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Bacterial Infections

What are bacteria?

Bacteria are tiny organisms (living things) that have only one cell. Under a microscope, they look like balls, rods, or spirals. They can be found almost everywhere on Earth. There are lots of bacteria in and on your body. In fact, your body has about 10 times more bacteria cells than human cells.

There are many different types of bacteria. Most types don't make you sick. Some types are helpful. For example, "good" bacteria in your digestive system can help your body digest food and absorb vitamins [<https://medlineplus.gov/vitamins.html>] and minerals [<https://medlineplus.gov/minerals.html>] . They can help protect you from getting sick. Bacteria are also used in making foods like yogurt and cheese.

But some types of bacteria can cause an infection and make you sick. They are called infectious bacteria. These bacteria can reproduce quickly in your body. Many of them give off toxins (poisons) that can damage your cells and make you sick. Other types can move into and damage your tissues. A few examples of bacteria that cause infections include *Streptococcus* [<https://medlineplus.gov/streptococcalinfections.html>] , *Staphylococcus* [<https://medlineplus.gov/staphylococcalinfections.html>] , and *E. coli* [<https://medlineplus.gov/ecoliinfections.html>] .

How do bacterial infections spread?

There are different ways that bacterial infections may spread:

- 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 bacteria on them and then touching your mouth, nose, or eyes.
- Through cuts, scrapes, and skin-to-skin contact with someone who has the infection.
- 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 [<https://medlineplus.gov/animalbites.html>] .
- Through sexual contact [<https://medlineplus.gov/sexuallytransmittedinfections.html>] (usually vaginal, anal and oral sex) with someone who has the infection.

What are the treatments for bacterial infections?

Sometimes your immune system may be able to fight off a bacterial infection. But when you do need treatment, it will be with antibiotics [<https://medlineplus.gov/antibiotics.html>] .

When you take antibiotics, follow the directions carefully. Each time you take them, there is a risk that the bacteria will become resistant to the effects of the antibiotics. This is called **antibiotic resistance** [<https://medlineplus.gov/antibioticresistance.html>] . When this happens, the bacteria are not killed, and they continue to grow. They can cause resistant infections, which can be difficult, and sometimes impossible, to treat.

Can bacterial infections be prevented?

You can help prevent some bacterial infections by:

- Getting vaccines [<https://medlineplus.gov/vaccines.html>] that protect against bacterial infections.
- Having good hygiene habits [<https://medlineplus.gov/germsandhygiene.html>] . These include washing your hands often and covering your mouth and nose when coughing or sneezing.
- Paying attention to food safety [<https://medlineplus.gov/foodsafety.html>] .
- Cleaning and disinfecting surfaces [<https://medlineplus.gov/cleaningdisinfectingandsanitizing.html>] that you frequently touch.
- Preventing insect bites by using a U.S. Environmental Protection Agency (EPA)-registered 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. This means using a latex condom every time you have anal, vaginal, or oral sex. If your or your partner is allergic to latex [<https://medlineplus.gov/latexallergy.html>] , you can use polyurethane condoms.
- Avoiding close contact with people who are sick.

Start Here

- Germs: Understand and Protect against Bacteria, Viruses, and Infections [<https://www.mayoclinic.org/diseases-conditions/infectious-diseases/in-depth/germs/ART-20045289?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/infectious-diseases/in-depth/germs/art-20045289?p=1>]

Diagnosis and Tests

- Acid-Fast Bacillus (AFB) Tests [<https://medlineplus.gov/lab-tests/acid-fast-bacillus-afb-tests/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/pruebas-de-bacilos-acidorresistentes-baar/>]
- 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/>]
- Calprotectin Stool Test [<https://medlineplus.gov/lab-tests/calprotectin-stool-test/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-calprotectina-fecal/>]
- Gram Stain [<https://medlineplus.gov/lab-tests/gram-stain/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/tincion-de-gram/>]
- 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/>]
- 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/>]
- 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/>]
- 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/>]
- Protein Electrophoresis by Immunofixation Blood Test [<https://medlineplus.gov/lab-tests/immunofixation-ife-blood-test/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/electroforesis-de-proteinas-por-inmunofijacion-en-sangre/>]
- 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/>]
- Sputum Culture [<https://medlineplus.gov/lab-tests/sputum-culture/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/cultivo-de-esputo/>]
- White Blood Cell (WBC) in Stool [<https://medlineplus.gov/lab-tests/white-blood-cell-wbc-in-stool/>]  (National Library of Medicine)

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>]

Treatments and Therapies

- **Antibiotics:** MedlinePlus Health Topic [<https://medlineplus.gov/antibiotics.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/antibiotics.html>]

Related Issues

- **Antibiotic Resistance:** MedlinePlus Health Topic [<https://medlineplus.gov/antibioticresistance.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/antibioticresistance.html>]
- **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>]
- **Infection Control Basics** [<https://www.cdc.gov/infection-control/about/>] (Centers for Disease Control and Prevention)
- **Probiotics: Usefulness and Safety** [<https://www.nccih.nih.gov/health/probiotics-usefulness-and-safety>]  (National Center for Complementary and Integrative Health)
- **What Is Sepsis?** [<https://www.nigms.nih.gov/education/fact-sheets/Pages/sepsis>]  (National Institute of General Medical Sciences)

