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Vaccinations - Questions & Answers

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By Dr. Susan Nelson, DVM

Editor's Note: While our profession has continually preached the importance of vaccinations, we've never focused on the potential side-effects that some vaccines might have on animals. A friend of mine recently told me, that several years ago, one of his Boston Terriers died after receiving a rabies vaccination. His story created the basis for this article. I also have Boston Terriers, and oddly enough, my female pooch experienced some aftereffects from her recent vaccinations, which she had never experienced previously. Something to think about…. John Mays, Editor

Vaccinations

Why does my pet need vaccinations? Puppies and kittens are born with immature immune systems which make them highly susceptible to contracting disease. Thankfully, their mothers transfer to them part of their own immunity via colostrum when they nurse. Colostrum is a substance found in the mother's milk for the first few days after giving birth. It provides her newborns with important protective proteins against several diseases. These agents are known as "maternal antibodies". As long as maternal antibodies to a particular disease are active in the newborn's system, they will help give protection against that disease. However, these antibodies can also render some types of vaccines ineffective against various diseases during the time they are functional. How long these maternal antibodies last varies between individuals and is affected by many factors. We do know that maternal antibodies are gone, on average, around 16-20 weeks of age. Therefore, the typical puppy/kitten vaccine series starts around 6-8 weeks of age. Boosters are administered every 2-4 weeks until around 16 - 20 weeks of age in hopes of narrowing the "window of opportu-

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nity" for infection. This window of opportunity is the time period between when the maternal antibodies wear off and the vaccines are able to stimulate the individual's own immune response to a disease. If animals are over 20 weeks of age, they may require just one dose of some of the vaccines. The incidence of disease and death is significantly higher in areas where vaccinations are not commonly administered. This is especially true for Canine and Feline Distemper, Canine Parvovirus and Rabies.

Does it seem like a lot of shots to you? Probably. Is it? No! It is much cheaper to vaccinate and prevent a disease such as parvovirus in a puppy than it is to treat it. Additionally, there is never a guarantee that the puppy will survive, even with the best of treatment. On average, a puppy/kitten receives 3-4 sets of vaccines in its puppy/kitten series, depending upon the age at which the vaccines were started. It is possible some may receive more if started at a very young age.

Does that mean more frequent boosters would be even better? No. Giving vaccines too frequently (less than 2 weeks apart) does not give the body time to respond properly to the vaccines. If a vaccine booster is given too soon, the body's immune response to the first vaccine will interfere with the response to the second vaccine; thus, you do not get the desired "booster" effect from the second vaccine that makes the immune response stronger. Although ideally vaccines should be separated by at least 2 week intervals, it should be noted that some shelters may have to give vaccines at closer intervals due to circumstances unique to shelter environments. Your veterinarian can let you know if they feel any additional boosters should be given after adopting a pet.

Does vaccinating my pet guarantee it will never get that disease? No. There are several factors that influence an animal's immune response to vaccines. We know that some vaccines may only minimize the effects of a disease (i.e. Bordetella, Feline Herpes and Calici viruses). We also know a very small subset of animals will never respond to vaccines no matter how many they receive. These animals are known as non-responders. The fact still remains, however, that far more animals are protected from disease when they are vaccinated.

Which vaccines should my pet receive? Which vaccines your pet should receive is influenced by several factors such as: type of disease, age, lifestyle, local regulations and any previous adverse reactions or health conditions that may be aggravated by immunizations. In general, vaccines are categorized as: Core and Noncore. At the Pet Health Center, we utilize the American Animal Hospital Association's (AAHA) guidelines for dogs and the American Association of Feline Practitioner's (AAFP) guidelines for cats.

1.) Core vaccines are those aimed at protection against diseases that cause significant illness and/or death and for which the majority of population is at risk of contracting. Examples include: Canine Distemper, Canine Parvovirus, Canine Adenovirus, Panleukopenia (feline distemper), Rhinotracheitis (feline herpes), Feline Calcivirus and Feline Leukemia virus (cats ≤ 1 year of age). A core vaccine may also be required by law (i.e. Rabies).

