



[Home](#) → [Health Topics](#) → [Viral Infections](#)

URL of this page: <https://medlineplus.gov/viralinfections.html>

Viral Infections

What are viruses?

Viruses are very tiny germs. They are made of genetic material (either DNA [<https://medlineplus.gov/genetics/understanding/basics/dna/>] or RNA) inside of a protein coating. There are a huge number of viruses on earth. Only a small number of them can infect humans. Those viruses can infect our cells, which may cause disease. Some of the diseases that viruses can cause include the common cold [<https://medlineplus.gov/commoncold.html>] , the flu [<https://medlineplus.gov/flu.html>] , COVID-19 [<https://medlineplus.gov/covid19coronavirusdisease2019.html>] , and HIV [<https://medlineplus.gov/hiv.html>] .

How are viruses spread?

Viruses can be spread in different ways:

- Through droplets and particles that are breathed out by someone who has the infection. You might breathe in the droplets or particles, or they could land on your mouth, nose, or eyes.
- By touching surfaces or objects that have the virus on them and then touching your mouth, nose, or eyes.
- From the pregnant parent to the baby during pregnancy [<https://medlineplus.gov/infectionsandpregnancy.html>] .
- Through contaminated food or water [<https://medlineplus.gov/foodborneillness.html>] .
- By being bitten by an infected insect [<https://medlineplus.gov/insectbitesandstings.html>] or animal.
- Through sexual contact [<https://medlineplus.gov/sexuallytransmittedinfections.html>] (usually vaginal, anal and oral sex) with someone who has the infection.

How do viruses cause disease?

Viruses are like hijackers. They invade living, normal cells. They then use those cells to multiply (make copies of themselves). This process is also called replication. The process can kill, damage, or change the infected cells. Sometimes this can make you sick. The symptoms can range from mild to very severe. Other times, your immune system [<https://medlineplus.gov/immunesystemanddisorders.html>] may be able to fight it off and you may not have any symptoms.

Each different virus usually only infects one type of cell in your body. For example, hepatitis [<https://medlineplus.gov/hepatitis.html>] viruses affect the cells in the liver. HIV infects a certain type of immune system cell.

What are the treatments for viral infections?

For most viral infections, treatments can only help with symptoms while you wait for your immune system to fight off the virus. There are antiviral medicines to treat some viral infections. Antibiotics [<https://medlineplus.gov/antibiotics.html>] do not work for viral infections.

Can viral infections be prevented?

Vaccines [<https://medlineplus.gov/vaccines.html>] can help prevent you from getting many viral diseases. You may be able to prevent some viral infections by:





- Proper hand washing [<https://medlineplus.gov/germsandhygiene.html>] .
- Paying attention to food safety [<https://medlineplus.gov/foodsafety.html>] .

- Cleaning surfaces [<https://medlineplus.gov/cleaningdisinfectingandsanitizing.html>] that may be infected with germs.
- Avoiding contact with wild animals.
- Preventing insect bites by using insect repellent when you go outdoors. If you travel to an area that has a high risk of diseases from insect bites, also wear long pants, shirts, and socks.
- Practicing safe sex (using a condom every time you have anal, vaginal, or oral sex).
- Avoiding close contact with people who are sick.



Start Here

- Bacterial vs. Viral Infections: How Do They Differ? [<https://www.mayoclinic.org/diseases-conditions/infectious-diseases/expert-answers/infectious-disease/FAQ-20058098?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/infectious-diseases/expert-answers/infectious-disease/faq-20058098?p=1>]
- Overview of Viral Infections [<https://www.merckmanuals.com/home/infections/overview-of-viral-infections/overview-of-viral-infections>] (Merck & Co., Inc.)
Also in Spanish [<https://www.merckmanuals.com/es-us/hogar/infecciones/introducci%C3%B3n-a-las-infecciones-virales/introducci%C3%B3n-a-las-infecciones-virales>]


