

Type 1 Diabetes

Introduction

Diabetes is a lifelong condition that causes a person's blood sugar level to become too high. It is also known as diabetes mellitus.

Types of diabetes

There are two main types of diabetes: type 1 and type 2.

Type 1 diabetes is often referred to as insulin-dependent diabetes. It is also sometimes known as juvenile diabetes or early-onset diabetes because it often develops before the age of 40, usually during the teenage years.

In type 1 diabetes, the pancreas (a small gland behind the stomach) does not produce any insulin. Insulin is a hormone that regulates blood glucose levels. If the amount of glucose in the blood is too high, it can seriously damage the body's organs.

If you have type 1 diabetes, you will need to take insulin injections for life. You must also make sure that your blood glucose levels stay balanced by eating a healthy diet, taking regular exercise and having regular blood tests.

In type 2 diabetes, the body does not produce enough insulin, or the body's cells do not react to it. This is known as insulin resistance.

This topic focuses on type 1 diabetes. Read more about type 2 diabetes.

Diabetes symptoms

Diabetes can cause various symptoms, including:

- feeling very thirsty
- urinating frequently, particularly at night
- feeling very tired
- weight loss and loss of muscle bulk (in type 1 diabetes)

Symptoms of type 1 diabetes

The main symptoms of diabetes that are common to type 1 and type 2 are:

- feeling very thirsty
- urinating frequently, particularly at night
- feeling very tired
- weight loss and loss of muscle bulk (in type 1 diabetes)

Symptoms of type 1 diabetes can develop quickly, over weeks or even days. Other symptoms include:

- itchiness around the vagina or penis, or regular bouts of thrush (a yeast infection)
- blurred vision that is caused by the lens of your eye changing shape
- cramps
- skin infections

Vomiting or heavy, deep breathing can also occur at a later stage. This is a dangerous sign and requires immediate admission to hospital for treatment.

Hypoglycaemia (low blood glucose)

If you have diabetes, your blood glucose levels can become very low. This is known as hypoglycaemia (or a "hypo"), and happens because any insulin in your body has moved too much glucose out of your bloodstream.

In most cases, hypoglycaemia occurs as a result of taking too much insulin, although it can also develop if you skip a meal, exercise very vigorously or drink alcohol on an empty stomach.

Symptoms of a "hypo" include:

- feeling shaky and irritable
- sweating
- tingling lips
- feeling weak
- hunger
- nausea (feeling sick)

A hypo can be brought under control simply by eating or drinking something sugary.

If a hypo is not brought under control it can lead to confusion, slurred speech and unconsciousness. If this occurs, you will need to have an emergency injection of a hormone called glucagon. This hormone increases the glucose in your blood.

Hyperglycaemia (high blood glucose)

As diabetes occurs as a result of your body being unable to produce any, or enough, insulin to regulate your blood glucose, your blood glucose levels may become very high. This happens because there is no insulin to move glucose out of your bloodstream and into your cells to produce energy.

If your blood glucose levels become too high, you may experience hyperglycaemia. The symptoms of hyperglycaemia are similar to the main symptoms of diabetes, but they may come on suddenly and severely. They include:

- extreme thirst

- a dry mouth
- blurred vision
- drowsiness
- a need to pass urine frequently

Left untreated, hyperglycaemia can lead to diabetic ketoacidosis, which is a serious condition where the body breaks down fat and muscle as an alternative source of energy. This leads to a build-up of acids in your blood, which can cause vomiting, dehydration, unconsciousness and even death.

When to seek urgent medical attention

You should seek urgent medical attention if you have diabetes and you develop:

- a loss of appetite
- nausea or vomiting (feeling or being sick)
- a high temperature
- stomach pain
- fruity smelling breath, which may smell like pear drops or nail varnish (others will usually be able to smell it but you will not)

Causes of type 1 diabetes

Type 1 diabetes occurs because your body is unable to produce insulin. Insulin usually moves glucose out of your blood and into your cells, where it is converted to energy. However, in type 1 diabetes, there is no insulin to move glucose out of your bloodstream and into your cells.

Without insulin, the body breaks down its own fat and muscle (leading to weight loss). In type 1 diabetes this can lead to a serious short-term condition where the bloodstream becomes acidic along with dangerous dehydration (diabetic ketoacidosis).

