

LET'S TALK ABOUT VACCINES!

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I'm overhearing a conversation while in the waiting room at a vet's office:

"Spot is going to a boarding kennel tomorrow and they require his yearly shots to be up-to-date. Oh, and a kennel cough vaccine" says a dog owner while looking at her cell phone, clearly in a rush. The receptionist is responding with an explanation that this vet practice requires a vaccine visit 2 weeks before a planned boarding of a dog.

"What's the difference? He's here now," says Spot's owner, her voice betraying annoyance.

In my mind I chalk her ignorance up to a superficial interest in her dog's well-being. Bringing the dog to a vet is just one of the things to check off on her to-do-list before she goes away, and vaccinating just a boarding kennel requirement. How the vaccines work is not even remotely on her mind. Request for multiple vaccinations, repeated yearly, shots given right before boarding a dog in the kennel; all this spells lack of knowledge.

When I get home I forget all about Spot's owner but I just happen to read a post in an online breeder forum that brings that memory back. I am surprised with the connection. A breeder who is taking a great pride in properly socializing her puppies is bragging about an enriched environment she created for her pups, with various surfaces to walk over, a home-made mobile, a wobbly board. Here is a person who cares and invests energy into her dogs. She shares photos of the setup – in a spacious exercise pen outdoors, and adds that she just vaccinated her 6-week old puppies the day before so that they could enjoy the outdoor playground.

Time out! As a responsible dog owner and breeder, you should know how vaccinations work.

VACCINES NEED TIME TO WORK

After receipt of a vaccine, it takes time for the dog's immune system to start producing antibodies to that vaccine. Depending on the kind of vaccine and on the dog's individual health, this process can take from 1 to 3 weeks. For example, when you travel to Europe with your dog you will be required to certify that a rabies vaccine was administered at least 3 weeks prior to entering EU. Those 3 weeks reflect the time needed to develop protective antibodies to the rabies vaccine.

IMMUNE SUPPRESSION FOLLOWING VACCINATION

Let us not forget that vaccines are a preparation of killed microorganisms, live attenuated organisms, or toxic components. That's some scary-sounding stuff. The process we intend to cause, namely production of antibodies, means taxing the body. Following administration of a vaccine the immune system goes through a process similar to fighting off an actual infection. Energy is devoted to the production of specialized white blood cells which process the foreign substances (the vaccine) and produce specific antibodies. In some cases, especially in the case of live-attenuated virus vaccines, this creates a temporary deficiency in immune system's ability to respond to something else.

Immediately following vaccination is not the time to bring your dog to a dog show, or a boarding kennel, or a young pup to a physically stressful or pathogen rich environment. Both Spot's owner and the loving breeder who set up a wonderful playground for her very young pups outdoors were oblivious to those facts.

VACCINE PROTOCOLS

A lot of discussion surrounds various vaccination protocols for dogs as if they were solid rules to be picked between. Not enough discussion illuminates the process of acquiring immunity against a disease. Understanding the process would help breeders and dog owners to make informed decisions about when to vaccinate and with what vaccines (in other words which protocol is best suited for their dog). There is really no "one size fits all" answer when it comes to something as complex as producing disease-fighting cells. Just think about it. There are no two identical dogs in this world. It comes to reason that the way they build immunity will be very individualized.

The American Veterinary Medical Association has two protocols for vaccinating puppies. One is for puppies of "unknown history", the other for a healthy pup with known origins. This distinction reflects the fact that vaccination is a process, with one of its components being the immune system of the puppy and its mother.

When the American Animal Hospital Association (AAHA) formed a task force to review the most current scientific data on vaccinations and to develop vaccine guidelines for veterinarians, its chairperson, Dr. Michael Paul, had this to say at the conclusion of the committee's work: "The guidelines should not be construed as dictating an exclusive protocol, course of treatment, or procedure. They serve as a guide for developing vaccine schedules for individual patients".

One of the foremost authorities on the process of acquiring immunity to disease through vaccination is Dr. Jean Dodds, founder of Hemopet, an animal blood bank and specialty diagnostic laboratory (as well as a retired racing greyhound rescue). Dr. Dodds' vaccination protocols are often favored by breeders.

To make an informed decision about which protocol to choose for your dog, let us look at a few key facts.

PUPPY VACCINATION

One of the most misunderstood facts about puppy shots is why we vaccinate puppies two or three times, and what factors influence the optimum time to administer those shots. The strength of the puppy's dam's immune system and the puppy receiving colostrum after birth are the two main factors influencing the puppy vaccine regimens.

Right after birth a puppy nurses on so called "first milk", or colostrum. I like saying that it is a true toast to health, as colostrum contains all the mother dog's antibodies against diseases. A newborn's stomach wall is porous to allow for his dam's antibodies to pass through its holes directly into the bloodstream. We now know that this "window of opportunity" is open for only a few hours after birth. The stomach wall closes as early as 6 hours after birth.