2.) Noncore vaccines are those diseases for which an individual's lifestyle gives it a greater chance of exposure. Some, but not all, of these diseases can cause serious illness or even death of your pet. Depending on where you live, some of these may be moved to the "core" category due to higher disease prevalence in that area (i.e. Lyme).

• Canine noncore vaccines include: Bordetella, Leptospirosis, Lyme, Canine Influenza (H3N8 and H3N2), Parainfluenza, and Crotalis atrox toxoid (rattlesnake vaccine).

• Feline noncore vaccines include: FeLV (adult cats), Chlamydophila felis, and Bordetella bronchiseptica.

3.) Not recommended vaccines are those that are felt to be unnecessary to give for various reasons. Examples for dogs include: coronavirus. Examples for cats include: FIP.

4.) Other vaccines include the canine Melanoma and Lymphoma cancer vaccines. These are therapeutic vaccines used by some for treatment and not preventive vaccines.

How often should my pet receive vaccinations? This can vary with the type of vaccine, age, lifestyle, local laws and other health factors. We now have data showing that the core vaccines can invoke immunity that can last for several years if the proper vaccine series has been administered. In general, puppies and kittens receive their core vaccines starting around 6-8 weeks of age and are boostered every 3-4 weeks until around 16-20 weeks of age. They are boostered again one year later and every 3 years thereafter, or have annual titers performed. Acceptable protocols for adult dogs with no pre-

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vious vaccine history are either a series of two DA2PP vaccines or a single dose of a modified live or recombinant DA2PP vaccine. They are then boostered one year later and every 3 years thereafter (or annual titers). Adult cats should receive a series of 2 FVRCP vaccines.

Local and /or state laws mandate how frequently your pet must be vaccinated for rabies. The earliest age a dog or cat can receive its first rabies vaccination is 12 weeks. After the first rabies vaccine has been given, an animal must have a booster one year later. Age (12 weeks vs. adult) at the time of first vaccine or type of vaccine used (1 yr. vs. 3 yr. vaccine) does not change the 1 year later booster requirement. Subsequent booster intervals are determined by the type of vaccine used (1 yr. vs. 3 yr.) and state or local ordinances.

Noncore vaccine intervals are generally one year. However, the interval may be shorter for some vaccines (i.e. Bordetella) due to increased exposure risk and the possibility of protection not lasting a full year.

**It is best to work with your veterinarian and tailor a vaccine schedule that suits your pet's individual needs.

I have a totally indoor cat, does it need vaccinations? Yes. Most experts agree that indoor animals receive at least the core vaccines. At some point in its life, a pet may have to be boarded, transported, or taken to a hospital for treatment. If your pet is not current on its vaccines it, will be at greater risk for contracting disease from these situations. Indoor cats should also receive rabies vaccines. There are numerous accounts of indoor only cats escaping to the outdoors and ending up in a fight with another animal. There are also several incidents of indoor only cats playing with and catching rabid bats that have entered a house. Cats are often the leading domestic animal reported for having rabies in the U.S. Remember, in many places rabies vaccination for cats is also required by law!

Will vaccinations harm my pet? There is a very small chance of an adverse reactions to a vaccine. Fortunately, the benefits of vaccines far outweigh the risks. Expected side-effects to vaccines include mild, low-grade fever; tenderness at the injection site; mild lethargy for 1-2 days; temporary lumps; and 1 or 2 episodes of mild vomiting and/or diarrhea. These are not adverse reactions, but expected responses from the immune system to a vaccine. More serious, but much less common, reactions include extreme lethargy, protracted vomiting

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and/or diarrhea, hives, respiratory difficulty, cancer at the injection site (cats) and rarely, death. These are true adverse reactions and should be reported to your veterinarian immediately. In turn, your veterinarian should report these to the vaccine company. It is important to report ANY suspected reaction to your veterinarian. Side effects such as tenderness at the injection site and mild fever/lethargy may be minimized by giving your pet an antiinflammatory pain reliever before and after receiving its vaccines.

** Make sure you ask for your veterinarian's advice as to which antiinflammatory would be the best and safest choice for your pet.