Diagnosis and Tests

- Immunoglobulins Blood Test [<https://medlineplus.gov/lab-tests/immunoglobulins-blood-test/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-sangre-de-inmunoglobulinas/>]
- PCR Tests [<https://medlineplus.gov/lab-tests/pcr-tests/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/pruebas-de-pcr/>]
- Rapid Tests [<https://medlineplus.gov/lab-tests/rapid-tests/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/pruebas-rapidas/>]
- Respiratory Pathogens Panel [<https://medlineplus.gov/lab-tests/respiratory-pathogens-panel/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/panel-de-patogenos-respiratorios/>]

Prevention and Risk Factors

- Germs and Hygiene: MedlinePlus Health Topic [<https://medlineplus.gov/germsandhygiene.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/germsandhygiene.html>]
- Infection Control: MedlinePlus Health Topic [<https://medlineplus.gov/infectioncontrol.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/infectioncontrol.html>]

Related Issues

- A New Vaccine is Here to Protect You and Your Loved Ones from RSV This Winter [<https://magazine.medlineplus.gov/article/a-new-vaccine-is-here-to-protect-you-and-your-loved-ones-from-rsv-this-winter>] 
Also in Spanish [<https://magazine.medlineplus.gov/es/art%C3%ADculo/una-nueva-vacuna-contr-el-vsr-les-confiere-proteccion-a-usted-y-a-sus-seres-queridos-durante-esta-temporada-de-invierno>]
- How a Virus Infects the Body [<https://www.nationaljewish.org/NJH/media/pdf/How-a-Virus-Infects-the-Body-Infographic.pdf>] *Infographic* (National Jewish Health) - PDF
- Infection Control Basics [<https://www.cdc.gov/infection-control/about/>] (Centers for Disease Control and Prevention)
- Viruses that Can Lead to Cancer [<https://www.cancer.org/cancer/risk-prevention/infections/infections-that-can-lead-to-cancer/viruses.html>] (American Cancer Society)

Specifics


- About Adenovirus [<https://www.cdc.gov/adenovirus/about/>] (Centers for Disease Control and Prevention)

About Enterovirus D68 [<https://www.cdc.gov/non-polio-enterovirus/about/about-enterovirus-d68.html>]

(Centers for Disease Control and Prevention)

- About Hand, Foot, and Mouth Disease [<https://www.cdc.gov/hand-foot-mouth/about/>]
(Centers for Disease Control and Prevention)
Also in Spanish [<https://www.cdc.gov/hand-foot-mouth/es/about/acerca-de-la-enfermedad-de-manos-pies-y-boca.html>]
- About Human Parainfluenza Viruses (HPIVs) [<https://www.cdc.gov/parainfluenza/about/>]
(Centers for Disease Control and Prevention)
- Clearing the Air: All About Airborne Viruses [<https://newsinhealth.nih.gov/2023/12/clearing-air>]
 (National Institutes of Health)
Also in Spanish [<https://salud.nih.gov/recursos-de-salud/nih-noticias-de-salud/aclarando-el-aire>]
- HTLV-1-Associated Myelopathy (HAM)/Tropical Spastic Paraparesis (TSP) [<https://www.ninds.nih.gov/health-information/disorders/htlv-1-associated-myelopathy-hamtropical-spastic-paraparesis-tsp>]
 (National Institute of Neurological Disorders and Stroke)
- Human Metapneumovirus (hMPV) [<https://www.lung.org/lung-health-diseases/lung-disease-lookup/human-metapneumovirus-hmpv>] (American Lung Association)
- Molluscum Contagiosum [<https://www.cdc.gov/molluscum-contagiosum/about/>] (Centers for Disease Control and Prevention)
- Non-Polio Enterovirus [<https://www.cdc.gov/non-polio-enterovirus/>] (Centers for Disease Control and Prevention)






Genetics

- Genomics and Virology [<https://www.genome.gov/about-genomics/fact-sheets/Genomics-and-Virology>]
 (National Human Genome Research Institute)