Specifics

- **About Brucellosis** [<https://www.cdc.gov/brucellosis/about/>] (Centers for Disease Control and Prevention)
- **About Elizabethkingia** [<https://www.cdc.gov/elizabethkingia/about/>] (Centers for Disease Control and Prevention)
- **About Leptospirosis** [<https://www.cdc.gov/leptospirosis/about/>] (Centers for Disease Control and Prevention)
- **About Melioidosis** [<https://www.cdc.gov/melioidosis/about/>] (Centers for Disease Control and Prevention)
- **About Necrotizing Fasciitis** [<https://www.cdc.gov/group-a-strep/about/necrotizing-fasciitis.html>] (Centers for Disease Control and Prevention)
Also in Spanish [<https://www.cdc.gov/group-a-strep/es/about/acerca-de-la-fascitis-necrosante.html>]
- **About Pseudomonas aeruginosa** [<https://www.cdc.gov/pseudomonas-aeruginosa/about/>] (Centers for Disease Control and Prevention)
- **About Q Fever** [<https://www.cdc.gov/q-fever/about/>] (Centers for Disease Control and Prevention)
- **About Vibrio Infection** [<https://www.cdc.gov/vibrio/about/>] (Centers for Disease Control and Prevention)
- **Anaerobic Infections** [<https://www.healthychildren.org/English/health-issues/conditions/infections/Pages/Anaerobic-Infections.aspx>] (American Academy of Pediatrics)
Also in Spanish [<https://www.healthychildren.org/spanish/health-issues/conditions/infections/paginas/anaerobic-infections.aspx>]
- **Necrotizing Skin Infections** [<https://www.merckmanuals.com/home/skin-disorders/bacterial-skin-infections/necrotizing-skin-infections>] (Merck & Co., Inc.)
Also in Spanish [<https://www.merckmanuals.com/es-us/hogar/trastornos-de-la-piel/infecciones-bacterianas-de-la-piel/infecciones-necrosantes-de-la-piel>]
- **Yaws** [<https://www.who.int/en/news-room/fact-sheets/detail/yaws>] (World Health Organization)
Also in Spanish [<https://www.who.int/es/news-room/fact-sheets/detail/yaws>]

Images

- Hot Tub Rash (Pseudomonas Folliculitis) [<https://skinsight.com/skin-conditions/pseudomonas-folliculitis-hot-tub-folliculitis/?Imiw9cApl=1>] (VisualDX)

Clinical Trials

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

Journal Articles

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

- Article: Burden of bacterial lower respiratory tract infections in hospitalized children and... [<https://www.ncbi.nlm.nih.gov/pubmed/40745284>]
- Article: Development of a machine learning-based prediction model for serious bacterial infections... [<https://www.ncbi.nlm.nih.gov/pubmed/40738607>]
- Article: Soluble Neuropilin-1 as a Marker for Distinguishing Bacterial and Viral Sepsis... [<https://www.ncbi.nlm.nih.gov/pubmed/40733612>]
- Bacterial Infections -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Bacterial+Infections%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

- 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

- Blood Culture [<https://kidshealth.org/en/parents/labtest3.html>] (Nemours Foundation)
- Moraxella Catarrhalis: A Common Cause of Childhood Illnesses [<https://www.healthychildren.org/English/health-issues/conditions/infections/Pages/Moraxella-Catarrhalis-A-Common-Cause-of-Childhood-Illnesses.aspx>] (American Academy of Pediatrics)
- Shigella Infections (Shigellosis) [<https://kidshealth.org/en/parents/shigella.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/shigella.html>]
- What Are Germs? [<https://kidshealth.org/en/kids/germs.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/kids/germs.html>]

Teenagers

- Arcanobacterium Haemolyticum Infections [<https://www.healthychildren.org/English/health-issues/conditions/infections/Pages/Arcanobacterium-Haemolyticum-Infections.aspx>] (American Academy of Pediatrics)
Also in Spanish [<https://www.healthychildren.org/spanish/health-issues/conditions/infections/paginas/arcanobacterium-haemolyticum-infections.aspx>]
- Germs: Bacteria, Viruses, Fungi, and Protozoa [<https://kidshealth.org/en/teens/care-about-germs.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/teens/care-about-germs.html>]

Women

- Vibrio [<https://mothertobaby.org/fact-sheets/vibrio-pregnancy/>] (Organization of Teratology Information Specialists)
Also in Spanish [<https://mothertobaby.org/es/hojas-informativas/informacion-para-mujeres-embarazadas-amamantando-sobre-la-infeccion-del-vibrio/>]

Patient Handouts

- Actinomycosis [<https://medlineplus.gov/ency/article/000599.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000599.htm>]
- Bacterial vaginosis - aftercare [<https://medlineplus.gov/ency/patientinstructions/000687.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000687.htm>]
- Blood culture [<https://medlineplus.gov/ency/article/003744.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003744.htm>]
- Gram stain [<https://medlineplus.gov/ency/article/007621.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007621.htm>]
- Gram stain of skin lesion [<https://medlineplus.gov/ency/article/003760.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003760.htm>]
- Necrotizing soft tissue infection [<https://medlineplus.gov/ency/article/001443.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/001443.htm>]



