

Is Your Vaccinated Pet Protected From Disease?

The purpose of a vaccine is to trigger an immune system response that confers protection against disease. But here's where it gets confusing for many pet owners. Just because your pet is vaccinated doesn't necessarily mean he is immunized - or protected - against disease.

Analysis by [Dr. Karen Shaw Becker](#)

Oct 30, 2022 • 7 min read

STORY AT-A-GLANCE

- Some veterinarians are stepping away from the narrative, hoping to encourage their colleagues to be more open to antibody titer testing in lieu of repeated re-vaccinations of cats and dogs
- Too often, pet parents are put in lose-lose situations when they are request titer tests in lieu of automatic re-vaccination
- Vaccine antibody titer tests can be performed to determine a dog's immunity to core vaccines, including distemper, parvovirus, and adenovirus; and a cat's immunity to panleukopenia
- Rabies vaccine titer tests are available, however, adequate rabies titer tests are not currently "acceptable" proof of immunity under the law in most states and countries
- A positive titer means a pet is protected; however, a negative titer doesn't necessarily mean a pet is vulnerable to disease
- Many pet parents don't realize that vaccinations don't always result in immunization — titer tests determine if an animal is protected or not

Over the past couple of years, many people have grown distrustful of vaccines, and in fact, concerns about vaccine injuries in humans have led lots of pet parents to also question the wisdom of automatic re-vaccination schedules for dogs and cats.

Unfortunately, too often pet owners who request titer tests in lieu of re-vaccinations get pushback from veterinarians, including being told titers will cost up to 10 times as much as a vaccine.

Just last month, an acquaintance of mine was told by her veterinarian that titer tests for parvo and distemper would run \$215 each, bringing the total for her perfectly healthy 11-year-old dog's semi-annual wellness exam to nearly \$800. This is simply beyond the ability of many pet parents to pay, especially during these inflationary times.

This approach is increasingly leaving pet owners questioning the intentions of veterinarians who actively choose to run the risk of administering too many vaccines rather than offering affordable titer tests to determine if their patients are already protected against disease thanks to an earlier vaccine.

When I last interviewed veterinarian Dr. John Robb of Protect the Pets, the fee for a core vaccine titer test (rabies, distemper, parvo, and adenovirus) through the Kansas State Veterinary Diagnostic Laboratory was \$55.50. The School of Veterinary Medicine at the University of Wisconsin charges only \$45.00 for parvo and distemper.

In-clinic test kits are also available for even less through Vaccicheck. Bottom line, veterinarians who understand the importance of titer tests and the inherent dangers of over-vaccinating pets do the research required to find labs like KSVDL or the **Wisconsin School of Veterinary Medicine Titer Testing Service** that charge reasonable fees and pass those savings along to their clients.

The hopeful news is that there are some members of the veterinary community who are beginning to realize a hardline approach to vaccinations against the wishes of clients is putting well-meaning pet parents in an impossible situation with regard to their animals' health.

Positive Means Protected

One member of the veterinary community speaking out is Dr. Richard Ford, who encouraged attendees at a recent veterinary conference to stop thinking of the situation as vaccination vs. titer testing, and instead consider "using antibody testing to assess response to vaccines."¹

There are four canine and feline core diseases for which a positive titer test can be considered a definitive indicator that the animal has protective immunity: distemper, parvovirus and adenovirus in dogs, and panleukopenia in cats.

It's important to remember these core vaccines are not required by law; they may be required by private companies (daycares, groomers, etc.) but they are not state mandated vaccines. I find many pet owners are afraid to titer because they think they're breaking the law; they aren't.

Rabies is the only required vaccine, legally. Unfortunately, because rabies vaccines are mandated by most countries, a positive rabies titer test cannot be interpreted (under the law) as an indication of protective immunity.

This is a situation that must be addressed. Laws not based on scientific evidence force pet owners and veterinarians to repeatedly re-vaccinate animals who already have protective immunity against rabies. These re-vaccinations are not helpful (i.e., they don't make pets "more immune") and can be harmful to some animals.

Regarding the remaining core vaccines not required by law, there are two types of titer tests available — quantitative and qualitative. Quantitative titer tests are sent out to a laboratory and results are returned in a few days.

The results are reported as a titer, for example, 1:1600, but the number isn't important as long as it's positive (indicating the body has made antibodies to that virus). An animal is either immune or not — a fact Ford emphasized with his audience, since many veterinarians scrutinize the numbers unnecessarily.

Qualitative titers are performed in veterinary clinics as point-of-care tests that provide results ("yes" = positive; "no" = negative) within about 25 minutes. These tests have been validated, and a positive result correlates well with the results of quantitative tests.

