

## VACCICHECK: CLINICAL FAQ'S

### ▶ **What is a titer?**

The word titer is a way of expressing concentration, and titer testing is a way to measure the presence/concentration of antibodies in humans or animals' fluid samples.

### ▶ **The purpose of titer testing**

The purpose of titer testing is to determine protective immunity in puppies/kittens, to determine revaccination intervals in adult dogs/cats, and to manage infectious disease outbreaks in shelters.

It is extremely important to vaccinate dogs/cats in order to allow them to build immunity and fight diseases. However, due to a great variability in their ability to build their protection, and a great variability in the duration of immunity in each dog/cat, titer testing is the only available tool to help vets make a smart evidence-based decision regarding revaccination. By titer testing pets, vets can determine whether revaccination is needed or not and prevent possible vaccination side effects.

### ▶ **Core and noncore vaccines**

As recommended and defined by WSAVA Vaccination Guidelines every dog and cat are required to have core vaccines in order to protect them from life-threatening infectious diseases that remain prevalent throughout the world. These include the following vaccines.

#### **Canine core vaccines:**

- Infectious canine hepatitis (ICH)
- Canine parvovirus

#### **Canine distemper virus**

#### **Feline core vaccines:**

- Feline panleukopenia virus
- Herpesvirus- feline viral rhinotracheitis (FVR)
- Feline calicivirus

Non-core vaccines are only required of animals whose geographical location, local environment or lifestyle place them at a risk of contracting specific infections. Most of these animals require an annual boost. The Parainfluenza virus, Bordetella bronchiseptica, and Leptospira, for example, are classified as noncore vaccines.

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### ▶ **What is VacciCheck**

VacciCheck is a simple and affordable titer test, designed to monitor an animal's immunity status as a result of vaccination, in order to confirm protection and avoid unnecessary vaccination in immunized pets. A single blood test will assess a pet's immune status for core feline or canine diseases.

### ▶ **What does VacciCheck test for?**

VacciCheck measures antibody levels against canine core vaccines components (parvovirus, distemper, and infectious hepatitis), and against feline core vaccine components (panleukopenia, herpesvirus and calicivirus), in order to assess the pet's immunization following vaccination.

### ▶ **How do I interpret the results?**

Once your comb has been developed, gray dots will appear on it: a positive control dot and 3 test dots. The results are always relative to the positive control.

A score of 2 and above is considered positive, meaning the animal is protected. The WSAVA Vaccination 2016 Guidelines state: "The presence of antibody (no matter what the titer is) indicates protective immunity and immunological memory is present in that animal. Giving more frequent vaccines to animals in an attempt to increase antibody titer is a pointless exercise. It is impossible to create 'greater immunity' by attempting to increase an antibody titer".

"When antibody is absent, (irrespective of the serological test used) the dog should be revaccinated unless there is a medical reason for not doing so, even though some will be protected by immunological memory."

### ▶ **Can I give the results a numerical value?**

Yes! VacciCheck is a semi-quantitative test and comes with a slide scale to match the gray dots on the developing comb with a correlating number. The darker the dot is, the higher the titer. VacciCheck offers a CombCam for users who prefer an automated system to interpret results.

### ▶ **Does VacciCheck test for rabies?**

No, it does not. According to WSAVA, "monitoring serum antibody specific for canine rabies is not generally used in the same manner for determining re-vaccination requirements as these are mandated by law".

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### ▶ **How often do I need to perform a test?**

According to the WSAVA guidelines a test should be performed every three years. With that being said, it is recommended you test yearly in certain medical situations and in geriatric dogs/cats.

### ▶ **Can I use the test results as a confirmation document for my pet boarder?**

It depends on the facility's requirements and policy.

### ▶ **Is VacciCheck's accuracy backed up by scientific evidence?**

The performance of the VacciCheck test kit has been validated using clinical samples by comparing results to the gold standard titer assays. The test was approved by the USDA and other authorities.

### ▶ **How old does the puppy/kitten need to be when tested for vaccine protection validation?**

We recommend following the WSAVA guidelines and test puppies/kittens 4 weeks after the completion of the puppy/kitten vaccination series.

### ▶ **How should the VacciCheck kit be used in assessing a puppy/kitten's immunization status?**

Taking into account that Initial puppy/kitten vaccination is finished at 16 weeks or older, it is recommended you test the dog/cat at the age of 20 weeks. If the result comes out negative, vaccinate one more time and repeat the test after two-four weeks. That way you can be certain that the dog/cat is protected.

