



Metz Petz Veterinary Clinic –  
Ada

180 State Route 309, Ada, OH, 45810

Phone: 419-634-9663

Fax: 4196349665

Email: [metzpetz@hotmail.com](mailto:metzpetz@hotmail.com)

Website: [www.metzpetz.net](http://www.metzpetz.net)

## 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:

#### A

Antartica  
Australia

#### F

Fiji  
Finland

#### I

Iceland  
Ireland, Republic of

#### J

Japan

#### N

New Zealand  
Norway

#### S

Sweden

#### U

United Kingdom (England, Scotland, Wales,  
Northern Ireland)

### How is rabies transmitted?

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

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 reproduces in the tissues near the wound, then uses the peripheral nerves (any nerves that are outside the brain and spinal cord) to travel to the spinal cord, and then it moves to the brain. After the virus enters the brain, it spreads to the salivary glands and organs. Once in the salivary glands, the virus can be 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 difficulty 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.

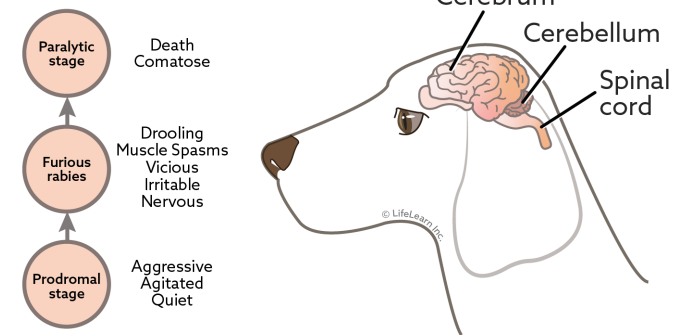
## How is rabies diagnosed?

Rabies can only be diagnosed by direct examination of the brain. It is not possible to diagnose this disease in a living animal.

**"Rabies can only be diagnosed by direct examination of the brain."**

If there is a high suspicion that the animal has rabies, or if an animal showing symptoms of rabies dies suddenly, your veterinarian may recommend submission of the appropriate brain samples for testing. If there has been human exposure, this may be required.

### Rabies in Dogs



## 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.

"Vaccination is the cornerstone of rabies prevention."

## Is post-bite vaccination used in exposed dogs?

If there is potential exposure in an *unvaccinated* dog but no human exposure, then the dog should be given a rabies vaccination and placed in a strict quarantine (no direct contact with people) for many months as determined by local public health regulations.

Because of the potential risk to people, an unvaccinated exposed dog that has bitten or scratched a human would not normally be given a vaccine, because it could cause a rare adverse reaction that may mimic the signs of infection. If there is a high probability of exposure, the safest policy is to euthanize the animal; the alternative is strict quarantine for many months.

If the exposed dog has previously been vaccinated, then a booster vaccination is indicated, followed by a period of at least 30 days of quarantine determined by local public health regulations and careful observation.

## What is the treatment for rabies?

There is no treatment for a dog with rabies. If rabies is suspected, the dog must 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.

In February 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 against 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 12 and 16 weeks should be vaccinated. Rabies vaccination is required by law in most states and provinces.

The frequency of re-vaccination is dependent on state or provincial law. Your veterinarian will advise you on the appropriate re-vaccination intervals and can assist you in obtaining any necessary licenses for your pet.

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