, which usually occurs earlier in life; and Type 2, which usually occurs as a person gets older (generally over 40 – although it can appear earlier, especially in people of Asian and African-Caribbean origin).

Type 1 is caused by the body's inability to produce insulin, the hormone that controls levels of glucose (blood sugar). Type 2 diabetes occurs when the body still produces some insulin, but not enough, or when the body doesn't respond properly to the insulin produced (this is called 'insulin resistance'). Type 2 diabetes is the more common type and is linked more closely with lifestyle factors. It is becoming more prevalent. This factsheet deals with Type 2 diabetes.

With management, diabetes – like HIV – can be controlled and need not stop someone from leading a full, productive life.

## What symptoms does diabetes cause?

Type 2 diabetes may have no symptoms at all (and some people can have the condition and not know about it). It can cause the following symptoms:

- increased thirst
- an increased amount of urine and increased frequency of urination
- tiredness
- weight loss and increased hunger
- blurred vision
- inability to get an erection (in men)
- genital itching or regular episodes of thrush (candidiasis)
- slow healing of wounds.

## How does diabetes affect the body?

Uncontrolled diabetes can damage a number of organs in the body. It increases the risk of heart attack, stroke and kidney damage, all of which may lead to disability or death if not managed. People with diabetes are at increased risk of problems with their feet and legs, and may develop a complication called retinopathy, which affects the eyes.

## HIV and Type 2 diabetes

The role of HIV treatment in the development of Type 2 diabetes is still being researched. Some older anti-HIV drugs in the protease inhibitor class (especially indinavir [*Crixivan*] and full-dose ritonavir) have been associated with an increased risk of diabetes, as have some of the other older anti-HIV drugs such as d4T (stavudine, *Zerit*) and AZT (zidovudine, *Retrovir*). The risk of developing diabetes as a side-effect of HIV treatment is lower with the drugs commonly used today.

If this has affected you, changing your combination may reduce glucose levels. If not, or if a change isn't practical, there are other things you can do.

As people with HIV age, their chances of getting Type 2 diabetes increase, in common with the HIV-negative population.

## How is Type 2 diabetes managed?

Type 2 diabetes is associated with excess weight gain and lack of exercise. The first line of treatment is to devise an exercise and diet plan to help reduce body weight that, if successful, will bring the diabetes under control.

If this approach fails, drugs may be used in conjunction with the diet and exercise plan. Tablets that either produce more insulin or make the existing insulin supply work better can be given. The standard choice is a tablet called metformin, although there are many different tablets available. Your doctor will decide with you which suits you best (treatment might involve more than one drug).

Type 2 diabetes is progressive and it may eventually become necessary to give daily injections of insulin to bring it under control.

## What tests will I have?

The standard test to diagnose and monitor diabetes is a blood glucose test, and people on antiretroviral treatment should have their blood glucose monitored regularly as part of their routine care. Sometimes you may have a 'fasting' blood glucose test, done after you have not eaten for 8 to 14 hours. In either case, a blood sample is taken; doctors can tell from the level of glucose in the blood if diabetes should be suspected.

Other tests include glucose tolerance tests, to see how your body responds to glucose, and the glycated haemoglobin test (HbA<sub>1c</sub>), which looks at how well your diabetes is being controlled in the longer term.

A tool to determine a healthy weight range is called the body mass index (BMI). It is calculated from your height and weight. Fat thickness, usually near the hips, can also be measured. These might be measured to help you develop a weight-loss plan.

When you are on diabetes treatment, your doctor may ask you to do daily blood glucose tests with a machine provided by the NHS, taking a small amount of blood by pricking your finger. This will help monitor your health and see if your treatment is working.

Your blood pressure and blood lipids (fats) should be measured regularly as part of your HIV monitoring; this is also important for monitoring diabetes.

## What else do I need to know about Type 2 diabetes?

People who gain weight and do little exercise in their daily lives have an increased risk of heart disease. Heart disease will be made much worse by diabetes.

As well as increasing the risk of heart disease, smoking also increases blood glucose levels and can increase the risk of some complications of diabetes such as nerve damage (neuropathy) and eye damage (retinopathy). Not smoking, or giving up if you smoke now, will make a big difference to your ability to stay healthy.

## How can I decrease the chances of getting Type 2 diabetes, or limit its effects?

Healthy living is the main way to reduce your chances of getting Type 2 diabetes. Maintain your weight at the ideal for your height, sex and age if possible. Get regular exercise (walking more often or climbing stairs instead of using the lift are simple ways to get a bit more exercise, for example). Try to eat healthy foods, reducing saturated and hydrogenated fats and trans fatty acids and increasing your intake of fibre and polyunsaturated fats.

All these activities will also help control the diabetes if you do develop it. Losing weight will help control blood glucose, blood pressure and blood lipids.

Try not to drink excessive amounts of alcohol. If you smoke, try to stop. Help may be available through your HIV clinic or from other NHS services.

## For more information on diabetes

You can find out more about diabetes at the Diabetes UK website: [www.diabetes.org.uk](http://www.diabetes.org.uk). There is also more information on diabetes in *NAM's HIV treatments directory*, freely available on [aidsmap.com](http://aidsmap.com).