

# STREPTOCOCCUS GROUP B BETA HEMOLYTIC (NEONATAL)

## Disease Overview

*Streptococcus agalactiae*, also known as Group B *Streptococcus* (GBS), is a  $\beta$ -hemolytic Gram positive cocci and an opportunistic pathogen that colonizes the gastrointestinal and genitourinary tracts of 10-30 % of pregnant women (Heyman's). While GBS is not usually a concern for the mother, this infection represents a very significant cause of neonatal morbidity and mortality.

## Symptoms

While most babies are not affected by the bacteria, a very small number (1- 2%) of these babies will go on to develop a GBS infection. GBS infection produces two different clinical presentations in neonates: early-onset neonatal sepsis (EONS) and late-onset neonatal sepsis (LONS).

Clinical Comparison Between Early- and Late-onset Neonatal Sepsis

	Early-onset Neonatal Sepsis	Late-onset Neonatal Sepsis
Time of presentation	Within 24 hours of birth (range, 0 to day 6 of life)	4–5 weeks of age (range, 7–89 days)
Clinical manifestations	Generalized sepsis, pneumonia, meningitis	Bacteremia without focus, meningitis, focal infection (septic arthritis, osteomyelitis, pneumonia, cellulitis, adenitis)

## Mode of Transmission

Transmission from mother to infant occurs shortly before or during delivery, and is responsible for cases of EONS. After delivery, person-to-person transmission can occur and is responsible for approximately half of LONS.

## Incubation Period

- Early onset disease: Usually occurs within the first 24 hours of life (range 0-6 days).
- Late onset disease: occurs typically at 3 to 4 weeks of age (range 7 days to 3 months).

## Period of Communicability

GBS is transmissible throughout the perinatal and intrapartum periods.

## Risk Factors

Susceptibility of the newborn is based on both maternal and neonatal risk factors.

Maternal risk factors:

- preterm labour (i.e., start prior to 37 weeks gestation),
- premature rupture of membranes (i.e., before 37 weeks gestation),

- membranes ruptured more than 18 hours before delivery,
- GBS bacteriuria during current pregnancy,
- fever higher than 38° C during labour,
- previous infant with GBS infection,
- maternal poverty,
- pre-eclampsia,
- cardiac disease and/or
- diabetes.

Neonatal risk factors:

- prematurity (i.e., < 37 weeks gestation),
- very low birth weight infants (1000–1499 gm) are at much greater risk with up to 3% infected and mortality rate of up to 30%,
- prolonged neonatal hospitalization,
- endotracheal intubation, assisted ventilation and/or
- surgery (presence of surgical wounds and drains).

**Note:** Approximately half of infected neonates have none of these risk factors, 75% of affected infants are full term.

## Surveillance Case Definition

### Confirmed case:

- Clinical illness in an infant less than 1 month of age with laboratory confirmation of infection: isolation of group B *Streptococcus* (*Streptococcus agalactiae*) from a normally sterile site (such as blood or cerebrospinal fluid)

OR

- demonstration of group B *Streptococcus* DNA in a normally sterile site

### Probable case

Clinical illness in an infant less than 1 month of age with laboratory confirmation of infection:

- detection of group B *Streptococcus* antigen in a normally sterile site

## Diagnosis and Laboratory Guidelines

Diagnosis is by culture and isolation of GBS from blood, cerebrospinal fluid or other normally sterile body fluid.

## Reporting

Per Policy 2.2 Disease and Event Notification to OCMOH and Disease and Event Reporting section.

- Routine Surveillance (RDSS). Only illness up to **1 month of age** is reportable under the *Public Health Act*



## **Case Management**

Consult with pediatric infectious disease specialist for case management

### **Education**

Not applicable

### **Investigation**

Not applicable for individual/sporadic cases

### **Exclusion/Social Distancing**

Not applicable

### **Immunization**

No vaccine is available

### **Treatment**

Antibiotic treatment under guidance of the attending clinician.

## **Contact Management**

### **Education**

Not applicable

### **Investigation**

Not applicable for individual/sporadic cases

### **Exclusion/Social Distancing**

Not applicable

### **Prophylaxis**

Not applicable

### **Immunization**

Not applicable

## **Outbreak Management**

Outbreaks have occurred through nosocomial transmission. If an outbreak is suspected or confirmed, activate the local outbreak plan.