



Public Health
England



Screening tests for you and your baby

Important information about the screening choices
you will have during and after your pregnancy



This booklet gives you information on the screening tests you will be offered during your pregnancy and after your baby is born. It explains the different types of test and what the tests are looking for.






We hope that reading this booklet will help prepare you for discussions with your midwife or doctor so that you can ask the questions that are important to you. It will be helpful if you have the booklet with you when you see them.

It is your decision whether or not to have any of the tests described in this booklet.




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Introduction

What you need to know about screening

What are screening tests?

Screening tests are used to find people at higher chance of a health problem. This means they can get earlier, potentially more effective treatment, or make informed decisions about their health. It can be helpful to imagine screening like putting people through a sieve. Most people pass straight through but a small number get caught in the sieve. The people caught in the sieve are those considered to have a higher chance of having the health problem being screened for.

Screening tests are not perfect. Some people will be told that they or their baby have a high chance of having a health problem when in fact they do not have the problem. Also, a few people will be told that they or their baby have a low chance of having a health problem when in fact they do have the problem.

Partners are welcome to attend screening and information sessions

What is the difference between screening tests and diagnostic tests?

A screening test can find out if you, or your baby, have a high or low chance of having a health problem. But it cannot usually tell you for certain, so people found to have a high chance of a problem will often be offered a second test. This is called a diagnostic test and gives a more definite 'yes' or 'no' answer.

Screening tests during and after pregnancy

Screening tests are offered during pregnancy to try to find any health problems that could affect you or the baby. The tests – ultrasound scans, blood tests and a questionnaire – can help you make choices about care or treatment during pregnancy or after your baby is born. A **dating ultrasound scan**, offered at around 8 to 14 weeks' pregnancy, is the most accurate way to work out the baby's due date. A **mid-pregnancy ultrasound scan**, offered around 18 to 21 weeks' pregnancy, looks for physical abnormalities in the baby.

Some screening tests are offered for your baby soon after he or she is born. We offer these so your baby can be given appropriate treatment as quickly as possible if needed.

Some practicalities

If you know that you, the father of the baby, or a family member already has the health problem being screened for, please tell your midwife. If you move home while waiting for the results of any screening test, please tell your midwife or health visitor your new address.

Do I have to have the screening tests?

Whether or not to have a screening test is a personal choice and one which only you can make. You can discuss each test you are offered with health professionals and decide, based on your own circumstances, whether or not it is right for you.

Some of the screening tests described in this booklet, such as blood tests for infectious diseases, eye screening if you have diabetes and the newborn checks, are recommended by the NHS. This is because results from these tests can help make sure that you or your baby gets urgent treatment for serious problems.



Screening tests in pregnancy for sickle cell disease and thalassaemia, Down's, Edwards' and Patau's syndromes and the mid-pregnancy scan can lead to difficult decisions such as whether or not to have a diagnostic test with a possible chance of miscarriage. Diagnostic tests can lead to a decision about whether to continue or end your pregnancy. Having a further test or termination will always be your decision and health professionals will support you, whatever you decide. You may want to think carefully about whether or not you want to have these screening tests.

Screening and the NHS

The NHS decides which screening tests to offer based on good evidence. A group of experts called the United Kingdom National Screening Committee (UK NSC) provides advice to the NHS.

All screening tests provided by the NHS are free. Some private companies also provide screening tests that you have to pay for. The NHS cannot guarantee the quality of private screening. More advice is available at www.gov.uk/private-screening-for-health-conditions-nhs-recommendations.

Confidentiality

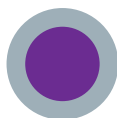
By law, everyone working in, or on behalf of, the NHS, must respect your privacy and keep all information about you safe. The NHS Constitution sets out how the NHS should handle your records to protect your privacy. In addition, there are laws in place to ensure confidentiality is maintained.

Screening records are only shared with staff who need to see them. This process is strictly managed. Sometimes information is used for audit and research purposes to improve screening outcomes and services. Find out how Public Health England and the NHS use and protect your screening information at www.gov.uk/phe/screening-data.

Further support

See NHS Choices for details of organisations that can provide further support about conditions mentioned in this booklet.

If your routine smear test is due while you're pregnant, you'll probably need to reschedule for 12 weeks after giving birth



Infectious diseases

[nhs.uk/infections](https://www.nhs.uk/infections)

What is the screening test for?

To find out if you have hepatitis B, HIV (human immunodeficiency virus) or syphilis.

Women already known to have HIV or hepatitis B need early specialist appointments to plan their care in pregnancy.

About these conditions

Hepatitis B and HIV are passed on in blood and body fluids through sexual contact or infected needles. These viruses can also be passed from mother to baby.

Hepatitis B virus affects the liver and can cause acute (immediate) and chronic (long-term) ill health. Specialist care is needed for pregnant women with hepatitis B. Vaccination of the baby in the first year of life greatly reduces the risk of the baby developing hepatitis B.

HIV weakens the immune system making it difficult to fight off infections. It can eventually lead to AIDS (acquired immune deficiency syndrome). If untreated, it can be passed from mother to baby in pregnancy, when giving birth or by breastfeeding. Treatment in pregnancy greatly reduces the risk of passing on HIV to the baby from 1 in 4 (25%) to less than 1 in 200 (0.5%).

Syphilis is an infection passed on through sexual contact. It can be passed from mother to baby during pregnancy. If it is untreated, it can result in serious health problems for the baby or cause miscarriage or stillbirth.

What does the test involve?

A blood sample is taken from your arm.



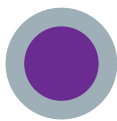
Can this test harm me or my baby?

There are no risks associated with the test.

Do I need to have this test?

