

# The Science Has Been Done

## References are provided to support the following

1. Duration of Immunity studies on large numbers of animals has been done.
2. Endogenous antibody interference with vaccines, blocks re-administered vaccines from enhancing immunity.
3. Dogs over 8 weeks of age do not develop any disease from canine corona virus
6. Vaccines can cause Injection Site Fibrosarcomas, or Vaccine Associated Sarcomas VAS. Non- Adjuvanted Vaccines are safer than adjuvanted vaccines, in that they are less likely to cause VAS.
7. Titers do not accurately predict which dogs will respond to another vaccination.

1. The **duration of immunity** for **Rabies vaccine, Canine distemper vaccine, Canine Parvovirus vaccine, Feline Panleukopenia vaccine, Feline Rhinotracheitis, feline Calicivirus**, have all been demonstrated to be a **minimum of 7 years** by serology for rabies and challenge studies for all others.

Schultz, Ronald D, *Duration of Immunity to Canine Vaccines: What We Know and What We Don't Know*, Proceedings – Canine Infectious Diseases: From Clinics to Molecular Pathogenesis, Ithaca, NY, 1999, 22.

Minimum Duration of Immunity for Canine Vaccines:

Distemper- 7 years by challenge/15 years by serology

Parvovirus – 7 years by challenge/ 7 years by serology

Adenovirus - 7 years by challenge/ 9 years by serology

Canine rabies – 3 years by challenge/ 7 years by serology

Fishman B & Scarnell J, *Persistence of protection against infectious canine hepatitis virus*, Vet Rec, 99, 509. 1976

Scott FW, Geissinger C, *Long-term immunity in cats vaccinated with an inactivated trivalent vaccine*, Am J Vet Res, 60(5): 652-8, May 1999.

7.5 years DOI by challenge

Lappin M R, Andrews J, Simpson D, Jensen WA, *Use of serologic tests to predict resistance to Feline Herpesvirus 1, Feline Calicivirus, and Feline Parvovirus infection in cats*, J AVMA, 220(1): 38-42, Jan 1, 2002

3 years DOI by challenge.

**Vaccines for diseases like distemper and canine parvovirus, once administered to adult animals, provide lifetime immunity.**

Schultz, Ronald D., “Are we vaccinating too much?” JAVMA, No. 4, August 15, 1995, pg. 421.

Canine distemper and adenovirus 2 vaccines both provide lifelong immunity. (Schultz)

**There is the mistaken assumption that if we recommend annual re-vaccination a greater percentage of the population will be vaccinated. It doesn't do any good to over vaccinate one segment of the population and not vaccinate the rest. (Macey)**

**With modified live virus vaccines** like canine parvovirus, canine distemper and feline panleukopenia, calicivirus, and rhinotracheitis the virus in the vaccine must replicate to stimulate the immune system. **In a patient that has been previously immunized**, antibodies from the previous vaccine will block the replication of the new vaccinal virus. Antibody titers are not significantly boosted. Memory cell populations are not expanded. **The immune status of the patient is not enhanced.**

**After the second rabies vaccination, re-administration of rabies vaccine does not enhance the immune status of the patient at one or two year intervals.**

**We do not know the interval at which re-administration of vaccines will enhance the immunity of a significant percentage of the pet population, but it is certainly not at one or two year intervals.**

Tizard Ian, Yawei N, *Use of serologic testing to assess immune status of companion animals*, JAVMA, vol 213, No 1, July 1, 1998.

Modified live vaccines rely on the replication of the agent to trigger a protective immune response. When an animal has maternal or endogenous antibodies at the time of vaccination, the vaccine agent may be neutralized before it can replicate. ... It may not be possible to stimulate an additional immune response in that animal.

HogenenEsch Harm, Dunham Anisa D, Scott-Moncrieff Catharine, Glickman Larry, DeBoer Douglas J, *Effect of vaccination on serum concentrations of total and antigen-specific immunoglobulin E in dogs*, AJVR, Vol 63, No. 4, April 2002, pg 611-616.

Dogs were injected with rabies vaccine at 16 weeks of age and then annually. Vaccination had no effect on serum concentrations of IgA, IgG and IgM as measured at 2 and 3 years of age. Dogs were vaccinated 5 times as puppies and then at 6-month intervals with multivalent (Vanguard 5 L, DAPPCL) vaccines. Such a protocol is rarely used in pet dogs and in kennels. There were no significant differences in the concentration of IgA and IgM at 2 years and 3 years of age

Gorham, J.R., "*Duration of vaccination immunity and the influence on subsequent prophylaxis*" JAVMA 149:699-704; 1966.

Larson L J, Sawchuck S, Bonds M D, Schultz RD, *Comparison of Antibody Titers Among Dogs Vaccinated, One, Two, Three Years Previously*, Proceedings of 80<sup>th</sup> Meeting of the Conference of Research Workers in Animal Diseases, CRWD, Chicago, IL, 1999.

Wolf, Alice M., *Vaccinations-What's right? What's not?* Compendium on Continuing Education, Schering-Plough Animal Health, 1999, pg. 32.

In studies Schultz performed at the Univ. of Wisconsin, 106 dogs vaccinated within the previous 1 to 4 years, were each given a canine parvovirus booster vaccination. Only one of the 106 dogs showed a significant increase in serum antibody titer following the booster. These results show that revaccination does not enhance antibody levels or improve immunity because the vaccine virus is neutralized before it can reach the memory T and B cells. The immunity provided by previous vaccination not only protects against the virulent disease but also prevents response to revaccination.

Wolf Alice, *Vaccines of the Present and Future*, Proceedings of the World Animal Veterinary Congress, Vancouver 2001.

