

“Every pregnant woman should read this leaflet – it could save her baby’s life.” Dr Chris Steele MBE, patron



The facts about group B Strep in pregnancy

By identifying Mums whose babies are at higher risk and managing their pregnancy and delivery appropriately, most group B Strep infection in newborn babies can be prevented.

Group B Strep is the most common cause of life-threatening infection in newborn babies in the UK – these infections are usually preventable.



Group B Strep Support

Preventing life-threatening group B Strep infection in newborn babies

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What is group B Strep?

Group B Streptococcus (GBS or group B Strep) is a naturally occurring bacterium that usually causes no harm, but can cause severe infection in a small number of babies and adults. Group B Strep is not a sexually transmitted disease.

What does group B Strep carriage mean?

Carrying group B Strep (referred to as group B Strep colonisation or carriage) is normal – around 20-30% of adults carry group B Strep, typically in the gut and/or vagina without signs or symptoms. **Group B Strep carriage does not require treatment until labour starts.** At the start of labour, antibiotics should be offered to the mum to reduce the risk to the baby of developing group B Strep infection.

What is group B Strep infection?

Infection occurs when group B Strep invades the body tissues – such infections are relatively uncommon. Most babies exposed to group B Strep will not develop infection but, for the small number who do, it can be life-threatening, causing **septicaemia** (“bloodstream infection” or “blood poisoning”), **pneumonia** (lung infection) and **meningitis** (inflammation of the fluid and linings of the brain).

Group B Strep infection is rare after the first 2 days of life and very rare after age 3 months.

Group B Strep is however the most common cause of severe infection in newborn babies and of bacterial meningitis in babies younger than three months.

The good news is that most group B Strep infections can be prevented. And, with prompt and appropriate treatment, most babies will fully recover from their group B Strep infection, though prevention is better than cure.

The underlying rate of group B Strep infection in babies, assuming no prevention, is around **one in every 1,000 babies born each year in the UK.** If Mum is carrying group B Strep, this increases to around **one in 300.**

Group B Strep is a very rare cause of infection in the mother, and of late miscarriage and stillbirth. These events are so rare that giving Mums antibiotics before labour is not recommended. Prolonged antibiotic treatment during pregnancy can be harmful to the baby, and there is no good evidence that they would prevent group B Strep infections before labour.

Occasionally, group B Strep is found in Mum’s urine during pregnancy. This indicates that either the urine has been contaminated by group B Strep from the skin and Mum is a carrier, or when high levels of group B Strep are detected in the urine, that Mum has a urinary tract infection. Urinary tract infections during pregnancy should be treated at the time of diagnosis with antibiotics.

Most group B Strep infections in newborn babies can be prevented, so knowing about group B Strep during pregnancy is good.

“I had a private test for group B Strep in my last pregnancy, after being found to carry group B Strep after my third (no problems, thank goodness). Test was negative so I had a low tech birth without antibiotics in a birthing pool.” **Christine M**

Key facts about group B Strep

Most group B Strep infection in newborn babies can be prevented by identifying the mums likely to be carrying group B Strep in labour and giving them intravenous (through a vein) antibiotics at the start of labour and at regular intervals until birth.

Routine testing of all pregnant women in the UK for group B Strep carriage is not currently recommended by the UK National Screening Committee.

Intravenous antibiotics are highly effective at preventing group B Strep infection in newborn babies when given as soon as possible once labour starts to Mums carrying group B Strep.

How do I know if I am carrying group B Strep?

Most people don't know if they carry group B Strep, as there are no symptoms. Those who do, often find out as a result of tests taken for other reasons. Antenatal testing of pregnant women is not currently recommended in the UK, but testing is the only way to establish whether you're carrying group B Strep.

Knowing if you carry group B Strep during pregnancy is good news

Carrying group B Strep late in pregnancy does not mean your baby will develop group B Strep infection, but it does mean your baby has a higher chance of doing so (around **one in 300**) than if you were not a carrier. If Mums know they carry group B Strep and have the appropriate antibiotics in labour, that chance falls to less than **one in 6,000**.



"Had I been fully informed about group B Strep, I could have been more proactive in agreeing with my health professionals what action should be taken to protect Arthur from this preventable infection." **Natasha O**

What are the tests for group B Strep in pregnancy?

