

VACCINES



WHAT is a vaccine?

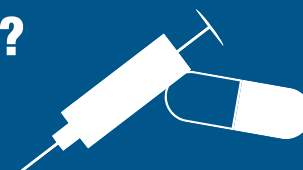
A **vaccine** is made up of all or part of a disease-causing bacteria or virus, and causes the body to produce its own defence system to fight infection.

Vaccination, also known as **immunization**, is a means of creating resistance to a particular disease in a human or animal.

When a vaccine is given to a person or an animal, the body's immune system makes defence cells and antibodies specific for whatever disease the vaccine is protecting against. The defence cells and antibodies are then "stored" for future use to protect against illness when exposure to that disease occurs.

VACCINES? ANTIBIOTICS? WHAT'S THE DIFFERENCE?

Vaccines guard against diseases caused by bacteria or viruses by introducing a small amount of the disease-causing agent into the body in order to stimulate immunity. Antibiotics help prevent or treat infections caused by bacteria by slowing down or preventing their growth.



In both animal medicine and human medicine, the first line of defence is **PREVENTION**. Vaccines help prevent diseases, thereby reducing the need for both people and animals to be given antibiotics.

Many diseases do not yet have vaccinations available; however, research to develop vaccines for various diseases is ongoing.

THE POLIO VACCINE STORY

Polio is an example of a human disease that was incurable until the invention of a vaccine. Polio is a highly contagious viral infection that can lead to paralysis, breathing problems, or even death. An effective vaccine was developed in 1952.¹ Since then, the incidence of polio has decreased drastically as more and more people are vaccinated. It is rare to see a case of polio in developed countries such as Canada, where childhood vaccination for polio is common. The number of polio cases is dropping in developing countries. In 1988, there were estimated to be 350,000 reported cases of polio in the world; in 2015, that number fell to 74.²





WHY are animals vaccinated?

Vaccines keep animals healthy, protect animal welfare, prevent disease and reduce the need for antibiotics. Vaccinating animals also prevents the spread of certain diseases from animals to humans.

Farmers and consumers benefit from vaccines because having healthy animals results in having safer and better quality food products (e.g., meat, milk).

YOUNG FARM ANIMALS

receive vaccinations just as children do. A vaccinated calf will either not contract the disease that it has been vaccinated for, or will experience only minor symptoms of that disease instead of life-threatening ones.

Animal vaccines help protect people

Animals can carry diseases that people can get. For example, rabies can be passed on from a domestic or wild animal to a human being. Vaccines are one way to prevent animal-to-human transfer of disease. Vaccines also reduce the need for antibiotics and the risk of developing antibiotic resistance.

Veterinarians work closely with farmers to advise them about vaccine usage. Farmers also follow nationally developed **codes of practice** pertaining to the care and handling of farm animals. The codes include recommended practices for treatment of diseases.



THE WEST NILE STORY

The first case of West Nile Virus was detected in Canada in 2001.³ Since then, many birds, horses and people have become ill when exposed to this virus because they have not developed an immunity against it. However, a vaccine for horses has been developed. As more and more horses are vaccinated, new cases of West Nile Virus in horses will become less common. A vaccine for human use, once developed, will provide similar protection for people.

