

## Rabies Information Sheet

Compiled from Washington State Department of Health [website](#)

### Rabies Q&A:

- **What is rabies?**

Rabies is a severe viral disease that affects the central nervous system. It is almost always fatal. All warm-blooded mammals including humans are susceptible to rabies.

- **What mammals carry rabies?**

Bats are the only rabies reservoir in the Pacific Northwest. In Washington, rabies has not been found in raccoons, skunks, foxes or coyotes. These species may carry the virus in other regions of the United States. In developing countries, dogs are the principal rabies reservoir.

- **How common is human rabies and what is the source of the rabies virus?**

Human rabies is an extremely rare disease. Since 1990, the number of reported cases in the United States has ranged from 1 to 6 cases annually. Almost all human rabies cases acquired in the United States since 1980 have been due to bat rabies virus. When human rabies occurs due to exposure outside of the United States it is usually the result of the bite of a rabid dog.

- **Has human rabies occurred in Washington state?**

There was one fatal case of human rabies in Washington in 1995 and one in 1997. Both were due to bat rabies virus. These cases were the first reported in the state since 1939.

- **How is rabies spread?**

The rabies virus is found in the saliva of a rabid animal. It is usually spread to humans by animal bites. Rabies could potentially be spread if the virus comes into contact with mucous membranes (eye, nose, and respiratory tract), open cuts, wounds, or abraded skin. Person-to-person transmission of rabies has occurred only through tissue transplantation.

- **What are the symptoms?**

While early symptoms include headache, fever, and sometimes pain and/or numbness at the site of the exposure (bite), the disease rapidly progresses into a severe neurologic illness. Neurologic symptoms may include agitation, confusion, paralysis, and difficulty swallowing. Most patients die within a few days or weeks of onset. For more details, see *Appendix A: Clinical Presentation of Rabies*.

- **How soon do symptoms appear?**

Normally two to eight weeks after exposure, but incubation periods as short as four days and as long as six years have been documented.

- **What is the primary reservoir of rabies in Washington state?**

The primary reservoir of rabies in the Northwest is bats. Rabid bats have been found in almost every county in Washington. Between 3-10% of bats submitted for testing are found to be rabid. This is a skewed population of sick and injured bats; less than 1% of healthy bats are infected

with rabies. The virus has been identified in the bat species common here, and likely occurs in all of the 16-18 bat species present in Washington.

In 2016, twenty rabid bats were identified in Washington State including three each in King, Spokane, and Chelan counties, two each in Lewis and Whatcom counties, and one each in Clark, Ferry, Grant, Kitsap, Mason, Pierce, and Thurston counties.

In 2015, a total of nine rabid bats were identified in Washington State including two each in King and Mason counties, and one each in Clark, Pacific, Snohomish, Spokane, and Thurston counties. Additionally, a rabid cat was identified in Jefferson County. This was the first rabid non-bat animal identified in Washington since 2002.

Other than bats, only nine individual animals from Washington State have tested positive for rabies since 1960, including an unvaccinated cat, a horse (from Benton County) and a llama (King County). The llama was found to be infected with a bat variant of the rabies virus. Because the specimens from the horse were fixed in formalin, the virus strain infecting that animal could not be further characterized at the time.=

#### **Preventative measures:**

There is a human vaccine that offers protection for persons working with unvaccinated dogs/cats, carnivores and rabies-suspect species. If you work with bats, it is a requirement of the UW Occupational Health Program that you get vaccinated for rabies. Individuals needing to be vaccinated for rabies should contact the UW Employee Health Center at Hall Health, 206-685-1026.

#### **Injuries:**

*Safe and effective treatment following potential rabies exposure should begin immediately after the exposure occurs.*

- DO FIRST AID. See [EH&S Exposure Response Poster](#).
- Contact your doctor or nearby emergency department, and check with your [local health department](#) to determine the potential for rabies exposure, the need for treatment, and to decide whether or not to test the animal for rabies.
- Check the tetanus vaccination status of the person who was bitten.
- If potential rabies exposure has occurred, a one-time administration of rabies immune globulin and four doses of human diploid cell rabies vaccine should be given in the arm on days 0, 3, 7, and 14 after exposure.
- Report injuries on the UW Online Accident Reporting System (OARS) at: <http://www.ehs.washington.edu/workplace/accident-and-injury-reporting>

#### **Legal Reporting Requirements:**

Health care providers, hospitals, and laboratories must immediately notify rabies incidents to local health jurisdiction. Laboratories may be asked to submit specimens. See Washington Department of Health webpages below for reporting requirements for healthcare providers.

