In this article I have quotes from newsletters on vaccinations from Dr. Jean Dodds and Dr. Karen Becker. The new research is slowing finding acceptance in the veterinarian world.

By Dr. Jean Dodds:

In my book, The Canine Thyroid Epidemic: Answer You Need for Your Dog, I discussed the critical role a properly functioning immune system plays in your dog's health.

So, what does this – vaccinations – have to do with our pets' immune systems? Plenty! As a dutiful pet caretaker, you are no doubt vaccinating your pet against a host of diseases. And, of course, a proper vaccination program is essential to your pet's health. On the other hand, research shows that our pets simply don't require annual vaccination boosters to keep them protected. In fact, the American Animal Hospital Association's (AAHA) revised 2011 Canine Vaccination Guidelines recommend a revaccination program every 3 or more years for dogs. And the truth is that once your dog has completed his puppy series (or kitten series for cats) for the core vaccines, there is a good chance his body will maintain immunity to these diseases for life. Yet, many well-intentioned people continue to follow the advice of some veterinarians and give their adult dogs and cats annual (or even semi-annual) vaccine boosters. This can result in over-vaccination and a variety of potentially damaging – and in some cases, even life-threatening – adverse reactions (referred to as "vaccinosis").

These risks are especially true for pets afflicted with immune-mediated disease, since over-vaccination places undue stress on the immune system and has been linked to autoimmune disease.

Side effects from canine and feline vaccinations can occur anywhere from instantly up to several weeks or months later. Vaccines can even cause susceptibility to chronic diseases later in life.

Mild reactions associated with canine or feline vaccines include:

- Fever
- Malaise
- Urticaria [hives]
- Facial swelling
- Anorexia
- Vomiting
- Stiffness
- Sore joints
- Abdominal tenderness

Severe and fatal adverse events include:

- Susceptibility to infections
- Neurological disorders and encephalitis
- Aberrant behaviour, including unprovoked aggression
- Collapse with autoagglutinated [clumped] red blood cells and icterus [jaundice]; autoimmune hemolytic anemia (AIHA) or the synonym immune-mediated haemolytic anemia (IMHA), when red blood cells are damaged and destroyed; or petechiae [pin-point] and ecchymotic [splotchy] hemorrhages from immune-mediated thrombocytopenia (ITP), when the blood platelets are destroyed. Hepatic enzymes may be markedly elevated, and liver or kidney failure may occur by itself or accompany bone marrow suppression.

The purpose of this article is to address the common misunderstandings that can lead to concerns and criticisms of the current laws about rabies vaccines. While I fully appreciate your concerns, the law is still the LAW.

The Rabies Vaccine

• Rabies vaccines are provided either annually (1-year vaccine) or every three years (3-year vaccine). The one year vaccine is given initially and then is followed up by a booster within 12 months; the booster given is the 3 year vaccine. Thereafter, boosters are required every three years. Please note that some states or locales still allow annual rabies boosters as an option at the discretion of the attending veterinarian.

• Both the 1-year and the 3-year rabies vaccine contain essentially the same amount of rabies antigenic material and adjuvant (potency).

• The law recognizes the label on the vial. So, a veterinarian cannot legally substitute a 1-year rabies vaccine for a 3-year and vice versa.

• The law states that the vaccine must be administered by a veterinarian.

• The whole vial must be administered to have a pet considered “vaccinated” by law. The size of the dog – whether a teacup Yorkie or a 180 lb. Newfoundland – does not matter.

• If a dog misses a 3-year rabies vaccination deadline, some states require a 1-year rabies vaccination as the next dose. This is expected to change in the near future based upon recent published data from the KSU Veterinary Diagnostic Laboratory (Moore, MC, et al. J Am Vet Med Assoc 2015; 246:205–211).

• I strongly recommend using the thimerosal-free (mercury-free) canine rabies vaccine (Merial IMRAB TF-1 or TF-3).

The following vaccine protocol is offered for those dogs where minimal vaccinations are advisable or desirable. The schedule is one I recommend and should not be interpreted to mean that other protocols recommended by a veterinarian would be less satisfactory. It's a matter of professional judgment and choice.

9 - 10 weeks of age

Distemper + Parvovirus, MLV

e.g. Merck Nobivac (Intervet Progard) Puppy DPV

14 – 15 weeks of age

Distemper + Parvovirus, MLV

18 weeks of age

Parvovirus only, MLV

Note: New research states that last puppy parvovirus vaccine should be at 18 weeks old.

20 weeks or older, if allowable by law

Rabies – give 3-4 weeks apart from other vaccines

Mercury-free (thimerosol-free, TF)

1 year old

Distemper + Parvovirus, MLV

This is an optional booster or titer. If the client intends *not* to booster after this optional booster or intends *to* retest titers in another three years, this optional booster at puberty is wise.

1 year old

Rabies – give 3-4 weeks apart from other vaccines

3-year product if allowable by law; mercury-free (TF)

Perform vaccine antibody titers for distemper and parvovirus every three years thereafter, or more often, if desired. Vaccinate for rabies virus according to the law, except where circumstances indicate that a written

waiver needs to be obtained from the primary care veterinarian. In that case, a rabies antibody titer can also be performed to accompany the waiver request. Visit The Rabies Challenge Fund for more information.
W. Jean Dodds, DVM

By Dr. Becker

> The American Animal Hospital Association (AAHA) Canine Vaccination Task Force has updated their vaccination guidelines for 2011.

