



Chelsea Animal Hospital Inc.

Anne M. Carroll, DVM, CVA
Betty Jo Black, DVM, CVH
Emma Basham, DVM

276 VT Rte 110 - PO Box 277
Chelsea, Vermont 05038
(802) 685-3232

Alternatively Speaking: A Holistic Take on Vaccination Dr. Anne Carroll, DVM, CVA

Springtime evokes different things for different people, but for those in the veterinary profession it is the season when a lot of pets come in for their vaccines. This is especially true for the dogs due for licenses. With that deadline looming, often vaccine discussion is rushed as we hurry to check off that 'to-do' from our springtime lists. But vaccination triggers powerful immune activity to create protection, and it does merit some discussion to make sure that protection comes with as little risk as possible. So spring seems a good time to revisit vaccination for our pets, how they work, and how to make educated decisions balancing risk and benefit when building your individual preventative health care plan with your veterinarian.

First, here is a little background on the mechanics of how vaccines work. Very simply, vaccines have two parts. One is a harmless version of something infectious that we want the body to make defenses against, such as Rabies or Distemper. This is called the "antigen". The second part of the vaccine is an irritant, called the "adjuvant". In natural exposures, the disease itself irritates tissues as it attempts to invade and infect the body. But because the vaccine's version of the disease is harmless, it causes no damage and would go ignored by the immune system. The adjuvant's job is to create enough irritation to trick the immune system into believing this antigen is harming the body, so it will make protective antibodies and store that memory for future use. We can verify the success of our vaccine by measuring the antibody level in the blood, called a titer.

Our understanding of the immune system and the ability to use vaccines to direct our immune systems to protect us in advance is really amazing science. We know that in natural exposure to disease, protection starts when a germ enters the body as it is breathed in, enters the mouth, or contacts other body openings like the eyes or a cut in the skin. The first line of defense is not specific and involves protective cells that recognize strange proteins in the body and tries to remove them. This happens with or without prior vaccination. However, if these strange proteins are recognized because of prior infection or vaccination, another branch of the immune system kicks in to make the antibodies it has on file. The antibodies label each germ, allowing a much larger group of protective cells to find and remove them from the body. The end result is a much faster and more successful defense.

So when we use a vaccine, we are triggering the many types of cells, communication signals, and pathways involved when we harness the immune system to create protection. But the vaccine only mimics natural disease exposure, and this abnormal manipulation of our biology is not without risk. Vaccines are injected, so they enter the body abruptly, bypassing entry point defenses and skipping a few steps in the typical immune response pathway. With "combination vaccines", this invasion includes several disease antigens along with foreign adjuvants, so it is not a surprise that in some individuals this unnatural exposure triggers some unnatural responses. Luckily vaccine reactions are rare, and usually mild, but they can be serious. We know that vaccines should be avoided in animals with certain cancers or immune system diseases, and that certain cats can develop cancer with exposure to any injected irritant including vaccines. Holistic medicine also recognizes that in some patients, vaccines contribute to chronic problems that are aggravated by adjuvant exposure or atypical immune system stimulation. This is called vaccinosis. It is hard to link these problems directly to any vaccine itself, but addressing vaccine triggered irritation and minimizing vaccination in the future does seem to play a role in improving these patient's more vague and stubborn conditions.

The good news is that many anti-viral vaccines last a very long time, and we may have a lot more flexibility to give them less often than in the past. Originally the first vaccines for pets made in the 1950's had to prove that they lasted at least a year in order to get approval from the FDA. So vaccine companies did just that, they tested

that the protection lasted a year, and since they did not check beyond a year, that is all the label could claim. Independent studies in the 1970's showed that immunity indeed lasted much longer than a year for diseases like Distemper and Parvo, and under mounting pressure a few manufacturers have extended their labels to 3 years in the last decade. But holistic vets have been monitoring blood antibody levels with titers for these diseases since the 70's, and we see that the vaccines protect far beyond 5 or even 8 years for many patients. If a dog has plenty of protection there is no need to boost it higher with a vaccine, so without any benefit all we are left with is the risk of vaccination. Titers have been around long enough and have enough science behind them that they are recognized as proof of immunity, say to board in a kennel. In our practice, puppies get their baby shots for Distemper and Parvo, and if healthy they get an adult booster which is the standard recommendation. From then on we check their status with a titer and only discuss immunization if it is needed. For dogs that sadly have problems early in life, we may start checking titers sooner to avoid placing more stress on their systems if they have already achieved a protective immunity.