Type 1 diabetes is an autoimmune condition, where your immune system (the body's natural defence against infection and illness) mistakes the cells in your pancreas as harmful and attacks them.

Causes of type 1 diabetes

Type 1 diabetes occurs when the body is unable to produce insulin. Insulin is a hormone that is needed to control the amount of glucose (sugar) in your blood.

When you eat, your digestive system breaks down food and passes its nutrients into your bloodstream.

The pancreas (a small gland behind your stomach) usually produces insulin, which transfers any glucose out of your blood and into your cells, where it is converted to energy.

However, if you have type 1 diabetes, your pancreas is unable to produce any insulin (see below). This means that glucose cannot be moved out of your bloodstream and into your cells.

Autoimmune condition

Type 1 diabetes is an autoimmune condition. Your immune system (the body's natural defence against infection and illness) mistakes the cells in your pancreas as harmful and attacks them, destroying them completely or damaging them enough to stop them producing insulin.

It is not known exactly what triggers the immune system to do this, but some researchers have suggested that it may be due to a viral infection.

Type 1 diabetes is usually inherited (runs in families), so the autoimmune reaction may also be genetic.

If you have a close relative, such as a parent, brother or sister with type 1 diabetes, you have about a 6% chance of also developing the condition. The risk for people who do not have a close relative with type 1 diabetes is just under 0.5%.

Treating type 1 diabetes

It is important that diabetes is diagnosed as early as possible so that treatment can be started.

Diabetes cannot be cured, but treatment aims to keep your blood glucose levels as normal as possible, and control your symptoms to prevent health problems developing later.

If you are diagnosed with diabetes, you will be referred to a diabetes care team for specialist treatment. Your care team will be able to explain your condition to you in detail and help you understand your treatment. They will also closely monitor your condition.

As your body cannot produce any insulin, you will need to have regular insulin treatment to keep your glucose levels normal. You will need to learn how to match the insulin you inject to the food you eat, taking into account your blood glucose level and how much exercise you do. This skill needs to be practised and learnt gradually. Many centres now provide courses to teach these skills.

Insulin comes in several different forms, each of which works slightly differently. For example, some last up to a whole day (long-acting), some last up to eight hours (short-acting) and some work quickly but do not last very long (rapid-acting). Your treatment may include a combination of these different insulin preparations.

Some people with type 1 diabetes may benefit from a fairly new procedure known as islet transplantation. It involves implanting healthy islet cells from the pancreas of a deceased donor into the pancreas of someone with type 1 diabetes.

Islet transplants have been shown to be an effective way of reducing the risk of severe hypoglycaemic attacks or 'hypos' (where a person's blood sugar falls to an abnormally low level).

So far, the results of islet transplants carried out in the UK have shown a significant reduction in the number of hypos, from 23 per person per year before transplantation to less than one per person per year afterwards.

Diagnosing type 1 diabetes

It is important to diagnose diabetes as early as possible so that treatment can be started.

If you experience the [symptoms of diabetes](#), you should visit your DOCTOR as soon as possible. They will ask you about your symptoms and may request a urine and blood test.

Urine and blood tests

Your urine sample will be tested to see whether it contains glucose. Urine does not usually contain glucose, but if you have diabetes, some glucose can overflow through the kidneys and into the urine. Your urine may also be tested for ketones (chemicals) which indicate type 1 diabetes.

If your urine contains glucose, a blood test can be used to confirm the diagnosis of diabetes. A sample of your blood will be taken in the morning, before you have had anything to eat, and it will be tested to measure your blood glucose levels.

If your blood glucose levels are not high enough for your DOCTOR to diagnose diabetes, you may need to have an oral glucose tolerance test (OGTT). This is also sometimes referred to as a glucose tolerance test (GTT).

After drinking a glucose drink, samples of your blood will be taken every half an hour, for two hours. The samples will be tested to find out how your body is dealing with the glucose.

Treating type 1 diabetes

There is no cure for diabetes, so treatment aims to keep your blood glucose levels as normal as possible and to control your symptoms to prevent health problems developing later in life.