There are four tests which may identify group B Strep during pregnancy:

Standard non-selective test

Samples are taken, normally from the high vagina (HVS), and processed in a laboratory using standard (non-selective) culture media to investigate samples from the genital tract. This test is universally available within the NHS and detects a wide range of microorganisms that can cause disease. It is not sufficiently sensitive to detect group B Strep carriage reliably – when this test detects group B Strep, the result is highly reliable (these tests rarely grow something that's not present). However, this test fails to detect group B Strep up to 50% of the time, so a Mum carrying group B Strep when this test is taken is almost as likely to be told group B Strep was not detected as she is to be told it was.

Remember! Mums who have had a previous baby with group B Strep infection should ALWAYS be offered intravenous antibiotics from the start of labour in subsequent pregnancies (no testing needed).

Enriched Culture Medium (ECM) test

Samples are taken from low vagina (LVS) and the anorectum (back passage), and processed in a laboratory using enriched (selective) culture media. The ECM test is very good both at identifying when group B Strep is present and when it is not. It is the 'gold standard' for detecting group B Strep carriage (Public Health England has a UK Standard describing the method, link at www.gbss.org.uk/test). This test is available from a number of NHS trusts and private laboratories. The ECM test only detects group B Strep (not other microorganisms) and is more expensive than the standard non-selective test (NHS estimate: £111).

Rapid test (PCR)

Samples are taken from the low vagina (LVS) and anorectum, processed using immunology assays, DNA hybridisation and PCR methods. These tests may one day provide results which are sufficiently speedy, accurate and cost-effective to use at the start of labour. They only detect group B Strep, are much more expensive than non-selective and ECM tests, are insufficiently accurate or take too long or require complicated procedures. These tests are rarely used to detect group B Strep carriage in the UK.

Urine test

Samples are taken from mid-stream urine, then processed using standard culture media. This test detects group B Strep and other microorganisms in the urine both when a urinary tract infection is suspected and in urinary screening programmes of women early in pregnancy. This test is routinely offered within the NHS. It ONLY detects group B Strep (or other microorganisms) in the urine – it cannot detect group B Strep carried in the vagina or rectum.

If a test detects group B Strep, you can be sure it was present – when tests other than the ECM test fail to detect group B Strep, you can't be sure it was absent.

Is my baby at risk of group B Strep infection?

There are six situations where a newborn baby is known to have a higher risk of developing group B Strep infection.

Risk factors for group B Strep infection in newborn babies:

- Mum has had a previous baby infected with group B Strep – **risk 10 times higher**
- Group B Strep found in Mum's urine during this pregnancy – **risk 4 times higher**
- Mum has a raised temperature during labour (37.5°C or higher) – **risk 4 times higher**
- Group B Strep found on a vaginal or rectal swab during this pregnancy – **risk 3 times higher**
- Labour starts or waters break before 37 weeks of pregnancy – **risk 3 times higher for each**
- Waters break more than 18 hours before delivery – **risk 3 times higher**

Risk factors multiply each other. So if you're carrying group B Strep in your current pregnancy, the chance of your baby developing group B Strep infection increases x 3. If you're carrying group B Strep and give birth preterm, the baby's risk is increased by $3 \times 3 = 9$ times.

The UK's Royal College of Obstetricians & Gynaecologists (RCOG) first recommended a prevention strategy against group B Strep infection in newborn babies in 2003. To date, there has been no significant reduction in the rate of group B Strep infections in newborn babies. This may be because the prevention strategy has not been well implemented, or for other reasons.

The RCOG recommends that intravenous antibiotics should be offered to Mums in labour to minimise the risk of group B Strep infection in their newborn baby in a smaller four situations:

RCOG indicators for offering antibiotics in labour:

- Mum has had a previous baby infected with group B Strep
- Group B Strep found in Mum's urine during the current pregnancy
- Mum has a raised temperature during labour (37.5°C or higher) or other symptoms of chorioamnionitis (infection of the membranes around the baby)
- Group B Strep found on a vaginal or anorectal swab during the current pregnancy

Carrying group B Strep before the current pregnancy is not a good predictor of carrying group B Strep now. You are more likely to be carrying it again if you have been a carrier before this pregnancy but, without a positive group B Strep test result during the current pregnancy, you will not be offered intravenous antibiotics in labour unless one or more of the other risk factors is present.