Images

- Molluscum Contagiosum [<https://skinsight.com/skin-conditions/molluscum-contagiosum/?lmiw9cApl=1>] (VisualDX)
- Viral Exanthem [<https://skinsight.com/skin-conditions/viral-exanthem/?lmiw9cApl=1>] (VisualDX)

Clinical Trials

- ClinicalTrials.gov: Adenoviridae Infections [<https://clinicaltrials.gov/search?cond=%22Adenoviridae+Infections%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Coxsackievirus Infections [<https://clinicaltrials.gov/search?cond=%22Coxsackievirus+Infections%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Enterovirus [<https://clinicaltrials.gov/search?cond=%22Enterovirus%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Hand, Foot and Mouth Disease [<https://clinicaltrials.gov/search?cond=%22Hand,+Foot+and+Mouth+Disease%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Virus Diseases [<https://clinicaltrials.gov/search?cond=%22Virus+Diseases%22&aggFilters=status:not%20rec>]  (National Institutes of Health)


Journal Articles

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

- Article: Epidemiological characteristics of acute viral and mycoplasma respiratory infections in Yongzhou,... [<https://www.ncbi.nlm.nih.gov/pubmed/40746698>]
- Article: Drugs Used in the Treatment of Viral Infections for the Prevention... [<https://www.ncbi.nlm.nih.gov/pubmed/40746413>]
- Article: vPro-MS enables identification of human-pathogenic viruses from patient samples by untargeted... [<https://www.ncbi.nlm.nih.gov/pubmed/40744923>]

Viral Infections -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Virus+Diseases%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+2+Years%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

- Centers for Disease Control and Prevention [<https://www.cdc.gov/>]
Also in Spanish [<https://www.cdc.gov/spanish/>]
- National Foundation for Infectious Diseases [<https://www.nfid.org/>]
- National Institute of Allergy and Infectious Diseases [<https://www.niaid.nih.gov/>] 

Children

- Adenovirus [<https://kidshealth.org/en/parents/adenovirus.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/adenovirus.html>]
- Coxsackievirus Infections (For Parents) [<https://kidshealth.org/en/parents/coxsackie.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/coxsackie.html>]
- Enterovirus Infections (For Parents) [<https://kidshealth.org/en/parents/enteroviruses.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/enteroviruses.html>]
- Hand, Foot, and Mouth Disease [<https://skinsight.com/skin-conditions/hand-foot-and-mouth-disease/infant/?lmiw9cApl=1>] (VisualDX)
- Parechovirus (For Parents) [<https://kidshealth.org/en/parents/parechovirus.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/parechovirus.html>]
- Roseola (Sixth Disease) [<https://skinsight.com/skin-conditions/roseola-sixth-disease/infant/?lmiw9cApl=1>] (VisualDX)
- Viral Exanthem [<https://skinsight.com/skin-conditions/viral-exanthem/infant/?lmiw9cApl=1>] (VisualDX)

Patient Handouts

- ECHO virus [<https://medlineplus.gov/ency/article/001340.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/001340.htm>]
- Enterovirus D68 [<https://medlineplus.gov/ency/patientinstructions/000782.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000782.htm>]
- Hand-foot-mouth disease [<https://medlineplus.gov/ency/article/000965.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000965.htm>]
- Herpangina [<https://medlineplus.gov/ency/article/000969.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000969.htm>]
- Molluscum contagiosum [<https://medlineplus.gov/ency/article/000826.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000826.htm>]
- Parainfluenza [<https://medlineplus.gov/ency/article/001370.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/001370.htm>]
- Roseola [<https://medlineplus.gov/ency/article/000968.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000968.htm>]



MEDICAL ENCYCLOPEDIA

ECHO virus [<https://medlineplus.gov/ency/article/001340.htm>]

ELISA blood test [<https://medlineplus.gov/ency/article/003332.htm>]