If you have been diagnosed with diabetes, you will be referred for specialist treatment from a diabetes care team. They will be able to explain your condition in detail and help you to understand your treatment. They will closely monitor your condition to identify any health problems that may occur.

Care standards for diabetes

The aim of treating diabetes is to help people with the condition control their blood glucose levels and minimise the risk of developing future complications.

The Department of Health has set out national standards for NHS organisations and professionals covering diabetes care and prevention. The Diabetes National Service

Framework was developed by diabetes clinical experts and patients with diabetes. Good diabetes care includes:

- access to information and appropriate support for people with type 1 diabetes, including access to a structured education programme, such as DAFNE (Dose Adjustment for Normal Eating)
- an agreed care plan, helping all people with diabetes to manage their care and lead a healthy lifestyle, including a named contact for their care
- information, care and support to enable all people with diabetes to control their blood glucose, maintain an acceptable blood pressure and minimise other risk factors for developing complications
- access to services to identify and treat possible complications, such as screening for [diabetic retinopathy](#) (where high blood glucose levels damage the retina at the back of the eye) and specialised foot care
- effective care for all people with diabetes admitted to hospital, for whatever reason

Want to know more?

- Diabetes UK: Diabetes care and you.

Insulin treatment hide

As type 1 diabetes occurs because your body cannot produce any insulin, you will need regular insulin treatment to keep your glucose levels normal.

Insulin comes in several different preparations, each of which works slightly differently. For example, some last up to a whole day (long-acting), some last up to eight hours (short-acting) and some work quickly but do not last very long (rapid-acting). Your treatment may include a combination of these different insulin preparations.

Insulin injections

In most cases of type 1 diabetes, you will need to have insulin injections. Insulin must be injected because if it were taken as a tablet, it would be broken down in your stomach, just like food, and would be unable to enter your bloodstream.

When you are first diagnosed, your diabetes care team will help you with your insulin injections, before showing you how and when to do it yourself. They will also show you how to store your insulin and dispose of your needles properly.

Insulin injections are either given with a syringe or an injection pen, which is also known as an insulin pen or auto-injector. Most people need two-to-four injections a day. Your DOCTOR or diabetes nurse may also teach one of your close friends or relatives how to inject the insulin properly.

Insulin pump therapy

Insulin pump therapy is an alternative to injecting insulin. An insulin pump is a small device that holds insulin and is about the size of a pack of playing cards.

The pump is attached to you by a long, thin piece of tubing, with a needle at the end, which is inserted under your skin. Most people insert the needle into their stomach, but you could also insert it into your hips, thighs, buttocks or arms.

The pump allows insulin to flow into your bloodstream at a rate that you can control. This means you no longer need to give yourself injections, although you will need to monitor your blood glucose levels very closely to ensure you are receiving the right amount of insulin.

Insulin pump therapy can be used by adults, teenagers and children (with adult supervision) who have type 1 diabetes. However, it may not be suitable for everyone. Your diabetes care team may suggest pump therapy if you often have low blood glucose ([hypoglycaemia](#)).

Monitoring your blood glucose levels

An important part of your treatment is to make sure that your blood sugar level is as normal and stable as possible.

You will be able to manage this using insulin treatment and by eating a healthy diet, but you will also have to regularly check your blood glucose levels to make sure they are not too high or too low.

Exercise, illness, stress, drinking alcohol, taking other medicines and, for women, changes to your hormone levels during your monthly period can all affect your blood sugar levels.

In most cases, you will need to check your blood glucose levels at home using a simple finger prick blood test. You may need to do this up to four or more times a day, depending on the type of insulin treatment you are taking. Your diabetes care team will talk to you about your ideal blood glucose level.

The normal blood sugar level is 4.0-7.0 mmol/l before meals and less than 9.0 mmol/l two hours after meals. Mmol/l means millimoles per litre, and it is a way of defining the concentration of glucose in your blood.

Find out how to test your glucose levels.

Having your blood glucose levels checked

As well as monitoring your blood glucose levels every day, your DOCTOR or diabetes care team will also carry out a special blood test every two-to-six months. This will show how stable your glucose levels have been over the past 6-12 weeks, and how well your treatment plan is working.

This additional blood test is known as the HbA1c test. Unlike the finger prick test that measures blood sugar at a single time, the HbA1c test gives an idea of blood glucose levels over time.