- Rabies exposure:  
<https://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/NotifiableConditions/RabiesSuspectedHumanExposure>
- Human rabies cases:  
<https://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/NotifiableConditions/RabiesHuman>

Local health jurisdictions must notify DOH Communicable Disease Epidemiology Section (CDES) within 7 days of case investigation completion or summary information required within 21 days.

For more information, contact your [local health department](#) or [Communicable Disease Epidemiology](#) 206-418-5500 or toll-free 877-539-4344.

#### References:

- Center for Disease Control and Prevention rabies webpage:  
<https://www.cdc.gov/rabies/>
- Washington State Department of Health rabies webpage:  
<https://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/Rabies>
- Public Health Agency of Canada webpage rabies virus webpage:  
<https://www.canada.ca/en/public-health/services/laboratory-biosafety-biosecurity/pathogen-safety-data-sheets-risk-assessment/rabies-virus.html>

#### Contacts:

- [UW Employee Health Center](#): 206-685-1026
- Harborview Employee Health Services: 206-744-3081
- For questions on AUMS: 206-221-7770
- For questions on UW Online Accident Reporting: 206-543-7388

#### Appendix A: Clinical Presentation of Rabies

## Appendix A Clinical Presentation of Rabies

Rabies is caused by members of the RNA virus genus *Lyssavirus*, family *Rhabdoviridae*. Rabies infection characteristically produces a rapidly progressive encephalomyelitis (inflammation of the brain and spinal cord), and *should be considered as a possible cause of any such illness in humans or other animals*.

### Rabies in Humans

The incubation period in humans is typically between 20 and 90 days, although incubation periods as short as 4 days and longer than 6 years have been documented<sup>9</sup>. This variation is probably related to the site of inoculation, the severity of the wound, and the amount of virus introduced. It is thought that the closer the inoculation is to well-innervated areas (and to the brain), the more severe the wound, and the more virus introduced, the shorter the incubation period.

Early symptoms of rabies are non-specific, but often include pain or paresthesia at the inoculation site. The disease progresses to an acute neurologic phase characterized by delirium, convulsions, muscle weakness, and paralysis. Spasms of the swallowing muscles can lead to a fear of water (hydrophobia), and may be precipitated by blowing on the patient's face (aerophobia). *Not all persons exposed to rabies virus develop disease*, but if symptoms do occur, rabies is almost invariably fatal -- usually within 10 days. There are case reports of three people who survived the disease in the 1970s. All three had received some pre- or post-exposure treatment with the duck embryo vaccine or suckling mouse brain vaccine (vaccines that are no longer used in this country). A fourth documented case was reported in 1992 in a boy who received partial post exposure treatment.

### Rabies in Other Animals

The clinical features of rabies in other animals are highly variable and resemble a number of toxic and infectious illnesses of the central nervous system, including distemper, transmissible mink encephalopathy, wasting disease of elk, and arboviral and herpes virus infections. Rabid animals can appear aggressive ("furious rabies") or lethargic ("dumb rabies") -- although aggressive behavior is uncommon in rabid bats. As the disease progresses over a matter of days, the rabid animal typically develops difficulty with coordination. This is usually followed by generalized paralysis and death. Rabies cannot be diagnosed reliably by an evaluation of behavior or clinical signs alone. Laboratory testing of the brain is essential.

All cases of suspected rabies in animals should be reported immediately to the [local health department](#) and to the (Washington) State Veterinarian's office at (360) 902-1878. Veterinarians may find additional diagnostic information at the online [Consultant](#) maintained by the Cornell University College of Veterinary Medicine, or by contacting the local health department for a referral to an expert on veterinary aspects of rabies.