If your pet has had a more serious reaction such as hives, protracted vomiting/diarrhea or severe lethargy, you should speak to your veterinarian about pretreating your pet with an antihistamine such as Benadryl and possible corticosteroids. Vaccines should also be split for these animals and separated by at least 3 week intervals in an attempt to avoid overstimulating the immune system. It is also wise to leave your pet with your veterinarian the entire day for monitoring. If a severe reaction should develop, your pet can then be treated promptly with injectable medications. For those animals with severe reactions, titers in lieu of vaccination are an option for some of the diseases.

Feline Injection Site Sarcoma (FISS) is an uncommon issue in cats. This is a very aggressive type of cancer that has been associated with vaccinations, but it has also been reported as a consequence from other types of injections and injuries. It is thought that the incidence ranges from 1:1000 to 1:10,000. No one knows for sure what the true incidence is as not all cases get reported. There is ongoing research to try to determine the cause of these tumors. At one time, adjuvants in vaccine were thought to be a possible cause, but various study results have shown conflicting results. Because of this, at this time, the 2020 AAFP Vaccine Task Force believes that there is currently insufficient research to justify recommending a single vaccine type. Since injection-site sarcomas are a risk, the Task Force recommends vaccination in the lower limbs in their specified sites as much as possible. There are intranasal vaccines for some diseases on the market that can be used in lieu of an injection in some instances. You should speak with your veterinarian about which vaccines he/she feels are the best choice for your cat.

Although feline injection site sarcomas are often a devastating disease, the risk of developing this cancer is far less than the chance of your feline friend contracting contagious diseases if not properly vaccinated. Some of these diseases (Feline Distemper (panleukopenia) and FeLV) are often fatal in cats. If you notice a lump at a site where any type of injection has been given, notify your veterinarian ASAP. Guidelines established by the Vaccine-Associated Feline Sarcoma Task Force (VAFTF) to help your veterinarian determine if a sample should be submitted for definitive diagnosis. These are:

• If the lump is less than 2 cm but persists for more than 3 months after vaccination

• Is at any time larger than 2 cm in diameter (about the size of an olive)

• Is increasing in size one month after vaccination

The Pet Health Center, follows the AAFP guidelines for recommended injection sites so that we know which vaccine is associated with a lump. It also aids in the surgical management of these tumors. The sites for these injections are:

Right front outer leg below elbow: FVRCP +/- Chlamydia

Right hind outer leg below stifle (knee): Rabies +/- any other antigen added to it

Left hind outer leg below stifle: FeLV +/- any other antigen added with it, except rabies

• All injectable vaccines should be given subcutaneously (SQ) for easier detection of lumps should they form.

• Injection sites of other medications should be recorded.

• Every effort should be made to avoid giving vaccines between the shoulder blades. If an injection site sarcoma should develop there, it cannot be completely removed.

• Tail vaccination has also been reported as well-tolerated and elicited acceptable serological responses to vaccination in the lower limbs; however, it must be given towards the very end of the tail in order to allow appropriate distance for good surgical margins should a tumor develop and need to be removed.

In the event your cat is diagnosed with a vaccine-associated sarcoma, a consultation with a boarded oncologist is suggested before surgery or treatment is commenced. This will give your cat the best chance for a successful outcome.

What about checking my pet's titers instead of vaccinating? Titers are a measurement of antibodies against a disease that develop in response to a vaccination. However, there are different types of antibodies and

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not all of them can be measured by methods currently available. To complicate things further, there are some diseases for which we can measure antibodies, but that measurement does not reliably predict protection. The good news is that there are some diseases for which titers have been shown to be a reliable indicator of protection. These are Canine and Feline Distemper, Canine Parvovirus and Canine Adenovirus. Titers for Feline Herpes and Calici viruses are also available, but are not as good of predictor for protection due to the fact that these viruses often mutate and they only invoke what is known as non-sterilizing immunity. This means one may still see signs of disease in vaccinated cats, but vaccinating is still helpful in minimizing the spread of these diseases and shortening the length of illness in many cases.

