

Patient information from the BMJ Group

Infection in newborn babies (group B streptococcus)

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Infection in newborn babies (group B streptococcus)

Sometimes, newborn babies get infected with bacteria (a kind of germ) called group B streptococcus in the first few days of their life. This infection can be serious and needs to be treated quickly. The bacteria are passed on from a mother to her baby during birth. To prevent this, women are sometimes given antibiotics during labour.

We've brought together the best research about preventing and treating this infection in newborn babies and weighed up the evidence about how to treat it. You can use our information to talk to your doctor and decide which treatments are best for you and your baby.

What is group B streptococcus infection in newborn babies?

If a newborn baby gets an infection with a kind of germ (bacteria) called group B streptococcus, it can make them seriously ill. This infection doesn't happen often, but when it does, babies need to be treated quickly.

Most **infections** in newborn babies are caused by bacteria called group B streptococcus (also called group B strep or GBS).^[1] Group B strep can live in your body without causing any problems. But if these bacteria spread from a mother to her baby during birth, they can cause serious illness such as:^[1] ^[2]

- Blood infection (sepsis)
- Lung infection (**pneumonia**)
- Infection of the fluid and lining around the brain (**meningitis**).

You may also hear group B strep infections called strep B infections and beta strep infections or beta strep disease. Although adults can get group B strep infections, newborn babies are much more likely to get them.

There are two main types of group B strep infection in newborn babies.

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Early-onset infection

If your baby gets group B strep infection in the first seven days of life, it's called **early-onset infection**. Doctors think that babies who get an infection soon after they are born breathed in fluid that contained group B strep during labour.^[3] Early-onset group B strep infection in newborn babies can be prevented by giving women antibiotics during labour. The antibiotics kill the bacteria before they can be passed on to the baby. To learn more, see [Preventing group B streptococcus infections in newborn babies](#) .

Late-onset infections

If your baby gets group B strep infection between seven days and two months after birth, it's called **late-onset infection**.^[1] Doctors aren't exactly certain how a baby gets late-onset infection. It seems that mothers probably pass group B strep to their babies through close physical contact.^{[1] [3]} Giving women antibiotics during labour doesn't prevent babies getting late-onset infections.

Here we look at preventing and treating group B strep infections that babies can get in the first week of their life (early-onset infections).

Risk factors for early-onset group B strep infection



Going into labour early is a risk factor for your baby getting an infection.

Certain things make it more likely that your baby will get a group B strep infection soon after birth. These are called risk factors. If you have a risk factor it doesn't mean your baby will definitely get an infection. But the chance of your baby getting an infection is greater than that of another baby whose mother doesn't have any risk factors.

Your baby is more likely to get early-onset group B strep infection if:^{[9] [10] [11]}

- You carry group B strep (that is, you have the bacteria in your body but you don't have any symptoms of an infection)
- Your baby is born before the 37th week of pregnancy
- Your baby weighs less than 2.5 kilograms (5.5 pounds)
- You have a fever when you are in labour
- Your waters break before the 37th week of pregnancy or before labour (this is called the premature rupture of membranes).

What are the symptoms of group B streptococcus infection in newborn babies?

Most babies who get early-onset infection become ill within the first few hours of their life. But early-onset infection can happen any time in the first week of life.

Here we look at preventing and treating group B strep infections that babies can get in the first week of their life (early-onset infections).

Early-onset infection

Some signs and symptoms of early **infection** in newborn babies are: ^[2] ^[12] ^[13]

- Rapid breathing or difficulty breathing (in most babies this is the first symptom that appears)
- A high temperature (fever)
- A low temperature (less than 35.5°C or 95.5°F)
- Grunting
- Difficulty feeding or not wanting to feed
- Being floppy, limp, and hard to wake up
- Low blood pressure
- Low blood sugar
- Jaundice in the first 48 hours after life. In jaundice, the skin and the whites of your baby's eyes get a yellow tinge; after 48 hours a little bit of jaundice is common and normal. Jaundice usually goes away after a couple of weeks.
- Mottled-looking skin.

