

Rabies Virus

The **rabies virus** is a fatal infection that attacks the central nervous and respiratory systems of mammals, including humans. Common wild animal carriers of the virus include skunks, raccoons, foxes, coyotes and bats. The virus life cycle within an animal begins with transmission and incubation, followed by prodromal and encephalitis phases. Infected animals may show pronounced symptoms of stages or may not display symptoms of stages.

Transmission

The rabies virus is transmitted through a bite wound from an animal with infected saliva. The virus can be transmitted between animals of the same or different species. Transmission is possible without a bite when the saliva of an infected animal comes in direct contact with a fresh wound or mucous membranes. Animals suffering from immune system disorders may also contract rabies if they are given a modified live virus vaccine.

Incubation of the Rabies Virus

The incubation period is the time between transmission of the disease and the onset of symptoms. The virus often remains at the site of infection for a period of time. For this reason, it is recommended that a wound site is immediately and thoroughly cleansed to reduce the risk of infection.

The virus eventually travels from the wound along the nerve network to the brain, then back along nerves to the mouth where it is then present in the saliva. The incubation period in cats is between 9 and 60 days, and in dogs is between 2 to 8 weeks. This can vary, with cases showing incubation periods as short as 1 week or as long as 1 year.

Prodromal Phase of Infection

Initial signs of infection usually appear in a prodromal stage within 15 to 25 days of incubation. Lasting only about 1 to 3 days, most animals display subtle central nervous system signs such as:

- Personality changes
- Aggressiveness
- Biting at site
- Overly affectionate
- Hiding
- Staring off
- Avoiding light

Encephalitic Phases of Infection

The prodromal stage is rapidly followed by encephalitis, or inflammation of brain. Encephalitis can be exhibited in 2 different forms of furious or paralytic, with animals showing one or both forms.

The furious form, known as "mad-dog syndrome", is most common and contrary to the name is not specific to dogs. Symptoms include:

- Sensitivity to noise
- Alertness
- Anxiety

- Aggression
- Facial muscle spasms
- Loss of caution or fear with other animals
- Ingestion of foreign objects
- Roaming
- Lips drawn back exposing teeth

As this stage progresses, the animal may stagger and appear uncoordinated. This is followed by convulsions, seizures and death from paralysis.

The paralytic, or dumb, form appears in about 30% of cases and begins with paralysis of the jaw and throat. Symptoms include:

- Drooling
- Coughing
- Inability to swallow
- Dropping jaw
- Pawing at mouth

Paralysis will quickly progress to other parts of the body resulting in coma, respiratory arrest and death.

Prevention

There is no treatment for the rabies virus and diagnosis is only definite through an autopsy examination of the brain or salivary tissues. Prevention by vaccination is the most effective course of action. Vaccination can be administered immediately after exposure but will not be effective once signs are exhibited. If exposed, a vaccinated animal will be put on leash confinement for 45 days but an animal that has not been vaccinated will be put on a 6-month quarantine or euthanized.

Delaware - Confirmed Rabies Cases by Species

Species	2010	2011	2012	2013	2014
Raccoon	3	1	7	8	2
Fox	1	1	3	4	3
Bat	0	0	1	3	1
Cat	5	3	2	1	3
Skunk	0	1	0	0	0
Dog	0	0	0	0	0
Groundhog	1	0	0	1	0
Sheep	0	0	1	0	0

Delaware - Rabies Tests Performed

Year	Statewide Total	New Castle County	Kent County	Sussex County	Out of State
2010	158	76	43	31	-
2011	183	88	49	40	-
2012	200	95	50	46	-
2013	145	55	39	49	-
2014	143	54	44	37	8

Delaware - Total Animal Bites Reported

Year	Statewide Total	New Castle County	Kent County	Sussex County	Unknown County	Out of State
2010	2059	1003	407	463	2	184
2011	2086	988	405	494	4	195
2012	2222	1050	428	526	9	209
2013	2206	1012	470	519	7	198
2014	2343	1131	486	518	0	208