



Information About Viral Infections

Introduction

A virus is a very tiny piece of genetic material that survives by invading the normal cells of a living host, such as a human or an animal. The most common places for viruses to enter humans are your lungs while you breathe or your mouth if the virus is on your hands and you touch your mouth. However, viruses can attack any normal cell in your body.

Once the virus enters a normal cell, it takes over the cell's function for the sole purpose of reproducing itself and spreading. This process can kill, damage, or otherwise change the cells the virus has invaded. This causes symptoms and illnesses.

Diseases caused by viruses are wide and varied. Viruses cause the common cold and serious illnesses such as chickenpox, AIDS, [measles](#), and hepatitis. Viruses can also cause less serious conditions such as warts.

How do viruses spread?

After the virus has multiplied within the host, it may be spread to others. Different viruses spread in different ways. Some viruses spread through droplets released into the air from coughing, sneezing, or even talking. Other viruses spread when your hands are contaminated with fecal matter or if there is an exchange of contaminated body fluids such as saliva or blood.

How long a virus may survive outside the host also varies based on the type of virus. The virus that causes measles can survive for several hours in the air. The virus that causes hepatitis A can survive for several weeks on hard surfaces. The influenza virus, which causes the flu, may last up to 24 hours on a hard surface. Therefore, covering your mouth when coughing or sneezing, washing your hands for at least 20 seconds, social distancing when you're sick, and other recommended preventative measures are very important for preventing the spread of viruses and viral diseases.

What is a coronavirus?

Coronavirus refers to one family of viruses that typically cause the symptoms of a common cold. However, there are certain viruses within the family that cause serious breathing problems.

The pandemic occurring today is caused by a brand new or novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Because this is a new virus, people are more susceptible to getting infected with this virus, which primarily attacks your lungs.

The virus is spread through coughing, sneezing, and breathing. It can live on certain surfaces for several days. Currently, we do not have a vaccine to prevent infection, nor do we know the best ways to treat people with the infection.

The difference between viruses and bacteria

Although bacteria and viruses can sometimes cause similar symptoms and illnesses, viruses and bacteria are very different. Bacteria are considered living organisms that can reproduce and survive in the environment by themselves. Viruses are genetic material that need hosts to reproduce and survive.

Many bacteria are harmless and do not cause disease. In fact, some bacteria live in our bodies and even help us digest our food. However, other bacteria are harmful and cause diseases such as ear infections, strep throat, and urinary tract infections.

[Antibiotics](#) treat bacterial infections but have no effect on viral infections.

There are antiviral medicines that are effective for certain viruses. For example, the medication Tamiflu, if used early, can minimize discomfort from the flu. There are medications that are highly effective in treating hepatitis C, which is a viral disease.

Vaccines for viral infections

Vaccines are the most effective weapon available to control viral diseases. Many vaccines use weakened or inactivated virus. A virus is inactivated when it is put through high heat or other methods. When a patient receives a vaccine containing weakened or inactivated virus, it will cause no or mild disease symptoms. The vaccine works by boosting your immune system to protect you if you are exposed to the virus.

Vaccines boost your immune system by creating “memory” blood cells for antibodies that will prevent the specific virus from invading your normal cells once you are exposed. There are many vaccines available that are effective in preventing or reducing the illnesses caused by viruses, including measles, mumps, rubella, polio, smallpox, rabies, yellow fever, chickenpox, shingles, [influenza](#), and hepatitis A and B infections. Vaccines also exist for some bacterial infections.

Treatments for COVID-19

SARS-CoV-2, the virus that causes the COVID-19 infection, is a new virus. Currently, researchers are working to develop a vaccine and identify [potential medications](#) to treat COVID-19.

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