These tests are strongly recommended to protect your health through early treatment and care, and to greatly reduce any chance of passing an infection onto the baby, partner or other family members.

Thanks to screening, England now has its lowest ever rate of mother-to-child HIV transmission



Infectious diseases

What if I decide not to have this screening test?

You will be reoffered screening later in pregnancy, ideally by 20 weeks. You can be screened right up to the birth of the baby. You can ask your midwife or GP to be retested for hepatitis B, HIV or syphilis at any time if you change your sexual partner or think you are at risk.

Possible results

The tests will tell you if you have any of these infections.

If you have **hepatitis B** it is important for specialist teams to check your health before and after the birth. Your partner and any other children may need testing and vaccination.

It is very important that the baby has all 6 recommended hepatitis B vaccinations at the correct times to protect their health. Ask your GP, practice nurse or health visitor if any of these don't happen. Vaccinations should take place:

- within 24 hours of birth
- at 4 weeks of age
- at 8, 12 and 16 weeks of age (part of routine childhood immunisation schedule)
- at one year of age

Your baby may also need an injection of antibodies (hepatitis B immunoglobulin) at their first vaccination.

They will also have a blood test at their final vaccination to check if infection has been avoided.

If you have **HIV** you can greatly reduce the chance of passing HIV on to the baby with specialist care and treatment, drugs, planned care for your birth, and by not breastfeeding.

If you have **syphilis** urgent referral to a specialist team is needed. Treatment is usually a course of antibiotics. These are safe for the baby. The team will also offer to test your partner to see if they need treatment. The baby will need an examination and blood tests after birth and may need antibiotics.

Getting my results

Results will usually be discussed before or at your next antenatal visit at around 16 weeks and recorded in your notes.

A specialist midwife will contact you if you have a positive screening test result for HIV, syphilis or hepatitis B, to arrange appointments to discuss results and referral to specialist services.



You can ask to be retested at any time if you think you are at risk of any of these infections



Sickle cell and thalassaemia

nhs.uk/sct

What is the screening test for?

To find out if you are a carrier of the sickle cell or thalassaemia gene and therefore likely to pass it on to the baby.

About these conditions

Sickle cell disease (SCD) and thalassaemia major are serious, inherited blood diseases. They affect haemoglobin, a part of the blood that carries oxygen around the body. People who have these conditions will need specialist care throughout their lives.

People with SCD can have attacks of very severe pain, get serious, life-threatening infections and are usually anaemic (their bodies have difficulty carrying oxygen). Babies with SCD can receive early treatment, including immunisations and antibiotics, which, along with support from their parents, will help prevent serious illness and allow them to live a healthier life.

People with thalassaemia major are very anaemic and need a blood transfusion every 3 to 5 weeks, and injections and medicines throughout their lives.

There are also other, less common, less serious haemoglobin diseases that may be found.

It is best to have the test before you are 10 weeks pregnant

SCD and thalassaemia are inherited diseases that are passed on from parents to children through unusual haemoglobin genes. Genes are the codes in our bodies for things such as eye colour and blood group. Genes work in pairs. For everything that we inherit we get one gene from our mother and one from our father.

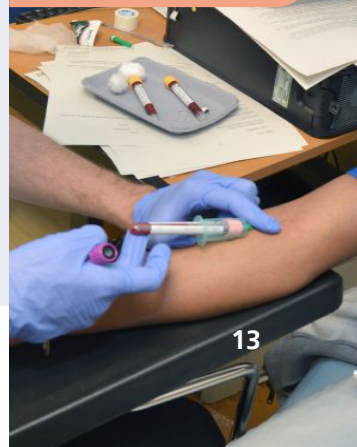
People only have SCD or thalassaemia if they inherit 2 unusual haemoglobin genes – one from their mother and one from their father. People who inherit just one unusual gene are known as “carriers” (some people call this having a “trait”). Carriers are healthy and do not have the disease, although they can experience some problems in situations where their bodies might not get enough oxygen, for example, having an anaesthetic.

When **both parents** are carriers the baby has:

- a 1 in 4 (25%) chance of not being affected – the baby will not have or carry a disease
- a 1 in 4 (25%) chance of inheriting both unusual haemoglobin genes and having a haemoglobin disease
- a 2 in 4 (50%) chance of inheriting 1 unusual haemoglobin gene and being a carrier



Both parents need to be a carrier for your child to be affected





Sickle cell and thalassaemia

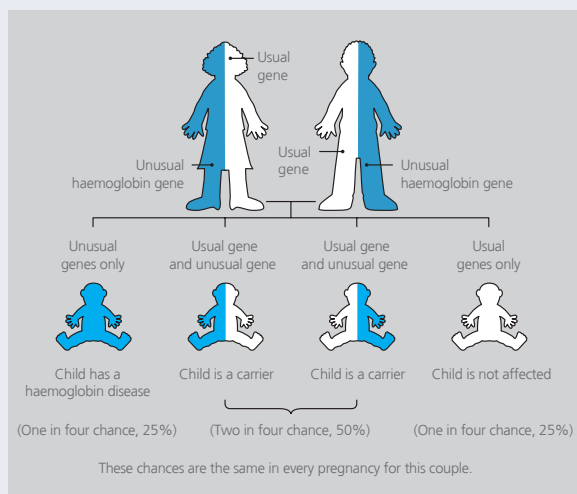
Anyone can be a carrier of a haemoglobin disease. However, it is more common among people whose ancestors come from Africa, the Caribbean, the Mediterranean, India, Pakistan, South and South-East Asia and the Middle East.

What does having the screening test involve?

Screening in pregnancy for SCD and thalassaemia involves having a blood test. It is best to have the test before you are 10 weeks pregnant.

