

## **What's the Deal with Group Beta Streptococcus (GBS)**

### **What is Group Beta Strep (GBS)?**

Group B Streptococcus (GBS) is a type of bacteria that is found in the intestine, vagina and rectum of 10-30% of healthy pregnant women. GBS should not be confused with Group A Strep which causes strep throat and skin infections. A person whose body carries GBS bacteria but who does not show signs of infection is said to be “colonized” with GBS. GBS colonization is not contagious. GBS bacteria are a normal part of the commonly found bacteria in the human body. Usually, the presence of GBS does not cause problems. GBS is usually asymptomatic during pregnancy but can occasionally cause urinary tract infections, infections in the womb and amniotic fluid and postpartum infections. In certain circumstances, however, GBS bacteria can invade the body and cause a serious infection, this is referred to as GBS disease.

### **Who May be Affected by Group B Strep Disease?**

Approximately 19,000 newborns and adults in the United States will contract serious GBS disease each year, resulting in bloodstream, respiratory, and other severe or devastating infections. About half of all GBS disease occurs in newborns and is acquired during childbirth.

### **How do Babies get GBS?**

Typically, babies are exposed to GBS during labor and delivery after the amniotic sac (bag of waters) has broken if the bacteria are present in the mother's vagina. The bacteria can travel upward from the vagina to the uterus. Babies may also be exposed passing through the birth canal. There is also evidence that GBS may cross intact membranes to expose the baby while it is still in the womb during pregnancy and/or labor.

### **What Are Risk Factors that may put my Baby at Greater Risk for GBS Infection?**

- Positive Culture for GBS Bacteria colonization at 35-37 weeks Gestational Age (GA)
- Membranes Rupture (having your water break) more than 18 hours before delivery
- Developing a fever during labor of higher than 100.4°F/38°C
- Labor or membrane rupture before 37 weeks GA
- GBS bacteria in urine (bacteruria – with or without symptoms)
- A history of a baby with GBS disease or infection

### **What happens to babies born with GBS bacteria?**

Although approximately 50% of newborns born to maternal carriers will be colonized at birth, immunity in the form of maternal antibodies passed from mother to child protect the majority of healthy newborns from developing infection. At birth, 1% to 2% of newborns born to colonized women will develop Early-onset Neonatal Group B Streptococcal disease (EONS). About half of the cases of Group B Strep disease among newborns happen in the first week of life, and most of these cases start a few hours after birth. Sepsis, pneumonia (infection in the lungs), and meningitis (infection of the fluid and lining around the brain) are the most common problems. EONS is the leading cause of neonatal sepsis and one of the most common causes of infectious morbidity and mortality in neonates.

Premature babies are more at risk of getting a group B strep disease, but most babies who

become sick from group B strep are full-term. Group B strep disease may also develop in infants one week to several months after birth as Late-Onset GBS Disease (LONS). Meningitis is more common with late-onset group B strep disease. Only about half of late-onset group B strep disease among newborns comes from a mother who is a group B strep carrier; the source of infection for others with late-onset group B strep disease can be hard to figure out. Late-onset disease is slightly less common than early-onset disease. In 2001, 1,700 babies contracted GBS disease, and of those, almost 4.5% (80 babies) died. In 2009 2.7/10,000 live births contracted EONS. Of the babies that survive GBS-related meningitis many will develop long term medical problems.

### **How do I know if I Have GBS?**

Around 36 weeks of pregnancy, the CDC recommends that a vaginal and rectal culture be taken with a sterile q-tip, which is inserted 2cm into the vagina and about 1cm into the anus. The test results are usually ready in 2-3 days. Unfortunately, it is not perfect and may miss a number of women (approximately 5%) who carry GBS. Fortunately, it is accurate in detecting colonization and will not give a false positive result. A positive culture results means that the mother is colonized with GBS. It does not mean that she has GBS disease or that her baby will develop GBS disease. Rather, a positive result means that a woman and her provider need to plan for her labor and birth with this test result in mind. Occasionally, GBS is found in a woman's urine with a urine culture. Also, GBS is a transient bacterium that comes and goes from the flora of any given person.

