

# Rabies

## Reporting Obligations

Rabies is designated as a disease of public health significance and is reportable under the *Ontario Health Protection and Promotion Act*. Report all suspect and confirmed cases within **one business day** to the health unit.

**NOTE:** For reporting of animal bites or other incidents where there is possibility of human exposure to rabies, refer to [Animal Exposure Report Form](#).

### REPORTING FORM

## Epidemiology

### Aetiologic Agent:

Rabies disease is caused by the rabies virus; an RNA virus classified in the *Rhabdoviridae* family from the genus *Lyssavirus*.

### Clinical Presentation:

During the incubation period after exposure, the person does not experience disease symptoms and the wound from the bite may heal. The prodrome begins when the virus enters the peripheral nerves and spinal cord and can last 2 – 10 days. Onset of clinical symptoms is generally heralded by a sense of apprehension and excitability with headache, fever, malaise and indefinite sensory changes and pain at the site of the bite. The excitation phase that follows is characterized by hypertension, increased salivation, and swallowing dysfunction (hydrophobia). This may be followed by generalized paralysis. The acute neurological phase of the disease is characterized by encephalomyelitis that almost always progresses to coma or death, often due to respiratory paralysis, if no medical intervention is given.

### Modes of transmission:

Rabies can be transmitted to humans through the saliva of infected animals through bites, scratches or other contact with mucosal membranes or open skin. Person to person transmission is theoretically possible but rare and not well documented. Airborne spread has been demonstrated in caves where bats roost and in laboratory settings, but this occurs very rarely. Transmission through corneal, solid organ and blood vessel transplant from unsuspected rabies cases has occurred.

### Incubation Period:

Usually 3-8 weeks; rarely as short as 9 days or as long as 7 years. The incubation period depends on wound severity, wound site in relation to nerve supply and distance from the brain, the amount and strain of virus, protection provided by clothing and other factors such as adequate wound cleansing.

### Period of Communicability:

Rabid animals including humans are infectious from the time the virus reaches the salivary glands and up until death. Death usually occurs within one week of onset of clinical signs. Different species may shed virus in saliva for different lengths of time prior to onset of clinical signs: dogs/cats/ferrets up to seven days; longer with wildlife.

### Risk Factors/Susceptibility

- History of animal bite, particularly a wild animal, stray animal, sick animal, bat, or an animal bite occurring in a rabies endemic region
- Exposure to bats in cave
- Recent corneal, solid organ or blood vessel transplant

### Diagnosis & Laboratory Testing

**Confirmed case:** clinically compatible signs and symptoms with:

- Detection of viral antigen in an appropriate clinical specimen, preferably the brain or the nerves surrounding hair follicles in the nape of the neck, by immunofluorescence, **OR**
- Isolation of rabies virus from saliva, cerebrospinal fluid (CSF), or central nervous system tissue using cell culture or laboratory animal, **OR**
- Detection of rabies virus ribonucleic acid (RNA) in an appropriate clinical specimen (e.g., saliva)

**Probable case:** clinically compatible signs and symptoms with:

- Demonstration of rabies-neutralizing antibody titre  $\geq$  five (i.e., complete neutralization) in the serum or CSF of an unvaccinated person

### TESTING INFORMATION & REQUISITION

## Treatment & Case Management

In cases where clinical symptoms of rabies have developed, death is invariably the outcome. Treatment is primarily supportive. Use routine practices for hospitalized cases for the duration of illness.

The Health Unit will be involved in exposure investigation and follow-up of contacts.

### Patient Information

#### PATIENT FACT SHEET

### References

1. [Ministry of Health. Infectious Diseases Protocol - Ontario Public Health Standards, 2022.](#)

### Additional Resources

1. [PHAC. "Canadian Immunization Guide, Rabies Vaccine."](#)
2. [MOHLTC. "Management of Potential Rabies Exposures Guideline, 2020"](#)
3. [Recommendations for Administration of Rabies PEP \(PDF\)](#)
4. [Rabies Post Exposure Prophylaxis Dose Schedule \(PDF\)](#)
5. [PHO. "Rabies", Dec 2022.](#)