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Meningitis

Also called: Spinal meningitis

Meningitis is inflammation of the thin tissue that surrounds the brain and spinal cord, called the meninges. There are several types of meningitis. The most common is viral meningitis. You get it when a virus enters the body through the nose or mouth and travels to the brain. Bacterial meningitis is rare but can be deadly. It usually starts with bacteria that cause a cold-like infection. It can cause [stroke](https://medlineplus.gov/stroke.html) [https://medlineplus.gov/stroke.html] , [hearing loss](https://medlineplus.gov/hearingdisordersanddeafness.html) [https://medlineplus.gov/hearingdisordersanddeafness.html] , and brain damage. It can also harm other organs. Pneumococcal infections [https://medlineplus.gov/pneumococcalinfections.html] and meningococcal infections [https://medlineplus.gov/meningococcalinfections.html] are the most common causes of bacterial meningitis.

Anyone can get meningitis, but it is more common in people with weak immune systems. Meningitis can get serious very quickly. You should get medical care right away if you have:



- A sudden high fever
- A severe headache
- A stiff neck
- Nausea or vomiting

Early treatment can help prevent serious problems, including death. Tests to diagnose meningitis include blood tests, imaging tests, and a spinal tap to test cerebrospinal fluid. Antibiotics can treat bacterial meningitis. Antiviral medicines may help some types of viral meningitis. Other medicines can help treat symptoms.



There are vaccines to prevent some of the bacterial infections that cause meningitis.

NIH: National Institute of Neurological Disorders and Stroke

Start Here

- **Inflamed Brain: Recognizing Encephalitis and Meningitis** [https://newsinhealth.nih.gov/2019/04/inflamed-brain]  (National Institutes of Health)
Also in Spanish [https://salud.nih.gov/recursos-de-salud/nih-noticias-de-salud/el-cerebro-inflamado]
- **Meningitis** [https://www.ninds.nih.gov/health-information/disorders/meningitis]  (National Institute of Neurological Disorders and Stroke)




Diagnosis and Tests

- **Bacteria Culture Test** [https://medlineplus.gov/lab-tests/bacteria-culture-test/]  (National Library of Medicine)
Also in Spanish [https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-cultivo-de-bacterias/]
- **Cerebrospinal Fluid (CSF) Analysis** [https://medlineplus.gov/lab-tests/cerebrospinal-fluid-csf-analysis/]  (National Library of Medicine)
Also in Spanish [https://medlineplus.gov/spanish/pruebas-de-laboratorio/analisis-del-liquido-cefalorraquideo/]

Meningococcal Disease Tests [<https://medlineplus.gov/lab-tests/meningococcal-disease-tests/>]

 (National Library of Medicine)


Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/pruebas-de-la-enfermedad-meningococica/>]

- **Nasal Swab** [<https://medlineplus.gov/lab-tests/nasal-swab/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/hisopado-nasal/>]
- **Procalcitonin Test** [<https://medlineplus.gov/lab-tests/procalcitonin-test/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-procalcitonina/>]
- **Spinal Tap (Lumbar Puncture)** [<https://kidshealth.org/en/parents/emmi-lumbar-puncture.html>]  (Nemours Foundation)
- **Ultrasound: Head (For Parents)** [<https://kidshealth.org/en/parents/ultrasound-head.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/ultrasound-head.html>]

Prevention and Risk Factors

- **Haemophilus Influenzae Type b (Hib) Vaccine: What You Need to Know** [<https://www.cdc.gov/vaccines/hcp/current-vis/downloads/hib.pdf>] (Centers for Disease Control and Prevention) - **PDF**
Also in Spanish [https://www.immunize.org/wp-content/uploads/vis/spanish_hib.pdf]
- **Meningococcal ACWY Vaccine: What You Need to Know** [<https://www.cdc.gov/vaccines/hcp/current-vis/downloads/mening.pdf>] (Centers for Disease Control and Prevention) - **PDF**
Also in Spanish [https://www.immunize.org/wp-content/uploads/vis/spanish_meningococcal.pdf]
- **Pneumococcal Conjugate Vaccine: What You Need to Know** [<https://www.cdc.gov/vaccines/hcp/current-vis/downloads/pcv.pdf>] (Centers for Disease Control and Prevention) - **PDF**
Also in Spanish [https://www.immunize.org/wp-content/uploads/vis/pdf/spanish_pcv.pdf]
- **Pneumococcal Polysaccharide Vaccine (PPSV23): What You Need to Know** [<https://www.cdc.gov/vaccines/hcp/current-vis/downloads/ppv.pdf>] (Centers for Disease Control and Prevention) - **PDF**
Also in Spanish [https://www.immunize.org/wp-content/uploads/vis/spanish_ppsv.pdf]



