

## Rabies in Dogs

### What is rabies?

Rabies is one of the most devastating viral diseases affecting mammals, including dogs and humans. It is a fatal disease caused by infection with the rabies virus. Rabies virus is found throughout the world, including North America, Central and South America, Asia, Africa, the Middle East, and some parts of Europe. However, there are many areas in the world that are rabies free, including Australia, New Zealand, Japan, Ireland, Iceland, United Kingdom, Japan, certain Pacific Islands, Antarctica and parts of Scandinavia.



### How is rabies transmitted?

The infection is transmitted when one infected animal bites another. Transmission by other means is rare.

**"The infection is transmitted when one infected animal bites another."**

In Europe, foxes are the main reservoir while in North America the skunk, fox, raccoon, coyote, and bat are important sources of infection. In Asia, Africa, and Latin America the main reservoir is not wildlife, but stray dogs. In these areas, human infection and fatalities are more common. After the bite occurs, the rabies virus enters the peripheral nerves (any nerves that are outside of the brain and spinal cord) of the host animal, reproduces, and spreads to the salivary glands. Here the virus is shed in the saliva. Rabies virus does not survive long outside a mammal's body.

### How long is the incubation period?

The incubation period (the time until clinical signs appear) can vary from ten days to one year or longer. In dogs, the incubation period is typically two weeks to four months. The speed at which clinical signs develop depends upon:

1. The site of infection – the nearer the bite is to the brain and spinal cord, the quicker the virus reaches the nervous tissue.
2. The severity of the bite.

3. The amount of virus injected by the bite.

## What are the clinical signs?

Following a bite from a rabid animal, the disease progresses in stages. In the **prodromal phase** (first phase), the dog undergoes a marked change in temperament. Quiet dogs become agitated and active pets become nervous or shy. This phase can last 2–3 days.

Following this stage, there are two recognized forms of the clinical disease:

**Furious rabies** occurs when the rabid dog becomes aggressive, highly excitable, and displays evidence of a depraved appetite, eating and chewing stones, earth, and rubbish (pica). Paralysis eventually sets in and the rabid animal may be unable to eat and drink. Hydrophobia (fear of water) is not a sign of rabies in dogs. This is a feature of human rabies. The dog finally dies in a violent seizure.

**Dumb rabies** is the more common form in dogs. There is progressive paralysis involving the limbs, distortion of the face and a similar difficulty in swallowing. Owners will frequently think the dog has something stuck in the mouth or throat. **Care should be taken in examination since rabies may be transmitted by saliva.** Ultimately the dog becomes comatose and dies.

## Is it possible to survive a bite from a rabid animal?

There are isolated and poorly documented reports of both dogs and people surviving. In some cases, there may have been very little rabies virus present in the saliva at the time the rabid animal bit its victim. In this situation, the victim may not develop rabies.

However, as Louis Pasteur was the first to show, it is possible to interrupt the progression from an infected bite to the onset of signs by the early post-bite use of anti-rabies serum. This antiserum contains specific immune antibodies to the virus. The most important method for preventing the progression of rabies is by administering a dose of rabies vaccine. The vaccine stimulates the bitten animal to develop its own neutralizing antibodies to the rabies virus. Without vaccination and rapid post-exposure treatment, the chances of survival are poor.

## Is vaccination effective?

Vaccination is the cornerstone of rabies prevention. Vaccination promotes the production of antibodies but is only effective if given before the virus enters the nervous system. Modern rabies vaccines for dogs, cats, horses, and ferrets are extremely safe and effective.



## What is the treatment for rabies?

There is no treatment for a dog with rabies. If rabies is suspected, the dog has to be kept in isolation and prevented from escaping or injuring someone.

**"There is no treatment for a dog with rabies."**

Since a dog shedding the rabies virus in the saliva will develop clinical signs within days, a 10 day quarantine of the dog will be observed. A dog that is normal or healthy after 10 days is not considered contagious at the time of the bite. Your veterinarian is required by law to notify the local, state, or provincial animal disease regulatory authorities. These authorities will determine the steps necessary to properly protect the public.

## Can I catch rabies?

Yes, the disease is **zoonotic** (can be transmitted from an animal to humans). It is only transmitted by the bite of a rabid animal. The virus is present in the saliva of the infected animal only for a limited time.

**"If any animal that may be suspicious for rabies bites you, immediately wash and flush the wound thoroughly with soap and water and seek immediate medical assistance"**

In February of 2018 the World Health Organization issued a new rabies vaccination and post-exposure recommendation. Those who have been bitten and have not previously been vaccinated for rabies should receive immunoglobulin (antibody) promptly, followed by a series of vaccines. Those previously vaccinated do not require immunoglobulin, but will still receive several vaccines again the virus.

## When should my dog be vaccinated?

There are several rabies vaccines approved for dogs, cats, horses, and ferrets. All dogs and cats between the ages of twelve and sixteen weeks should be vaccinated. Generally in the United States and Canada, rabies vaccination is mandatory. Rabies revaccination boosters are also required and the frequency of revaccination is dependent on state or provincial law. Your veterinarian will advise you on the appropriate revaccination intervals and can assist you in obtaining any necessary licenses for your pet.

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