



Bacterial Meningitis Tip Sheet

Background

Meningitis is an inflammation (swelling) of the protective membranes that cover the brain and spinal cord. Different types of bacterial or viral infections of the fluid surrounding the brain and spinal cord can cause meningitis. It is important to know the specific cause of meningitis because the treatment differs depending on the cause. Meningitis caused by bacteria can be deadly and requires immediate medical attention. Vaccines are available to protect against some kinds of bacterial meningitis.

Several types of bacteria can cause meningitis. Leading causes in the United States include:

- *Streptococcus pneumoniae*
- Group B *Streptococcus*
- *Neisseria meningitidis*
- *Haemophilus influenzae*
- *Listeria monocytogenes*
- *Escherichia coli*
- *Mycobacterium tuberculosis*

Clinical Description

Bacterial meningitis symptoms include sudden onset of:

- Fever
- Headache
- Stiff neck

There are often other symptoms, such as:

- Nausea
- Vomiting
- Photophobia (eyes being more sensitive to light)
- Altered mental status (confusion)

Newborns and babies may not have, or it may be difficult to notice the classic symptoms listed above.

Instead, babies may:

- Be slow or inactive
- Be irritable
- Vomit
- Feed poorly
- Have a bulging fontanelle (the “soft spot” on a baby’s head)
- Have abnormal reflexes

Typically, symptoms of bacterial meningitis develop within 3 to 7 days after exposure; note, this is not true for TB meningitis, which can develop 1 week to 1 month after exposure to the bacteria.

Transmission

Most of these bacteria are spread through person-to-person transmission but some can be transmitted via contaminated food.

How people spread the germs often depends on the type of bacteria. Here are some of the most common examples of how people spread each type of bacteria to each other:

- *Group B Streptococcus* and *E. coli*: Mothers can pass these bacteria to their babies during birth.
- *H. influenzae*, *M. tuberculosis*, and *S. pneumoniae*: People spread these bacteria by coughing or sneezing while in close contact with others, who breathe in the bacteria.
- *N. meningitidis*: People spread these bacteria by sharing respiratory or throat secretions (saliva or spit). This typically occurs during close (coughing or kissing) or lengthy (e.g., living together in a household) contact.
- *E. coli*: By eating contaminated food.
- *L. monocytogenes*: By eating contaminated food.

Investigating a Case

Cases with an infectious organism identified in a sterile site, such as the cerebral spinal fluid or blood, should be reported on their specific reportable disease condition form in MDSS. However, if the case is infected with a bacterial species in which there is not an existing MDSS form, Meningitis Bacterial Other can be used. See the table below for additional guidance and links to disease specific investigation guidance:

Infectious Agent Identified in sterile site (e.g., CSF or blood)	Reportable Condition
<i>Cronobacter sakazakii</i> (in infant <12 months old)	Cronobacter (infant)
<i>Cronobacter sakazakii</i> (non-infant)	Meningitis – Bacterial Other
<i>Neisseria meningitidis</i>	Meningococcal disease
<i>Streptococcus pyogenes</i> (Group A)	Streptococcal Disease Invasive, Group A
<i>Haemophilis influenzae</i>	H. Influenzae Disease – Invasive
<i>Listeria monocytogenes</i>	Listeriosis
<i>Staphylococcus aureus</i>	Meningitis – Bacterial Other
<i>Streptococcus pneumoniae</i> – Drug resistance testing done and resistance found	Streptococcus pneumoniae, Drug Resistant
<i>Streptococcus pneumoniae</i> – Drug resistance testing done and no resistance found	Streptococcus pneumoniae, Invasive
<i>Streptococcus</i> Group B	Meningitis – Bacterial Other
<i>Escherichia coli</i>	Meningitis – Bacterial Other
<i>Mycobacterium tuberculosis</i>	Tuberculosis

Additional Resources

- [CDC Bacterial Meningitis Page](#)
- [Meningitis, Other Bacterial Case Definition](#)