It measures the amount of haemoglobin, which is the oxygen-carrying substance in red blood cells that has glucose attached to it. A high HbA1c level may indicate that your blood glucose level is consistently high and that your diabetes treatment plan needs to be altered.

Treating hypoglycaemia (low blood glucose) hide

Hypoglycaemia can occur when your blood glucose level becomes very low. It is likely that you will develop hypoglycaemia from time to time.

Mild hypoglycaemia (or a 'hypo') can make you feel shaky, weak and hungry, and can be controlled by eating or drinking something sugary, such as a fizzy drink (not a diet version), sugar cubes or raisins. You may also be able to take pure glucose, in the form of a tablet or fluid, if you need to control the symptoms of a hypo quickly.

If you develop severe hypoglycaemia, you can become drowsy and confused, and you may even lose consciousness. If this occurs, you will need to have an injection of glucagon into your muscle or glucose into one of your veins. Glucagon is a hormone that quickly increases your blood glucose levels.

Your diabetes care team may show several of your family members and close friends how to inject the glucagon or glucose, should you need it.

Once you begin to come round, you will need to eat something sugary when you are alert enough to do so. If you lose consciousness as a result of hypoglycaemia, there is a risk that it could happen again within a few hours, so you will need to rest afterwards and have someone with you.

If the glucagon injection into your muscle does not work and you are still drowsy or unconscious 10 minutes after the injection, you will need urgent medical attention.

You will need to have another injection of glucagon straight into a vein, which must be given by a trained healthcare professional.

If you have type 1 diabetes, it is recommended that you carry identification with you so that people will be aware of the problem if you become hypoglycaemic.

Islet transplantation

Some people with type 1 diabetes may benefit from a fairly new procedure known as islet transplantation. It involves implanting healthy islet cells from the pancreas of a deceased donor into the pancreas of someone with type 1 diabetes.

In 2008, a government-funded islet transplant programme was introduced, and the procedure is now available through the NHS for people who satisfy certain criteria (see below).

You may be suitable for an islet transplant if you:

- have had two or more severe hypos within the last two years and you have a poor awareness of hypoglycaemia
- have a working kidney transplant, severe hypos and poor hypoglycaemia awareness, or poor blood glucose control even after receiving the best medical treatment

You may not be suitable for an islet transplant if you:

- weigh over 85kg (13st 5.4lb)
- have poor kidney function
- need a lot of insulin - for example, over 50 units a day for a 70kg (11st) person

An islet transplant is a minor, low-risk procedure that is carried out under local anaesthetic.

The procedure has been shown to be effective at reducing the risk of severe hypos. So far, the results of islet transplants carried out in the UK have shown a significant reduction in the number of hypos, from 23 per person per year before transplantation to less than one per person per year afterwards.

Treating hyperglycaemia (high blood glucose) **hide**

Hyperglycaemia can occur when your blood glucose levels become too high. It can happen for several reasons, such as eating too much, being unwell or not taking enough insulin.

If you develop hyperglycaemia, you may need to adjust your diet or your dose of insulin to keep your glucose levels normal. Your diabetes care team will be able to advise you about the best way to do this.

If hyperglycaemia is not treated, it can lead to [diabetic ketoacidosis](#), where the body begins to break down fats for energy instead of glucose, resulting in a build-up of acids in your blood.

This is very serious and if it is not addressed quickly it can cause unconsciousness and, eventually, death. Read more about the [symptoms of diabetic ketoacidosis](#).

If you develop diabetic ketoacidosis, you will need urgent hospital treatment. You will be given insulin directly into a vein (intravenously). If you are dehydrated, you may also need to have other fluids given by a drip, including salt solution and potassium.

Other treatments

Type 1 diabetes can lead to long-term complications. If you have type 1 diabetes, you have an increased risk of developing [heart disease](#), [stroke](#) and [kidney disease](#). To reduce the chance of this, you may be advised to take:

- anti-hypertensive medicines to control high blood pressure
- a statin, such as simvastatin, to reduce high cholesterol levels
- low-dose aspirin to prevent stroke

- angiotensin-converting enzyme (ACE) inhibitor, such as enalapril, lisinopril or ramipril if you have the early signs of diabetic kidney disease

Diabetic kidney disease is identified by the presence of small amounts of a protein called albumin in your urine. It is often reversible if treated early enough.