Although we can check rabies titers, it is not considered a legal replacement for vaccination in most places. For these reasons, titer testing is not currently recommended for the general population of animals. This could change in the future as more information becomes available. It may be indicated, however, for animals that have had extreme reactions to vaccines or have diseases that may be worsened by vaccinating (i.e. immune-mediated hemolytic anemia). It is important to choose a lab for titer testing that has validated its test results. One must also check to make sure titers will be accepted by whomever enforces the rabies laws in their area.

Dr. Susan C. Nelson, DVM is a Clinical Professor at the Veterinary Health Center/Pet Health Center. The Veterinary Health Center at Kansas State University is a full service veterinary hospital providing routine, specialty and emergency care. Their mission is to provide superior veterinary medical education, quality patient care and exceptional customer service in a caring environment. Dr. Nelson's passion is providing primary care services to her clients and patients and the instruction of veterinary students on primary care case management. Her clinical interests are in preventive care for cats and dogs, senior wellness and puppy/kitten wellness. She is also active in clinical communications training for 4th year students as well as providing media interviews covering a range of pet-related topics. Dr. Nelson has authored several articles and presentations to include: Disease Prevention in Dogs and Cats by Use of Vaccines and Other Preventive Measures; Bite Prevention and Information for Pet Owners Regarding Rabies Vaccination for Pets; and Vaccine Guideline Updates for Dogs and Cats.

Surplus Item for Sale - Coda Netgun - Standard Model

This item is an early version produced by Coda. I was advised that the device is in working order, however, it does require new nets which can be purchased directly from Coda. This device is the standard 4-barrel system and includes two net canisters; one net (needs replacement) and associated weights; metal case; and several blank cartridges (propellants for the Netgun; includes some yellow and blue loads). The trigger guard on the device also should be replaced.

The Coda Netgun is classified by the U.S. Bureau of A.T. F. as a tool rather than a firearm. This classification greatly facilitates the purchase, shipment, transport, and use of the tool.

If you are interested, please contact John Mays at jmays@accacademy.net

ACCA Training Schedule

For a registration form, visit www.accacademy.net or call 913-515-0080

Chemical Immobilization Certification
Hosted by the Ozark Police Department
October 8, 2020 - Ozark, Alabama
Schedule of Training: Chemical Immobilization Certification

Basic Animal Control Officer Certification
Hosted by the Southwestern Community College - Public Safety Training Division
October 13-16, 2020 - Franklin, North Carolina
Schedule of Training: Laws and Enforcement Procedures; Interpersonal Communication; Officer Safety and Protection; Basic Animal Control Officer Investigations; Evidence Law and Collection; Courtroom Testimony and Report Writing; Canine Behavior and Aggressive Dogs; Safe Animal Handling/Capture and Restraint Equipment

Training Course for Animal Control Professionals
Hosted by Barbour County Animal Control
October 19-23, 2020 - Belington, West Virginia
Schedule of Training: Understanding the "Link" in Animal Abuse; Understanding the ADA and Service Animals; Stress Management/Compassion Fatigue; Sovereign Citizens; Performing Animal Exhibitor Inspections; Illegal Animal Fighting; Investigative Techniques for Cruelty and Neglect Complaints; Chemical Immobilization Certification; Baton/Bitestick Certification

Basic Animal Control Officer Certification
Hosted by the Williamson County Animal Shelter
October 26-29, 2020 - Franklin, Tennessee
Schedule of Training: Laws and Enforcement Procedures; Interpersonal Communication; Officer Safety and Protection; Basic Animal Control Officer Investigations; Evidence Law and Collection; Courtroom Testimony and Report Writing; Canine Behavior and Aggressive Dogs; Safe Animal Handling/Capture and Restraint Equipment

Calhoun County Cruelty Certification Training
Hosted by Calhoun County Animal Control
November 2-4, 2020 - Saint Matthews, South Carolina
Schedule of Training: Laws and Enforcement Procedures; Canine Behavior and Aggressive Dogs; Investigative Techniques for Cruelty/Neglect Complaints; Understanding the "Link" in Animal Abuse

Chemical Immobilization Certification
Hosted by Calhoun County Animal Control
November 5, 2020 - Saint Matthews, South Carolina
Schedule of Training: Chemical Immobilization Certification