

Where infection of the membranes is diagnosed or suspected (called "chorioamnionitis"), or where there is premature prolonged rupture of membranes, broad-spectrum intravenous antibiotics should be given which include adequate GBS cover.

2 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.
 - If completely healthy, no antibiotics for the baby are required.
 - A period of monitoring (12-24 hours) may be appropriate for those at highest risk of infection.
 - Parents should be made aware of the early signs of infection and given a handout about GBS.
- **Babies born at increased/high risk to Mums who HAVE received antibiotics for less than 2 hours before delivery should be:**
 - Examined thoroughly and investigated by a Paediatrician as appropriate.
 - Observed for a minimum of 12 hours, ideally 24 hours.
 - If completely healthy, no antibiotics for the baby are required (antibiotics should be administered if there is any doubt).
- **Babies whose gestational age is less than or equal to 36 completed weeks of pregnancy and are born by Caesarean section (not in labour, no broken waters) and antibiotics given to Mum for less than 2 hours before delivery should be:**
 - Examined thoroughly by a Paediatrician and a full sepsis work up done.
 - Started on intravenous antibiotics unless a robust examination determines baby is completely healthy.
 - Reviewed at 48 hours.
- **For well babies at highest risk of infection, monitoring (12-24 hours) may be appropriate.**

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 he/she is not infected.

Oral antibiotics during pregnancy for GBS carriage have **not** been shown to be effective at preventing GBS infections in babies.

Caesareans are not recommended to prevent GBS infection in babies. Intravenous antibiotics in labour are effective and safer than a Caesarean, which carries risks for both the baby and (especially) the mother. Moreover, Caesareans do not completely

eliminate the risk of GBS infection in newborn babies, although the risk is sufficiently low that it is not necessary to give the mother antibiotics beforehand against GBS unless the waters have broken or Mum is feverish or in labour.

During a future pregnancy, Mum should make sure her GP, midwife and obstetrician are all aware of her history and agree a pregnancy and birth plan with them that includes what should happen to address the risk of GBS.

For more information about GBS, speak with your health professionals or contact:



Group B Strep Support

Preventing life-threatening group B Strep infection in newborn babies

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www.gbss.org.uk
(Free downloadable information)

Regd charity No: 1112065 Regd company No: 5587535

Group B Strep Support is a national charity providing accurate and up-to-date information on GBS for families and health professionals. GBSS has no financial links with any laboratory.

GBSS believes:

- Every Mum in the UK should be informed about GBS as a routine part of her antenatal care.
- All low-risk Mums should be offered a sensitive test for GBS carriage at 35-37 weeks of pregnancy on the NHS (and, until GBS-specific tests are available, Mums should be told of its availability privately – see www.gbss.org.uk/test).
- All Mums whose babies are at higher risk of GBS infection, including those found to carry GBS during the current pregnancy, should be offered intravenous antibiotics in labour.

This approach could prevent **over 80%** of GBS infection in newborn babies, as compared with **less than 60%** of GBS infection in newborn babies being prevented using risk factors alone. Not only would many more horrible GBS infections be prevented, it would also save NHS resources.

Key Medical References – see www.gbss.org.uk/research

Understanding your baby's group B Strep infection

This leaflet aims to answer some of the questions you may have if your baby has been diagnosed with a group B Streptococcal (GBS) infection

What is group B Streptococcus?

Group B Streptococcus (GBS or group B Strep) is a very common bacterium, occurring naturally in men and women and typically causes no harm or symptoms.

What is GBS carriage?

Carrying GBS (GBS colonisation or carriage) is normal – up to one in every three people carries GBS in the gut and up to one in four women in both the vagina and gut. Carriage can come and go. No treatment is required for GBS carriage (until labour starts).

What is GBS infection?

GBS infection occurs most often in babies shortly before, during or after birth, though thankfully this is not common. Young babies are particularly at risk from GBS infections because their immune systems are immature. Untreated, around one in every 1,000 babies develops GBS infection. With prompt medical care, most sick babies recover fully but up to 10% of infected babies die and some



survivors suffer long term problems.

GBS infection in newborn babies usually presents as septicaemia (blood poisoning), pneumonia and/or meningitis.

How is GBS infection diagnosed?

GBS infection is diagnosed by growing GBS bacteria from usually sterile body fluids, such as blood, urine or spinal fluid. These cultures normally take 24-48 hours to grow the organism. The Polymerase Chain Reaction or PCR test to detect GBS bacterial protein may be available in some institutions and is more rapid. If a baby has GBS meningitis, the cerebral spinal fluid (CSF) test will usually grow GBS.

