



# Rabies Vaccination: A Vital Line of Defence Against a Deadly Zoonotic Disease

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## DESCRIPTION

Rabies is a viral disease that affects the central nervous system, resulting in acute encephalitis. It is typically transmitted through the bite or scratch of an infected animal, most usually dogs, and kills tens of thousands of people each year, the vast majority of whom live in Asia and Africa. Rabies vaccines play a pivotal role in preventing human fatalities and controlling the spread of the virus. Rabies is a devastating zoonotic disease that continues to pose a significant public health threat globally. The development and widespread use of rabies vaccines have been instrumental in preventing human and animal deaths caused by this lethal virus.

Rabies vaccines have had a profound impact on human and animal health by preventing rabies infections. Vaccination of domestic animals, such as dogs and cats, helps break the cycle of transmission and reduces the risk of human exposure. Vaccinating humans who have been exposed to rabies significantly reduces the likelihood of developing the disease, preventing a potentially fatal outcome.

### Types of rabies vaccines

There are several types of rabies vaccines used for both human and animal vaccination. These vaccines play a critical role in preventing the transmission of rabies virus and protecting individuals from the disease. The main types of rabies vaccines are:

**Inactivated vaccines:** Inactivated rabies vaccines are composed of inactivated rabies virus particles. They are safe and highly effective, requiring multiple doses for adequate immunity. Inactivated vaccines are used for pre-exposure and post-exposure prophylaxis in both humans and animals.

**Live attenuated vaccines:** Live attenuated rabies vaccines contain a weakened form of the virus. These vaccines provide robust and long-lasting immunity but are primarily used in wildlife vaccination programs due to safety concerns in domestic animals.

**Recombinant vaccines:** Recombinant rabies vaccines involve the

use of genetically engineered viruses or viral proteins. They offer advantages in terms of safety, efficacy, and ease of production. Recombinant vaccines are widely used in both human and animal vaccination programs.

### Vaccination strategies

Vaccination strategies for rabies encompass a range of approaches aimed at preventing the spread of the rabies virus in both human and animal populations. These strategies are crucial for controlling and eventually eliminating rabies as a public health threat. Some of the key vaccination strategies include:

**Pre-exposure prophylaxis:** Pre-exposure vaccination involves administering a series of rabies vaccine doses to individuals at high risk of exposure, such as veterinarians and animal handlers to rabies-endemic areas. This strategy provides a baseline level of immunity, ensuring a rapid and robust response in case of exposure.

**Post-exposure prophylaxis:** Post-exposure prophylaxis is crucial for individuals who have been bitten or scratched by a potentially rabid animal. It involves thorough wound cleaning, administration of rabies vaccine doses, and, in some cases, rabies immunoglobulin. Timely initiation of Post-exposure prophylaxis is essential to prevent the virus from reaching the central nervous system.

**Animal vaccination:** Mass vaccination of dogs, the primary source of rabies transmission to humans, is a key strategy for rabies control. Vaccinating domestic animals helps create a barrier, reducing the risk of human exposure and ultimately eliminating the disease.

## CONCLUSION

Despite the availability of effective vaccines, rabies remains a significant public health challenge, particularly in resource-limited settings. Emerging technologies, such as oral vaccines for wildlife and novel vaccine delivery systems, show promise in enhancing rabies control. Additionally, advancing global coordination and interdisciplinary research will be instrumental in achieving the goal of eliminating rabies as a public health

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threat. Rabies vaccines have revolutionized rabies prevention, saving countless human and animal lives. As it strive to eliminate rabies, it is crucial to continue promoting the importance of rabies vaccination, implementing effective vaccination strategies,

and fostering international collaboration. By embracing new technologies and addressing challenges, it can work towards a future where rabies is consigned to history, and generations to come can live without fear of this deadly disease.