Vaccinating your pet: Effective and safe

Vaccination is a simple, low-risk procedure that is performed daily all over the world. It is a cost-effective and highly successful way to protect both animals and people (especially the young) from diseases that can be fatal.

Widespread use of vaccines protects not only the vaccinated individual, but also the community they live in. You may have heard this concept referred to as 'herd immunity'.

Vaccines can help protect your pet from diseases such as canine and feline parvovirus (also known as feline panleukopaenia), which are common in parts of New Zealand – particularly areas where vaccination rates are low. These diseases can cause severe illness and death in unvaccinated puppies or kittens. The cost of the vaccine is significantly lower than the cost of treating this serious disease.

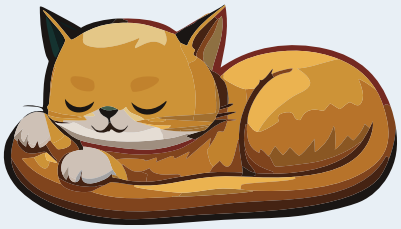
Other diseases, such as canine distemper and canine infectious hepatitis, are rarely seen in this country, mostly due to successful vaccination strategies. These diseases still pose a risk to New Zealand pets, however, which is why vaccination is widely recommended as the cornerstone of preventative healthcare.

Vaccination is a highly effective way to prevent many diseases. Like many veterinary and human therapies, vaccination can uncommonly be associated with adverse events. This information sheet outlines possible reactions your pet may experience following vaccine administration and immunisation so you can make an informed decision about vaccinating your pet.

If you have any questions about this information, please contact your veterinary team for advice.

Terminology

- **Vaccination:** The act of administering a vaccine to a pet.
- **Immunisation:** Includes administration of a vaccine AND the individual's immune response to the vaccine (ie the response to the procedure).
- **Adverse event:** Any observation that is unfavourable and unintended that occurs after the use of a veterinary medicine (including a vaccine), regardless of whether the event is directly related to receiving the medicine or not.
- **Vaccine-associated adverse events:** Adverse events associated with vaccine administration or immunisation. These events include failure of a vaccine to provide protection from disease.



Adverse events following vaccine administration

Symptoms of vaccine-associated adverse events can range in severity, but most are self-limiting and temporary. These symptoms may simply be the immune system responding to the vaccine (eg fever or lethargy) or a more serious event, such as a severe allergic reaction (anaphylaxis) or an abnormal immune system response (eg immune-mediated disease).

In extremely rare cases, vaccines may induce symptoms similar to the disease being vaccinated against.

To reduce the chance of vaccine-associated adverse events, vaccines should only be administered to healthy animals. Your veterinary team will ask questions and do a thorough check of your pet before administering the vaccine.

Likelihood of vaccine-associated adverse events

There have been large-scale studies on cats and dogs in the United States estimating the prevalence of vaccine-associated adverse events. A 2023 study of vaccine-associated adverse events in over 4.6 million dogs noted 19 adverse events were reported for every 10,000 vaccination visits. This rate had decreased by almost half (38/10,000) from a similar study conducted in 2005, illustrating ongoing improvements in the safety of veterinary vaccines.

In cats, the rate is a little higher but still very uncommon, with 52 cats developing an adverse event for every 10,000 cats vaccinated. Over half of these reactions were lethargy and fever, which is an expected response to immune stimulation.

As a comparison, a large-scale review of the safety of COVID-19 vaccines in humans revealed an incidence rate of 1.5% (150/10,000) for adverse events.

Symptoms of vaccine associated adverse events

Keep an eye on your pet after their vaccination to see if they display any symptoms or side effects. If you're worried about your pet, please contact your veterinary team. They are your best source of advice for your individual pet.

Mild reactions

Mild, short-lived reactions are the most commonly observed adverse event following vaccination. Symptoms usually occur within the first three days of vaccination but can occur up to a few weeks after the vaccination. Mild symptoms typically resolve within a few days without any specific treatment. Common symptoms include:

- lethargy.
- pain, heat or swelling at the injection site.
- mild cough, sneezing or stuffy/runny nose.
- loss of appetite.

Moderate to severe reactions

Moderate to severe reactions are rare, with approximately three out of 10,000 dogs experiencing serious reactions following a vaccination.

Serious responses are often the result of an abnormal response by an animal's immune system (immune dysregulation). Inherited, environmental and individual health factors may all contribute

Several conditions can result from these abnormal responses, including:

- anaphylaxis (a severe allergic reaction to a component of the vaccine).
- changes in the components of the blood (eg low numbers of platelets or red blood cells).
- excessive inflammatory responses at the injection site.

Serious vaccine adverse events can usually be treated with medication that acts on the immune system of the pet. In very rare cases, however, severe reactions may result in death.

Moderate or severe reactions may include:

- vomiting or diarrhoea.
- collapse.
- difficulty breathing.
- facial swelling.
- hives or raised swellings in or on the skin.

If your pet experiences an adverse event following a vaccination, they may require veterinary attention. Symptoms seen in your pet may indicate many different causes and may not be associated with the vaccine your pet was administered.

Other types of adverse events following vaccination

Coincidental events

Coincidental events are completely unrelated to vaccination and immunisation. The event occurs after vaccination by chance, and was likely to have occurred even if the vaccine had not been given.

Medical events can occur throughout an animal's life; however, some events are diagnosed more frequently in certain age groups. The growth and development of young animals is very visible and closely monitored by both pet owners and veterinary professionals. Since puppies and kittens receive multiple vaccinations when they are young, this is often the age when congenital or developmental conditions are first detected. This can create the appearance that illnesses or newly diagnosed conditions are related to immunisation when they are not.

Failure to protect

A very small number of animals simply do not respond appropriately to vaccines. This may be temporary (poor health) or permanent (genetic).

This most commonly occurs in young kittens or puppies where maternally derived antibodies from the colostrum interfere with the vaccine's efficacy. As maternal antibodies decline, the puppy or kitten is then able to mount an immune response to the vaccine.

Inappropriate storage or transport may also impact the potency of vaccines.

Summary

Vaccines save the lives of millions of people and animals every year. Vaccinating pets is a safe and effective practice that is critical to preventing and controlling infectious disease outbreaks.

Vaccine-associated adverse events are very uncommon. When they do occur, they are usually mild and a result of the immune system's response to the vaccine. The risk of rare, serious adverse events is very low. Protection from serious disease by vaccination far outweighs the potential risks.

Please talk to your vet team if you have any questions or concerns about vaccinating your pet.

If you are concerned about your pet after they've been vaccinated, please contact your veterinary clinic for advice.