All pregnant women are offered a test for thalassaemia but not all women are automatically offered a test for SCD. The screening offered depends on where you live.

In areas where haemoglobin diseases are more common, you will be offered a blood test for SCD. In areas where haemoglobin diseases are less common, a



questionnaire is used to identify the baby's mother and father's family origins. If the questionnaire shows either parent may be a sickle cell carrier, a screening test is offered to the woman.

You can ask to have the test even if your family origins do not suggest the baby would have a high chance of a haemoglobin disease.

Can this screening test harm me or my baby?

The screening test cannot harm you or the baby but it is important to consider carefully whether to have this test or not. The screening test can provide information that may mean you have to make further important decisions. For example, you may be offered further tests that have a risk of miscarriage.

Do I need to have this test?

You do not need to have the screening test. Some people want to find out if their baby has SCD or thalassaemia and some do not.

What if I decide not to have this test?

If you choose not to have the screening test in pregnancy, the baby can have newborn blood spot screening for SCD at 5 days of age.

Dads – if the mum is a carrier it's important for you to get tested too



Sickle cell and thalassaemia

Possible results

The test will tell you if you are a carrier or not, or whether you have the disease yourself.

Will I need any further tests?

If you are a carrier of a haemoglobin disease, the baby's father will be offered a blood test. If the baby's father is also a carrier you will be offered diagnostic tests to find out if the baby is affected.

If the baby's father is not available and you have been identified as a carrier, you will be offered the diagnostic test.

About 1 to 2 in every 200 (0.5% to 1%) diagnostic tests result in a miscarriage. It is up to you whether or not to have the further test. There are 2 types of diagnostic test.

CVS (chorionic villus sampling) is usually done from 11 to 14 weeks of pregnancy. A fine needle, usually put through the mother's abdomen, is used to take a tiny sample of tissue from the placenta. The cells from the tissue can be tested for SCD or thalassaemia.

Amniocentesis is usually done after 15 weeks of pregnancy. A fine needle is passed through the mother's abdomen into the uterus to collect a small sample of the fluid surrounding the baby. The fluid contains some of the baby's cells, which can be tested for SCD or thalassaemia.

If the result shows that the baby has SCD or thalassaemia then you will be offered an appointment with a health professional. You will be able to get information about the condition the baby has inherited and talk through your choices.

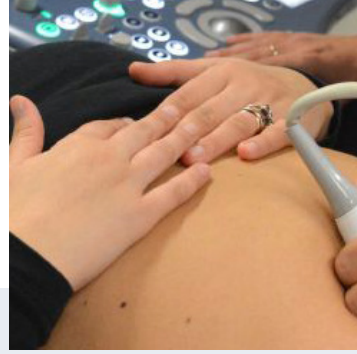
Some conditions are more serious than others. Some women decide to continue with the pregnancy. Others decide they do not want to continue with the pregnancy and have a termination.

If you are faced with this choice you will get support to help you make a decision.

If the test shows that you are a carrier, there is a chance that other members of your family could be carriers too. You may want to encourage them to ask for a test, especially if they are planning to have a baby.

Getting my results

The person doing the test will discuss the arrangements for providing your result.





Down's, Edwards' and Patau's syndromes

nhs.uk/downs

What is the screening test for?

To find out how likely it is that the baby has Down's syndrome (also known as Trisomy 21 or T21), Edwards' syndrome (Trisomy 18/T18) or Patau's syndrome (Trisomy 13/T13).

About these conditions

Inside the cells of our bodies there are tiny structures called chromosomes. These chromosomes carry the genes that determine how we develop. There are 23 pairs of chromosomes in each cell. Problems can occur when the sperm or egg cells are produced, which can lead to a baby having an extra chromosome.

Babies with Down's, Edwards' and Patau's syndromes are born to mothers of all ages but the chance of having a baby with one of these conditions increases as the age of the mother increases.

Down's syndrome (T21)

In Down's syndrome there is an extra copy of chromosome 21 in each cell. It affects about 1 in every 1,000 births.

A baby born with Down's syndrome will have a learning disability. This means they will find it harder than most people to understand and to learn new things. They may have communication problems and difficulty managing some everyday tasks. It is impossible to know what level of learning disability a baby with Down's syndrome will have. It can vary from mild to severe.

Most children with Down's syndrome attend mainstream primary school. A lot is now known about how to develop the potential of children with Down's syndrome. People with Down's syndrome can have a good quality of life. With support from their family and others, many people are able to get jobs and live independently.

Some health problems are more common in people with Down's syndrome, for example, heart conditions, and problems with the digestive system, hearing and vision. Some problems can be serious but many can be treated. With good healthcare, someone with Down's syndrome is expected to live to around 60 years.

People with Down's syndrome have almond shaped eyes and distinctive facial features but they do not all look the same. Like all children, they also inherit features from their parents.





Down's, Edwards' and Patau's syndromes

Edwards' syndrome (T18) and Patau's syndrome (T13)

Babies with Edwards' syndrome have an extra copy of chromosome 18 in each cell. Similarly, babies with Patau's syndrome have an extra copy of chromosome 13 in each cell.

Most babies with Edwards' or Patau's syndromes will die before they are born, be stillborn or die shortly after birth. Some babies may survive to adulthood but this is rare.

All babies born with Edwards' and Patau's syndromes will have a wide range of problems, which are usually extremely serious – these may include major brain abnormalities.

Babies affected by Edwards' syndrome can have heart problems, unusual head and facial features, growth problems and be unable to stand or walk. Edwards' syndrome affects about 3 of every 10,000 births.