Complications

Left untreated, diabetes can cause many different health problems. Large amounts of glucose can damage blood vessels, nerves and organs.

Even a mildly raised glucose level that does not cause any symptoms can have damaging effects in the long term.

Read more about the [complications of type 1 diabetes](#).

Complications caused by diabetes



Early diagnosis of diabetic retinopathy is vital

If diabetes is not treated, it can lead to a number of different health problems. High glucose levels can damage blood vessels, nerves and organs.

Even a mildly raised glucose level that does not cause any symptoms can have damaging effects in the long term.

Heart disease and stroke

If you have diabetes, you are up to five times more likely to develop heart disease or have a [stroke](#).

Prolonged, poorly controlled blood glucose levels increase the likelihood of developing [atherosclerosis](#) (furring and narrowing of your blood vessels).

This may result in a poor blood supply to your heart, causing [angina](#) (a dull, heavy or tight pain in the chest). It also increases the chance that a blood vessel in your heart or brain will become completely blocked, leading to a [heart attack](#) or [stroke](#).

Nerve damage

High blood glucose levels can damage the tiny blood vessels of your nerves. This can cause a tingling or burning pain that spreads from your fingers and toes up through your limbs. If the nerves in your digestive system are affected, you may experience nausea, vomiting, diarrhoea or constipation.

Retinopathy

Retinopathy is where the retina (the light-sensitive layer of tissue) at the back of the eye is damaged. Blood vessels in the retina can become blocked or leaky, or can grow haphazardly. This prevents the light from fully passing through to your retina. If it is not treated, it can damage your vision.

The better you control your blood sugar levels, the lower your risk of developing serious eye problems. Having an annual eye check with a specialist (an ophthalmologist or an optometrist) can help pick up signs of a potentially serious eye problem early so that it can be treated.

Diabetic retinopathy can be managed using laser treatment if it is caught early enough. However, this will only preserve the sight you have but will not make it better.

Kidney disease

If the small blood vessels of your kidney become blocked and leaky, your kidneys will work less efficiently.

In rare, severe cases, this can lead to kidney failure and the need for dialysis (treatment to replicate the functions of the kidneys). In some cases, a kidney transplant may be necessary.

Foot problems

Damage to the nerves of the foot can mean that small nicks and cuts are not noticed, which can lead to the development of a foot ulcer. About 1 in 10 people with diabetes get a foot ulcer, which can cause serious infection.

If you develop nerve damage, you should check your feet every day and report any changes to your doctor, nurse or podiatrist. Look out for sores and cuts that do not heal, puffiness or swelling and skin that feels hot to the touch. You should also have a foot examination at least once a year.

Sexual dysfunction

In men with diabetes, particularly those who smoke, nerve and blood vessel damage can lead to erection problems. This can usually be treated with medication.

Women with diabetes may experience:

- a reduced sex drive
- reduced pleasure from sex

- vaginal dryness
- a reduced ability to orgasm
- pain during sex

If you experience a lack of vaginal lubrication, or you find sex painful, you can use a vaginal lubricant or a water-based gel.

Miscarriage and stillbirth

Pregnant women with diabetes have an increased risk of miscarriage and stillbirth. If your blood sugar level is not carefully controlled during early pregnancy, there is also an increased risk of the baby developing a serious birth defect.

Pregnant women with diabetes will usually have their antenatal check-ups in hospital or a diabetic clinic. This allows doctors to keep a close eye on their blood sugar levels and control their insulin dosage more easily.

Living with diabetes

If you have type 1 diabetes, you will need to look after your health very carefully. Caring for your health will also make treating your diabetes easier and minimise your risk of developing complications.

Eating a [healthy, balanced diet](#) and [exercising regularly](#) will lower your blood glucose level.

And [stopping smoking](#) (if you smoke) will reduce your risk of developing a cardiovascular disease.

Diabetes in pregnancy

During pregnancy, some women have such high levels of glucose in their blood that their body cannot produce enough insulin to absorb it all. This is known as gestational diabetes, and it affects approximately 5% of pregnant women. For people with existing type 1 diabetes, pregnancy can also make this worse.