The recommendation for annual re-vaccination is a practice that was officially started in 1978. This recommendation was made without any scientific validation of the need to booster immunity so frequently. In fact the presence of good humoral antibody levels blocks the anamnestic response to vaccine boosters just as maternal antibody blocks the response in some young animals.

Schultz, Ronald D., “*Current and future canine and feline vaccination programs*”, *Veterinary Medicine*, March 1998, pg. 243.

The patient receives no benefit and may be placed at serious risk when an unnecessary vaccine is given. Few or no scientific studies have demonstrated a need for cats or dogs to be revaccinated. Annual vaccination for diseases caused by CDV, CPV2, FPLP and FeLV has not been shown to provide a level of immunity any different from the immunity in an animal vaccinated and immunized at an early age and challenged years later. We have found that annual revaccination with the vaccines that provide long-term immunity provides no demonstrable benefit.

Schultz, Ronald D, *The Vaccine Controversy: What Vaccines Do Cats and Dogs Really Need and How Often Do They Need To Be Vaccinated?* Department of Pathobiological Sciences, School of Veterinary Medicine, University of Wisconsin-Madison.

There was never a scientific study performed to show that CDV, CAV, CPV, or rabies virus needs to be given annually to be effective, or that if they are given annually they are more effective. There is data available for the dog and cat to show that modified live CDV, CAV, and CPV given seven years previously and killed PLP, FeCV, and FeHV given seven years previously provided the same immunity as if these products had been given one year prior to challenge with virulent organisms.

Phillips, Tom R. and Schultz, Ronald D, “*Canine and Feline Vaccines*”, *Current Veterinary Therapy XI*, ed. Kirk and Bonagura, pg. 202, 205, WB Saunders Co, Philadelphia, PA 1992.

**Almost without exception there is no immunologic requirement for annual re-vaccination.** Immunity to viruses persists for years or for the life of the animal. Furthermore re-vaccination with most viral vaccines fails to stimulate the anamnestic response as a result of interference by existing antibody. The practice of annual vaccination in our opinion should be considered of questionable efficacy.

Klingborg Donald, *Principles of Vaccination*, AVMA Council on Biologic and Therapeutic Agents, Policy on Biologics, April 2002.

The one- year re-vaccination frequency recommendation found on many vaccine labels is based on historical precedent, and not on scientific data.

Re-vaccination of patients with sufficient immunity does not add measurably to their disease resistance, and may increase their risk of adverse post vaccination events.

Schultz, Ronald D., “*Are we vaccinating too much?*” *JAVMA*, no. 4, August 15, 1995, pg. 421.

Dr Schultz said “The client is paying for something with no effect or the potential for an adverse reaction.”

## **2. Dogs over 6 weeks of age do not develop disease from canine corona virus.**

Schultz, Ronald D., “*Are we vaccinating too much?*” *JAVMA*, No. 4, August 15, 1995, pg. 421.

Schultz, Ronald D., “*Current and future canine and feline vaccination programs*”, *Veterinary Medicine*, March 1998, pg. 251.

Wolf, Alice M., *Vaccinations-what’s right? What’s not?* Compendium on CE, Schering-Plough Animal Health, 1999, pg. 32,33.

Paul, Michael A., *Vaccinations-what’s right? What’s not?* Compendium on CE, Schering-Plough Animal Health, 1999, pg. 32,33.

5. Antibody Titers do not predict if a patient will respond to re-administration of a vaccine with enhanced immunity.

**Titers don't take into effect cell mediated immunity**, which is the most important aspect of disease protection for a number of diseases. Titers don't assess the ability of memory cells, B and T lymphocytes, which can live up to 20 years or more, to regenerate an immune response. You can have a negative titer and if the pet is exposed, memory cells can respond within hours to regenerate enough antibodies for protective immunity.

Paul M, Report of the American Animal Hospital Association Canine Task Force: 2003 Canine Vaccine Guidelines, Recommendations, and Supporting Literature, AAHA Foundation, March 2003.

2000 Report of American Association of Feline Practitioners and Academy of Feline Medicine Advisory Panel on Feline Vaccines, pg. 15 & 16.

Tizard Ian, Yawei N, *Use of serologic testing to assess immune status of companion animals*, JAVMA, vol 213, No 1, July 1, 1998.

Wolf, Alice M., *Vaccinations-what's right? What's not?* Compendium on CE, Schering-Plough Animal Health, 1999, pg. 32,33.

Wolf Alice M, *Just the Facts About Vaccs: Frequently Asked Questions About Current Vaccination Recommendations and Practice Guidelines*, Proceedings from the North American Veterinary Conference, 13, 1999, pg 681.

Klingborg Donald, Principles of Vaccination, AVMA Council on Biologic and Therapeutic Agents, Policy on Biologics, April 2002.

Lappin M R, Andrews J, Simpson D, Jensen WA, *Use of serologic tests to predict resistance to Feline Herpesvirus 1, Feline Calicivirus, and Feline Parvovirus infection in cats*, J AVMA, 220(1):38-42, Jan 1, 2002

## Puppies – What is their protection?

Three day old puppies are expected to have the same anti-body titer levels as their mother. The antibodies have a ½ life of 9 days.

Eg. Mother's CPV titer = 320

Puppy's expected anti-body levels.

3 days = 320

12 days = 160

21 days = 80

30 = 40

39 = 20

48 = 10

It must also be realized with this measure of titers there is a component of error and your results put you into a range. If that range is 80 or higher it is believed the dog has lifetime immunity. It is recommended to vaccinate as late as is reasonable not earlier than 7 weeks.