Babies affected by Patau's syndrome can have heart problems, a cleft lip and palate, growth problems, poorly formed eyes and ears, problems with their kidneys and be unable to stand or walk. Patau's syndrome affects about 2 of every 10,000 births.

What does the test involve?

A screening test for these conditions, called the “combined test”, is available between 10 and 14 weeks of pregnancy.

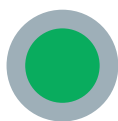
If you choose to have the combined test, a blood sample is taken from your arm. At the dating ultrasound scan (see page 5) the fluid at the back of the baby’s neck is measured (known as the nuchal translucency). The information from these 2 tests is combined to work out the chance of the baby having Down’s, Edwards’ or Patau’s syndromes.

It is your decision whether or not to have screening

If you are too far on in your pregnancy to have the combined test for Down’s syndrome, you will be offered a blood test between 14 and 20 weeks of pregnancy. This test is not quite as accurate as the combined test. If you are too far on in your pregnancy to have the combined test for Edwards’ and Patau’s syndromes, you will be offered a mid-pregnancy scan which will look for physical abnormalities.

Can this screening test harm me or the baby?

The screening test cannot harm you or the baby but it is important to consider carefully whether to have this test or not. This test cannot tell you if the baby definitely has Down’s, Edwards’ or Patau’s syndromes or not. The screening test can provide information that may lead to further important decisions. For example, you may be offered diagnostic tests that have a risk of miscarriage.



Down's, Edwards' and Patau's syndromes

Do I need to have this test?

You do not have to have the screening test. Some people want to find out if their baby has Down's, Edwards' or Patau's syndromes and some do not.

You can choose to have screening for:

- Down's, Edwards' and Patau's syndromes
- Down's syndrome only
- Edwards' and Patau's syndromes only
- none of the conditions

What if I decide not to have this test?

If you choose not to have the screening test for Down's, Edwards' and Patau's syndromes you can still choose to have other tests.

If you choose not to have the screening test for these conditions, it is important to understand that if you have a scan at any point during your pregnancy it could pick up physical abnormalities. These could be related to Down's, Edwards' or Patau's syndromes but there is a chance that other problems could be picked up on a scan. The person scanning you will always tell you if any abnormalities are found.

Possible results

You will be given 2 results: one for Down's syndrome and another for Edwards' and Patau's syndromes.

If the screening test shows that the chance of the baby having Down's, Edwards' or Patau's syndrome is lower than 1 in 150 this is called a "lower-chance" result. Over 95 out of 100 (95%) screening test results will be lower chance.

A lower-chance result does not mean that there is no chance at all of the baby having Down's, Edwards' or Patau's syndrome.

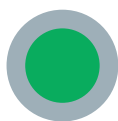
If the screening test shows that the chance of the baby having Down's, Edwards' or Patau's syndrome is higher than 1 in 150 – that is from 1 in 2 to 1 in 150 – this is called a "higher-chance" result. Fewer than 1 in 20 (5%) of screening test results will be higher chance.

A higher-chance result does not mean the baby definitely has Down's, Edwards' or Patau's syndrome.

Will I need further tests?

If you have a lower-chance result you will not be offered a further test.





Down's, Edwards' and Patau's syndromes

If you have a higher-chance result you will be offered a diagnostic test to find out for certain whether or not the baby has Down's, Edwards' or Patau's syndromes.

Diagnostic tests for Down's syndrome will also look at chromosomes 18 and 13, so will also tell you whether or not the baby has Edwards' or Patau's syndromes. Similarly, diagnostic tests for Edwards' and Patau's syndromes will also look at chromosome 21 for Down's syndrome.

About 1 to 2 in every 200 (0.5% to 1%) diagnostic tests result in a miscarriage. It is up to you whether or not to have the further test.

There are 2 types of diagnostic test.

CVS (chorionic villus sampling) is usually done from 11 to 14 weeks of pregnancy.

A fine needle, usually put through the mother's abdomen, is used to take a tiny sample of tissue from the placenta. The cells from the tissue are then tested for Down's, Edwards' and Patau's syndromes.

Screening does not give definite answers. That is why you may be offered a diagnostic test

Amniocentesis is usually done after 15 weeks of pregnancy. A fine needle is passed through the mother's abdomen into the uterus to collect a small sample of the fluid surrounding the baby. The fluid contains cells from the baby, which are tested for Down's, Edwards' and Patau's syndromes.

A small number of women who have the diagnostic test will find out their baby has Down's, Edwards' or Patau's syndromes. They then have 2 options. Some women decide to continue with the pregnancy and prepare for their child with the condition; others decide they do not want to continue with the pregnancy and have a termination.

If you are faced with this choice you will get support to help you make a decision.

Getting my results

If your screening test shows a lower-chance result, you should be told within 2 weeks of the test being taken.

If your screening test shows a higher-chance result, you should be told within 3 working days of the blood test result being available. You will be offered an appointment to discuss the test results and the further options you will have.



Physical abnormalities (mid-pregnancy scan)

nhs.uk/anomalyscan

What is the scan for?

To look for physical abnormalities in the baby.

The scan only looks for certain problems in the baby and cannot find everything that might be wrong.

About the conditions that the scan will look for

The scan will look in detail at the baby's bones, heart, brain, spinal cord, face, kidneys and abdomen.

In most cases the scan will show that the baby appears to be developing as expected but sometimes a problem is found or suspected. Some problems can be seen more clearly than others. For example, some babies have a problem called open spina bifida, which affects the spinal cord. Spina bifida can usually be seen clearly on a scan and of those babies who have this problem, around 9 out of 10 (90%) will be detected. Some other problems, such as heart defects, are more difficult to see. The scan will find about half (50%) of those babies who have heart defects.