Negative Doesn't Always Mean Unprotected

When a titer test for one of the four core diseases listed above produces a negative result, Ford cautions that veterinarians shouldn't assume an adult cat or dog who has been vaccinated in the past is not protected against that disease. As veterinarian Kate Boatright explains in an article for veterinary journal *dvm360*:

*"Over time, antibody levels circulating in the blood will decrease in the absence of exposure, but the immune system possesses memory that can produce an immune response should it encounter the disease. A negative titer in a puppy undergoing its initial vaccine series indicates that the immune system has not yet responded to vaccinations or may be unable to respond."*²

According to the American Animal Hospital Association (AAHA) guidelines for dogs (which also reasonably applies to feline panleukopenia) published in 2017:

- A "negative" test result does not always correlate with susceptibility. Antibody may fall below detectable levels in the absence of exposure, including re-vaccination. For adult dogs which have been shown to have had protective titers against CDV, CPV and CAV2 in the past, exposure to pathogenic virus is likely to induce an immune "memory" response resulting in a rapid, anamnestic protection, even years following the last vaccination.
- A "negative" or "weak" response indicates that further vaccination may be of benefit to re-establish humoral response above the sterile immunity threshold.
- In effect, documentation that an individual patient has ever had a "positive" antibody test result for canine distemper, parvovirus, and/or adenovirus denotes that immune memory exists and the patient, if exposed, is expected to mount a rapid, protective response whether or not detectable levels of antibody were present at the time of the exposure.
- False negative test results are uncommon and can be associated with low test sensitivity, insufficient time following vaccination for a detectable antibody response to develop, procedural errors, etc.

Astonishingly, the above bullet points have been removed from the 2022 guidelines and replaced with information that discourages the use of antibody titer tests. It's so discouraging that AAHA has taken a step backwards when it comes to helping hospitals cultivate individualized medical protocols tailored around the unique needs of each animal family member.

Cookie-cutter medicine is de-evolution in our profession and embarrassing for an organization encouraging better medical standards and protocols for hospitals. Let's hope Dr. Ford's forward-thinking expertise may help shift this organization's stance to a more immunologically rational one next year.

Vaccinated Doesn't Always Mean Protected

Another extremely important point Ford reinforced in his presentation was that just because a pet is vaccinated doesn't mean he has been immunized against disease. The purpose of vaccines is to trigger an immune system response that confers protection against disease.

However, according to Ford, research shows that at 12 weeks, only 50% of puppies have been immunized against distemper and parvo, likely due to interference from maternal antibodies. That's the reason puppies (and kittens) receive a series of vaccines — so that at least one vaccine is given after maternal antibodies have disappeared.

Per Ford, at 16 weeks, 15% of puppies are still not immunized. Owners who need or want to know definitively that immunization has been achieved can ask for titer testing two to four weeks after completion of the vaccine series. This is a crucial step in determining whether your puppy is protected against parvo, distemper and adenovirus, or not.

I have strongly advocated for more bio-individualized vaccine protocols for the last 20 years, including the use of **vaccine nomographs** to correctly time puppy vaccines. Dr. Ronald Schultz was the immunologist who introduced me to this invaluable tool in 1999 to assess when puppy vaccines are best administered. Titering pregnant dogs to determine when maternal antibodies will dwindle in her litter is a wise strategy to avoid unnecessary and ineffective inoculations.

By knowing when maternal antibodies wane, proactive wellness vets don't have to guess at when to initiate effective puppy vaccines. This easy and elegantly simple approach to accurate vaccine timing prevents the administration of unnecessary vaccines when the puppies are too young (and maternal antibodies are high) and offers litters the potential of avoiding ineffective vaccinations.

There is one caveat all pet parents should be aware of, and that's the rare possibility their pet is a "non-responder." A small number of dogs are genetic non-responders to the parvovirus vaccine (but do respond to vaccines against other diseases).

These dogs will not produce antibodies, no matter how many times they are vaccinated, and are at high risk for parvo, especially as puppies, so it's extremely important to minimize their exposure to prevent infection.

If you have been revaccinating your pet every 1-3 years and then decide to titer and the titer is negative, you can assume he or she is a non-responder.

If you've just rescued an animal who has no measurable antibody response, the general recommendation for healthy adult dogs with a negative titer is to administer a booster, then titer two to four weeks later to see if the vaccine produced measurable antibodies.

However, the decision to vaccinate a dog with no titer depends on a number of factors. Animals must be healthy to be vaccinated for anything. Animals with a history of adverse vaccine reactions, an autoimmune disease, a chronic illness (including organ disease, thyroid/adrenal disease and cancer), or who are taking immunosuppressant drugs should not be vaccinated at all.

Additional Info on Titer Testing and Vaccines

These days it's not uncommon to be erroneously labeled an "anti-vaxxer" if you ask any questions about the number or frequency of vaccines your pet receives, which is unfortunate. In my opinion, Dr. Ford's suggestion to use titers to determine the necessity of additional vaccines makes guardians wise-vaxxers, not anti-vaxxers.

I'm excited conventional veterinarians are being encouraged to participate in the much-needed conversation about titers that Dr. Ford is initiating in our profession.

If you're concerned about over-vaccinating your pet, I encourage you to view my most recent interview with Dr. John Robb, founder of Protect the Pets, who is fearlessly leading the charge to keep animal companions safe from too many unnecessary vaccines, and one-size-fits-all vaccine dosing. Our collective goal is to have all pets immunized without

being over-vaccinated.

[Download Interview Transcript](#)

Sources and References

^{1, 2} [dvm360, May 4, 2020](#)

³ [AAHA Guidelines: Utilization and interpretation of serologic titers](#)
