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*Editorial*

## Virus evolution and transmission in animals and plants

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### EDITORIAL NOTE

A virus is a small piece of genetic material, such as DNA or RNA, encased in a protein coat. A virus can't replicate on its own. Viruses must infect cells and generate copies of themselves using the host cell's components. They frequently kill the host cell and harm the host organism in the process.

Viruses are minute particles that can be found virtually anywhere on the planet. They can be found in animals, plants, and other living beings and they can cause sickness in some cases.

Viruses do not leave any fossils, making them difficult to track down through time. Scientists compare the DNA and RNA of viruses to learn more about where they came from using molecular techniques.

Viruses developed from pieces of DNA or RNA that "escaped" from the genes of larger entities, according to the progressive, or escape, hypothesis. They were able to become self-sufficient and travel across cells as a result of this.

The virus-first hypothesis proposes that viruses emerged from sophisticated nucleic acid and protein molecules either before or simultaneously with the appearance of the first cells on Earth billions of years ago.

It's not always evident where a viral disease comes from when it first appears. SARS-CoV-2, for example, is thought to have started in bats and then spread to people, according to researchers.

Viruses can be propagated by:

- Touch: If a person has the SARS-CoV-2 virus on their hands and touches their nose, mouth, or eyes, the virus can enter the body and cause COVID-19 to form.
- Respiratory droplets: Respiratory droplets can contain

viruses. When a person speaks, coughs, or sneezes, these are produced. SARS-CoV-2 and influenza are two examples of viruses that can propagate this manner.

- Direct contact: Some viruses can be transferred by coming into direct contact with a virus-infected individual. The human papillomavirus (HPV), for example, can spread through direct skin contact. Mononucleosis (mono) is caused by the Epstein-Barr virus, which can be spread through saliva, such as kissing.

HIV, for example, can be transmitted from one person to another through the sharing of sperm or blood.

- Contaminated food or water: Nor viruses are a type of virus that can enter a person's body through contaminated food or drink.

- Mosquitoes: Mosquitoes spread the Zika virus from one person to another.

- During childbirth: A mother who has the herpes virus cytomegalovirus can transmit it on to her unborn child.

Some viruses have the ability to remain active on an object for an extended period of time. If a person with the virus on their hands contacts an object, the next person who touches the same object can contract the infection. A fomite is the name for the thing.

Viruses are responsible for a wide range of human disorders. The Epstein-Barr virus, for example, can cause mono. COVID-19. Smallpox, the common cold, various flu viruses, measles, mumps, rubella, chickenpox, hepatitis, herpes simplex virus (HSV), polio, rabies, Ebola, hantavirus, HIV, SARS, dengue fever, and Zika

Viruses are biological entities found in all living organisms. Some are completely safe, but others can spread infections ranging from the common cold to Ebola.

Vaccinating against potentially dangerous viruses, for example, can help avoid disease.

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