The scan looks for certain physical abnormalities but cannot find everything that could be wrong

Some of the problems that can be seen on the scan will mean the baby may need treatment or surgery after it is born, for example cleft lip. In a small number of cases some very serious problems are found. For example, the baby's brain, kidneys, internal organs or bones may have not developed properly. In some very serious rare cases, where no treatment is possible, the baby will die soon after it is born or during pregnancy.

For more detailed information about the main conditions that are looked for during the mid-pregnancy scan please see www.nhs.uk/anomalyscan.

What does having the screening test involve?

The scan for these conditions usually takes place between 18 weeks, and 20 weeks and 6 days of pregnancy. Most scans are carried out by specially trained staff called sonographers. In order for the sonographer to get good images of the baby, the scan is carried out in a dimly lit room.





Physical abnormalities (mid-pregnancy scan)

You will be asked to lie on a couch. You will then be asked to raise your top to your chest and lower your skirt or trousers to your hips. Tissue paper will be tucked around your clothing to protect it from the ultrasound gel, which will then be put on your tummy. The sonographer then passes a hand-held probe over your skin to examine the baby's body. The gel makes sure there is good contact between the probe and your skin.

Having the scan does not hurt but the sonographer may need to apply slight pressure to get the best views of the baby. This might be uncomfortable. A black and white picture of the baby will then be seen on the ultrasound screen. During the examination, sonographers need to keep the screen in a position that gives them a good view of the baby. The screen may be directly facing them or at an angle.

The appointment usually takes around 30 minutes. Sometimes it is difficult to get a good picture if the baby is lying in an awkward position, is moving around a lot or if you are above average weight; this does not mean there is anything to worry about. You may need to have a full bladder when you come for the appointment. The doctor or midwife looking after you will let you know before you come.

You may be offered further tests if a problem is suspected

If you are not sure, you can contact them and ask.

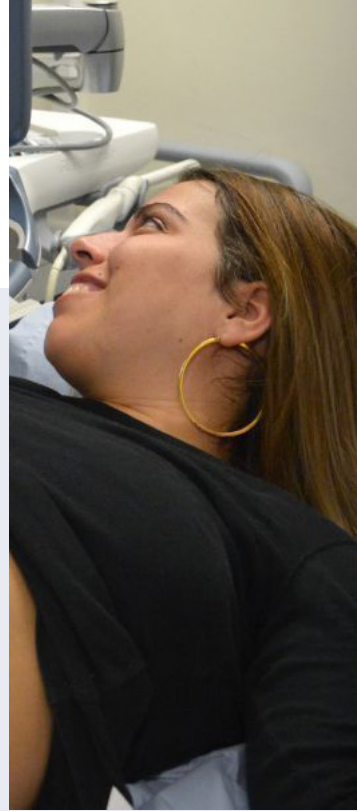
The mid-pregnancy scan can sometimes find problems with the baby. You may like someone to come with you to the scan appointment. Most hospitals do not allow children to attend scans as childcare is not usually available. Please ask your hospital about this before your appointment.

Can this scan harm me or my baby?

There are no known risks to the baby or the mother from having an ultrasound scan but it is important that you consider carefully whether to have the mid-pregnancy scan or not. The scan can provide information that may mean you have to make further, important decisions. For example, you may be offered further tests that have a risk of miscarriage.

Do I need this scan?

You do not have to have the scan. Some people want to find out if their baby has problems and some do not.





Physical abnormalities (mid-pregnancy scan)

What if I decide not to have this scan?

If you choose not to have the scan your antenatal care will continue as normal.

Possible results

Most scans show that the baby seems to be developing as expected, and no problems are found.

If any problem is found or suspected, the sonographer may ask for a second opinion from another member of staff.



Scans cannot find all problems. There is always a chance that a baby may be born with a health problem that scans could not have identified.

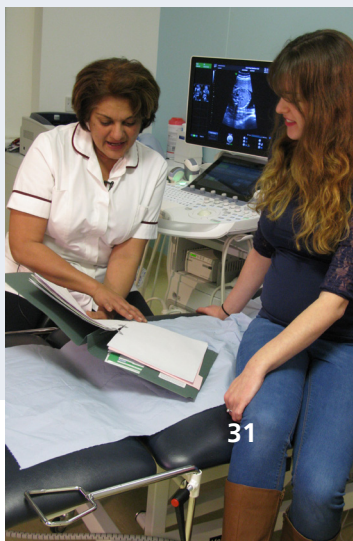
Will I need further tests?

You might be offered another test to find out for certain if there is a problem.

If you are offered further tests you will be given more information about them so that you can decide whether or not you want to have them. You will be able to discuss this with your midwife or consultant. If necessary, you will be referred to a specialist, possibly in another hospital.

Getting my results

The sonographer will be able to tell you the results of the scan at the time.





Eye problems in women with diabetes

nhs.uk/diabeticeye

What is the test for?

To check for signs of diabetic retinopathy and other eye problems caused by diabetes and monitor the health of your eyes if you are pregnant and have type 1 or type 2 diabetes. You will not need diabetic eye screening if you did not have diabetes before pregnancy.

Some women develop gestational diabetes in later pregnancy (28 weeks or more). Gestational diabetes can be treated through changes in diet and usually goes away once the baby is born. You will not be offered diabetic eye screening if you develop gestational diabetes.

About this condition

Diabetic retinopathy is caused when diabetes affects the small blood vessels in the retina at the back of the eye.

Everyone with diabetes is offered eye screening but screening is very important when you are pregnant because the risk of serious eye problems is greater.

Screening will only be offered if you already had diabetes before you were pregnant

What does having the test involve?

