

# Meningitis in children

Some forms of meningitis can very quickly lead to brain damage or death. Meningitis caused by some viruses, is, fortunately, much milder. In all cases, immediate medical attention is needed.

## WHAT IS MENINGITIS?

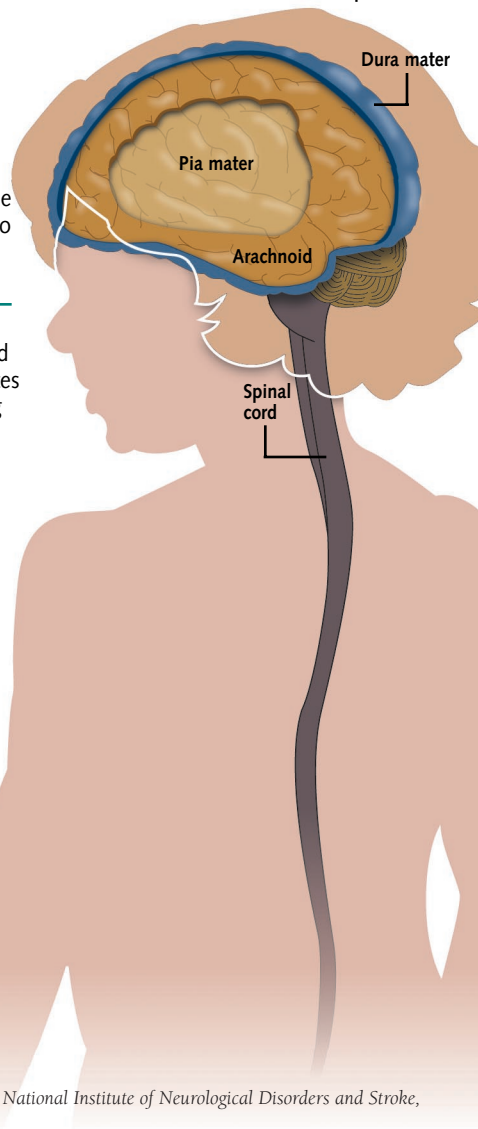
Meningitis refers to inflammation of the **meninges** (membranes that cover the brain and spinal cord). It results from infection from microorganisms, which typically reach the meninges through the bloodstream, often from an infection somewhere else in the body. Your doctor can diagnose meningitis by testing a sample of spinal fluid. Symptoms may be harder to detect in infants and young children.

## TYPES OF MENINGITIS:

- **Viral meningitis** – usually relatively mild and far more common in the United States than bacterial meningitis, often occurring in epidemics in the winter months. It generally requires no treatment and usually clears up within 2 weeks.
- **Bacterial meningitis** - can be life-threatening and needs prompt treatment. Today, ***Streptococcus pneumoniae*** and ***Neisseria meningitidis*** (**meningococcus**) are the leading causes of bacterial meningitis, which can occur as isolated cases or epidemics. Before the 1990s, ***Haemophilus influenzae type b*** was the leading cause of meningitis in children under age 6 in the United States. But vaccines given to children as part of their routine immunizations have reduced the incidence of this type of meningitis. In newborns, group B streptococcus and other bacteria, such as ***E. coli***, can cause meningitis.

A study in the April 28, 1999, issue of JAMA looks at a promising vaccine for a particular type of meningitis. Vaccines for meningitis are primarily used during outbreaks and are not used routinely for children.

The meninges are made up of 3 membranes that cover the brain and spinal cord:



## SYMPTOMS:

- A newborn can be irritable or lethargic, and not eat. An infant can have fever and be irritable. The soft spot on the head (**fontanelle**) may be bulging and taut, instead of slightly sunken as it usually is. An older child can have severe and persistent headache and/or a stiff neck, become unusually quiet or withdrawn, show sensitivity to bright light, feel nauseated, or vomit.
- In bacterial meningitis, the symptoms develop rapidly, sometimes over a few hours, and are followed by drowsiness and sometimes loss of consciousness. In about half the cases, there may be a deep red or purplish rash.
- In viral meningitis, the symptoms are milder and may resemble the flu.

## PREVENTION:

Vaccines are available for certain strains of bacterial meningitis and may be helpful in controlling an epidemic or for people traveling to certain areas. Those who come into close contact with infected people (such as family members) may be given antibiotics to protect against infection. Other things you can do are avoid direct contact with an infected person's oral secretions (through coughing or kissing) and wash your hands thoroughly and often.

## FOR MORE INFORMATION:

- Centers for Disease Control and Prevention  
National Center for Infectious Diseases  
[www.cdc.gov/ncidod](http://www.cdc.gov/ncidod)
- Meningitis Foundation of America  
800/668-1129 or [www.musa.org](http://www.musa.org)

## INFORM YOURSELF:

To find this and previous JAMA Patient Pages, check out the AMA's Web site at [www.ama-assn.org/consumer.htm](http://www.ama-assn.org/consumer.htm).

Additional Sources: AMA's Encyclopedia of Medicine, National Institute of Neurological Disorders and Stroke, National Center for Infectious Diseases

Mi Young Hwang, Writer

Richard M. Glass, MD, Editor

Jeff Molter, Director of Science News

The JAMA Patient Page is a public service of JAMA and the AMA. The information and recommendations appearing on this page are appropriate in most instances; but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, JAMA and AMA suggest that you consult your physician. This page may be reproduced noncommercially by physicians and other health care professionals to share with patients. Any other reproduction is subject to AMA approval. To purchase bulk reprints, call 212/354-0050.