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

If your vaginal culture or urine test is positive for GBS, the CDC recommends treating you with antibiotics to prevent disease of the newborn, with Penicillin usually through the vein (IV) during labor and after your amniotic sac has broken. GBS is very sensitive to antibiotics and the goal is to reduce the amount of bacteria in the birth canal during labor to reduce the risk of transmission of this bacterium to your baby. A woman who tests positive for GBS has a 1 in 200 chance of delivering a baby with GBS infection if antibiotics are not given. When treated with antibiotics, this risk decreases to a 1 in 4,000 chance of delivering a baby with GBS infection. If the GBS screen is positive and women are given antibiotics there is still a chance that their baby will contract GBS disease. Similarly, if a woman tests negative there is still a chance that the baby can contract GBS disease. Some people experience a severe allergic reaction, anaphylaxis, to antibiotics. Estimates of the rate of maternal death from anaphylaxis range from 4/10,000 to 4/100,000 and 10% of adults have less severe allergic reactions to penicillin.

There is no perfect solution for GBS disease. No method of screening or antibiotic treatment will completely eliminate the chance of a baby getting GBS. There are alternative ways to decrease the colony count of GBS in urine reproductive tract, such as using chlorhexidine (hibiclens) washes vaginally in early labor. This method has been studied and appears to decrease the transmission of GBS to the baby, but does not decrease the incidence of EONS or neonatal mortality.

### **Resources:**

American College of Nurse Midwives (2003). Early-onset Group B Strep Infection in newborns:

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prevention and prophylaxis. ACNM Clinical Bulletin 2. Journal of Midwifery and Women's Health, 48(5), 375.,

CDC website: <http://www.cdc.gov/groupbstrep/default.htm>

Stade B, Shah V, Ohlsson A. (2004); Vaginal chlorhexidine during labour to prevent early-onset neonatal group B streptococcal infection. Cochrane Database Syst Rev.

Handouts from Michelle Wellborn and Tenaya Jackman

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### My/Our Decision for GBS Testing and Treatment

**I/we understand that there is no "perfect" answer for the issue of Group B strep** – no perfect screening program, no perfect protocol which can specifically identify and prevent all GBS disease; no drug or other treatment that is 100% effective in treating a baby who develop a GBS infection after birth.

**I/we understand the CDC's position on universal screening for GBS.** There are also adaptations of the CDC-approved methods, as well as a host of alternative methods not currently established as effective by the scientific literature. Every choice has its own risks & unintended consequences. I/we understand that it is our responsibility to decide which approach to use to manage the GBS risk in this pregnancy, including the choice to decline, after being fully informed, all diagnostic procedures, protocols or prophylactic treatments. However, **if symptoms of an infection develop during labor or after the birth, my midwife will be required to transfer my care (or my baby's) to an appropriate medical facility. I have satisfactorily had my questions answered and believe that I can make an informed decision regarding GBS testing. I understand the limitations of home-based midwifery care relative to the issue of GBS prophylaxis.**

Date: \_\_\_\_\_

I/We plan to:

Screen for GBS

If I test positive, I want to start antibiotics at the onset of active labor or when my membranes release

I want to start antibiotics using the risk based screening factors, if my membranes are released for 18 or more hours, I develop a fever, or my baby develops any signs of infection, prior to delivery.

If I test positive, I want to use chlorhexidine vaginal washes to decrease the risk of transmission of GBS to my baby, and understand that it has not been proven to diminish risk of EONS or mortality

If I test positive, I choose to decline any antibiotics in labor, unless I or my baby develop signs of infection, at which point I agree to transport to the hospital.

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Mother's signature: \_\_\_\_\_

Partner's signature: \_\_\_\_\_

Witness signature: \_\_\_\_\_