

Deworming And Vaccination in Dogs: A One Health Approach to Protect Human Health

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Abstract

Dogs share a close and continuous interaction with humans, making them an integral part of the human–animal–environment interface. While they serve as companions and working animals, they also act as potential reservoirs of several zoonotic pathogens that can significantly impact human health. In this context, the One Health approach, which emphasizes the interconnectedness of human, animal, and environmental health, becomes highly relevant. Preventive healthcare practices such as regular deworming and systematic vaccination in dogs play a crucial role in breaking the transmission cycle of infectious and parasitic diseases. These interventions not only improve canine health but also reduce environmental contamination with infectious agents, thereby lowering the risk of human exposure. From a One Health perspective, effective canine health management serves as a key strategy for controlling zoonotic diseases and promoting public health. By integrating veterinary care with public health initiatives, deworming and vaccination programs contribute significantly to disease prevention, environmental hygiene, and sustainable health outcomes. Thus, strengthening these preventive measures is essential for ensuring a healthier and safer society. This article highlights the role of deworming and vaccination in dogs and their significance in safeguarding public health.

Keywords: Dogs, Deworming, Vaccination, Zoonoses, Public Health, One Health

INTRODUCTION

Dogs are among the most widely domesticated animals worldwide and maintain close contact with humans, which increases the risk of transmission of various zoonotic diseases. Several important infections, including rabies, toxocariasis, echinococcosis, and leptospirosis, are commonly associated with dogs and pose significant public health concerns. Therefore, maintaining optimal canine health is not only essential for animal welfare but also for safeguarding human health. Preventive veterinary practices, particularly regular deworming and vaccination, play a crucial role in reducing the risk of disease transmission. These measures help in controlling parasitic and infectious diseases at the source, thereby minimizing environmental contamination and human

exposure. Furthermore, such practices are closely aligned with the One Health concept, which emphasizes the interconnectedness of human, animal, and environmental health. By adopting effective preventive strategies, it is possible to reduce the overall disease burden and promote a healthier and more sustainable ecosystem.

DEWORMING IN DOGS AND ITS SIGNIFICANCE

- Deworming is the process of administering anthelmintic drugs to eliminate internal parasites such as roundworms, hookworms, tapeworms, and whipworms. These parasites are commonly found in dogs, especially in puppies, due to transmission from the mother or contaminated surroundings.
- Parasitic infections can cause anaemia, diarrhoea, poor growth, and general weakness in dogs. In addition, infected dogs shed

parasite eggs in their faeces, contaminating soil and water. This creates a potential source of infection for humans, particularly children who are more likely to come into contact with contaminated environments.

- Certain parasites of dogs are of significant zoonotic importance. For example, *Toxocara canis* can cause visceral and ocular larva migrans in humans, while hookworms can lead to cutaneous larva migrans. Regular deworming reduces the parasitic load in dogs and minimizes environmental contamination.
- A proper deworming schedule is essential. Puppies should be dewormed frequently during early life, followed by periodic treatment in adult dogs. This simple practice plays a major role in breaking the life cycle of parasites and protecting both animal and human health.

VACCINATION IN DOGS AND DISEASE PREVENTION

- Vaccination is one of the most effective tools for preventing infectious diseases in dogs. It works by stimulating the immune system to develop protective immunity against specific pathogens. Core vaccines in dogs include those against rabies, canine distemper, parvovirus, leptospirosis and adenovirus.
- Among these, rabies vaccination holds the greatest importance from a public health perspective. Rabies is a fatal disease, and dogs are the primary source of infection for humans in many countries. Regular vaccination of dogs has been proven to significantly reduce the incidence of human rabies.
- Vaccination also helps in preventing the spread of other infectious diseases within the dog population, thereby reducing the overall disease burden.
- A well-planned vaccination schedule starting from puppyhood and followed by booster doses is essential for maintaining immunity.
- By ensuring that dogs are properly vaccinated, the risk of disease transmission to humans can be effectively minimized.

ONE HEALTH PERSPECTIVE

- The One Health approach emphasizes the interconnectedness of human, animal, and environmental health. In this context, the

health of dogs is not an isolated issue but a critical component of overall public health.

- Deworming and vaccination in dogs contribute to One Health in multiple ways. They reduce the prevalence of infectious agents in animal populations, limit environmental contamination, and decrease the risk of transmission to humans. These measures also support better sanitation and hygiene in communities.
- Furthermore, coordinated efforts involving veterinarians, public health professionals, and communities are essential for implementing effective disease control strategies. Awareness programs, vaccination campaigns, and regular veterinary care play a key role in strengthening the One Health framework.

PUBLIC HEALTH IMPORTANCE

- The impact of dog deworming and vaccination extends beyond animal health.
- These practices significantly contribute to improving public health by preventing zoonotic diseases.
- Regular deworming reduces soil contamination with parasite eggs, thereby lowering the risk of human infection.
- Vaccination, particularly against rabies, is one of the most effective ways to prevent fatal human diseases.
- In addition, these practices reduce healthcare costs, improve quality of life, and enhance community well-being.
- Healthy dogs create a safer environment for humans, especially in areas with a high population of stray or free-roaming dogs.

CHALLENGES AND FUTURE NEEDS

- Despite the importance of deworming and vaccination, several challenges exist.
- Lack of awareness among pet owners, irregular veterinary care, and the large population of stray dogs are major obstacles.
- In rural and resource-limited areas, access to veterinary services may also be limited.
- To overcome these challenges, there is a need for increased public awareness, government-supported vaccination programs, and community participation.
- Strengthening veterinary infrastructure and promoting responsible pet ownership are also essential steps.

CONCLUSION

Deworming and vaccination are fundamental components of preventive healthcare in dogs and have a direct impact on human health. These practices not only ensure the well-being of animals but also play a vital role in controlling zoonotic diseases and improving environmental hygiene. From a One Health perspective, effective management of dog health contributes significantly to the protection of human populations. Therefore, promoting regular deworming and vaccination is essential for building a healthier and safer society.

REFERENCES

- Bowman, D.D. (2020). *Georgis' Parasitology for Veterinarians*. 11th ed. Elsevier, pp. 85–120.
- Centers for Disease Control and Prevention (CDC). (2022). Parasites and Zoonotic Diseases. Available at: CDC website (no page numbers).
- Day, M.J. et al. (2016). WSAVA Guidelines for the Vaccination of Dogs and Cats. *Journal of Small Animal Practice*, **57(1)**, pp. E1–E45.
- World Health Organization (WHO). (2021) Rabies Fact Sheet. Available at: WHO website (no page numbers).
- World Organisation for Animal Health. (2021). Rabies Control Guidelines. Paris: OIE, pp. 1–45.
- Zinsstag, J. et al. (2015). From “One Medicine” to “One Health”. *Preventive Veterinary Medicine*, **120(1–2)**, pp. 12–19.