

Safe & Healthy Food for Your Family

Division of Extension

What's got you sick? Viruses vs bacteria



It's no fun to wake up with a **sore throat** or **blocked sinuses**. Maybe you head to the doctor, and maybe you don't. Knowing whether the illness is caused by a bacterium or a virus can help you understand **possible treatment options**.

A bacterium — more commonly seen written in its plural form, **bacteria** — is a microscopic, single-celled organism. Bacteria **can exist on their own in the world**. Given the right conditions (food, warmth, the right acidity (pH), and enough time),

single-celled bacteria can grow rapidly and to high numbers. Some bacteria thrive inside humans. Healthy bacteria **known as probiotics** live in the human gut and help digest food and support the immune system. **Probiotics are found in foods like yogurt**. Some bacteria are harmful and can make us sick, an example is **Salmonella**. If we eat food containing *Salmonella*, it can make us sick.

Other bacteria that are harmful to humans cause infections such as **strep throat**, or some **ear infections**, or **urinary tract infections**. Bacterial infections can usually be identified with a doctor's test — for example, a throat culture can check for the presence of the streptococcus bacteria that causes strep throat. If you have a **bacterial infection**, the doctor may choose to **prescribe antibiotics: medicine that specifically inhibits the growth of certain types of bacteria**. Antibiotics are generally effective only against certain types of bacteria, and some bacteria can't be treated with antibiotics (it makes the infection even worse).

Viruses are also microscopic beings, but they **behave differently from bacteria**. Viruses, like the coronavirus, **can only flourish inside of a living thing, a host**. The coronavirus is composed of a type of genetic material, RNA, enclosed in a lipid membrane. **Like all other viruses, the coronavirus can not grow and multiply unless it is inside of a host**. Illnesses that result from a viral infection include the common cold or flu, Ebola and HIV.

The **biggest difference between viral and bacterial infections involves the treatment: A bacterial infection may be treated with a doctor-prescribed dose of antibiotics, while a virus does not respond to antibiotics**. Antiviral medication may help ease the symptoms of a viral infection, but it's generally up to the body's strong immune system to fight off the cause of the problem — the human body has response systems that kick into gear when an unwanted virus is detected, and is usually able to fight it off. It's important to recognize that antibiotics need to be used responsibly so that they are available to help fight diseases for which they are effective. **The CDC wants all of us to be aware of the smart use of antibiotics**.

- Antibiotic Use: Questions and Answers ([English](#)) [Español \(Spanish\)](#)
- [What's got you sick?](#) [CDC, poster]

Stay well and food-safe. Barb

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