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Vaccination Against Common Canine Disease

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Vaccination is a most effective way of preventing the disease in canine. Vaccines elicit an immune response in an animal without causing the disease itself and body remembers the infectious agent to which it is vaccinated. There is high level of protective immunity in case of subsequent exposure to the same pathogen. A general good health and proper functioning of immune system is a important requirement to stimulate strong immune response to vaccine and subsequent protection to the infection.

Various kinds of Vaccines which are available can be broadly categorized as

- Modified-live (attenuated): This vaccine contains an intact but weakened pathogen which stimulates an immune response but does not cause clinical disease. Care should be taken while administrating in immune-compromised animal and pregnant animals.
- Inactivated (killed): Theses vaccine contains a completely inactivated pathogen, which is no longer infectious often contain an adjuvant, which is a compound added to help improve the protective immune response. These are safe to be given in pregnant animals.
- Recombinant: These vaccines use specific genetic material from a pathogen to produce proteins which when administered will stimulate an immune response in the animal.
- Toxoid: Inactivated toxins in the vaccine produced by pathogens stimulate immunity and protect the animal against these toxins.

Vaccines can be classified as core and noncore vaccine. Core vaccine comprises of those disease which are endemic to the particular area, severely affects the animal or such animal diseases which has a potential zoonotic implications or are required by law. Noncore vaccines comprises of those disease which are of low risk of exposure and are considered optional. In view of this a noncore vaccine can become a core vaccine of visa versa depending on prevalent diseases in a geographical area, risk of exposure, transportation routine, etc.

Table of various canine vaccines, its primary and booster schedule along with salient clinical manifestations of disease.

S.No.	CORE VACCINE	Manifestations	Primary dose	Booster
1.	Canine Parvo Virus (CPV)	Gastroentritis	4 weeks* 6-8 weeks** of age	3-4 weeks after primary vaccination Latter annually
2.	Canine Distemper virus (CDV)	Nervous, Respiratory or Gastro intestinal signs	4 weeks* 6-8 weeks** of age	3-4 weeks after primary vaccination Latter annually
3.	Canine Adenovirus-2 (CAV-2)	Hepatitis	6-8 weeks of age	3-4 weeks after primary vaccination Latter annually
4.	Canine Para influenza (CPi)	Respiratory tract infection	6-8 weeks of age	3-4 weeks after primary vaccination Latter annually
5.	Canine Leptospira	Kidney and Liver disease	6-8 weeks of age	3-4 weeks after primary vaccination Latter annually

6.	Rabies	Highly fatal and Zoonotic	3 month of age	3-4 weeks after primary vaccination Latter annually
	NONCORE VACCINE			
1.	Kennel cough *Bordetella bronchiseptica* Intra nasal vaccine	Respiratory tract infection	6-8 weeks of age In High risk animal	3-4 weeks after primary vaccination
2.	Lyme disease *Borrelia burgdorferi*	Heart, kidney and joints	10-12 weeks of age or Prior to start of tick infestation	3-4 weeks after primary vaccination
3.	Canine Influenza Virus (H3N2 and H3N8 strains)	Respiratory tract infection	6-8 weeks of age, or 2-4 weeks before animal is send for boarding kennel	3-4 weeks after primary vaccination
4.	Canine Coronavirus (Canine Enteric Coronavirus, CECOV).	Mild Gastro enteritis	Vaccine is available in some countries but it's not recommended	
5.	Tetanus	Stiffing of muscle	In case of deep punctured wound	

* If vaccination for Parvo and Distemper is to be done individually primary vaccination can be given at age of 4 weeks.

**6 weeks is preferred when vaccination of parent/bitch/Dam is not done if mother is vaccinated first dose is initiated after 8 weeks

- Pups should be dewormed first at the age of 3 weeks against intestinal parasite. Regular deworming is performed every 3-4 month.
- In common practice Five in one vaccine comprises of Canine Parvo, Canine Distemper, Canine Adenovirus-2, Canine Para influenza and Leptospirosis is given on 6-8 weeks age, followed by same Five in one booster 3-4 week and annual vaccination.

Vaccination in Pregnant animal

Killed Vaccine registered as 'safe' vaccines and MLV registered as 'safe' intranasal vaccines are recommended for pregnant animal. Use of live vaccine in a pregnant bitch is not recommended. Killed parvovirus vaccines can be given 2 weeks or more before the pups are due to be born (they should not be given any closer to the time of birth than this) to increase the levels of parvovirus antibodies in the colostrums.