

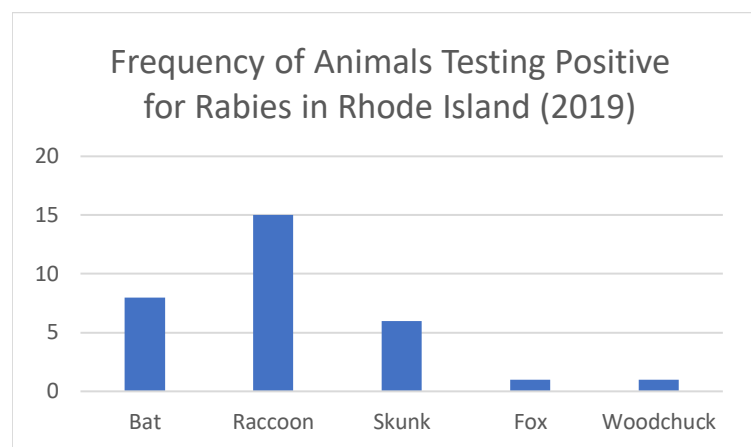


Rhode Island Public Health Brief

Bat Exposure and Rabies Risk

Rabies is a deadly viral infection that attacks the brain and nervous system. The virus is transmitted between animals and humans through contact with saliva of infected animals. The disease starts with nonspecific symptoms of fever, headache, and weakness. It progresses to neurological symptoms including the classic symptoms of increased salivation, difficulty swallowing, and fear of water. If a human or animal develops symptoms of rabies, they will almost always die. ¹ The World Health Organization (WHO) estimates that rabies causes 59,000 human deaths per year. ² In the United States (US), there are only one to three cases of human rabies per year. The number of US cases has decreased dramatically because of successful pet vaccination campaigns and the availability of post exposure rabies vaccines. ³ Of the 52 cases of human rabies diagnosed in the United States between 2000 and 2018, only three of these individuals survived. ^{4,5}

Exposure to a potentially rabid animal does not have to result in death. Human rabies can be prevented after an animal bite if the individual receives post exposure vaccines and medications before any symptoms develop. The Centers for Disease Control and Prevention (CDC) estimates that one series of rabies vaccines and medication costs \$3,800. Preventing animal bites and other potential exposures including bat exposures will reduce health care expenditures. ⁶



Data Source: Rhode Island Department of Health

Rabies in Rhode Island

All mammals are at risk for rabies, but certain animals are at higher risk. In the US, wild animals accounted for 92.7% of reported animal rabies cases in 2018. ¹ Animals that most often test positive for rabies in Rhode Island include bats, raccoons, and skunks. Cats, foxes, and woodchucks have also tested positive in Rhode Island. Dogs do not frequently test positive for rabies in Rhode Island. ⁷⁻¹¹ There has not been a case of human rabies in Rhode Island since 1940. ¹²

Bats and Rabies

Bat exposures pose a significant and unique risk to humans. The bat rabies virus variant can cause the disease easily in humans. ¹² Between 1960 and 2018, 70% of human rabies cases acquired in the US were due to bat exposures. ¹ According to the Rhode Island Department of Environmental Management (RI DEM), about 4% of bats tested in Rhode Island are positive for rabies. ¹³ Bats have very small teeth, and humans can be bitten while sleeping without being aware of the bite. ¹² The photo to the left shows the tiny marks from a bat bite.



It is also possible for humans to be exposed to infected saliva through open wounds or mucous membranes without being aware of the exposure. ¹ Post exposure vaccines may be recommended in cases where a bat was found in a home and residents do not recall being bitten. ¹²

Big brown bats are the most common species of bat in Rhode Island and are year-round residents, but eight different species of bats live in Rhode Island at some point during the year. Many bats migrate out of the state to hibernate during the winter. Bats prefer to hibernate in abandoned mines or caves with high humidity and temperatures above freezing. Since Rhode Island does not have any caves or mines, bats are often found hibernating in buildings. Bats will often return to the same location every year to raise their young.¹³ The majority of bats that are tested for rabies in Rhode Island are tested at the end of July and early August.¹⁴ This is the time when juvenile bats born in attics start to fly and may get into living spaces.¹⁵ Bats are found in every city and town in Rhode Island.¹⁴

