

# Rabies

## What is Rabies?

Rabies is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. The vast majority of rabies cases reported to the Centers for Disease Control and Prevention (CDC) each year occur in wild animals like raccoons, skunks, bats, and foxes.

**Risk factors:** People usually get rabies from the bite of a rabid animal. It is possible, but quite rare, that people get rabies if infectious material from the rabid animal, such as saliva, gets directly into their eyes, nose, mouth or wound. Scratches, abrasions, open wounds, or mucous membranes contaminated with saliva are considered a non-bite exposure.

**Symptoms:** The rabies virus infects the central nervous system, ultimately causing disease in the brain and death. The early symptoms of rabies in people are similar to that of many other illnesses, including fever, headache, and general weakness or discomfort.

As the disease progresses, more specific symptoms appear and may include insomnia, anxiety, confusion, slight or partial paralysis, excitation, hallucinations, agitation, hypersalivation (increase in saliva), difficulty swallowing, and hydrophobia (fear of water). Death usually occurs within days of the onset of these symptoms.

## How it spreads:

All species of mammals are susceptible to rabies virus infection, but only a few species are important as reservoirs for the disease. In the United States, distinct strains of rabies virus have been identified in raccoons, skunks, foxes, and coyotes. Several species of insectivorous bats are also reservoirs for strains of the rabies virus.

Transmission of rabies virus usually begins when infected saliva of a host is passed to an uninfected animal. The most common mode of rabies virus transmission is through the bite and virus-containing saliva of an infected host. Though transmission has been rarely documented via other routes such as contamination of mucous membranes (i.e., eyes, nose, mouth), aerosol transmission, and corneal and organ transplantations.

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**Diagnosis:** In animals, rabies is diagnosed using the direct fluorescent antibody (DFA) test, which looks for the presence of rabies virus antigens in brain tissue. In humans, several tests are required. Rapid and accurate laboratory diagnosis of rabies in humans and other animals is essential for timely administration of post exposure prophylaxis. Within a few hours, a diagnostic laboratory can determine whether or not an animal is rabid and inform the responsible medical personnel. The laboratory results may save a patient from unnecessary physical and psychological trauma, and financial burdens, if the animal is not rabid. In addition, laboratory identification of positive rabies cases may aid in defining current epidemiologic patterns of disease and provide appropriate information for the development of rabies control programs.

**Treatment:** Regardless of the risk of rabies, bite wounds can cause serious injury such as nerve or tendon laceration and local and system infection. Your doctor will determine the best way to care for your wound, and will also consider how to treat the wound for the best possible cosmetic results. Wound cleansing is especially important in rabies prevention since, in animal studies, thorough wound cleansing alone without other post exposure prophylaxis has been shown to markedly reduce the likelihood of rabies. You should receive a tetanus shot if you have not been immunized in ten years. Decisions regarding the use of antibiotics, and primary wound closure should be decided together with your doctor. For people who have never been vaccinated against rabies previously, post exposure anti-rabies vaccination should always include administration of both passive antibody and vaccine. The combination of human rabies immune globulin (HRIG) and vaccine is recommended for both bite and non-bite exposures, regardless of the interval between exposure and initiation of treatment. People who have been previously vaccinated or are receiving pre exposure vaccination for rabies should receive only vaccine. The vaccine should be given at recommended intervals for best results. Talk to your with your doctor or state or local public health officials if you will not be able to have shot at the recommended interval. Rabies prevention is a serious matter and changes should not be made in the schedule of doses.

**Prevention:** Rabies in humans is 100% preventable through prompt appropriate medical care. Children are often at greatest risk from rabies. They are more likely to be bitten by dogs, and are also more likely to be severely exposed through multiple bites in high-risk sites on the body. Severe exposures make it more difficult to prevent rabies unless access to good medical care is immediately available.