

# Body Buddies: The Microbes that Live In and On Us

This article is provided courtesy of the American Museum of Natural History.



Photo Credit: NOAA

*Scientists use microscopes to examine things that are too small to be seen by the human eye.*

Try to count all the living things you can see. You might spot people, trees, a squirrel, grass, birds, or insects. But did you know that most of the life around you can't be seen? That's because most living things are microbes: tiny organisms that are invisible without a microscope.

Microbes live everywhere. They're in the water you drink, the food you eat, and the air you breathe. Right now, there are trillions of microbes in your belly and on your skin! These microbes live, feed, and reproduce in and on your body. But don't worry! Most of these microbes aren't "germs." They don't make you sick. Some of them actually help keep you healthy.

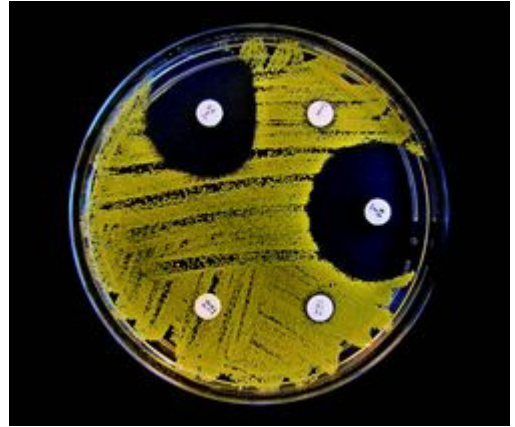


Photo Credit: Nathan Reading

*This is what X, a type of bacteria, looks like under the microscope.*

## Many Homes for Many Microbes

Many kinds of microbes live in your body: there are fungi and viruses, but most are bacteria. And different types live on different parts of your body. Take your skin as an example. You can think of your skin as a landscape with mountains, valleys, cracks, and forests. Some parts are cool and dry, and others are warm and moist. Other parts might

be smooth or rough, oily, or covered with hair.

In every part, different types of microbes find the shelter, moisture, and other nutrients they need to grow. This is happening all over your body: a unique group of microbes lives in each part of your gut, your mouth, and even your brain.

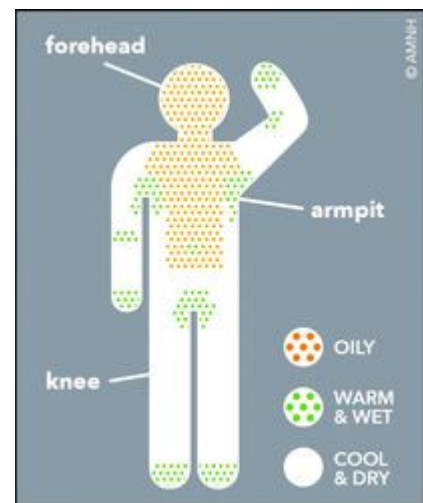


Photo Credit: AMNH

*Your skin has lots of environments. Some are oily, others are warm and moist or cool and dry.*

## Body Buddies

When you shake someone's hand or grab a doorknob, harmful microbes, called pathogens, might grab onto you. Fortunately, the helpful bacteria that live on your hands can usually fight them off. But using hand sanitizer can wipe out enough of the helpful bacteria that the harmful have a better chance of taking over. So it's better to wash your hands with soap and water, which will sweep away most pathogens. Some of your helpful bacteria will be swept away too, but will soon grow back where they belong in the palm of your hand.

Microbes are hard at work in other parts of your body too. They help protect you from pathogens, and also help you digest food, make vitamins, and even help your brain work!

That's why we need to be careful when we use antibiotics. Antibiotics are important medicines because they can kill dangerous pathogens. But they can also kill the helpful microbes in our bodies.

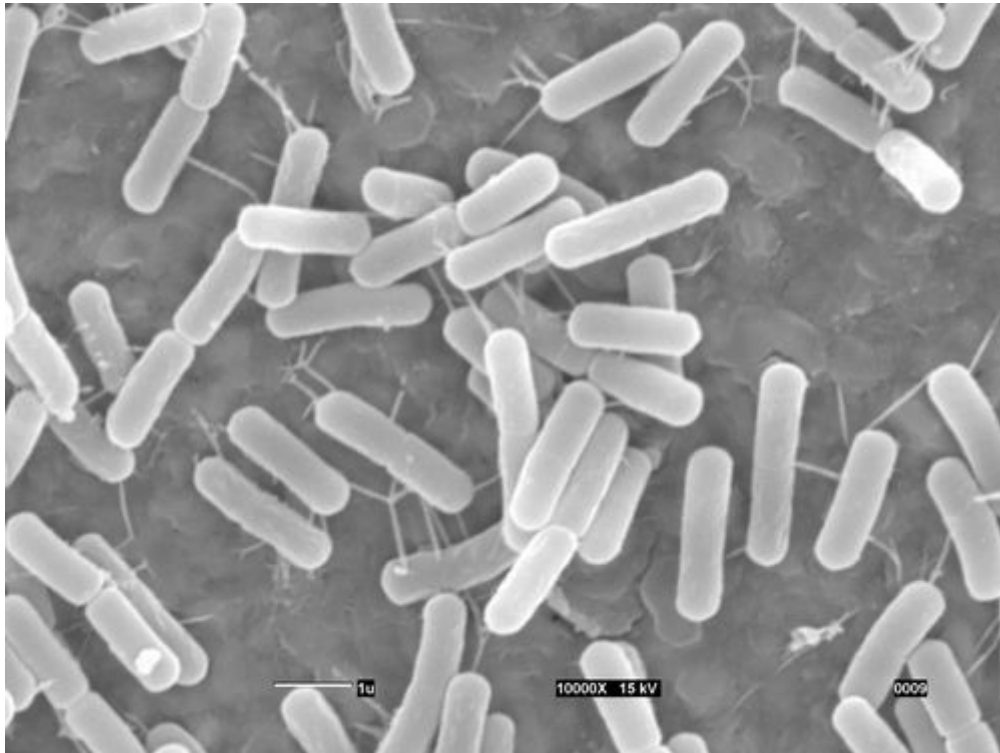


Photo Credit: iGEM

*Bacillus subtilis* is a type of bacteria typically found on skin. These bacteria don't harm us, and they may protect us from harmful pathogens.

## You are an Ecosystem!

You've probably heard of ecosystems like forests and prairies. An ecosystem is a community of living things (such as plants and animals) that interact with one another as well as with non-living things (such as air and water) in their environment. Ecosystems don't have to be large. In fact, together, your body and your microbiome make up an amazing ecosystem. Your body provides the environment for the trillions of microbes living inside you. And in return, they keep your body's systems working like they should.

Now you have a new way to think of yourself: You're more than an individual, you're a "superorganism," a community of trillions of microbes plus one human! You might feel funny about all those microbes living on you and inside of you. But remember, they're an important part of our bodies and our health.