

Vaccinations for Dogs

Most people are familiar with vaccinations for humans and their pets, and people generally have their pets vaccinated as puppies or kittens, but often they let them lapse. Here, we explain how they work and why vets continue to advise pet owners to vaccinate their pets.



When puppies are born they have some immunity against these diseases from their mothers, this comes via the placenta and then the colostrum (first milk) that the mother provides. This gives them antibodies that allow them to fight any diseases they encounter, but as time goes on this immunity wanes and the levels drop so we vaccinate them. This stimulates their own immunity to produce antibodies and the second vaccination further boosts this process providing the animal with their own protection mechanisms.

So, for example, we know that Distemper, Parvovirus and Canine Adenovirus-2 (a cause of hepatitis in dogs) antibodies persist at sufficient levels for three years, so we only vaccinate against these every three years, but Leptospirosis (more commonly known as Weil's disease), that is spread by cattle, rats and other animals and is present in water ways where we walk our dogs, we know that its immunity wanes after 12 months, so hence the annual vaccinations.

As time goes on and with the increase in vaccination many of the diseases are not seen as often and people start to believe that they have disappeared and that their animal is not at risk anymore, so why vaccinate? Over the last few years' vets have seen an increasing number of parvovirus cases, these dogs are very sick and often require extended periods of hospitalisation and some may not pull through. Similarly, with increasing imported dogs we are seeing some cases of canine distemper, and leptospirosis is a disease that we see with reasonable regularity, and in some dogs this can cause permanent liver or kidney failure.

So the advice still has to be to vaccinate your animals as advised by your vet. These are life-threatening diseases and the best way to protect your animal is to vaccinate them.

What do we vaccinate against?

Parvovirus

The canine parvovirus (CPV) infection is a highly contagious viral illness that affects dogs. The virus manifests itself in two different forms. The more common form is the intestinal form, which is characterised by vomiting, diarrhoea, weight loss, and lack of appetite (anorexia). The less common form is the cardiac form, which attacks the heart muscles of very young puppies, often leading to death. The majority of cases are seen in puppies that are between six weeks and six months old, but can also be seen in unvaccinated adult dogs. The incidence of canine parvovirus infections has been reduced radically by early vaccination in young puppies.



Canine Infectious Hepatitis

Infectious canine hepatitis is a disease, which affects the liver, kidneys, eyes and lungs of a dog. The disease can develop very quickly and some individuals may die within hours of becoming unwell. It is transmitted by direct contact with infected urine, saliva and faeces. Furthermore, dogs that have recovered from this disease can still be infectious to other dogs for more than six months. Young puppies are particularly susceptible to the disease. The virus is relatively hardy and can survive for months in the environment.

Canine adenovirus vaccination prevents the spread of this potentially fatal disease.



Kennel Cough

Kennel cough, the common name that is given to infectious canine tracheobronchitis, is a very highly contagious respiratory disease among dogs. As the name of the disease suggests, it is typified by inflammation of the *trachea* and bronchi. This disease is found throughout the world and is known to infect a very high percentage of dogs at least once during their lifetime. It is also medically referred to as tracheobronchitis and *Bordetella*.

Young puppies can suffer the most severe complications that can result from this disease, since they have an underdeveloped immune system that is still strengthening. Also at increased risk are older dogs, which have decreased immune capabilities, and pregnant bitches, who also have lowered immunity to infections. The vaccination contains weakened *Bordetella* and needs repeating annually. Canine adenovirus, which is often an initiating cause forms part of the basic vaccinations as does the canine parainfluenza virus



Leptospirosis

Leptospirosis is an infection of bacterial *spirochetes*, which dogs acquire when subspecies of the *Leptospira interrogans* penetrate the skin and spread through the body by way of the bloodstream.

Leptospire spread throughout the entire body, reproducing in the liver, kidneys, central nervous system, eyes, and reproductive system. Soon after initial infection, fever and bacterial infection of the blood develop, but these symptoms soon resolve with the reactive increase of antibodies, which clear the spirochetes from most of the system. The extent to which this bacteria affects the organs will depend on your dog's immune system and its ability to eradicate the infection fully. Even then, *Leptospira spirochetes* can remain in the kidneys, reproducing there and infecting the urine. Infection of the liver or kidneys can be fatal for animals if the infection progresses, causing severe damage to these organs.

Younger animals with less developed immune systems are at the highest risk for severe complications.

The *Leptospira spirochete* bacteria is zoonotic, meaning that it can be transmitted to humans and other animals. Children are most at risk of acquiring the bacteria from an infected pet.



Distemper

Canine distemper is a contagious and serious viral illness with no known cure. Young, unvaccinated puppies and non-immunised older dogs tend to be more susceptible to the disease.

The virus, which is spread through the air and by direct or indirect (i.e. utensils, bedding) contact with an infected animal, initially attacks a dog's tonsils and *lymph nodes* and replicates itself there for about one week. It then attacks the respiratory, urogenital, *gastrointestinal*, and nervous systems.

In the initial stages of Canine Distemper, the major symptoms include high fever ($\geq 103.5^{\circ}\text{F}$, or 39.7°C), reddened eyes, and a watery discharge from the nose and eyes. An infected dog will become lethargic and tired, and will usually become anorexic. Persistent coughing, vomiting, and diarrhoea may also occur. In the later stages of the disease, the virus starts attacking the other systems of the dog's body, particularly the nervous system. The brain and spinal cord are affected and the dog may start having fits, seizures, paralysis, and attacks of hysteria.



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