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## VACCINATION IN DOGS

Recent advances in veterinary science have resulted in an increase in the number and type of vaccines that are available for use in dogs. Currently dogs can be vaccinated against many different diseases including:-

**Canine Parvovirus**  
**Canine Infectious hepatitis**  
**Canine Distemper Virus**  
**Canine parainfluenza virus**  
**Bordetella Bronchiseptica**  
**Tetanus**

### How do vaccines work?

Vaccines work by exposing the body's immune system to a particular modified infectious agent. This causes the white blood cells to react to fight the infection by producing proteins (antibodies) which are able to bind to and neutralise the infectious agent (antigen). Antibodies work together with other white blood cells (lymphocytes) which are able to identify and kill cells within the body which have become infected by the agent (cell mediated response). After vaccinal exposure the body 'remembers' the particular antigens so that when they are encountered again it can mount a very rapid and strong immune response preventing the dog from showing clinical signs of disease. **It is important to realise that most vaccines work by preventing your dog from becoming ill and may not prevent it from becoming infected.**

### What is the difference between the various types of vaccine?

Four major types of vaccine are produced for use in dogs.

1. **Modified live vaccines** - these vaccines contain live organisms that are weakened (attenuated) so that they do not produce disease but will multiply in the dog's body. It is not advisable to use modified live vaccines in pregnant dogs or dogs whose immune system is not working properly.
2. **Modified live intranasal vaccines** - for protection against canine cough. Intranasal vaccines are given as drops up the dog's nose rather than by injection under the skin. They have the advantage of causing a very rapid immune response to a single dose and can, in emergencies, be used to protect very young puppies, but can cause signs of canine cough in some dogs.
3. **Killed (inactivated) vaccines** - these vaccines are prepared using fully virulent organisms that have been killed by chemicals, UV light or radiation. Because, on their own, they do not give such a high level of protection, a chemical (adjuvant) is added to the vaccine to stimulate a better immune response.

## When should my puppy be vaccinated?

Generally puppies are vaccinated for the first time at 6-8 weeks, second dose given at 10-12 weeks. A puppy will not be fully protected until 7-10 days after the second vaccination. Under specific circumstances your veterinary surgeon may advise an alternative regime.

## How often should adult vaccinations be given?

Adult vaccinations are generally carried out yearly. However, some newer vaccines protect adult dogs for 3 years against distemper, hepatitis and parvovirus. Tetanus vaccines provide protection for up to 5 years after the initial course. All dogs should have a health examination every 6-12 months and vaccinations when required, adult dogs are also susceptible to these infections particularly as they grow old and their immune system becomes less efficient.

## Will vaccination always protect my dog?

Vaccination will protect the vast majority of dogs but under some circumstance vaccine breakdowns will occur. There are many reasons for this including:-

1. Variations between different strains of viruses – this is very uncommon.
2. Maternally derived antibodies - when a puppy is born it is protected in its early life by antibodies passed from the bitch in the first milk (colostrum). These antibodies can also prevent vaccination from working properly. The amount of colostrum antibodies that each puppy receives is variable and so the age at which a puppy can respond to vaccination successfully will also vary. This is part of the reason why two injections are given in the primary course.
3. The dog was not healthy at the time of vaccination - 'stress' can prevent a good response to vaccination. For this reason your vet will give your dog a physical examination before a vaccination is given.
4. The dog may also be pre-infected with the virus and incubating the disease.

If you feel your dog has contracted an infection for which it is vaccinated then let your veterinary surgeon know. Investigation to establish why vaccination has possibly failed can be undertaken.

## What are the risks of vaccination?

Generally the risks of vaccination are extremely low. Severe reactions being very rare. Many dogs experience mild reactions at the site of vaccination where a lump may occur that can be painful. Generalised reactions are sometimes seen, the dog being quiet, lame and often off its food for 24 hours after vaccination. Occasionally more severe signs occur including vomiting, diarrhoea and profound depression. Under these circumstances your veterinary practice should be informed. Vaccine reactions appear to occur more commonly in puppies.

## Which are the most important vaccinations to have?

Your veterinary surgeon will be able to advise you of the most appropriate vaccinations to give your dog. Some dogs need to have additional vaccines depending on the environment they are living in and what infections they are at risk of being exposed to. However there are some core vaccines all dogs should receive.

### Core vaccines

- **Canine Parvovirus** – a severe gastroenteritis that causes severe vomiting and bloody diarrhoea in dogs. It is spread via faeces and is highly contagious, contact with a sick dog is not required and the virus lives a long time in the environment. You can bring it home on your shoe, flies can bring it to your yard and it can be already present in the soil. This disease is very unpleasant for the dog and usually fatal if left untreated especially in young puppies. It is a common disease and vaccination against this disease is essential for all dogs.

- **Canine Infectious hepatitis** – this is a severe liver disease that often results in death. It is very uncommon now mostly due to widespread vaccination against it but ongoing vaccination is required to keep it this way.
- **Canine Distemper Virus** – this is a severe neurological disease that usually results in a slow death. It is very uncommon now mostly due to widespread vaccination against it but ongoing vaccination is required to keep it this way.
- **Canine parainfluenza virus & Bordetella Bronchyseptica** – these two diseases are part of the canine cough disease. In most cases canine cough is just an irritating cough that lasts a few weeks without making the dog particularly sick. However in some cases it may lead to pneumonia and can therefore occasionally be fatal. It is highly contagious so any dogs that have contact with other dogs especially in a kennel or training situation need to be vaccinated against it.

#### **Additional vaccines**

- **Tetanus** – dogs are usually quite resistant to tetanus but if they do contract it it is usually fatal. Deep puncture wounds and puppies teething are the most common situations related to dogs getting tetanus. Vaccination against this disease is recommended for any dogs in environments they may sustain contaminated puncture wounds and is beneficial to any dog but not essential.
- **Leptospirosis** – usually contracted via contact with rats, contaminated water or urine (eg from infected cattle). It causes kidney damage and can be fatal. Dogs in certain areas are considered at risk of this disease and should be vaccinated.
- **Coronavirus** – usually results in a mild to moderate gastroenteritis in puppies. Much rarer in adult dogs. As the disease is not generally lifethreatening and symptoms are not usually severe most dogs are not routinely vaccinated against this disease. However, if your puppy is considered more at risk vaccination is available.

**REGULAR VACCINATION IS AN IMPORTANT PART OF ROUTINE HEALTH CARE FOR YOUR DOG AND HELPS TO ENSURE YOUR DOG REMAINS FIT AND WELL.**