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The importance of vaccinating your pet

There have been many excellent improvements made over the years to the quality and length of life of our pets and one of the biggest contributors to these improvements is vaccination. While the often fatal diseases of parvovirus, distemper, hepatitis and leptospirosis are still around, as vets we see far fewer cases than we used to thanks to effective vaccine use by responsible pet owners.

These diseases are still around however and outbreaks still happen occasionally such as one in Finland in the late nineties when the number of dogs vaccinated against distemper fell to below 50% and an outbreak was triggered affecting at least 5000 dogs, 30% of which died. Recently in the veterinary press there have been reports of dogs dying from leptospirosis (a bacterial infection which can also spread to humans) within a few months of their vaccination expiring.

How vaccines work

Vaccines work by introducing a small amount of the substance that causes the particular disease into the animal's system. The vaccine is in a highly weakened form and isn't capable of actually causing the disease but it is enough for the animal's immune system to detect and to mount a strong response against. Thus the immune system is "primed" so, in future, when the animal comes across the "wild" disease its immune system is ready to fight it off. The immune system is used to responding to hundreds of challenges every day in the normal course of events as we eat and breathe and otherwise introduce foreign substances into our bodies which have to be dealt with, so responding to vaccination is no problem.

Over time however this immunity will reduce albeit at different rates depending on the type of vaccine used; read on to find out why it is important to have regular booster injections.

What diseases do we vaccinate against?

In dogs the so-called core vaccines are distemper (the same as hard pad), canine viral hepatitis, canine parvovirus and 2 strains of leptospirosis, a bacterial disease which also affects humans. Many people have dogs further protected against kennel cough by means of nasal drops which confer protection against Bordatella bronchiseptica and canine para-influenza virus although kennel cough has many potential causes, some of which it is not possible to vaccinate against. Occasionally, in breeding bitches we will vaccinate against herpes virus as this condition can interfere with conception and embryonic development.

In cats the core vaccines are feline viral enteritis (also known as feline panleukopenia or feline parvo-virus), feline calici virus and feline herpes virus (both common causes of cat flu) and feline leukaemia virus (FeLV), a virus which can cause the cancer leukaemia, or lymphoma, in cats (although not every case of lymphoma is caused by this virus). It is also possible to vaccinate cats further against cat flu by means of intranasal drops to protect against Bordatella bronchiseptica infection and some cats are also vaccinated against Chlamydia, a small bacteria-like organism that can cause respiratory and reproductive problems.

Ferrets should be vaccinated against canine distemper and parvovirus. Although there are no licensed ferret vaccines in the UK dog vaccines have been used for many years quite safely.

All three species can also be vaccinated against rabies, this requires a booster every three years and is usually only done in animals travelling abroad.

Types of vaccine

Broadly speaking there are 2 types of vaccines that are used in animals. The first type are live vaccines such as distemper, hepatitis and parvovirus which use a weakened strain of the virus to boost the immune system.

The second type is killed vaccines such as leptospirosis which strengthens the body's defences using an inactivated bacteria. For a long time it has been known that the live vaccines give better and longer immunity than the killed ones and it has not been necessary to give them every year. Now it has been found that the immunity from this type of vaccine lasts 3 years and vets have adjusted their vaccination regimes accordingly.

The immunity from killed vaccines on the other hand lasts only 1 year so annual boosters are still required. The good news where leptospirosis is concerned is that the protection from this vaccine has been greatly improved. The newest form of this vaccine as well as protecting against disease now prevents an affected dog from shedding bacteria thus protecting the environment and other dogs and people from this terrible condition.

It is vital that we continue to vaccinate our pets. At the moment a large proportion of the dog population is vaccinated and this means that the few who are not are still protected indirectly because there is less disease around; this is phenomenon known as "herd immunity". These unvaccinated individuals, however are at great risk should any of these diseases appear and once the number of vaccinated animals in a population falls below a certain level, as in Finland, the results could be devastating.

Vaccine Safety

There is always debate as to how to make the best use of vaccines and other medicines. Although vaccines are extremely safe, particularly compared with the diseases they protect against, much research and thought is been put into their continuing improvement.

A recent scientific study (known as the 'POOCH' report) looked at over 4000 dogs which had recently been vaccinated and concluded, "Results demonstrated that recent vaccination (<3 months) does not increase signs of ill-health by more than 0.5% and may actually decrease it by as much as 5%.". This was an extremely rigorous study conducted according to strict scientific criteria and is strong evidence of the safety of vaccination in pets. One of the report's authors, Dr James Wood, head of epidemiology at the Animal Health Trust stated "This is completely contrary to the claims which have hit the headlines... people should understand that our research results clearly demonstrate the absence of any deleterious association between routine vaccination and signs of ill health.".

In cats vaccines also have an excellent safety record. There is, however a well recognised, although rare condition known as vaccine associated sarcoma (VAS) which has been associated with vaccination against feline leukaemia (FeLV) and other types of (non-vaccine) injections as well. There is no known association with cat flu and enteritis vaccines. VAS is a serious form of cancer which develops at the site of injection but only affects around one in ten thousand cats which have been vaccinated against FeLV. FeLV itself is a virus which causes an equally deadly form of cancer with a far higher incidence than that of VAS so, on balance it is still of benefit to vaccinate your cat against FeLV.

In the United States the Vaccine Associated Sarcoma Task Force are looking at VAS and developing ways to reduce the risk even further. In the UK VAS is even less common although veterinary associations such as the British Small Animal Veterinary Association (BSAVA) have issued statements about VAS and vaccination in general and the government has responded to a working party report on the issue. In the USA one of the biggest studies carried out on VAS found no variation in incidence between different brands of vaccine and found that there was no association with the aluminium adjuvant included in some vaccines to improve the immune response. The authors state,

"...that vaccines played a causal role in the increase in the number of soft tissue sarcomas identified in cats during the 1990's is no longer in question. An abundance of evidence consistently points to a heightened risk among cats receiving FeLV, rabies virus, and possibly other vaccines. Nevertheless, avoiding using these vaccines can be even more dangerous and just as counterproductive. The diseases they are designed to prevent are not rare or without veterinary or human public health importance, and the agents that cause these diseases are themselves capable of resulting in epidemics. As veterinarians and cat owners strive toward an uneasy juxtaposition of the relative costs and benefits of vaccination, an improved understanding of exogenous (extrinsic) risk factors associated with the development of FVASs becomes even more vitally important."