Your group B Strep status, determined by an ECM test, is unlikely to change quickly.

Research showed:

- a positive ECM result gave an 87% chance of still carrying group B Strep five weeks later
- a negative ECM result gave a 96% chance of still not carrying group B Strep five weeks later

Testing for group B Strep at 35-37 weeks of pregnancy is good at predicting the likelihood of your carrying group B Strep when you give birth at term. Earlier testing means your status may be more likely to change. Later testing means there's a greater chance that your baby will arrive before the result.

How can group B Strep infection in newborn babies be prevented?

Our medical advisory panel's key recommendations are:

Most group B Strep infections in newborn babies are preventable. Over eight out of ten cases could be prevented were intravenous antibiotics offered to all Mums testing positive using an ECM test at 35-37 weeks of pregnancy and to Mums with any of the recognised risk factors listed above.

Offering antibiotics to Mums whose babies are at raised risk of group B Strep infection (see risk factors above)

- **High Risk – Mum should be strongly advised to have intravenous antibiotics in labour until delivery. At high risk means:**
 - Mums who have previously had a baby infected with group B Strep
 - Mums carrying group B Strep this pregnancy with another risk factor
 - Mums who don't know if they carry group B Strep and who have two or more other risk factors
 - Mums where group B Strep has been found in their urine this pregnancy
 - Mums who have a fever during labour
- **Increased Risk – Mum should be offered intravenous antibiotics in labour until delivery. At increased risk means:**
 - Mums carrying group B Strep with no other risk factors
 - Mums who don't know if they carry group B Strep this pregnancy and have one of: preterm labour; waters breaking prematurely or waters broken more than 18 hours before birth

Treatment in labour

If Mum decides to take it, **she should be given the first dose of intravenous antibiotics as soon as possible once labour has started, and then at regular intervals until delivery to prevent group B Strep infection in the newborn baby.** The Royal College of Obstetricians and Gynaecologists (RCOG) recommends that the first dose should be given at least 2 hours before delivery. Group B Strep Support considers this the absolute minimum, with the first dose being given at least 4 hours before delivery being ideal.

The intravenous antibiotics recommended for Mums in labour until delivery are:

- **Penicillin G** 3 g IV, then 1.5 g every 4 hours
- **Clindamycin** 900 mg IV every 8 hours for Mums allergic to penicillin

Group B Strep is becoming increasingly resistant to clindamycin (13% resistance was reported by Public Health England for 2012), though not to penicillin. If group B Strep has been found on culture, the report should indicate whether it is resistant to clindamycin. If it is, vancomycin should be used (Vancomycin, 1g IV every 12 hours until delivery).

Where infection of the membranes is diagnosed or suspected (called "chorioamnionitis"), or where there is preterm prelabour rupture of membranes (waters breaking before labour starts and before 37 completed weeks of pregnancy), broad-spectrum intravenous antibiotics should be given which include group B Strep cover.

If you are allergic to Penicillin or any other antibiotic, you MUST tell your health professionals.

Using any antibiotic carries risks, so please discuss this with them.

Care after birth

- **Babies born at increased/high risk to Mums who HAVE received antibiotics for more than 2 hours before delivery should be:**
 - Carefully assessed by an appropriately trained Paediatrician or Advanced Neonatal Nurse Practitioner (ANNP)
 - If completely healthy, no antibiotics for the baby are required
 - A period of monitoring (12-24 hours) may be appropriate for those at the highest risk of infection
- **Babies born at increased/high risk to Mums who HAVE NOT received antibiotics for more than 2 hours before delivery should be:**
 - Examined thoroughly and investigated by a Paediatrician or Advanced Neonatal Nurse Practitioner (ANNP) as appropriate
 - If completely healthy, no antibiotics for the baby are required
 - Observed for a minimum of 12 hours, ideally 24 hours

For well babies at the highest risk of infection, monitoring (12-24 hours) may be appropriate and this should be undertaken as a minimum if the baby is not screened and treated for infection

If there's any doubt about whether an infection is present, the baby should be started on intravenous antibiotics until it is known that they are not infected

Caesarean Sections

Planned Caesareans are not recommended as a means of preventing group B Strep infection in babies since they only reduce not remove the risk and they pose their own risks for both Mums and babies. A planned Caesarean takes place before waters break or labour starts. In this situation, the risk of the baby developing group B Strep infection is so low that antibiotics specifically against group B Strep infection are not recommended.

