



For a long time all new puppies and kittens were given a standard vaccination that protected them from a number of infectious diseases. Recently a number of new vaccines have been developed and pet owners and vets have begun to question the value of routine annual vaccination for adult pets particularly in the light of recent scares about adverse reactions to MMR vaccination in children. At the same time concerns were raised about potential 'over vaccination' of pets and this has led to development of the concept of tailored vaccination protocols. If your pet is not likely to be exposed to a disease there is little point in vaccinating them against it. Your vet will be able to advise you on the most appropriate choice of vaccine for your pet weighing up the benefits of protection against any risk associated with the vaccine.

Vaccination protocols

An optimal vaccination programme:

- Maximizes the number of animals within the population that receive vaccination
- Ensures that only animals that have a realistic risk of contracting disease are vaccinated
- Minimizes the total number of vaccinations each animal receives in a lifetime.

There is minimal benefit to be derived from vaccinating an individual with an antigen for which likelihood of exposure is low and where clinical disease is, in any case, mild.

Which vaccinations should be given?

In almost all cases puppies should be vaccinated against the major infectious diseases distemper, canine hepatitis, leptospirosis, parvovirus (and probably parainfluenza virus) (DHLPPi) by 8-10 weeks of age. Revaccination is then necessary at 12 weeks with a second dose of DHLPPi to ensure full immunity. Puppies presented before 8 weeks can be vaccinated with DHLPPi using some vaccine brands, this is advantageous to allow early socialisation. There is continued debate about the appropriate intervals for booster vaccinations in order to maintain immunity against the full range of infectious diseases in all individuals. Current recommendations are for revaccination at intervals of 1-3 years against most diseases (this varies depending on the brand and the disease (for which protection is required)).

Vaccination to protect against *Bordetella bronchiseptica* (one of the causes of kennel cough) is usually only carried in 'at risk' individuals - often just prior to entry to boarding kennels. The immunity produced by this vaccine does not last long and revaccination is required as often as every 6 months to maintain protection.

Are vaccines safe?

Vaccination is an essential part of a healthcare programme for domestic pets. The ideal strategy maximizes the beneficial effects of vaccination whilst minimising risks to the patient. This means ensuring that not only does each individual receive only the most appropriate vaccinations, but that these vaccines are effective. The effectiveness of vaccines can be reduced by poor storage and inappropriate administration techniques but is also determined by the health of the animal being vaccinated. For this reason your vet will perform a full clinical examination before vaccinating your pet so that signs of disease are detected and appropriate action can be taken. Vaccination of an individual already incubating infectious disease is unlikely to be effective. If your pet is suffering from another condition vaccination may be even more important. Animals with chronic, controlled diseases such as diabetes mellitus should receive regular vaccination. The ability of an animal to mount an adequate response to vaccination can also be affected by poor nutrition, concurrent drug therapy, eg immunosuppressive drugs, and 'stress'.

Remember that in any population; even with the strictest attention to correct administration, a small number of individuals may fail to respond to any vaccine.

What is an adverse event?

An adverse event is defined as "any undesirable occurrence after the use of a vaccine - whether or not the product causes the event". Reactions to vaccines can be divided into 3 groups:

- **Acute** - occurring within 24-72 hours of vaccination, eg swelling of the face.
- **Medium-term** - delayed immune response occurring 1-6 weeks after vaccination. These reactions

Vaccination protocols and safety



may include suppression or stimulation of the immune response, eg development of joint stiffness or other diseases of the immune system.

- **Chronic** - often years after initial vaccination, eg injection site tumours in cats.

Is vaccination more risky in some breeds?

There have been many breeds of dog identified as at increased risk from the development of vaccination reactions, eg Old English Sheepdogs, Springer Spaniels and Weimeraners. However, many of these breeds have an inherent high incidence of immune-mediated blood diseases (onset of which is often within 4-6 weeks of vaccination). Suspected vaccine-associated joint disease (polyarthritis) has been reported in Weimeraners but since this disease usually develops around 13 weeks of age and the vast majority of puppies are vaccinated around 10 and 12 weeks it is easy to understand why a correlation between vaccination and disease can be shown. There are just too few controlled studies (where some animals are not vaccinated) to draw meaningful conclusions.

Can vaccination harm the immune system?

There is increasing concern that the more diseases protected against by a vaccine the greater the risk of adverse reaction. Suppression of the immune system as a result of vaccination is greater when vaccines with a number of components (multivalent) are used. Immune-mediated disease is becoming increasingly common in the domestic animal population. Whilst cause and effect is difficult to prove there is anecdotal evidence to support claims that some of these diseases may be associated with vaccination.

Can vaccination cause tumours?

Studies from America now provide evidence of an association between the use of particular vaccines and the development of certain tumours at injection sites in cats. It has been reported that the risk of injection site sarcomas increases with the number of vaccinations. It is believed that these tumours develop secondary to inflammation at injection sites and this inflammation may be worse with certain vaccines.

Why should I vaccinate my pet?

There is no doubt that vaccines have been the key factor in the control of serious infectious diseases and have played an important part in the improvement of canine and feline health. The control of infectious disease in man is a 'population issue' - the Government sets target for vaccinations in children (over 90%), in order to achieve population immunity. The situation in veterinary medicine is different. Levels of vaccination are much lower - in many areas the percentage of pets that receive vaccination is around 50%.

Pet owners pay to have their pet protected by vaccination - not to protect the general dog and cat population. This means that vaccination policy for pets are based on the worst responders so that all vaccinated pets are continually protected. Vaccination of pets is therefore more akin to the vaccinations we have before travelling abroad to protect our families and ourselves.

Does my pet need a booster?

Protection afforded by vaccination is not necessarily life-long. The duration of immunity varies depending on the circumstances of the individual animal and the vaccine used. Long-term protection afforded by vaccinations varies according to the manufacturer and the antigens contained. For example Leptospirosis vaccines provide adequate protection for less than a year in most animals. The level of infection in the environment of many of the diseases against which we vaccinate (notably distemper and infectious hepatitis) is low. This means that it is unlikely that a vaccinated animal will come into contact with the wild strain virus sufficiently frequently to receive natural boosts to its immunity. Repeated vaccination is necessary to maintain adequate antibody titres in these cases.

If you want any other information on health issues concerning your dog please contact Hampden Veterinary Hospital on 01296 423666 and we will be happy to advise you.