



## What Are Germs?

Our bodies are pretty amazing. Day after day, they work hard — digesting food, pumping blood and oxygen, sending signals from our brains and much more.

But there is a group of tiny invaders that can make our bodies sick — they're called germs.

Some kids may think that germs are bugs or cooties or other gross stuff. Actually, germs are tiny organisms, or living things, that can cause disease. Germs are so small and sneaky that they creep into our bodies without being noticed. In fact, germs are so tiny that you need to use a microscope to see them. When they get in our bodies, we don't know what hit us until we have symptoms that say we've been attacked!

## What Types of Germs Are There?

Germs are found all over the world, in all kinds of places. The four major types of germs are: bacteria, viruses, fungi, and protozoa. They can invade plants, animals, and people, and sometimes they make us sick.

**Bacteria** (say: BAK-teer-ee-uh) are tiny, one-celled creatures that get nutrients from their environments in order to live. In some cases that environment is a human body. Bacteria can reproduce outside of the body or within the body as they cause infections. Some infections that bacteria can cause include ear infections, sore throats (tonsillitis or strep throat), cavities, and pneumonia (say: new-MO-nyuh).

But not all bacteria are bad. Some bacteria are good for our bodies — they help keep things in balance. Good bacteria live in our intestines and help us use the nutrients in the food we eat and make waste from what's left over. We couldn't make the most of a healthy meal without these important helper germs! Some bacteria are also used by scientists in labs to produce medicines and vaccines (say: VAK-seens).

**Viruses** (say: VY-rus-iz) need to be inside living cells to grow and reproduce. Most viruses can't survive very long if they're not inside a living thing like a plant, animal, or person. Whatever a virus lives in is called its host. When viruses get inside people's bodies, they can spread and make people sick. Viruses cause chickenpox, measles, flu, and many other diseases. Because some viruses can live for a short time on something like a doorknob or countertop, be sure to wash your hands regularly!

**Fungi** (say: FUN-guy) are multi-celled (made of many cells), plant-like organisms. Unlike other plants, fungi cannot make their own food from soil, water, and air. Instead, fungi get their nutrition from plants, people, and animals. They love to live in damp, warm places, and many fungi are not dangerous in healthy people. An example of something caused by fungi is athlete's foot, that itchy rash that teens and adults sometimes get between their toes.

**Protozoa** (say: pro-toh-ZOH-uh) are one-cell organisms that love moisture and often spread diseases through water. Some protozoa cause intestinal infections that lead to diarrhea, nausea, and belly pain.

## What Do Germs Do?

Once germs invade our bodies, they snuggle in for a long stay. They gobble up nutrients and energy, and can produce toxins (say: TOK-sinz), which are proteins that are actually like poisons. Those toxins can cause symptoms of common infections, like fevers, sniffles, rashes, coughing, vomiting, and diarrhea.

How do doctors figure out what germs are doing? They take a closer look. By looking at samples of blood, urine, and other fluids under a microscope or sending these samples to a laboratory for more tests, doctors can tell which germs are living in your body and how they are making you sick.

## How Can You Protect Yourself From Germs?

Most germs are spread through the air in sneezes, coughs, or even breaths. Germs can also spread in sweat, saliva, and blood. Some pass from person to person by touching something that is contaminated, like shaking hands with someone who has a cold and then touching your own nose.

Steering clear of the things that can spread germs is the best way to protect yourself. And that means . . .

**Hand washing!** Remember the words that germs fear — soap and water. Washing your hands well and often is the best way to beat these tiny warriors. Wash your hands every time you cough or sneeze, before you eat or prepare foods, after you use the bathroom, after you touch animals and pets, after you play outside, and after you visit a sick relative or friend.

There is a right way to wash your hands. Use warm water and soap and rub your hands together for at least 15 seconds, which is about how long it takes to sing "Happy Birthday."

Cover your nose and mouth when you sneeze and cover your mouth when you cough to keep from spreading germs. So if you have to cough, it is best to do it in your elbow so you are not contaminating your hands.

Using tissues for your sneezes and sniffles is another great weapon against germs. But don't just throw tissues on the floor to pick up later. Toss them in the trash and, again, wash your hands!

Another way to fight and prevent infections is to make sure you get all the routine immunizations from your doctor. No one likes to get shots but these help keep your immune system strong and prepared to battle germs. You can also keep your immune system strong and healthy by eating well, exercising regularly, and getting good sleep. All this will help you to be prepared to fight germs that cause illness.

Now that you know the facts about germs, you may still pick up a cough or a cold once in a while, but you'll be ready to keep most of those invading germs from moving in.

Reviewed by: Ryan J. Brogan, DO

Date reviewed: January 2015

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