It is important to understand that none of the tests in newborn babies is completely reliable. Occasionally the tests for GBS give "false negative" results, even though the baby has signs of infection and other blood tests indicate the presence of infection (so called inflammatory markers which may include a high or very low white blood cell count, a low platelet count or a raised C-reactive protein). When babies show symptoms consistent with GBS infection but no cultures grow GBS, doctors may make a presumed diagnosis based on the baby's clinical history.

"This leaflet provides essential information about group B Strep." says Dr Chris Steele

Early-onset GBS infection

GBS infection occurs in the first 6 days of life ("early-onset GBS infection"). Signs are apparent at or soon after birth in most and usually within the baby's first 24 hours. This usually presents as septicaemia with pneumonia.

Typically at delivery, or within a few hours, an infected baby shows signs of having difficulty breathing and may need additional oxygen. For many babies the early signs may be detected and acted upon when they are very subtle. For other babies, even when treated promptly, these oxygen requirements may increase and, in more severe cases, the baby may need a breathing machine (*artificial ventilator*). Some babies may simply stop breathing. Early-onset GBS infection may look a lot like the clinical presentation and chest X-ray appearance of an immature lung condition called respiratory distress syndrome (RDS) and may be confused with this.

Early-onset GBS infection is most common in conjunction with obstetric complications, such as prematurity, prolonged rupture of membranes and maternal fever in labour.

Early-onset GBS infection is approximately 8-9 times more common than late-onset infection. Most babies will fully recover from their early-onset GBS infection but, even with the best medical care, up to 15% die, with a small number of survivors sustaining permanent mental and/or physical problems.

Signs of early-onset GBS infection in newborn babies include:

- Grunting
- Poor feeding
- Being abnormally drowsy (lethargic)
- Being irritable
- High/Low temperature
- High/Low heart rate
- High/Low breathing rate
- Low blood pressure
- Low blood sugar

Late-onset GBS infection

Occurring after the baby is 6 days old, with the incidence declining with age, late-onset GBS infection is uncommon after the baby is 1 month old and very rare after the baby is 3 months old. Up to 90% of late-onset GBS infections include meningitis with septicaemia, although focal infections and pneumonia also occur.

Late-onset GBS infection in newborn babies is associated with prematurity, prolonged rupture of membranes, multiple births and the mother carrying GBS. Until a vaccine is developed, there are no known methods for preventing late-onset GBS infection in babies.

Late-onset GBS infection is responsible for around 1-2 in every 10 cases of GBS infection in babies and has a lower mortality rate compared with babies who develop early-onset GBS infection – approximately 5% of babies (1 in 20 babies) who develop late onset GBS infection will die as a result. Of the GBS meningitis survivors, up to half suffer long-term mental or physical problems and in 1 out of every 8 survivors of GBS meningitis, the problem is severe.

Signs of late-onset GBS infection in babies – including meningitis – may include one or more of the following:

- High temperature, fever, possibly with cold hands and feet
- Vomiting, refusing feeds or poor feeding
- High pitched moaning, whimpering cry
- Blank, staring or trance-like expression
- Pale, blotchy skin
- Baby may be floppy, may dislike being handled, be fretful
- Difficult to wake, lethargic or withdrawn
- The fontanelle (soft spot on babies' heads) may be tense or bulging.
- Turns away from bright light
- Altered breathing pattern
- Involuntary body stiffening or jerking movements

If a baby shows any of the above signs, immediately call your GP or go to the nearest Paediatric Accident & Emergency Department. Early diagnosis and treatment is essential – delay can be fatal.

GBS infection can be effectively treated

GBS infection can usually be successfully treated using aggressive intravenous antibiotic therapy and intensive care. Most babies will recover fully, especially if meningitis is not present, although some will require all the expertise of full intensive care and ventilatory support, as provided in a neonatal or paediatric intensive care unit. Not all hospitals have such units, so some babies will have to be transferred to one with these specialised facilities. Sadly, despite the best medical care, approximately 10% of babies who develop GBS infection will die.

The **minimum** recommended length of intravenous antibiotic treatment for babies diagnosed with GBS infection is usually 10 days if meningitis is not present (14 days if it is). Any other medical problems a baby has in addition to GBS infection, eg jaundice or anaemia, will also need to be treated.

If the baby is one of a multiple birth, the same treatment should be given to the other babies as preventative medicine, even if they appear well, since they are at increased risk of developing GBS infection.

A baby who has recovered from GBS infection is at a **slightly** higher risk of re-infection. A few practitioners may prescribe a daily penicillin dose for the baby for the first 3 months of life in the belief that it may prevent GBS infection. There is no evidence to support this practice, although penicillin given in this

way has been shown to reduce the risk of infection with another related bacterium, called pneumococcus, in individuals who have lost their spleens. Although this should not be routine practice, it is our medical panel's view that this may be considered to prevent reinfection with GBS in those who develop more than one episode of infection. This would need to be discussed with the baby's paediatrician.