Late-onset infections

Late-onset infections happen between seven days and two months after birth. But most babies become ill in the first month. ^[12]

Some signs and symptoms of late infection in newborn babies are:

- A high temperature
- Being floppy, limp, and hard to wake up

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- Difficulty feeding or not wanting to feed
- Rapid breathing^[12]
- Being difficult to settle and irritable.

Babies who get a late-onset infection are less likely to have difficulty breathing. But they're much more likely to have an infection of the fluid and lining around the brain (known as meningitis).

It's very important that you get medical help straight away if you think that your baby's unwell. Group B streptococcus infection is serious, and your baby may become very ill very quickly.^{[13] [14]}

How common is group B streptococcus infection in newborn babies?

Group B strep infection isn't common.

Every year about 350 babies born in the UK and Ireland are diagnosed with early-onset group B streptococcus infection. That's about 1 in every 2,000 babies born. About 175 babies are diagnosed with late-onset infection.^[15]

What treatments work for infection in newborn babies?

If your baby is unwell, and you think this may be because of an infection, you should get medical help straight away. Babies who have an infection must be treated quickly with antibiotics.

Key messages about prevention and treatment for group B streptococcus infections in babies

- Newborn babies who have an infection are usually treated quickly with antibiotics.
- Even if your baby doesn't have symptoms, he or she may be given treatment. This is because your baby may have a high risk of getting an infection.
- Doctors recommend that you carry on breastfeeding your baby. Breastfeeding will protect your baby from other infections.^[2]

We've looked at the best research and given a rating for each treatment according to how well it works.

Treatment Group 1

Treatments for infection in newborn babies (group B streptococcus)

Usual treatment

- [Antibiotics](#)

Treatments that are unlikely to work

- [Antibiotics to prevent infections in newborn babies who don't have symptoms](#)

What will happen to my baby?

Newborn babies who get group B streptococcus infection must be treated as soon as possible. Babies treated quickly have the best chance of making a full recovery.

Most babies who are treated for early-onset group B strep infection make a full recovery. But a few babies die.

About 1 in 10 babies who are diagnosed with group B strep infection die.^[2] Some babies who get a group B strep infection of the fluid and lining around the brain (known as meningitis) will have permanent nerve damage. They may get:^[16]

- Problems with their hearing or sight
- Seizures (fits).

About half of babies who get meningitis from a group B strep infection go on to have these long-term problems.^[17]

Treatments:

Antibiotics

In this section

There hasn't been much research on whether antibiotics help babies with group B streptococcus infection. That's because it wouldn't be fair to treat some babies and not others when doctors know antibiotics might help. We've included this treatment here because babies with group B strep infections are usually given antibiotics.

Doctors generally agree that antibiotics are the best way to treat group B strep infections. Antibiotics are drugs that kill bacteria (germs) and cure the infection in most babies.^[2]
^[18]

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The antibiotic is given to your baby as a drip (also called IV or **intravenous infusion**). ^[2]

^[19] The antibiotics that doctors mainly use to treat babies who have a group B strep infection are: ^[20] ^[21]

- Ampicillin
- Gentamicin.

Antibiotics can have side effects, but these are usually mild. Your baby may get:

- An upset stomach
- Diarrhoea
- A rash.

Some babies can have serious reactions to antibiotics, such as fits. But these reactions are rare. ^[20] ^[21]

Antibiotics to prevent infections in newborn babies who don't have symptoms

In this section

Babies at most risk of getting a group B strep infection (for example, those who are born early) are often given antibiotics to prevent this. But doctors disagree about whether all babies who are at risk of a group B strep infection should be given antibiotic treatment. ^[22]

Babies who don't have symptoms of an infection are tested or treated rarely. Your baby might get treated if your doctor thinks he or she has a high risk of getting an infection (for example, if you've got another child who had a group B strep infection as a baby). ^[2]

Two studies have looked at whether it's better to:

- Give all babies antibiotics as soon as they're born
- Wait and only treat those who have symptoms of an infection or if tests show that they are carrying group B strep (they have the bacteria in their body but they don't have any symptoms of an infection).