WSAVA recommends an initial core vaccination at 6-8 weeks of age, then every 2-4 weeks until the dog/cat reaches 16 weeks of age or older. Therefore, the number of puppy/kitten primary core vaccinations will be determined by the age at which the vaccination series first started and the selected interval between the vaccines.

### ▶ **How can VacciCheck be used in shelters?**

One of the uses of VacciCheck is in the event of a disease outbreak in shelters. VacciCheck is used to control of infections outbreaks by determine which dogs/cats are protected and safe, and which need to be quarantined. In addition, by titer testing a new puppy/kitten upon admission to the shelter, rather than vaccinating dogs with an unknown history, you can safely bypass any quarantines that may be required. This allows for a quicker adoption and ensures the safety of all dogs/cats in the shelter.

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### ▶ **Is it true that there is a poor correlation between humoral immunity (IgG) and protective immunity against FHV and FCV?**

There is some disagreement between key opinion leaders regarding the validity of using titers to measure protection from a disease following the feline calicivirus and feline herpesvirus vaccines.

According to the WSAVA guidelines, "In terms of feline core vaccines it is important to realize that the protection afforded by the FCV and FHV-1 vaccines will not match the immunity provided by FPV vaccines. Thus, core vaccines for feline respiratory diseases should not be expected to give the same robust protection, nor the duration of immunity, as seen in canine core vaccines".

For that reason, developing antibodies may not always equate with protective immunity, or the ability to prevent infection or shedding.

### ▶ **Interpreting results**

If the dog's Vaccicheck titer test comes out positive (score 2 and above), then they are protected, and will most likely remain immune for the following three years.

As for the duration of immunity, Professor Ronald Schultz's advice is: "Neither a titer nor annual vaccination is necessary every year because of the 'core vaccines' duration of immunity. However, a blood sample taken yearly from an animal for a titer check is preferential to an unnecessary vaccination as a vaccine may cause harm."

### ▶ **How long does immunity last follow a positive testing in dogs?**

According to the WSAVA Guidelines (attached): "A high percentage (98%) of core puppy vaccines given between 14-16 weeks of age will provide immunity against parvovirus, distemper and adenovirus **for many years, and probably for the life of the animal.**"

### ▶ **Can a pet owner perform a titer test?**

1. Titer testing requires blood withdrawal which can only be performed by a veterinarian or qualified staff.
2. Running the test involves handling pet's blood which might be contaminated with infectious agents that could be harmful to humans.
3. Interpreting and making a decision according to the test results requires veterinary knowledge. It is strongly contraindicated to rely on results and make a decision without veterinary consultation.

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### ▶ **What is the gold standard used for VacciCheck validation?**

VN=Virus Neutralization for Canine Distemper Virus (CDV) and Canine Adenovirus (CAV).  
HI=Hemagglutination Inhibition for Canine Parvovirus and Feline Panleukopenia Virus.

### ▶ **How do you titer test kittens?**

It is highly recommended to titer test kittens following the completion of their initial vaccination series.

It is critical to make sure the kitten is immunized especially against FPLV which is the most severe and lethal of the three feline core diseases.

Later in life, titer tests are the only assured way to reduce the burden of revaccination.

### ▶ **How do I interpret VacciCheck feline titer tests results?**

For FPLV it is quite simple: if the titer is negative, it means it is imperative to perform a revaccination. For the respiratory elements, FCV and FHV, it depends on the veterinarian's recommendations and the level of risk.

In some countries there is now a nasal spray vaccine for FCV/FHV. This is a simple, effective and safe vaccine to complete in cases of FPLV positive, with negative FCV/FHV.

### ▶ **What should be taken into consideration when titer testing cats?**

You should take into account the level of risk of the cat, in terms of the age of the cat, whether the cat lives alone or with other cats, lives inside an apartment or is an outdoor cat, and what his or her underlying health conditions are.

Titer testing cats differs between geographical locations depending on the vaccination coverage and the prevalence of disease outbreaks.

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### How much does it cost to perform a VacciCheck titer test?

A titer test kit can only be purchased by a veterinarian, therefore the service fee for the test is determined by the veterinarian who provides it.

There's no doubt about it: vaccinations provide the cheapest form of preventative care. However, rather than sending a titer test sample to a lab, a veterinarian using VacciCheck in his or her clinic will be able to offer clients a reasonable price and quick results. Furthermore, testing for antibodies is currently the only practical way to ensure that a puppy/kitten's immune system has recognized the vaccine antigen and is therefore protected for the next few years.

There are several reasons why vaccines may fail to induce protective immunity in a puppy or kitten:

1. Vaccine poor immunogenicity
2. Genetic non-responders
3. Maternal derived antibodies (MDA)