How will GBS affect my baby?

Thankfully, with aggressive treatment, most babies with GBS infection make a full recovery, especially if meningitis is not present. However, up to half of the survivors of GBS meningitis have long-term mental or physical problems and, in about one of every 8 cases, these will be severe.

There is no evidence that GBS infection leaves a baby more likely to catch other illnesses, such as allergies, coughs, colds, colic etc but there are few data available on this. Antibiotics given to babies have however been linked with allergies as a result of changing the natural bacteria in and on the baby's body. Antibiotic therapy also increases the chances of developing bacterial resistance. This is why antibiotic therapy is only offered if there is a true risk of infection.

If you have any concerns about your baby's medical care or expected long-term outcome, please ask the doctors and nurses caring for your baby.

Handling your (or someone else's) newborn baby

Group B Strep may be carried on the skin, so everyone, whether they carry GBS or not, should wash and dry their hands properly before handling a baby during its first 3 months of life. This is good paediatric practice – not GBS-specific.

Should I breast feed my baby?

Our medical advisory panel strongly recommends Mum breastfeeds her baby. The advantages of breast-feeding will, in their opinion, greatly outweigh the remote risk of transmitting GBS through breast-feeding.

If Mum develops mastitis or a breast abscess, she should seek medical advice regarding breast-feeding.

How did my baby get GBS infection?

A baby develops GBS infection after it has been exposed to the bacterium. Where this exposure comes from may vary. If a baby developed early-onset GBS infection, the GBS bacteria will most probably have been passed from Mum to her baby during labour or, less frequently, during birth. Transmission during labour occurs if Mum is carrying GBS in her vagina when labour starts, and it either reaches the baby through ruptured membranes or very occasionally across intact membranes. Transmission during labour may occur as the baby passes down the birth canal.

If a baby develops late-onset GBS infection, the bacteria may have been passed to the baby from Mum but it might have come from someone else. Since GBS may be passed from one person to another through skin-to-skin contact, someone who touched the baby could have exposed him/her to the GBS they were carrying.

Most babies exposed to GBS don't become infected: just why some babies are susceptible to the bacteria and develop infection while others don't is not clear.

Could I have prevented my baby from becoming infected with GBS?

In the UK, up to 30% of adults carry GBS in the intestines and up to 25% of women carry GBS in both their vagina and intestines. Thankfully, GBS infection in babies is relatively rare and most babies born to women carrying GBS are completely healthy. In the UK, it is estimated that, without preventative medicine, only one in every 300 babies born to women carrying GBS in their vagina at delivery develop GBS infection.

Carrying GBS does not cause any symptoms, so a woman would not know she carried GBS unless a test had found it. Unfortunately, sensitive tests for GBS carriage are currently not routinely available in the UK, although sensitive testing is available privately and from a handful of NHS hospitals.

What should happen in a future pregnancy?

It may seem insensitive to raise the issue of a future pregnancy now, while your baby may be seriously ill, but it is vital that you know a future baby may be at risk from GBS infection and the effective prevention strategies which exist. Having and using the information in this leaflet significantly reduces the likelihood of a future baby developing GBS infection.

Giving Mums whose babies are in higher risk situations intravenous antibiotics from the start of labour and at intervals until the baby is born is very effective at preventing GBS infection in newborn babies.

When a baby has developed serious GBS infection, any future siblings will be at a substantially increased risk of developing GBS infection – approximately a one in 100 (1%) chance if *no preventative action is taken*. Our medical advisory panel therefore **strongly recommends** Mum should be given intravenous antibiotics as detailed below in any future labour.

There are small but serious risks associated with taking antibiotics, so the decision must be considered carefully and Mum must tell her health professionals if she is allergic to Penicillin or any other antibiotic.

I Treatment in labour

- **Intravenous antibiotics should be given to Mum immediately at start of labour and then at intervals until delivery to prevent GBS infection in the newborn baby.** The Royal College of Obstetricians and Gynaecologists recommends the antibiotics should be given for a minimum of 2 hours before delivery. GBSS considers this the absolute minimum, with a period in excess of 4 hours being ideal.
- **Intravenous antibiotics recommended for Mums in labour until delivery are:**
 - **Penicillin G:** 3g (or 5MU) at first and then 1.5g (or 2.5MU) at 4-hourly intervals.
 - **Clindamycin** 900 mg every 8 hours for Mums allergic to penicillin.