Related Issues

- **Encephalitis** [<https://www.ninds.nih.gov/health-information/disorders/encephalitis>]
 (National Institute of Neurological Disorders and Stroke)
Also in Spanish [<https://www.ninds.nih.gov/es/health-information/disorders/encefalitis>]
- **Travelers' Health: Meningococcal Disease** [<https://www.cdc.gov/yellow-book/hcp/travel-associated-infections-diseases/meningococcal-disease.html>] (Centers for Disease Control and Prevention)

Specifics

- **About Bacterial Meningitis** [<https://www.cdc.gov/meningitis/about/bacterial-meningitis.html>]
(Centers for Disease Control and Prevention)
- **About Fungal Meningitis** [<https://www.cdc.gov/meningitis/about/fungal-meningitis.html>]
(Centers for Disease Control and Prevention)
- **About Parasitic Meningitis** [<https://www.cdc.gov/meningitis/about/parasitic-meningitis.html>]
(Centers for Disease Control and Prevention)
- **About Viral Meningitis** [<https://www.cdc.gov/meningitis/about/viral-meningitis.html>] (Centers for Disease Control and Prevention)
- **Arachnoiditis** [<https://www.ninds.nih.gov/health-information/disorders/arachnoiditis>]
 (National Institute of Neurological Disorders and Stroke)
- **Meningitis** [<https://www.who.int/news-room/fact-sheets/detail/meningitis>] (World Health Organization)
Also in Spanish [<https://www.who.int/es/news-room/fact-sheets/detail/meningitis>]
- **Subacute and Chronic Meningitis** [<https://www.merckmanuals.com/home/brain-spinal-cord-and-nerve-disorders/meningitis/subacute-and-chronic-meningitis>] (Merck & Co., Inc.)
Also in Spanish [<https://www.merckmanuals.com/es-us/hogar/enfermedades-cerebrales-medulares-y-nerviosas/meningitis/meningitis-subaguda-y-cr%C3%B3nica>]

Clinical Trials



- ClinicalTrials.gov: Meningitis [<https://clinicaltrials.gov/search?cond=%22Meningitis%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Meningitis, Aseptic [<https://clinicaltrials.gov/search?cond=%22Meningitis,+Aseptic%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

Journal Articles

References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Burden of meningitis and encephalitis in Iran from 1990 to 2021:... [<https://www.ncbi.nlm.nih.gov/pubmed/40597995>]
- Article: Global, regional, and national burden of meningitis among children, 1990-2021: An... [<https://www.ncbi.nlm.nih.gov/pubmed/40554606>]
- Article: Analysis of extraocular muscle volumes in idiopathic hypertrophic pachymeningitis patients. [<https://www.ncbi.nlm.nih.gov/pubmed/40299826>]
- Meningitis -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Meningitis%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bdat%5D+NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

Find an Expert

- National Institute of Allergy and Infectious Diseases [<https://www.niaid.nih.gov/>] 
- National Institute of Neurological Disorders and Stroke [<https://www.ninds.nih.gov/>] 

Children

- Meningitis (For Parents) [<https://kidshealth.org/en/parents/meningitis.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/meningitis.html>]
- Vaccines and Cochlear Implants [<https://kidshealth.org/en/parents/cochlear-immunizations.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/cochlear-immunizations.html>]

Teenagers

- Meningitis [<https://kidshealth.org/en/teens/meningitis.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/teens/meningitis.html>]