Both studies found that treating all babies made no difference to the number of babies who got infections and those who died. ^[23] ^[24]

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Doctors don't know if some antibiotics would be better than others at preventing group B strep infections in babies. No studies have compared the different antibiotics in this way.

Further informations:

Preventing group B streptococcus infections in newborn babies

About 1 in 4 women in the UK carry group B streptococcus bacteria (a kind of germ).

^[4] In most women the bacteria don't cause any problems. ^[4] But some pregnant women can get a bladder or womb infection. ^[5]

During birth, group B strep can spread from the mother to the baby. Usually this doesn't cause the baby harm. But occasionally group B strep can cause a serious infection. ^[4] In the UK, women who are likely to pass on group B strep to their babies are offered antibiotics to prevent this. ^[4] ^[6] The antibiotic is given as a drip (also called an IV or an intravenous infusion) during labour.

Antibiotics are drugs that kill bacteria. So the aim of this treatment is to prevent group B strep passing on from you to your baby. ^[5] ^[7] But the treatment doesn't prevent late-onset group B strep infections (those that appear after your baby is seven days old). ^[5]

Your doctor will talk to you about antibiotic treatment to prevent group B strep being passed to your baby if: ^[4]

- Group strep B has been found in your urine at some time during your pregnancy
- Group strep B has been found on swabs taken from your vagina and/or rectum taken for some other reason
- You've had a baby with a strep group B infection before.

You may also be offered antibiotic treatment if there's a high risk of you passing on group B strep to your baby. For example: ^[5] ^[6]

- You have a fever during labour
- You go into labour before the end of the 37th week of pregnancy
- Your waters break more than 18 hours before you give birth.

There is a test to see if you are carrying group B strep. Your doctor uses a small swab to take a sample of cells from your vagina. This can show if you are carrying group B

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strep. But the test isn't very accurate. So, you might have a negative test result but still be carrying the bacteria.

The National Institute for Health and Care Excellence (NICE), which advises the government on health care, says that not enough is known about the test for it to be used routinely. ^[8] You could ask your doctor about the test, if you are worried about carrying group B strep. The test is usually done at 35 to 37 weeks of pregnancy.

Glossary:

infection

You get an infection when bacteria, a fungus, or a virus get into a part of your body where it shouldn't be. For example, an infection in your nose and airways causes the common cold. An infection in your skin can cause rashes such as athlete's foot. The organisms that cause infections are so tiny that you can't see them without a microscope.

pneumonia

Pneumonia is an infection in your lungs. Anything that causes infections (bacteria, viruses or fungi, for example) can give you pneumonia.

meningitis

Meningitis is a swelling in the thin layers of tissue that surround your brain and your spinal cord. It usually happens because of an infection with certain kinds of bacteria or viruses. Meningitis can give you a severe headache and a stiff neck. And you may find it difficult to keep your eyes open in the light. Meningitis is a life-threatening disease. If you have these symptoms, you should go to hospital straight away.

antibiotics

These medicines are used to help your immune system fight infection. There are a number of different types of antibiotics that work in different ways to get rid of bacteria, parasites, and other infectious agents. Antibiotics do not work against viruses.

bacteria

Bacteria are tiny organisms. There are lots of different types. Some are harmful and can cause disease. But some bacteria live in your body without causing any harm.

bladder

Your bladder is the hollow organ at the top of your pelvis that stores urine. It is similar to a balloon, only with stronger walls. It fills up with urine until you go to the toilet.

intravenous infusion

When a medicine or a fluid, such as blood, is fed directly into a vein, it's called an intravenous infusion (or IV). To give you an intravenous infusion, a nurse, technician or a doctor places a narrow plastic tube into a vein (usually in your arm) using a needle. The needle is then removed and the fluid is infused (or dripped) through the tube into the vein.

seizure

A seizure (or fit) is when there is too much electrical activity in your brain, which results in muscle twitching and other symptoms.

diarrhoea

Diarrhoea is when you have loose, watery stools and you need to go to the toilet far more often than usual. Doctors say you have diarrhoea if you need to go to the toilet more than three times a day.

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