

## ***Group B Strep Infection***

Group B streptococcus (GBS, also called Group B strep) is a type of bacteria that can cause life-threatening infections in newborns. GBS infection occurs in about 1 in every 3,000 babies born in the United States. Infected babies usually contract GBS from their mother during vaginal delivery.

About 25 percent of pregnant women carry GBS in the vagina or rectal area. The Centers for Disease Control and Prevention (CDC) recommends that all pregnant women be screened for GBS and, when necessary, receive treatment during labor and delivery.

These steps usually can prevent the infection in newborns.

Group B streptococcus should not be confused with Group A streptococcus, which commonly causes strep throat and, rarely, a potentially deadly destruction of flesh.

### ***How does a pregnant woman get GBS?***

Anyone can carry GBS, but few become sick from it. GBS lives in the lower genital tract or gastrointestinal system, along with many other bacteria that are harmless to most people. The bacterium causes illness primarily in pregnant women and their babies and, occasionally, in the elderly and in adults with other illnesses, such as cancer and diabetes.

### ***How does a baby become infected with GBS?***

There are two forms of GBS infection in infants:

- Early-onset
- Late-onset

Babies with early-onset infection develop symptoms within seven days of birth, most commonly within the first day of life. Babies with late-onset infection develop symptoms between 7 days and 3 months of age.

About half of all GBS infections in newborns are early-onset. Early-onset infections almost always are transmitted from mother to baby around the time of delivery. Late-onset infections can be contracted at delivery or acquired after birth from contact with the mother or other people who are GBS carriers.

If an untreated pregnant woman carries GBS in her vagina or rectum at the time of labor and delivery, there is a 1-in-200 chance that her baby will become sick from GBS infection. The risk rises to 4 in 100 if an untreated pregnant woman carries GBS and has certain risk factors. These include:

- Preterm delivery (before 37 weeks gestation)
- Membranes (bag of waters) ruptured for longer than 18 hours before delivering the baby
- Fever (100.4# F or higher) during labor

Other risk factors include having a previous pregnancy resulting in a GBS-infected baby or having a urinary tract infection caused by GBS. Babies who become sick with GBS infection may take the bacterium into their bodies by ingesting GBS-containing amniotic or vaginal fluids during labor and delivery.

### ***What are the symptoms of GBS infection in the newborn?***

Babies with an early-onset infection suffer from one or more of the following conditions: pneumonia, sepsis (blood infection) and, less commonly, meningitis (infection of the membranes surrounding the brain). Babies with a late-onset infection usually have sepsis or meningitis.

In spite of treatment with antibiotics, 3 to 5 percent of babies with GBS die. Premature babies are more likely to die from the illness than full-term babies. Most babies who survive GBS go on to develop normally. However, among those who develop meningitis, 25 to 50 percent suffer lasting neurologic damage that can include cerebral palsy, sight and hearing loss, mental retardation, learning disabilities and seizures.

### ***How can newborn GBS infection be prevented?***

All pregnant women should be screened for GBS at 35 to 37 weeks of pregnancy. (Women who had a previous baby with GBS infection or a urinary tract infection caused by GBS in the current pregnancy do not need screening. These women require treatment.) The health care provider takes a swab of the vagina and rectum and sends the sample to a laboratory for a culture to test for the presence of GBS. Test results are usually available in 24 to 48 hours. Women who test positive for GBS, and certain other women known to be at high risk of having an infected baby, are treated with intravenous (through a vein) antibiotics during labor and delivery. Treatment is recommended for women who:

- Had a previous baby with GBS infection
- Had a urinary tract infection caused by GBS in the current pregnancy
- Had a screening test in the current pregnancy that was positive for GBS
- Go into labor before the results of the GBS test are available, or before they have been tested, and have any of the following risk factors:
  - Preterm labor (less than 37 weeks)
  - Membranes (bag of waters) ruptured for longer than 18 hours before delivering the baby
  - Fever of at least 100.4° F during labor

Taking oral antibiotics before labor is not recommended because the bacteria can return quickly.

When a woman who has had a positive GBS test goes to the hospital for delivery, she should remind the providers of her test result so she can be treated promptly. Treatment appears most effective when it begins at least four hours before delivery.

If a woman who carries GBS is having a cesarean delivery before the onset of labor and before rupture of membranes, her health care provider may decide that she does not need to be treated with intravenous antibiotics.

### ***What antibiotics are used during labor and delivery to prevent GBS infection in the baby?***

Penicillin is the preferred drug. A related antibiotic called ampicillin is an alternative. Other antibiotics should be substituted in women who are allergic to penicillin. While

these drugs are generally considered safe for mother and baby, studies suggest that up to 10 percent of women treated with penicillin will have a mild allergic reaction (usually a rash), and 1 in 10,000 will have a serious allergic reaction (anaphylactic shock), which requires prompt treatment and, in rare instances, can be fatal.

Women who are allergic to penicillin usually are treated with a cephalosporin drug called cefazolin. However, a small number of individuals who are allergic to penicillin are also allergic to cephalosporins.

If the health care provider believes the woman is at high risk for a serious allergic reaction, he should treat her with erythromycin or clindamycin, as long as lab tests show that the GBS bacterium is not resistant to these drugs. If her infection cannot be treated with these drugs (a small number of cases are resistant), she should be treated with vancomycin.

### ***Can GBS cause complications in the mother, unrelated to newborn infection?***

GBS can cause uterine infection before or after delivery. Infection before delivery is called chorioamnionitis and causes fever, uterine tenderness and increased heart rate in the baby. This infection is treated with antibiotics.

However, before delivery, a uterine infection may be symptomless and, therefore, not detected. The infection may increase the risk of:

- Premature rupture of the membranes (PROM)(before 37 weeks gestation)
- Preterm labor
- Stillbirth

After delivery, the symptoms of a uterine infection include fever, abdominal pain and rapid pulse. With antibiotic treatment, a postpartum (after delivery) uterine infection usually subsides in a few days. Women who are screened and treated for GBS during labor and delivery are less likely to develop postpartum uterine infections).

GBS also can cause a urinary tract infection during pregnancy. Symptoms of a urinary tract infection include fever and pain and burning during urination. Some women have a symptomless urinary tract infection, which may be diagnosed during a routine urine test during a prenatal visit.

Women with a urinary tract infection caused by GBS should be treated with oral (by mouth) antibiotics during pregnancy. They also should be treated with intravenous antibiotics during labor and delivery, as they are likely to have high levels of the bacterium in the vagina.

***Do babies of women treated for GBS in labor require additional treatment?***

Most babies of treated women do not require special treatment after birth unless they have symptoms of developing sepsis. However, if the mother is diagnosed with a uterine infection (chorioamnionitis) during labor and delivery, her baby should be tested for GBS. The baby often is treated with antibiotics while waiting for the results of the test.

***What research is being conducted on preventing GBS infections in newborns?***

Researchers are seeking to develop vaccines, to be given before or during pregnancy, to prevent GBS infection in mothers and their babies. Researchers also are developing highly accurate rapid screening tests that can be used during labor.

Most currently available rapid tests are not considered accurate enough to be practical in identifying women who should receive antibiotic treatment in labor. However, one new rapid test does appear to detect more than 90 percent of women who carry GBS (6).

Accurate rapid tests may be especially beneficial for:

- Women in preterm labor for whom culture testing is not useful because of the time it takes to receive test results
- Women who have not had prenatal care (and so did not receive a GBS test)