I'm encouraged by, if not blissful about the new guidelines.

The absolute highlight is that all core vaccines with the exception of the 1-year rabies are now recommended at 3-year or greater intervals.

Even more exciting is the task force has acknowledged that in the case of the non-rabies core vaccines, *immunity lasts at least 5 years for distemper and parvo, and at least 7 years for adenovirus.*

When it comes to rabies vaccines, Dr. Schultz gives the first vaccine after 4 months of age, revaccinates in a year, and then again in 3 years and every 3 years thereafter. In other words, he follows the law for 3-year rabies vaccines, even though he doesn't believe a vaccination every 3 years is necessary for immunization.

Currently Dr. Schultz is in year 4 of a 7-year study of the rabies vaccine. You can read more about the study at the Rabies Challenge Fund. His goal is to be able to recommend that after an animal is vaccinated at from 12 to 24 weeks for rabies, there's no need for re-vaccination every 3 years.

Risks of Too-Early Rabies Vaccinations

> I asked Dr. Dodds to talk about her concerns about vaccinating puppies too early in life.
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> She explained that at 12 weeks, puppies are at a critical age for socialization. This is around the time they leave their litters and go to new homes. They are also receiving combination vaccines for core diseases like distemper and adenovirus, and in some regions they're also receiving Lyme, leptospirosis and/or other non-core vaccines. They're getting what are called "combo-wombo" vaccines at the critical age of 12 weeks when the immune system is just beginning to mature and may be unable to handle the immunological challenge of multiple vaccines.
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> Puppies at this age are getting lots of vaccinations, leaving their litters, going to new homes, adjusting to new environments including new food, and possibly the presence of children and other pets. Now we want to take these poor puppies and give them another very strong, neurogenic vaccine at the

same time – a vaccine that can be affected and neutralized by residual maternal immunity. This is worrisome. This is not the time, in Dr. Dodds view or mine, to give an additional vaccination on top of the other vaccines and all the other changes puppies are dealing with.

How Residual Maternal Immunity Can Affect Vaccines

I asked Dr. Dodds to explain what happens when a puppy is vaccinated while there is still the potential for maternal antibody interference.

She explained that when you give a vaccine antigen, which is the protein of the virus or bacteria you're immunizing against, you actually neutralize any existing antibody directed specifically against that same antigen. So let's say that at 12 weeks, a puppy still has residual distemper virus immunity from the mother. If you give that puppy the distemper virus vaccine, it will neutralize some of the existing immunity against the virus, leaving the animal vulnerable until the new antibodies from the vaccine take over.

For distemper, that window of vulnerability can be relatively short. For parvo, it can be much longer. Parvovirus 2c, the new virulent strain in the U.S., is highly contagious and can be very serious in young puppies. We don't want to create a vulnerability window by vaccinating puppies with existing maternal immunity and then assuming they are fully protected. They must receive the vaccine after 16 weeks for that assurance.

Dangers of Adverse Rabies Vaccine Reactions

If we're vaccinating puppies with a very strong, adjuvanted vaccine at a younger age, what should pet owners look for in terms of potential vaccine reactions?

Dr. Dodds responded that she wishes she had a dollar for every frantic call she gets from a pet owner or veterinarian about an adverse reaction from a rabies vaccination. Many vets, including those at veterinary teaching hospitals, get confused about just what you described – the type I/type II more immediate reactions vs. delayed reactions.

What you see very often with delayed reactions in young puppies are very disturbing symptoms like seizures or severe, adverse temperament changes such as irritability, snapping, or acting dazed. These puppies can exhibit odd behaviors like "fly-snapping" and staring at the ceiling. The seizures are of course very worrisome, because many people assume young puppies with seizures have congenital epilepsy. In fact, there have been instances where veterinarians have told owners they bought their dog from an irresponsible breeder who breeds epileptic dogs, when in fact the animal is having a

delayed adverse reaction to a rabies vaccination. Dr. Dodds even knows of veterinary neurologists who don't recognize the symptoms as an adverse vaccine reaction.

As Dr. Dodds explains, vaccine reactions can destroy joints, cause high fevers, and even cause the animal to scream out in pain when touched. They can destroy red blood cells and platelets. They can destroy the liver. But the scariest reactions involve neurological behavioral changes. Some of these puppies wind up abandoned or euthanized when all that was needed was detoxification support to address the rabies vaccinosis reaction.

Dr. Dodds feels very uncomfortable that veterinarians and pet owners are not being taught to recognize the adverse effects of rabies and other vaccines. Distemper vaccine reactions can also involve neurological signs, especially if the vaccine contains modified live virus -- the Rockborn strain of virus – that is known to produce post-vaccinal encephalitis. So we're talking about post-vaccinal encephalitis from adjuvanted rabies vaccines with lots of immune system stimulants as well as from modified live distemper virus vaccines.