Enterovirus D68 [<https://medlineplus.gov/ency/patientinstructions/000782.htm>]

Hand-foot-mouth disease [<https://medlineplus.gov/ency/article/000965.htm>]

Herpangina [<https://medlineplus.gov/ency/article/000969.htm>]

Lymph node culture [<https://medlineplus.gov/ency/article/003737.htm>]

Molluscum contagiosum [<https://medlineplus.gov/ency/article/000826.htm>]

Parainfluenza [<https://medlineplus.gov/ency/article/001370.htm>]

Roseola [<https://medlineplus.gov/ency/article/000968.htm>]

Subacute thyroiditis [<https://medlineplus.gov/ency/article/000375.htm>]

Related Health Topics

Acute Flaccid Myelitis [<https://medlineplus.gov/acuteflaccidmyelitis.html>]

Chickenpox [<https://medlineplus.gov/chickenpox.html>]

Chikungunya [<https://medlineplus.gov/chikungunya.html>]

Common Cold [<https://medlineplus.gov/commoncold.html>]

COVID-19 (Coronavirus Disease 2019) [<https://medlineplus.gov/covid19coronavirusdisease2019.html>]

Croup [<https://medlineplus.gov/croup.html>]

Cytomegalovirus Infections [<https://medlineplus.gov/cytomegalovirusinfections.html>]

Dengue [<https://medlineplus.gov/dengue.html>]

Ebola [<https://medlineplus.gov/ebola.html>]

Fifth Disease [<https://medlineplus.gov/fifthdisease.html>]

Flu [<https://medlineplus.gov/flu.html>]

Hantavirus Infections [<https://medlineplus.gov/hantavirusinfections.html>]

Hemorrhagic Fevers [<https://medlineplus.gov/hemorrhagicfevers.html>]

Hepatitis A [<https://medlineplus.gov/hepatitisa.html>]

Hepatitis B [<https://medlineplus.gov/hepatitisb.html>]

Hepatitis C [<https://medlineplus.gov/hepatitisc.html>]

Herpes Simplex [<https://medlineplus.gov/herpessimplex.html>]

HIV [<https://medlineplus.gov/hiv.html>]

HPV [<https://medlineplus.gov/hpv.html>]

Infectious Mononucleosis [<https://medlineplus.gov/infectiousmononucleosis.html>]

Measles [<https://medlineplus.gov/measles.html>]

Mpox [<https://medlineplus.gov/mpox.html>]

Mumps [<https://medlineplus.gov/mumps.html>]

Norovirus Infections [<https://medlineplus.gov/norovirusinfections.html>]

Polio and Post-Polio Syndrome [<https://medlineplus.gov/polioandpostpoliosyndrome.html>]

Rabies [<https://medlineplus.gov/rabies.html>]

Respiratory Syncytial Virus Infections [<https://medlineplus.gov/respiratorysyncytialvirusinfections.html>]

Rotavirus Infections [<https://medlineplus.gov/rotavirusinfections.html>]

Rubella [<https://medlineplus.gov/rubella.html>]

Shingles [<https://medlineplus.gov/shingles.html>]

Vaccines [<https://medlineplus.gov/vaccines.html>]

Warts [<https://medlineplus.gov/warts.html>]

West Nile Virus [<https://medlineplus.gov/westnilevirus.html>]

Zika Virus [<https://medlineplus.gov/zikavirus.html>]

National Institutes of Health

The primary NIH organization for research on *Viral Infections* is the National Institute of Allergy and Infectious Diseases [<http://www.niaid.nih.gov/>]

MedlinePlus links to health information from the National Institutes of Health and other federal government agencies.

MedlinePlus also links to health information from non-government Web sites. See our disclaimer

[<https://medlineplus.gov/disclaimers.html>] about external links and our quality guidelines

[<https://medlineplus.gov/criteria.html>] .

The information on this site should not be used as a substitute for professional medical care or advice. Contact a health care provider if you have questions about your health.

[Learn how to cite this page](#)