



**BAKENKOP**  
DIEREKLINIEK • ANIMAL CLINIC

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## WHY DID MY VACCINATED PUPPY DEVELOP PARVO VIRUS INFECTION

### **Maternal antibodies: our biggest obstacle**

- Your puppy's immunity depends on the amount of circulating antibody against the virus in its body.
- *Young Puppies:* When puppies are born, they are unable to make antibodies against infectious invaders. They would be totally unprotected, but nature has created a system to protect them. Their mother secretes colostrum [milk] for the first one or two days after giving birth. It contains all the antibodies that the mother has circulating in her own body and in this way, she gives her own immune experience to her offspring. A puppy absorbs the milk antibodies through "gaps" in the intestinal lining. These "gaps" close up after 24 – 48 hours, and no more antibodies can be absorbed. In a poorly or unvaccinated mother, there are few to no antibodies to be transferred to the puppies. If the puppy was not able to suckle during the first day or two from its natural mother no antibodies could be obtained either.
- *Older Puppies:* These maternal antibodies obtained from the mother may last between 4 - 12 weeks, depending on the 'dose' the individual received. Birth order and how strong it nurses plays a role in the amount of antibodies obtained. When the antibody count drops to a certain level in the puppy, they no longer have enough protection, and if they are exposed to an overwhelming number of viral particles, they will get infected. The age at which the maternal antibodies are no longer protective differs between individuals. Maternal antibodies also interfere with vaccines in that if it is still present in the body, it inactivates the vaccine without antibody production. The more maternal antibodies a puppy has, the weaker the immune response is post vaccination.

When a vaccine fails it is usually because it was given to a puppy before enough passive maternal antibodies has gone from its bloodstream. At 6 weeks of age 25% of puppies can be immunised successfully. At 9 weeks of age 40% of puppies can be immunised successfully. By 16 weeks 60% of puppies can be immunised and by 18 weeks 95% of puppies.

Rather than measuring antibody levels in the blood of puppies in order to choose the right age to administer the vaccine (very expensive), we give a series of boosters designed to successfully immunise most puppies while susceptible.

We use a high titre-low passage vaccine in our hospital. These vaccines give successful protection at 12 weeks of age. 'High titre' refers to the viral particle 'dose' per vaccine. Thus, there is a great deal more virus challenging the immune system. When the puppy is vaccinated, maternal antibodies neutralize the virus. If a high titre vaccine is used, there is still virus left after all the maternal antibodies have been used. This surplus virus can then stimulate the puppy's immune system. High titre vaccines commonly produce full protection by 12 weeks of age. We, however, still recommend vaccinating up to 16 weeks to have peace of mind.

We recommend the following protocol:

<b><u>Vaccination Periods</u></b>	
<b>1<sup>st</sup>:</b>	6 weeks (5-in-1)
	<ul style="list-style-type: none"><li>• Parvovirus</li><li>• Hepatitis</li><li>• Distemper</li><li>• Parainfluenza</li><li>• Corona</li></ul>
<b>2<sup>nd</sup>:</b>	9 weeks
	<ul style="list-style-type: none"><li>• 5-in-1</li></ul>
<b>3<sup>rd</sup>:</b>	12 weeks
	<ul style="list-style-type: none"><li>• 5-in-1 and <b>Rabies</b></li></ul>
<b>4<sup>th</sup>:</b>	16 weeks
	<ul style="list-style-type: none"><li>• 5-in-1 and <b>Rabies</b></li></ul>
<b>Annual:</b>	Every 12 months
	<ul style="list-style-type: none"><li>• 5-in-1 and Rabies</li><li>• Kennel Cough if going to stay in a kennel</li></ul>