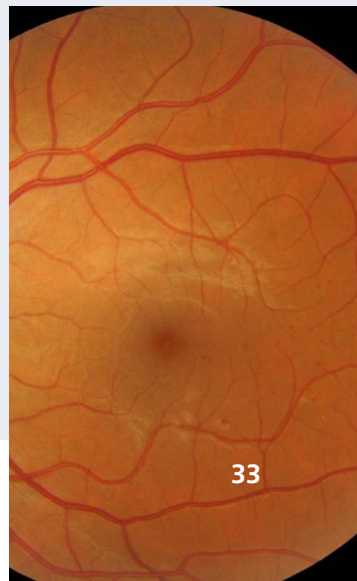
You will be offered screening at, or soon after, your first antenatal clinic visit and also after 28 weeks of pregnancy. If early stages of retinopathy are found at the first screening, you will be offered another test between 16 and 20 weeks of pregnancy. If serious retinopathy is found at any screening, you will be referred to an eye specialist.

Diabetic eye screening in pregnancy is the same as routine eye screening when you have diabetes.

Screening staff will record your details and level of sight. They will put drops in your eyes to make your pupils larger so the retinas can be seen more clearly. They then take digital photographs of your retinas.

If the images are not clear enough you will be referred to an eye specialist for a different test.

Diabetic retinopathy is treatable, especially if caught early





Eye problems in women with diabetes

Can this screening test harm me or my baby?

The photograph is painless and the camera does not come into contact with the eye. The eye drops may sting for a few seconds and cause blurred vision for 2 to 6 hours after the test. Take all your usual spectacles with you. Take sunglasses with you to wear home, as everything may look very bright after the screening test.

Arrange to use public transport or get a lift for the journey home. **You should not drive after screening as the eye drops can blur vision.**

Very rarely, the drops can cause a sudden, dramatic rise in pressure within the eye. Symptoms of pressure rise include:

- pain or severe discomfort in the eye
- redness of the white of the eye
- constantly blurred sight

If you experience any of these symptoms after screening, you should return to the eye unit or go to an accident and emergency department.

Do I need this test?

This test is strongly recommended if you already had diabetes before getting pregnant.

Eye screening is a part of managing your diabetes and diabetic retinopathy is treatable, especially if it is caught early.

What if I decide not to have this test?

People with diabetes can decide not to attend eye screening appointments.

If you decide not to have the test you should notify the clinician looking after your diabetes care during pregnancy.

Possible results

If you have the screening test, possible results are:

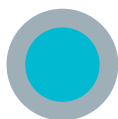
- no retinopathy
- early signs of retinopathy
- more serious retinopathy that requires referral to a specialist

If your test shows early signs of retinopathy, your health professional will give you advice about looking after your diabetes during pregnancy and you will be invited for additional screening tests during your pregnancy. If you are a smoker, seek help to stop or at least cut down.

If the test shows you have referable retinopathy you will receive an appointment with an eye specialist.

Getting my results

A letter will be sent to you and your GP within 6 weeks following your screening appointment.



Heart, eyes, hips and testes (physical examination)

nhs.uk/newborninfantexam

What is the screening test for?

Within 72 hours of giving birth, you will be offered an all over physical examination for your baby. This will include 4 specific screening tests to find out whether your baby has a problem with their eyes, heart, hips or, in boys, their testes and would benefit from early investigation and possible treatment.

The screening tests are carried out again between 6 and 8 weeks of age as some conditions do not develop or appear until then.

About the conditions

Each part of the physical examination is looking for different conditions.

Eyes – the examination checks the appearance and movement of the eyes and investigates whether your baby has cataracts and other problems. About 2 or 3 in 10,000 babies are born with cataracts, a clouding of the transparent lens inside the eye. The examination cannot tell how well your baby can see.

Screening is part of a top-to-toe physical examination of your baby

Heart – there is a general examination of your baby's heart and sometimes murmurs are picked up. A murmur is a noise made by the blood as it passes through the heart. In almost all cases when a murmur is heard, the heart is normal. Murmurs are common in babies and this does not always mean there is a problem. However, around 1 in 200 babies have a heart problem that needs treatment.

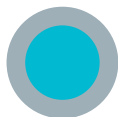
Hips – babies can be born with hip joints that are not formed properly and if untreated this can lead to a limp and to joint problems. About 1 or 2 in 1,000 babies have hip problems that need treatment.

Testes – baby boys are checked to make sure their testes are in the right place. It can take several months for testes to drop down (descend) into the scrotum. About 1 in 100 baby boys have problems with undescended testes that need treatment to reduce the risk of problems later in life, such as reduced fertility.

What does the examination involve?

The health professional will carry out a physical examination of your baby and ask you questions about your baby's feeding, how alert they are and their general wellbeing.





Heart, eyes, hips and testes (physical examination)

Your baby will need to be undressed for part of the examination. During the examination the health professional will:

- look into your baby's eyes focusing on how their eyes look and move
- listen to their heart using a stethoscope to detect heart sounds
- examine their hips to ensure the joints are in the correct place
- examine baby boys to check if their testes are in the right place

These screening tests are carried out within 72 hours of birth and again when your baby is between 6 and 8 weeks of age.

Screening is offered within 72 hours of birth and again at 6 to 8 weeks

Can this examination harm my baby?

There are no risks associated with having this test.

Does my baby need to have this examination?

The examination is intended to identify any of the problems early so that treatment can be started as soon as possible.

The general physical examination including this screening is therefore recommended for your baby.

What if I decide that my baby will not have this examination?

You can decide to have your baby examined and screened for any or all of the conditions. If you have any concerns you should discuss them with your midwife and the health professional who offers the examination.

