



Although it is widely accepted that the routine use of vaccines in pets has been a significant factor in reducing serious infectious diseases, discontent has been growing steadily for many years among informed pet owners about the practice of 'annual vaccination boosters'. Indeed, the World Small Animal Veterinary Association (WSAVA) has gone as far as suggesting that the focus of the veterinary profession internationally should now be to 'vaccinate more animals less often'.

One of the key issues central to the ongoing revaccination debate is duration of immunity, a term used to define how long a vaccine will typically protect an animal for. Duration of immunity studies are time consuming, expensive and may not reflect what happens in real life situations, and researchers have stated that since there is insufficient information to make blanket predictions about duration of immunity, each animal must be assessed individually. Certainly, the vast majority of dogs and cats that receive a complete initial course of vaccine and a first booster at around one year of age will be conferred with protective immunity for a substantial period, potentially for the lifetime of the animal. However, variations in the response to vaccines are known to occur, and some animals may have low or no protection following vaccination.

Researchers have strongly supported the use of titre testing as one component in the individual animal assessment. So what is titre testing?

Titre testing explained

A titre test is a diagnostic test that measures the levels of protective antibodies circulating in the blood. Antibodies are produced when an antigen (for example, a virus or bacteria, either from disease or a vaccine) provokes a protective response from the immune system. In some diseases or in response to vaccination, cells known as 'memory cells' are formed that will rapidly produce antibodies in response to infection. Since titre tests do not measure memory cells, a titre test may show little or no immunity to an infection when, in fact, the animal's immune system is capable of mounting an effective immune response on the basis of previous exposure or vaccination. So while a positive titre test result clearly demonstrates when vaccination is not required, it is possible that animals with low antibody titres (negative titre test) are in fact protected.

Titre tests as an alternative to vaccination boosters

Although a small proportion of dogs with a negative titre may in fact still have immunity as a result of memory cells, many researchers believe that testing for antibody status using a titre test is better practice than simply administering a vaccine booster. Those animals which return a negative titre test result would be considered in need of revaccination while those that produce a positive titre test result would not. Many dog owners are now requesting annual titre testing when their dogs visit the vet for their yearly check up, rather than giving boosters that are not required.

Titre tests to determine the vaccination status of dogs with unknown vaccination histories

It is strongly recommended to titre test a dog of unknown vaccination history, because if they have circulating antibodies, they do not need to be vaccinated. This can help rescue groups, dog shelters, and owners adopting stray or rescued animals (and ex-racing greyhounds!) avoid giving unnecessary vaccinations.

Titre tests for puppies

Using titre testing to check for an effective immune response following the completion of the first series of puppy vaccinations is probably the most common and important use of the titre test, and is applicable for all puppies. Not all individuals respond to vaccination in the normal way, either because maternal antibodies (transferred via the milk during suckling) have interfered with the pup developing its own antibodies, or because the pup is a 'non reactor' and is unable to acquire immunity regardless of how many times he or she is vaccinated.

Initial immunisation may also fail to take place in a dog of any age if the vaccine is improperly stored or administered, or is somehow damaged, misformulated, or inactivated. A titre test, performed approximately two weeks after the final vaccination, can provide a clear indication that immunisation was successful, and if not the pup should be revaccinated, perhaps with an alternative vaccine type. Testing should then be repeated to see if further vaccination is required. Titre testing is the only way to ensure that a puppy has developed an effective immune response following vaccination.

Titre testing is now available in New Zealand for distemper virus, parvovirus, and the virus that cross-protects for infectious hepatitis and some kennel cough. In time, we believe that it will become a routine part of puppy care, ensuring that all pups have responded effectively to their first series of vaccinations. It will also prove to be an invaluable tool for pets that have had adverse reactions to vaccination in the past, or are unwell in some way that makes vaccination a possible risk – a positive titre test can provide reassurance for the owner that vaccination is not necessary, and the pet is protected against infection.

Please note that canine vaccination testing does not replace the need for your pet to receive a thorough examination by a qualified vet at least once a year. Annual health checks are critically important for detecting, preventing, and treating any diseases or other ailments as early as possible. ■

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