

Why do cats and dogs younger than 20 weeks of age need multiple vaccinations, especially in the shelter setting?

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When a kitten or puppy is born, its immune system is not able to produce antibodies to help fight off germs. Their first protection comes from antibodies they receive from their mother prior to birth and/or soon after birth by nursing colostrum produced by the mother. These maternally derived antibodies (MDA) decline over time. In this same time period, the baby's own immune system slowly develops and their own ability to produce antibodies increases and is generally considered mature by 5 months of age.

The number of antibodies a kitten or puppy receives from their mother affects how long they remain at a high enough level to provide protection from disease. How long MDA last in any individual animal is highly variable and therefore unpredictable. While there are tests available to measure antibody levels, they are not practical or cost-effective for routine use in newborn animals.

As MDA decline the protection they provide also declines. Critically, this decline results in something called an immunity gap. In the immunity gap time period, MDA are too low to provide protection from diseases, but too high to allow the animal's own immune system to respond to a vaccination. Remember, because we don't generally know what level of MDA a baby started with OR how quickly they are declining, we can't know when a puppy or kitten is in this immunity gap period. We do know that by 20 weeks of age, maternal antibodies are gone in every kitten or puppy, so any vaccine give at or after this age will produce the same immune response we would expect from an adult animal. Some individuals will mount this immune response at an earlier age.

For this reason, we recommend that puppies and kittens admitted to an animal shelter start receiving core vaccines at 4 weeks of age, and try to keep the immunity gap period as short as possible by repeating vaccinations every 2 weeks until they leave the shelter or reach 20 weeks of age. There is no set number of vaccinations that will reliably provide adequate immunity prior to this age. It will vary by every individual animal.

This means that an individual kitten or puppy may at times be vaccinated at a time when they cannot respond to a vaccine or are already immunized from a previous vaccination. However, receiving these extra vaccinations ("over-vaccinating") is safe and has no negative impacts on the health or development of a puppy or kitten. Conversely, puppies and kittens in an animal shelter are at high risk of being exposed to and becoming ill from infectious diseases.



Recommended vaccination schedules for shelter animals (all ages) compared to those in homes are often different for this reason.

The risk of exposure to disease may vary between shelters, communities, time periods, and many other factors. If the level of risk posed to a puppy or kitten is considered very low (such as when they are housed in a foster home) a shelter may spread out vaccinations to repeat every 3 or even 4 weeks instead of 2 weeks. This may result in a prolonged immunity gap period but this may be a reasonable choice when other risks are low and can save staff and volunteer time/resources. We recommend that both animal shelters and pet owners discuss the optimal vaccination plan for the animals in their care with their veterinarian.

Vaccination recommendations for shelter animals can be found in the following recommended resources.

2022 Association of Shelter Veterinarians Guidelines for Standards of Care, Medical Care
asmcah.org/index.php/jasv/article/view/42/19

2022 American Animal Hospital Association (AAHA) Canine Vaccination Guidelines (this link is for shelter dog specific recommendations)
<https://www.aaha.org/globalassets/02-guidelines/2022-aaha-canine-vaccination-guidelines/resources/2022-aaha-canine-vaccinations-guidelines.pdf>

2020 AAHA/American Association of Feline Practitioners (AAFP) Feline Vaccine Guidelines
journals.sagepub.com/doi/pdf/10.1177/1098612X20941784

2016 World Small Animal Veterinary Association (WSAVA) Vaccination Guidelines
wsava.org/wp-content/uploads/2020/01/WSAVA-Vaccination-Guidelines-2015.pdf