

Canine Vaccination – Risks & Duration of Immunity

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The risks associated with the core canine diseases are as follows:

1. **Distemper** – high rates of morbidity and mortality from respiratory, gastrointestinal and neurological abnormalities; a widespread disease
2. **Parvovirus** – high rates of morbidity and mortality resulting primarily from gastrointestinal disease; this disease has worldwide distribution;
3. **Canine Adenovirus** – high rates of morbidity and mortality from liver dysfunction
4. **Rabies** – nearly universally fatal neurological disease. Infected animals are a potential source for human infection, thus vaccination is mandated by law in most states.

The risks associated with vaccination are as follows:

Possible adverse events from vaccination include failure to immunize, anaphylaxis, immunosuppression, autoimmune disorders such as hyper/hypothyroidism, polyarthritis, allergies, transient infections, and/or long-term infected carrier states. In addition, a causal association in cats between injection sites and the subsequent development of a malignant tumor is the subject of ongoing research.

Optimal immune responses are obtained by vaccines administered singly three to four weeks apart rather than in combination shots. Single vaccine administration also reduces the likelihood of adverse events as well as increasing the animal's immune response. Only healthy animals should be vaccinated.

Except for the rabies vaccine, manufacturers' labeled revaccination recommendations are based on limited scientific data and do not contain information on the vaccine's maximum duration of immunity. The tables below contain the minimum duration of immunity data from the canine vaccine studies performed by Dr. Ronald Schultz, Professor and Chair of the Pathobiological Sciences Department at the University of Wisconsin School of Veterinary Medicine, which form the scientific base of the American Animal Hospital's 2003 Canine Vaccine Guidelines, Recommendations, and Supporting Literature.

If your animal experiences any of the following symptoms after vaccination, you should contact your veterinary care provider immediately: fever, vomiting, diarrhea, uncontrollable trembling, lack of coordination, seizures or a hard lump at the vaccination site which doesn't disappear after a couple of weeks.

Minimum Duration of Immunity for Canine Vaccines

Vaccine:	Methods used to Determine Immunity:	Minimum Duration of Immunity:
Canine Distemper Virus (CDV) Rockborn strain Onderstepoort strain	Challenge/serology Challenge/serology	7 years/15 years 5 years/9 years
Canine Adenovirus-2 (CAV-2)	Challenge-CAV-1/serology	7 years/9 years
Canine Parvovirus-2 (CPV-2)	Challenge/serology	7 years
Canine Rabies	Challenge/serology	3 years/7 years

Data from *Duration of Immunity to Canine Vaccines: What We Know and Don't Know*, by Dr. Ronald D. Schultz, Professor and Chair, Department of Pathobiological Sciences at the University of Wisconsin School of Veterinary Medicine.

Note: Challenge studies are those in which an animal is vaccinated, isolated for a number of years, and then injected with high doses of virulent virus to test its immunity to disease. Serology is the method of counting antibody levels in the blood to determine an animal's immunity.