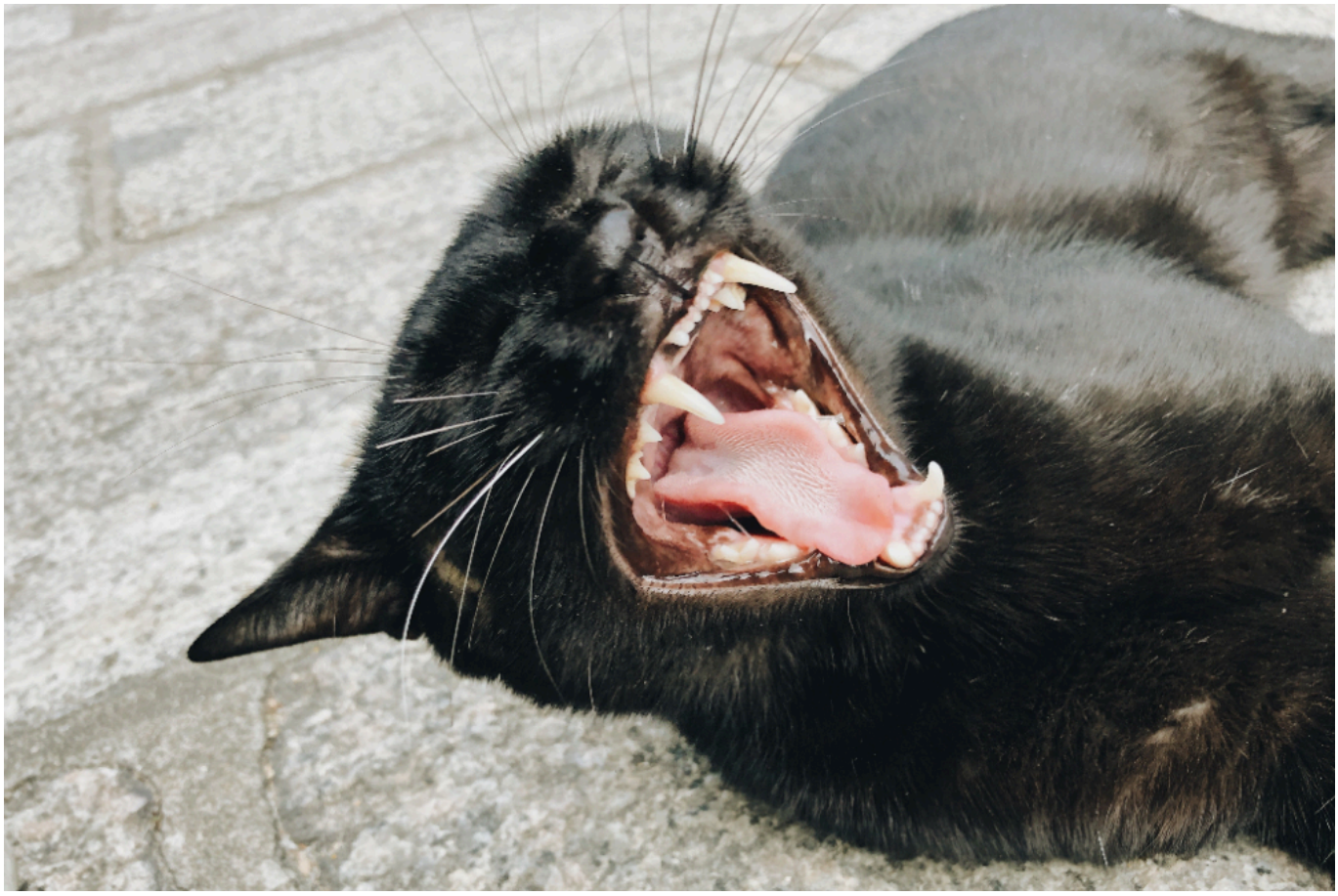
Breaking the Chain of Rabies Transmission



Rabies remains a critical public health issue in over 150 countries, with Asia and Africa carrying the greatest burden. The disease causes tens of thousands of lives each year, with 40% of cases affecting children under 15. Caused by viruses in the genus *Lyssavirus* of the *Rhabdoviridae* family, this zoonotic viral disease is primarily transmitted through the saliva of infected animals, often via bites, scratches, or contact with mucosal surfaces such as the eyes, mouth, or open wounds. Once clinical symptoms appear, rabies is nearly always fatal.

Approximately 98% of human rabies cases occur in regions with large stray canine populations, though other animals, such as bats and foxes, also contribute to transmission. Following exposure, the incubation period typically ranges from several weeks to months. The virus travels through the peripheral nerves to the central nervous system, where it replicates and rapidly spreads to various tissues in the body.

Symptoms

The initial phase of rabies may begin months or even years after being infected with saliva from a rabid animal. The delay is due to the slow movement of the virus along the sensory nerves to the brain and spinal cord. Early symptoms are similar to those of less serious viral diseases, including weakness, headache, and loss of appetite.

1. Furious Rabies

- Most rabies patients enter the "furious phase."
- Marked by heightened sensitivity to stimuli and hydrophobia (fear of liquids).
- Symptoms include:

        - Violent vomiting.
        - Audible screams during agitation.
        - Brief moments of calm lucidity.
    - The phase ends in a coma and death due to central nervous system failure.

2. Paralytic Rabies

- Represents about 20% of rabies cases.
- Progresses more slowly and subtly compared to the furious form.
- It begins with paralysis at the wound site, which gradually spreads to other muscles.
- Leads to the development of a coma and eventual death

Prevention

Implementing mass canine vaccination programs, including adult canines and puppies, has been identified as the most economically efficient method for rabies prevention in humans. This approach effectively interrupts transmission at its primary source.

Furthermore, immediate wound cleaning greatly decreases the risk of developing rabies. Recommended first aid for bite wounds and scratches includes thorough flushing with soap and water, povidone iodine, or other virucidal substances. Care should be taken to avoid contamination or enlargement of the wound. Rabies can be effectively prevented through vaccination**.** There are two main types of rabies vaccination: pre-exposure vaccination and post-exposure prophylaxis.

Pre-exposure vaccination is recommended for people at continuous or increased risk of exposure to rabies, such as laboratory staff, veterinarians, and anyone who works with animals or wildlife. It is also a recommended prevention strategy for infants and children in areas with a high incidence of canine rabies, especially in areas with limited access to immediate care or rabies immunoglobulin.

Post-exposure prophylaxis should be initiated as soon as rabies exposure is suspected, particularly after an unprovoked animal bite. If administered before the onset of clinical symptoms, it effectively prevents the virus from reaching the nervous system.

Source

World Health Organization. Rabies. 2024

World Health Organization. Human Rabies Prevention and Management. 2019

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