Antibodies are large proteins. If ingested even next day, they will not make it into the puppy's bloodstream. If the puppy is able to nurse on colostrum after birth, he is receiving what is called Maternal Derived Antibodies. MDAs will be protecting him for up to 14 weeks from the diseases his

mother is immune to. What is more, it will protect him against even killed viruses, you know, the thing we call vaccines. So in order for a puppy vaccine to work, meaning stimulate the production of antibodies, MDAs cannot interfere.

Here is our first “if”. If the puppy received colostrum (nursed right after birth), he will most likely not be able to mount a response to a vaccine for at least 9 to 10 weeks, or even longer. MDAs will block the vaccine. Vaccinating such puppy at 6-8 weeks is almost certain to be too soon. If, on the other hand, the puppy did not receive colostrum, vaccinating at week 6-8 makes sense. What if the mother dog was not a healthy individual and did not have a strong immunity towards disease? That is another “if” we need to consider.

Every puppy vaccination protocol, whether it advocates three or two vaccines, whether it advocates the first shot to be administered at 6 weeks or 10 weeks of age, aims at delivering the vaccine (that killed or weakened nasty stuff) at the time when the body will start producing the antibodies. It is literally a guessing game when that is. The more is known about the puppy and its mother, the more informed that guess is.

I think the most common misconception is that a puppy needs more than one shot. It doesn't. All vaccine protocols were devised to cover the period when MDAs wear off so that one of the vaccine doses is sure to be administered at the right time. Once it works, a vaccine dose received afterwards is no longer useful. In other words when we vaccinate puppies two or three times it is only one vaccine dose that is necessary to stimulate the production of antibodies. Only one of them! We administer two or three doses to hit the right time with one of them when MDAs are not so strong that the vaccine is interfered with, but not so weak that the puppy might be unprotected.

The protocol for shelter puppies with unknown origins comprises of 3 shots starting very early, at week 6, then at week 10-12 and then again at week 14-16. The AAHA protocol of administering shots at 8 weeks/12 weeks/16 weeks is based on very broad averages of “reasonably healthy” puppies and their mothers.

Breeders, who know that their mother dogs are healthy, and their puppies nursed properly and received colostrum are best suited by Dr. Dodds protocol. She recommends vaccinating healthy puppies at week 9 and week 14. Only two vaccines. They cover the entire optimal period when MDAs from a healthy previously vaccinated mother stop interfering with puppy vaccines and right before a puppy is unprotected.

What's coming in the future is rather than trying to “hit” the right time blindly, we could first run a blood test (titer) on the puppy's MDAs and then vaccinate when the numbers are in the optimum range with one vaccine dose. The technology exists, but improved availability of lab service and cost effectiveness is what is coming, when running a couple of titers would be less expensive than vaccinating more than once.

All puppy vaccine protocols agree on a booster at 1 year old. After that you can check the protection against disease by running titers every 3 years, as Dr. Dodds recommends, or vaccinate every 3 years as per the current AAHA guidelines. All recent studies confirm longevity of vaccine protection spanning as much as the dog's lifetime, certainly lasting longer than a year. Annual vaccinations could become a thing of the uninformed past.

CORE VERSUS NON-CORE VACCINES

Another important consideration is what vaccines to administer. Again, that depends. That is a conversation to have with your vet. A dog that will actively hunt might benefit from some non-core vaccines. For most pooches sharing our sheltered lives, core vaccines are all they would need. Dr. Dodds recommends vaccination only with Parvo and Distemper vaccines, without any

additional components. For example Adenovirus has not been recorded in over 15 years in North America.

RABIES VACCINE

Rabies is a vaccine legally regulated by state laws. The law compliance overrides medical considerations, but when permitted, puppies should be vaccinated no earlier than at 20 weeks old and again with boosters as required by state law. One important consideration for rabies is to use a vaccine that does not contain thimerosal (mercury), for example Merial IMRAB TF (TF stands for “thimerosal free”).

I doubt this article will ever reach Spot’s owner, but I hope that responsible breeders and concerned dog owners will choose optimum timing for vaccination that suits each individual dog and situation. There is an overwhelming proof that over-vaccination is harmful, but judicious vaccination saves lives. As with everything else, human knowledge has an expiration date, so please do check up on new research about vaccines periodically.

2015 “HEALTHY DOG” VACCINE PROTOCOL AT A GLANCE

- Parvovirus and Distemper at week 9 and at week 14 of life
- Parvovirus and Distemper at 1 year old
- Titers every 3 years afterwards
- Rabies at 20 weeks or later, then boosters per local law
- Non-core vaccines as appropriate for the location and dog’s risk of exposure to disease