Women

- Meningococcal Vaccines and Pregnancy [<https://mothertobaby.org/fact-sheets/meningococcal-disease-bacterial-meningitis-vaccine-pregnancy/>] (Organization of Teratology Information Specialists)
Also in Spanish [<https://mothertobaby.org/es/hojas-informativas/vacuna-contr-la-enfermedad-meningococica-meningitis-bacteriana/>]

Patient Handouts

- Cerebral spinal fluid (CSF) collection [<https://medlineplus.gov/ency/article/003428.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003428.htm>]
- Cerebrospinal fluid culture [<https://medlineplus.gov/ency/article/003769.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003769.htm>]
- Gram-negative meningitis [<https://medlineplus.gov/ency/article/000610.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000610.htm>]
- H influenzae meningitis [<https://medlineplus.gov/ency/article/000612.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000612.htm>]

Meningitis [<https://medlineplus.gov/ency/article/000680.htm>] (Medical Encyclopedia)

Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000680.htm>]

- **Meningitis - cryptococcal** [<https://medlineplus.gov/ency/article/000642.htm>] (Medical Encyclopedia)

Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000642.htm>]

- **Meningococcal ACWY Vaccine: What You Need to Know** [<https://www.cdc.gov/vaccines/hcp/current-vis/downloads/mening.pdf>] (Centers for Disease Control and Prevention) - **PDF**

Also in Spanish [https://www.immunize.org/wp-content/uploads/vis/spanish_meningococcal.pdf]

- **Pneumococcal Conjugate Vaccine: What You Need to Know** [<https://www.cdc.gov/vaccines/hcp/current-vis/downloads/pcv.pdf>] (Centers for Disease Control and Prevention) - **PDF**

Also in Spanish [https://www.immunize.org/wp-content/uploads/vis/pdf/spanish_pcv.pdf]

- **Pneumococcal Polysaccharide Vaccine (PPSV23): What You Need to Know** [<https://www.cdc.gov/vaccines/hcp/current-vis/downloads/ppv.pdf>] (Centers for Disease Control and Prevention) - **PDF**

Also in Spanish [https://www.immunize.org/wp-content/uploads/vis/spanish_ppsv.pdf]



MEDICAL ENCYCLOPEDIA

Cerebral spinal fluid (CSF) collection [<https://medlineplus.gov/ency/article/003428.htm>]

Cerebrospinal fluid culture [<https://medlineplus.gov/ency/article/003769.htm>]

CSF analysis [<https://medlineplus.gov/ency/article/003369.htm>]

CSF cell count [<https://medlineplus.gov/ency/article/003625.htm>]

CSF smear [<https://medlineplus.gov/ency/article/003768.htm>]

Gram-negative meningitis [<https://medlineplus.gov/ency/article/000610.htm>]

H influenzae meningitis [<https://medlineplus.gov/ency/article/000612.htm>]

Meningitis [<https://medlineplus.gov/ency/article/000680.htm>]

Meningitis - cryptococcal [<https://medlineplus.gov/ency/article/000642.htm>]

Meningitis - tuberculous [<https://medlineplus.gov/ency/article/000650.htm>]

Meningococcal meningitis [<https://medlineplus.gov/ency/article/000608.htm>]

Pneumococcal meningitis [<https://medlineplus.gov/ency/article/000607.htm>]

Sinus x-ray [<https://medlineplus.gov/ency/article/003803.htm>]

Staphylococcal meningitis [<https://medlineplus.gov/ency/article/000613.htm>]

Subdural effusion [<https://medlineplus.gov/ency/article/001422.htm>]

Syphilitic aseptic meningitis [<https://medlineplus.gov/ency/article/000724.htm>]

Related Health Topics

Encephalitis [<https://medlineplus.gov/encephalitis.html>]

Haemophilus Infections [<https://medlineplus.gov/haemophilusinfections.html>]

Meningococcal Disease [<https://medlineplus.gov/meningococcaldisease.html>]

Pneumococcal Infections [<https://medlineplus.gov/pneumococcalinfections.html>]

National Institutes of Health

The primary NIH organization for research on *Meningitis* is the National Institute of Neurological Disorders and Stroke [<http://www.ninds.nih.gov/>]

Other Languages

Find health information in languages other than English [<https://medlineplus.gov/languages/meningitis.html>] on *Meningitis*

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