Keep Bats Out of Homes

Bats can get into buildings through openings as small as 1/3” x 1 1/2” and may roost in structural voids between the interior and exterior walls of the building. Sealing off any openings around pipes, wiring, or appliances can help prevent bats from entering living spaces.¹⁵ If a bat is found in a bedroom and there is any possibility it may have been there while children or pets were in the room or while anyone was sleeping in the room, the bat should be tested for rabies at the Rhode Island State Health Laboratory.¹²



Images courtesy of: Bat Conservation International, Inc.
www.batcon.org

Protect Pets from Rabies

Prevention: Vaccinate dogs, cats, and ferrets against rabies as required by Rhode Island Law.¹⁶ According to the WHO, at least 70% of the dog population should be vaccinated against rabies in order to stop the cycle of dog to human transmission.² **Intervention:** If a pet is bitten or scratched by another animal, seek advice from the pet’s veterinarian and animal control officer.¹²

REFERENCES

- Centers for Disease Control and Prevention, (CDC). Rabies. <https://www.cdc.gov/rabies/index.html>. Updated 2021.
- World Health Organization (WHO). Rabies. <https://www.who.int/news-room/fact-sheets/detail/rabies>. Updated 2021.
- Brown CM, Slavinski S, Ettestad P, Sidwa TJ, Sorhage FE. Compendium of animal rabies prevention and control, 2016. *Journal of the American Veterinary Medical Association*. 2016;248(5):505-517. <https://www.ncbi.nlm.nih.gov/pubmed/26885593>. doi: 10.2460/javma.248.5.505.
- Blanton JD, Robertson K, Palmer D, Rupprecht CE. Rabies surveillance in the United States during 2008. *Journal of the American Veterinary Medical Association*. 2009;235(6):676-689. <https://www.ncbi.nlm.nih.gov/pubmed/19751163>. doi: 10.2460/javma.235.6.676.
- Ma X, Monroe BP, Cleaton JM, et al. Public veterinary medicine: Public health: Rabies surveillance in the United States during 2018. *Journal of the American Veterinary Medical Association*. 2020;256(2):195-208. <https://www.ncbi.nlm.nih.gov/pubmed/31910075>. doi: 10.2460/javma.256.2.195.
- Pieracci EG, Pearson CM, Wallace RM, et al. Vital signs: Trends in human rabies deaths and exposures - United States, 1938-2018. *MMWR. Morbidity and mortality weekly report*. 2019;68(23):524-528. <https://www.ncbi.nlm.nih.gov/pubmed/31194721>. doi: 10.15585/mmwr.mm6823e1.
- Rhode Island Department of Health (RIDOH). Animal rabies surveillance report January 2019 to June 2019. <http://health.ri.gov/publications/surveillance/2019/2019AnimalRabiesJanJune.pdf>.
- Rhode Island Department of Health, (RIDOH). Animal rabies surveillance report July 2018 to December 2018. <http://health.ri.gov/publications/surveillance/2018/2018AnimalRabiesJulyDec.pdf>.
- Rhode Island Department of Health, (RIDOH). Animal rabies surveillance report January 2018 to June 2018. <http://health.ri.gov/publications/surveillance/2018/2018AnimalRabiesJanJune.pdf>.
- Rhode Island Department of Health, (RIDOH). Animal rabies surveillance report July 2019 to December 2019. <https://health.ri.gov/publications/surveillance/2019/2019AnimalRabiesJulDec.pdf>.
- Rhode Island Department of Health, (RIDOH). Animal rabies surveillance report January 2020 to June 2020. <https://health.ri.gov/publications/surveillance/2020/2020AnimalRabiesJanJune.pdf>.
- Rhode Island Department of Health, (RIDOH) Web Site. Rabies. <http://www.health.ri.gov/diseases/rabies/?param=82>. Accessed Jan 17, 2022.
- Brown C. Bats of Rhode Island. Rhode Island Department of Environmental Management (RI DEM) Web site. <http://www.dem.ri.gov/programs/bnatres/fishwild/pdf/bat.pdf>.
- Brown C. RIDOH bats 2010-2020. 2021.
- Bat Conservation International. Bats in buildings. <http://www.batcon.org/resources/for-specific-issues/bats-in-buildings>. Updated 2020.
- Compulsory rabies vaccination. <http://webserver.rilin.state.ri.us/statutes/title4/4-13/4-13-31.htm>. Updated 1995.