If however, labour has started or waters have broken, Mum should be treated as for a normal labour. If an emergency Caesarean section becomes necessary, the baby should be delivered immediately.

“Knowing I carried group B Strep meant I could have antibiotics in labour and keep my baby safe.” Kylie G

How to recognise group B Strep infection in babies

Two thirds of babies who develop group B Strep infection show signs in their first 6 days of life (early-onset). Of these, almost nine out of every ten show signs within 12 hours of birth. Early-onset group B Strep infection in babies usually shows as septicaemia or pneumonia. Less frequently, it shows as meningitis.

Most early-onset group B Strep infection can be prevented by giving intravenous antibiotics in labour to Mums whose babies are at increased risk.

Early-onset group B Strep infection – typical signs include:

- Rapid breathing or stopping breathing
- Making grunting sounds
- Poor feeding
- Being abnormally drowsy (lethargic)
- Being irritable
- High/Low temperature
- High/Low heart rate
- Low blood pressure
- Low blood sugar
- Pale, blotchy skin

Late-onset group B Strep infection occurs after a baby's first 6 days of life. It is uncommon after a baby is one month old and very rare after three months old. It usually shows as meningitis and septicaemia.

There are no known ways of preventing late-onset group B Strep infection in babies. One day, a vaccine may be available, but that is in the early stages of development.

Late-onset group B Strep infection - typical signs are similar to those for early-onset infection and may include signs associated with meningitis such as:

- Being irritable with high pitched or whimpering cry, or moaning
- Blank, staring or trance-like expression
- Floppy, may dislike being handled, be fretful
- Tense of bulging fontanelle (soft spot on babies' heads)
- Turns away from bright light.
- Involuntary stiff body or jerking movements

Group B Strep can be carried on the skin. This is one reason why everyone should wash and dry their hands properly before handling a baby under age three months, whether or not they know they carry group B Strep.

Group B Strep infection can usually be treated effectively

Most babies recover fully from their group B Strep infection when treated with prompt and aggressive intravenous antibiotic therapy and intensive care. Even so, sadly one in ten babies infected with group B Strep die, and more than one in every twenty survivors suffers long-term problems (up to half of the survivors of group B Strep meningitis suffer long-term problems). **Prevention is better than cure.**

What next?

Each UK Trust has a policy against group B Strep infection in newborn babies. Find out what your Trust's is and agree a pregnancy and birth plan that addresses the risk of group B Strep infection in your baby.

Once your baby has been born (congratulations!), be alert for any symptoms of group B Strep infection.

Trust your instincts: if your baby shows any signs consistent with group B Strep infection, immediately call your GP or go to the nearest Paediatric Accident & Emergency Department. And tell them your group B Strep history. Early diagnosis and treatment are essential – delay can be fatal.

REMEMBER: MOST GROUP B STREP INFECTIONS IN NEWBORN BABIES ARE PREVENTABLE

Group B Strep Support is a national charity providing free information materials to families and health professionals. It has no financial links with any laboratory or pharmaceutical company. It believes:

- Every pregnant woman should be informed about group B Strep as a routine part of her antenatal care
- All low-risk Mums should be offered a sensitive test for group B Strep carriage at 35-37 weeks of pregnancy. Where not available on the NHS, Mums should be told of their availability privately (see www.gbss.org.uk/test)
- Intravenous antibiotics in labour should be offered to all mums whose babies are at increased risk of group B Strep infection

Following a screening approach could prevent over **80%** of group B Strep infections in newborn babies. Fewer than **60%** are potentially preventable using the current risk-based strategy. Most newborn babies who develop group B Strep infection display none of the risk factors which prompt the offer of intravenous antibiotics in labour using the RCOG's strategy. Screening would mean fewer group B Strep infections in babies, preventing death, disability and infection, and saving NHS resources.

For more information about group B Strep, ask your midwife, GP, obstetrician or contact us: www.gbss.org.uk 01444 416176

