

Stopping the Spread of Germs

Microbes are tiny organisms that live in plants, animals, and even the human body. Microbes that cause infectious diseases are commonly referred to as *germs* or *bugs*. Infectious diseases are responsible for more deaths worldwide than any other single cause. Health care experts estimate about \$120 billion is spent in the U.S. on medical costs annually for treating infectious diseases.

What is an infectious disease?

Some common diseases and infections include:

- Common cold
- Genital herpes
- Influenza (flu)
- Meningitis
- Pneumonia
- Shingles
- Strep throat
- Urinary tract infection

How do I know if I'm at risk?

Different types of germs spread in different ways. For example, viruses that cause colds or flu are often passed through the air by **coughing** or **sneezing**. Close contact through **kissing** can spread oral bacteria, and bacteria that cause HIV and genital herpes can be transmitted during **sexual contact**. Other sources of germs may include:

- **Touching infectious material**, such as feces
- **Household pets**, which can spread meningitis through their saliva
- **Small animals and insects**, such as rats, mosquitoes, fleas, and ticks
- **Contaminated food or water**, such as undercooked meat or water infected by animal waste
- **Transplanted animal organs**, such as pig hearts used in humans

Although anyone can spread or catch an infectious disease, including healthy people, those with a weakened immune system (eg, taking steroids,

have HIV/AIDS, very old or very young in age) may be more likely to get sick.

What are the symptoms?

Each sickness comes with its own specific set of symptoms. The most common symptoms include:

- Fatigue
- Fever
- Diarrhea
- Muscle aches

Are there complications?

Some infections can make you very sick quickly and then not bother you again, whereas others can damage body tissues and last forever.

- **Acute infections** are usually very severe and last a short time. Once the body's immune system has successfully fought off the infection, it doesn't come back.
- **Chronic infections** often develop from acute infections and can last for days to months to a lifetime. Because some people with chronic infections are unaware they are infected, they may be able to pass the germ to others.
- **Latent infections** are "hidden" or "silent" and may cause symptoms that come and go for many months or years.

Some infections—such as pneumonia, AIDS, and meningitis—can become life-threatening. A few types of infections, like human papillomavirus, *Helicobacter pylori*, and Epstein-Barr virus, have been linked to a long-term increased risk of cancer.

How can I prevent it?

To decrease the risk of infecting yourself or others:

- **Wash your hands**, especially before and after preparing food, before eating, and after using the toilet.
- **Avoid touching your hands, nose, and mouth**, which can spread airborne germs.
- **Get vaccinated** to drastically reduce your chances

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of contracting many diseases. If you plan to travel outside of the U.S., getting recommended immunizations is very important.

- **Stay home** from work, school, and errands if you are vomiting, have diarrhea, or are running a fever.
- **Prepare food safely** by keeping counters and other kitchen surfaces clean. Always cook foods to the proper recommended temperature, and promptly refrigerate any leftovers.
- **Practice safe sex.** Always use condoms if you or your partner has a history of sexually transmitted infections or high-risk behavior.
- **Don't share personal items,** such as a toothbrush, razor, drinking glass, or dining utensil.

When should I see a doctor?

You should seek medical attention if you experience any of the following:

- Have been bitten by an animal
- Are having trouble breathing
- Have been coughing for more than a week
- Have a fever over 100°F
- Have episodes of rapid heartbeat
- Experience a rash or swelling
- Have sudden vision problems
- Have been vomiting

What tests will I need?

Your doctor may order lab work or imaging scans to help determine what's causing your symptoms.

Laboratory tests

Many infectious diseases have similar signs and symptoms. Samples of your body fluids can sometimes reveal evidence of the particular microbe that's causing your illness. This helps your doctor choose the right treatment for you.

- **Blood tests.** A technician obtains a sample of your blood by inserting a needle into a vein, usually in your arm.
- **Urine tests.** This test requires you to urinate into a container.
- **Swabs.** Samples from your throat or other areas of your body may be obtained with a sterile swab.

- **Stool sample.** You may be instructed to collect a stool sample so a lab can check the sample for parasites and other organisms.
- **Spinal tap (lumbar puncture).** During this procedure a sample of your cerebrospinal fluid is obtained through a needle carefully inserted between the bones of your lower spine.

Imaging scans

- Imaging procedures—such as X-rays, CT (computerized tomography), and MRI (magnetic resonance imaging)—can help pinpoint diagnoses and rule out other conditions that may be causing your symptoms.

Biopsies

- During a biopsy, a tiny sample of tissue is taken from an internal organ for testing.

How is it treated?

Knowing what type of germ is causing your illness makes it easier for your doctor to choose appropriate treatment.

- **Antibiotics** are reserved for bacterial infections, because these types of drugs have no effect on illnesses caused by viruses.
- **Antiviral drugs** have been developed to treat some, but not all, viruses, including AIDS, herpes, hepatitis B and C, and influenza (flu).
- **Antifungals** are drugs that treat severe fungal infections, which can affect the lungs or the mucous membranes of the mouth and throat.
- **Antiparasitics** are used to treat diseases, such as malaria, caused by tiny parasites.

In addition to visiting your doctor and taking any prescribed medications, it is important to drink plenty of fluids and get plenty of rest.

The best way to prevent the spread of germs is to practice good hand hygiene. For more information, visit <http://www.cdc.gov/handwashing>.