Gestational diabetes can increase the risk of health problems in an unborn baby, so it is important to keep the levels of glucose in your blood under control.

In most cases, gestational diabetes develops in the second half of pregnancy and disappears after the baby is born.

Read more information about [diabetes in pregnancy](#) and [gestational diabetes](#).

Diabetes and pregnancy

What is gestational diabetes?

Diabetes and your unborn baby

Diabetes is a condition in which the amount of sugar (glucose) in the blood is too high. Glucose comes from the digestion of starchy foods, such as bread and rice. Insulin, a hormone produced by your pancreas, helps your body use glucose for energy.

Three types of diabetes can affect you when you're pregnant. Type 1 diabetes and type 2 diabetes are long-term conditions that women may have before they get pregnant (pre-existing diabetes). Gestational diabetes develops only in pregnancy and goes away after the baby is born.

Type 1 diabetes

[Type 1 diabetes](#) develops when your body can't produce any insulin. It usually begins in childhood, and most women with type 1 diabetes will be aware of their condition before they become pregnant. People with type 1 diabetes need to take insulin to control their blood glucose.

Type 2 diabetes

[Type 2 diabetes](#) develops when your body can't produce enough insulin, or when the insulin that is produced doesn't work properly. It often occurs in overweight people and is usually diagnosed in women aged 40 or over. But it can happen at a younger age, particularly in Asian and black people.

You may be aware that you have type 2 diabetes before you become pregnant, or you may be diagnosed during your pregnancy. Type 2 diabetes can usually be treated with tablets to lower blood glucose, but in some pregnant women insulin injections are needed.

Gestational diabetes

[Gestational diabetes](#) only occurs in pregnancy. It can occur at any stage of pregnancy, but is more common in the second half. It occurs when your body can't produce enough extra insulin to meet the demands of pregnancy. Gestational diabetes goes away after you've given birth.

It is important to know that you're twice as likely to develop type 2 diabetes later in life if you have gestational diabetes when you're pregnant.

Having diabetes when you're pregnant can put you and your baby at risk of complications (see below). You can reduce this risk, but it partly depends on what type of diabetes you have.

If you already have diabetes

If you already have type 1 or type 2 diabetes, you may be at a higher risk of:

- having a large baby, which increases the risk of a difficult birth, having your labour induced or a caesarean section
- having a miscarriage

People with type 1 diabetes may develop problems with their eyes (called [diabetic retinopathy](#)) and their kidneys (diabetic nephropathy), or existing problems may get worse.

Your baby may be at risk of:

- not developing normally and having congenital abnormalities, particularly heart and nervous system abnormalities
- being stillborn or dying soon after birth
- having health problems shortly after birth (such as heart and breathing problems) and needing hospital care
- developing obesity or diabetes later in life

Reducing the risks if you have pre-existing diabetes

The best way to reduce the risk to your own and your baby's health is to ensure that your diabetes is well controlled before you become pregnant. Ask your DOCTOR or diabetologist (diabetes specialist) for advice. You should be referred to a diabetic pre-conception clinic for support before you try to get pregnant.

You should be offered a blood test called an HbA1c test, which helps to assess the level of glucose in your blood. It's best if the level is no more than 6.1% before you get pregnant. If your HbA1c is higher than this, there would be benefit from getting your blood glucose under better control before you conceive in order to reduce the risk of complications for you and your baby. Your DOCTOR or diabetes specialist can advise you how best to do this.

Folic acid

Women with diabetes should take a higher dose of folic acid. The normal daily dose for women trying to get pregnant and for pregnant women is 400 micrograms. Diabetic women should take 5 milligrams (5mg) a day. Your doctor can prescribe this high-dose folic acid for you. Taking folic acid helps prevent your baby from developing birth defects, such as spina bifida. You should take folic acid until you are 12 weeks pregnant.

Your treatment



Your diabetic treatment regime is likely to need adjusting during your pregnancy, depending on your needs. If you take drugs for conditions related to your diabetes, such as high blood pressure, these may have to be altered.

It's very important to keep any appointments that are made for you, so that your care team can monitor your condition and react to any changes that could affect your own or your baby's wellbeing.