Early detection of problems means quicker treatment and better health outcomes

Possible results

Usually there will be nothing of concern found. If the health professional finds a possible problem, your baby will be referred for further assessment and tests if appropriate.

Getting my results

The health professional carrying out the examination will give you the results straight away. If a referral for further assessment is needed, this will also be discussed with you at the time of the examination.

The results will be recorded in your baby's case notes and personal child health record ("red book"). You will need to keep this record safe and make sure it is available whenever your baby sees a health professional.



Hearing loss

[nhs.uk/newbornhearing](https://www.nhs.uk/newbornhearing)

What is the screening test for?

To find babies who have a hearing loss so that support and advice can be offered right from the start.

About this condition

One to 2 babies in every 1,000 are born with a permanent hearing loss in one or both ears. Most of these babies are born into families with no history of hearing loss.

Permanent hearing loss can significantly affect a baby's development. Finding out early can give these babies a better chance of developing speech and language skills. It will help babies make the most of relationships with their family and carers from an early age.

What does the test involve?

In many hospitals you will be offered a hearing screening test for your baby before discharge or invited to attend a clinic appointment; in some areas it will be done by the health visitor within the first few weeks. Ideally, the test is done in the first 4 to 5 weeks, but it can be done at up to 3 months of age.

The test called the AOA (automated otoacoustic emission) test takes a few

Most babies with hearing loss are born into families with no previous history of the condition

minutes. A small soft tipped earpiece is placed in your baby's ear and soft clicking sounds are played. When an ear receives sound, the inner part (called the cochlea) responds and this can be picked up by the screening equipment.

It is not always possible to get clear responses from the first test. This does not necessarily mean your baby has a hearing loss. It can mean:

- your baby was unsettled when the test was done
- there was background noise
- your baby has fluid or a temporary blockage in their ear – this is very common and passes with time
- your baby has a hearing loss

In these cases your baby will be offered another test. This may be the same as the first test, or another type called the AABR (automated auditory brainstem response) test. This involves 3 small sensors being placed on your baby's head and neck. Soft headphones are placed over your baby's ears and soft clicking sounds are played. This test takes between 5 and 15 minutes.



The hearing test is straightforward and most babies sleep right through it





Hearing loss

Can these tests harm my baby?

There are no risks associated with having this test.

Does my baby need to have this test?

This screening test is recommended for your baby. Finding hearing loss early is important for your baby's development.

What if I decide that my baby will not have the test?

If you decide not to have the newborn hearing screening test you will be given checklists to help you check on your baby's hearing as they grow older. If you have any concerns you should speak to your health visitor or GP.

Possible results

If your baby has a clear response in both ears then they are unlikely to have a permanent hearing loss. However, newborn hearing screening does not pick up all types of hearing loss and children can develop hearing loss later on. It is important to check your child's hearing as they grow up. The checklist in your baby's personal child health record ('red book') tells you how to do this. If you have any concerns about your child's hearing tell your health visitor or GP.

The hearing test is simple and most babies sleep right through it

If the screening test results do not show a clear response from one or both of your baby's ears an appointment will be made with audiology to see a hearing specialist. About 2 to 3 babies in every 100 do not show a clear response on the screening tests. Being sent for further tests does not necessarily mean your baby has a hearing loss.

A hearing specialist should see you within 4 weeks of having your baby's hearing screening test. It is very important that you attend the appointment in case your baby has a hearing loss.

Getting my results

You will be given your baby's results as soon as the hearing test is done.





Blood spot

nhs.uk/bloodspot

What is the test for?

To find out if your baby has any of 9 rare but serious health conditions. Early treatment can improve your baby's health and prevent severe disability or even death. If you, the baby's father, or a family member already has one of these conditions, please tell your health professional straight away.

Blood spot screening is recommended as it can save your baby's life

About these conditions

Sickle cell disease

About 1 in 2,000 babies born in the UK has a sickle cell disease (SCD). These are serious, inherited blood diseases. They affect haemoglobin, a part of the blood that carries oxygen around the body. Babies who have SCD will need specialist care throughout their lives.

People with SCD can have attacks of severe pain, get serious, life-threatening infections and are usually anaemic (their bodies have difficulty carrying oxygen). Babies with SCD can receive early treatment, including vaccinations and antibiotics, which, along with support from their parents, will help prevent serious illness and allow them to live a healthier life.

Cystic fibrosis

About 1 in 2,500 babies born in the UK has cystic fibrosis (CF). This inherited condition affects the digestion and lungs. Babies with CF may not gain weight well and frequently have chest infections.

Babies with CF can be treated early with a high-energy diet, medicines and physiotherapy. Although children with CF may still become very ill, early treatment can help them live longer, healthier lives.

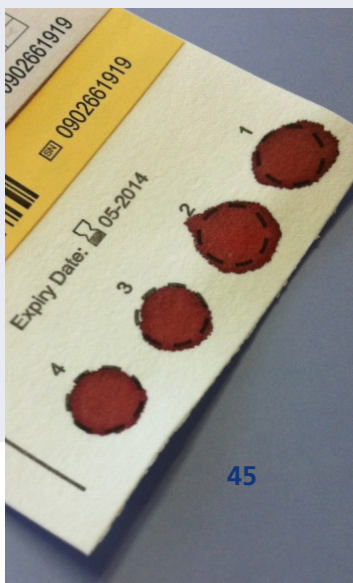
Congenital hypothyroidism

About 1 in 3,000 babies born in the UK has congenital hypothyroidism (CHT). Babies with CHT do not have enough of the hormone thyroxine. Without thyroxine babies do not grow properly and they can develop permanent serious physical problems and learning disabilities.

Babies with CHT can be treated early with thyroxine tablets and this will allow them to develop normally.