MEDICAL ENCYCLOPEDIA

- Actinomycosis [<https://medlineplus.gov/ency/article/000599.htm>]
- Arterial stick [<https://medlineplus.gov/ency/article/003422.htm>]
- Bacterial vaginosis - aftercare [<https://medlineplus.gov/ency/patientinstructions/000687.htm>]
- Blood culture [<https://medlineplus.gov/ency/article/003744.htm>]
- Brucellosis [<https://medlineplus.gov/ency/article/000597.htm>]
- Complement fixation test to C. burnetii [<https://medlineplus.gov/ency/article/003520.htm>]
- Culture - duodenal tissue [<https://medlineplus.gov/ency/article/003730.htm>]
- Erysipeloid [<https://medlineplus.gov/ency/article/000632.htm>]
- Gram stain [<https://medlineplus.gov/ency/article/007621.htm>]
- Gram stain of skin lesion [<https://medlineplus.gov/ency/article/003760.htm>]
- Gram stain of tissue biopsy [<https://medlineplus.gov/ency/article/003453.htm>]
- Hot tub folliculitis [<https://medlineplus.gov/ency/article/001460.htm>]

Lepromin skin test [<https://medlineplus.gov/ency/article/003383.htm>]

Leptospirosis [<https://medlineplus.gov/ency/article/001376.htm>]

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

Lymphangitis [<https://medlineplus.gov/ency/article/007296.htm>]

Necrotizing soft tissue infection [<https://medlineplus.gov/ency/article/001443.htm>]

Nocardia infection [<https://medlineplus.gov/ency/article/000679.htm>]

Noma [<https://medlineplus.gov/ency/article/001342.htm>]

Pleural fluid Gram stain [<https://medlineplus.gov/ency/article/003722.htm>]

Psittacosis [<https://medlineplus.gov/ency/article/000088.htm>]

Pulmonary actinomycosis [<https://medlineplus.gov/ency/article/000074.htm>]

Pulmonary nocardiosis [<https://medlineplus.gov/ency/article/000083.htm>]

Q fever [<https://medlineplus.gov/ency/article/000611.htm>]

Rat-bite fever [<https://medlineplus.gov/ency/article/001348.htm>]

Rickettsialpox [<https://medlineplus.gov/ency/article/001351.htm>]

Serology for brucellosis [<https://medlineplus.gov/ency/article/003536.htm>]

Shigellosis [<https://medlineplus.gov/ency/article/000295.htm>]

Stool Gram stain [<https://medlineplus.gov/ency/article/003757.htm>]

Swimming pool granuloma [<https://medlineplus.gov/ency/article/001357.htm>]

Tularemia [<https://medlineplus.gov/ency/article/000856.htm>]

Tularemia blood test [<https://medlineplus.gov/ency/article/003523.htm>]

Typhus [<https://medlineplus.gov/ency/article/001363.htm>]

Yaws [<https://medlineplus.gov/ency/article/001341.htm>]

Related Health Topics

Antibiotics [<https://medlineplus.gov/antibiotics.html>]

Botulism [<https://medlineplus.gov/botulism.html>]

C. diff Infections [<https://medlineplus.gov/cdiffinfections.html>]

Campylobacter Infections [<https://medlineplus.gov/campylobacterinfections.html>]

Cellulitis [<https://medlineplus.gov/cellulitis.html>]

Chlamydia Infections [<https://medlineplus.gov/chlamydianfections.html>]

E. Coli Infections [<https://medlineplus.gov/ecoliinfections.html>]

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

Infection Control [<https://medlineplus.gov/infectioncontrol.html>]

Lyme Disease [<https://medlineplus.gov/lymedisease.html>]

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

Mycobacterial Infections [<https://medlineplus.gov/mycobacterialinfections.html>]

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

Salmonella Infections [<https://medlineplus.gov/salmonellainfections.html>]

[Staphylococcal Infections](https://medlineplus.gov/staphylococcalinfections.html) [<https://medlineplus.gov/staphylococcalinfections.html>]

[Streptococcal Infections](https://medlineplus.gov/streptococcalinfections.html) [<https://medlineplus.gov/streptococcalinfections.html>]

[Tetanus](https://medlineplus.gov/tetanus.html) [<https://medlineplus.gov/tetanus.html>]

[Tick Bites](https://medlineplus.gov/tickbites.html) [<https://medlineplus.gov/tickbites.html>]

[Traveler's Health](https://medlineplus.gov/travelershealth.html) [<https://medlineplus.gov/travelershealth.html>]

[Tuberculosis](https://medlineplus.gov/tuberculosis.html) [<https://medlineplus.gov/tuberculosis.html>]

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

[Whooping Cough](https://medlineplus.gov/whoopingcough.html) [<https://medlineplus.gov/whoopingcough.html>]

National Institutes of Health

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

Other Languages

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

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