Expect to monitor your blood glucose levels more frequently during pregnancy. Your eyes and kidneys will be screened more often to check that they are not deteriorating in pregnancy, as eye and kidney problems can get worse. You may also find that as you get better control over your diabetes, you have more [hypoglycaemic \(low blood sugar\) attacks](#). These are harmless for your baby, but you and your partner need to know how to cope with them. Find out more about [treating a hypoglycaemic attack](#), and talk to your doctor or diabetes specialist.

If you develop gestational diabetes

You're more likely to develop gestational diabetes if:

- you're overweight, with a BMI (body mass index) above 30 (use the [BMI healthy weight calculator](#), but note that this calculator is not suitable for use during pregnancy)
- you've given birth to a large baby, weighing more than 4.5kg (9.9lb), in the past
- you've had gestational diabetes before
- you have a parent, brother, sister or grandparent with diabetes
- your origin is south Asian, black Caribbean or Middle Eastern

If you're in any of these higher risk categories, you should be offered a test to check for gestational diabetes. You may be given a home testing kit to check your blood glucose levels, or you may be offered an oral glucose tolerance test (OGTT or GTT) at 28 weeks or earlier.

A GTT test is a blood test that's done after a period of not eating. You'll be told how long not to eat for before the test (it's often overnight). You'll then be asked to have a glucose drink and take another blood test two hours later.

If you're diagnosed with gestational diabetes, you're at risk of:

- having a large baby, which increases the risk of a difficult delivery, having your labour induced or a caesarean section

Your baby may be at risk of:

- stillbirth
- health problems shortly after birth (such as heart and breathing problems) and needing hospital care
- developing obesity or diabetes later in life

Controlling gestational diabetes

Gestational diabetes can often be controlled by diet. A dietitian will advise you how to choose foods that will keep your blood sugar levels stable. You'll also be given a kit to test

your blood glucose levels. If your blood sugar levels are unstable, or your baby is shown to be large on an ultrasound scan, you may have to take tablets or give yourself insulin injections.

Whatever type of diabetes you have, you will have more frequent – and sometimes time-consuming – antenatal appointments to check your and your baby's progress. You will be offered advice on diet and treatments to control your blood glucose levels.

Labour and birth

If you have diabetes, it's strongly recommended that you give birth with the support of a consultant-led maternity team in a hospital. Find out more about where you can give birth, including in hospital.

Babies born to diabetic mothers are often larger than normal. This is because blood glucose passes directly from you to your baby, so if you have high blood glucose levels your baby will produce extra insulin to compensate. This can lead to your baby storing more fat and tissue. This in turn can lead to birth difficulties, which requires the expertise of a hospital team.

After the birth

Two to four hours after your baby is born, they will have a heel prick blood test to check whether their blood glucose level is too low. Feed your baby as soon as possible after the birth (within 30 minutes) to help keep your baby's blood glucose at a safe level.

If your baby's blood glucose can't be kept at a safe level, they may need extra care. Your baby may be given a drip to increase their blood glucose. Find out more about special care for babies.

When your pregnancy is over, you won't need as much insulin to control your blood glucose. You can decrease your insulin to your pre-pregnancy dose or, if you have type 2 diabetes, you can return to the tablets you were taking before you became pregnant. Talk to your doctor about this.

If you had gestational diabetes, you can stop all treatment after the birth. You should be offered a test to check your blood glucose levels before you go home and at your six-week postnatal check. You should also be given advice on diet and exercise.

Gestational diabetes



How common is gestational diabetes?

Two to five in every 100 women giving birth in England and Wales has diabetes. Most of these women have gestational diabetes, and some have type 1 or type 2 diabetes.

Outlook

Gestational diabetes can be controlled with diet and exercise. However, some women with gestational diabetes will need medication to control blood glucose levels. Read more about [how gestational diabetes is treated](#).

If gestational diabetes is not detected and controlled, it can increase the risk of birth complications, such as babies being large for their gestational age (Macrosomia). Read about the [complications of gestational diabetes](#) for more information about the risks of this and related conditions.

In most cases, gestational diabetes develops in the third trimester (after 28 weeks) and usually disappears after the baby is born. However, women who develop gestational diabetes are more likely to develop type 2 diabetes later in life.

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