Rabies is a different situation. Vaccination is required by law, and rightfully so due to the fact that humans can contract this lethal disease from their pets. However, we have mounting evidence that like Distemper and Parvo, the vaccine provides immunity that lasts far longer than 3 years. Kansas State University's veterinary lab has been collecting data on Rabies titers for dogs for years. At the same time another group of veterinary scientists have been conducting the Rabies Challenge Study for almost a decade. This spring we hope to see publication of the long awaited results, which could provide the medical data to change the Rabies label to be a 5 or even 7 year vaccine and promote the use of titers to show immunity for Rabies. This would be the first step in changing the laws and allow legal extension of vaccination. In the meantime, if vaccination presents a high medical risk to ill dogs, you may be able to have a medical waiver that allows licensing until it is safe to vaccinate.

For other vaccines like Lyme or Leptospirosis, the immune system is not designed to make long term protection against infections that are not viruses. Therefore yearly boosters are needed to maintain protection, and deciding whether to vaccinate requires careful consideration of the risk versus benefit of immunization for these infections.

So with this knowledge, how should a pet owner proceed at that annual check-up when shots are due? Our approach is to first identify any health issues or risks your pet has that may increase their chance that a vaccine would bother their system. Allergies, past reactions to shots, or advancing age are all things that may tip the scales to more risk than benefit. A titer may be a better choice for these patients. Then we discuss what diseases your dog or cat needs protection from. Do they travel? Do they go outdoors? Many diseases we can't avoid if our pet goes outside, like Lyme disease or Rabies, because exposure comes to them in our yards and on our porches. Similarly, Parvo virus can track into your home on your feet if you walk where an infected dog went to the bathroom. But if your dog has immunity for the most dangerous infections, and we weigh the potential for treating those infections that are not as threatening, you may find that yearly vaccination is not the only choice to make.

When we do decide to vaccinate in our hospital, we use vaccines that have a very good track record for safety. For every available vaccine there are several companies that make their own version. Luckily over time those that were not as safe have disappeared from the market, but there are still many options for veterinarians to choose from. The specific adjuvants in the vaccines are generally a corporate secret, but there are vaccines that are verified free of Mercury. Alternatively, newer vaccines are using technology that avoids adjuvants all together or have smaller volumes, especially for cats since a small percentage have that sensitivity to vaccination. In our practice we also limit how many vaccines are given at once, and certainly avoid large combination vaccines. For instance, a "distemper" vaccine for dogs or cats may contain anywhere from one to more than eight disease antigens in that single shot, some of which may be of questionable benefit for your pet. We often recommend spacing out shots by a month or more as able rather than getting several all at once.

As you can see, there are plenty of strategies to effectively protect your pets from disease while minimizing risks. So, instead of rushing in for that quick vaccine update on your to-do list this spring, take the time to have a conversation with your veterinarian. Get educated about all the options, identify what your pet's needs are, and employ thoughtful consideration to make the best medical decision for you and your pet. Spending the time will pay off with a healthier, well protected pet, and that is certainly worth the effort.

Dr. Anne Carroll is owner of the Chelsea Animal Hospital where she practices both conventional medicine and surgery as well as several alternative modalities including traditional Chinese acupuncture and Chinese herbal medicine. Her associate Dr. Betty Jo Black brings classical homeopathy to the practice. For more information on alternative veterinary medicine visit their website at www.chelseaanimalhospital.com

4 Legs and A Tail Spring 2018