Inherited metabolic diseases

It is important to let your health professional know if you have a family history of a metabolic condition.





Blood spot

Babies are screened for 6 inherited metabolic diseases (IMDs). These are:

- phenylketonuria (PKU)
- medium-chain acyl-CoA dehydrogenase deficiency (MCADD)
- maple syrup urine disease (MSUD)
- isovaleric acidaemia (IVA)
- glutaric aciduria type 1 (GA1)
- homocystinuria (pyridoxine unresponsive) (HCU)

About 1 in 10,000 babies born in the UK has PKU or MCADD. The other conditions are rarer, occurring in 1 in 100,000 babies to 1 in 150,000 babies.

Babies with these inherited conditions cannot process certain substances in their food. Without treatment babies with some of these conditions can become suddenly and seriously ill. The symptoms of the conditions are different; some may be life threatening or lead to severe developmental problems. They can all be treated by a carefully managed diet, which is different for each condition and may include additional medicines.

The information collected on your baby's blood spot card is important – make sure all the details are correct

What does the test involve for my baby?

When your baby is 5 days old the health professional will prick your baby's heel using a special device to collect some drops of blood onto a card. Occasionally this may be later than 5 days. The heel prick may be uncomfortable and your baby may cry. You can help by making sure your baby is warm and comfortable, and by cuddling and feeding them.

Sometimes, a second blood spot sample is required later on. If so, the reason will be explained. It does not necessarily mean there is something wrong with your baby.

Can this test harm my baby?

There are no known risks to your baby associated with having the test.

Does my baby need to have this test?

Screening your baby for all these conditions is recommended because it could save your baby's life but it is not compulsory. You can choose to have screening for SCD, CF or CHT individually but can only choose to have screening for all 6 IMDs or none at all. If you do not want your baby screened for any of the conditions, please talk to your midwife.

Can my baby have the test later if I change my mind?

Yes. Babies can be screened up to 12 months of age for all the conditions except CF (only up to 8 weeks of age). If you have any concerns about the tests, please discuss them with your health professional.



Blood spot

Possible results

Most babies will have normal results indicating that it is unlikely that they have any of the conditions. A small number of babies will screen positive for 1 of the conditions. This does not mean they have the condition but they are more likely to have it. They will be referred to a specialist for further tests.

Screening for cystic fibrosis finds some babies who may be genetic carriers of the condition. These babies may need further testing. Screening does not detect all carriers.

Occasionally, other medical conditions might be identified through these screening tests. For example, babies with beta thalassaemia major (a serious blood disease) will usually be detected. These children also need to be referred for lifelong treatment and care.

Screening for sickle cell disease also finds babies who are genetic carriers of these or other red blood cell diseases. Carriers are healthy although they can experience some problems in situations where their bodies might not get enough oxygen, for example, if they are having an anaesthetic.

Getting my results

You should receive the results from a health professional by the time your baby is 6 to 8 weeks old. The results should be recorded in your baby's personal child health record ("red book"). Please keep this safe and bring it with you to any

further appointments. You will be contacted sooner if there is thought to be any problem with your baby.

What happens to my baby's blood spot card and data after screening?

After screening blood spot cards are stored for at least 5 years and may be used:

- to check the result or for other tests recommended by your doctor
- to improve the screening programme
- for research to help improve the health of babies and their families in the UK

This research will not identify your baby and you will not be contacted. The use of these blood spots is governed by the code of practice available from your midwife, or on the website.

There is a small chance researchers may want to invite you or your child to take part in research linked to this screening programme. If you do not want to be invited to take part in research, please let your midwife know.

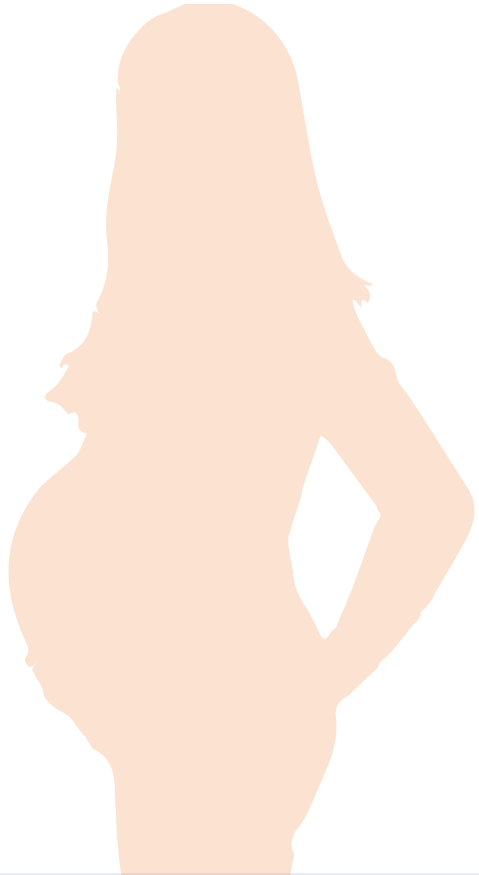
If it looks like you or your baby has sickle cell disease or thalassaemia, we will pass the information to the National Congenital Anomaly and Rare Diseases Registration Service (NCARDRS). This helps us improve screening and prevent or treat the condition. You can opt out of the register, or find out more, by visiting www.gov.uk/phe/ncardrs and www.gov.uk/phe/newborn-outcomes.

Notes

You can write down any notes here from discussions with your health professionals

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First published	October 2014
Updated	July 2017
Review due	Pending
Reference	ANNB01 PN1316705



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Web address	www.gov.uk/topic/population-screening-programmes
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Photo credit	With grateful thanks to the Down's Syndrome Association for permission to use the photographs on page 19.
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