Report to the Boards of Health

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Bats and Rabies

Rabies kills almost everyone who gets it. Around the world, dogs cause most human rabies deaths - about 70,000 people die each year. In the United States, human rabies is rare. We see only 1 to 3 cases per year, and most come from bats. From 2000 to 2024, there were 58 human rabies cases in the US. Here's what caused them:

- 14 cases came from outside the US (1 fox in Mexico, 13 dogs)
- Of the 44 US cases: 39 came from bats (89%), 4 from raccoons, and 1 unknown cause

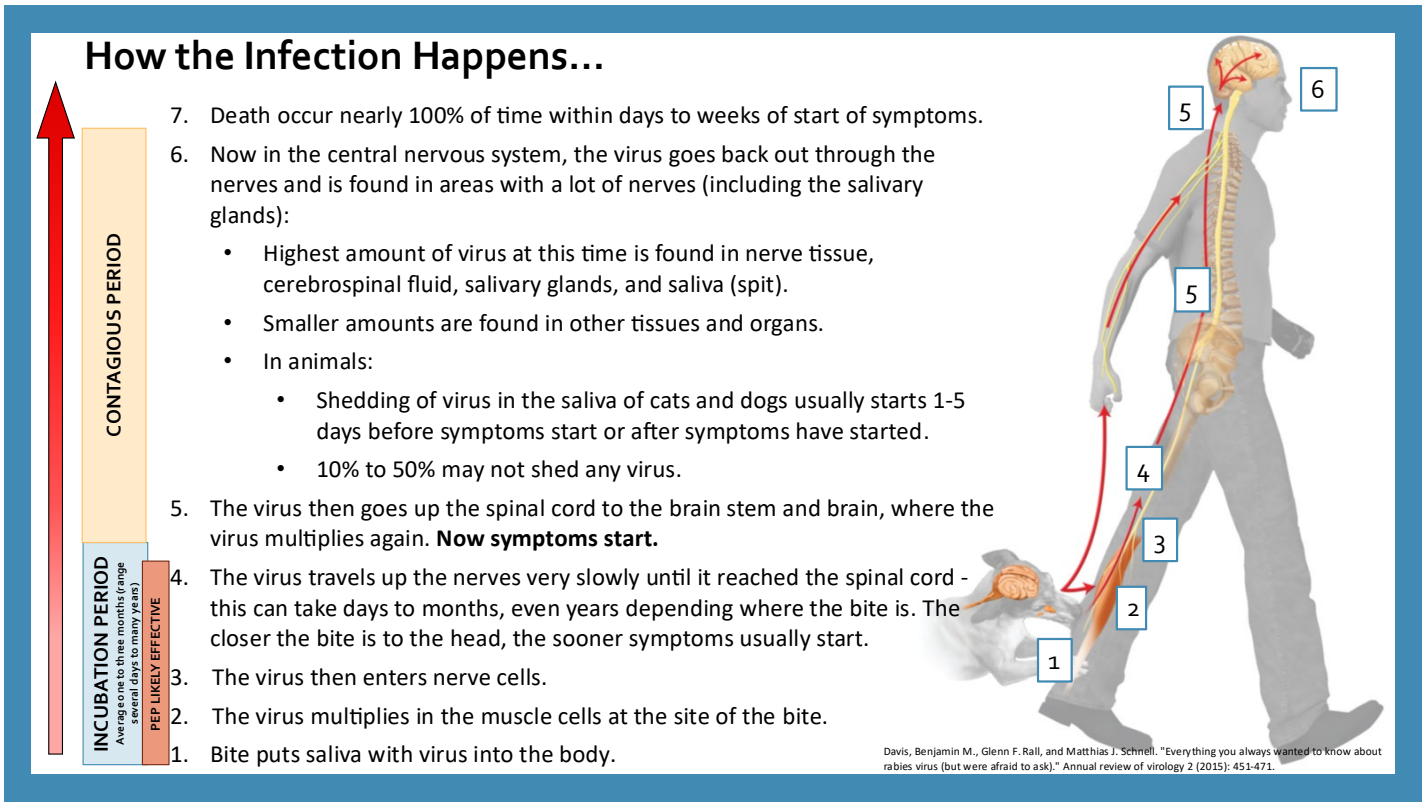
How Rabies Spreads

Rabies spreads through saliva or brain tissue that contains the virus. Most people get rabies from bites. You can also get it if infected saliva or brain tissue goes in your nose or mouth (called your mucous membranes) or fresh cuts. You cannot get rabies from urine, blood, or feces (poop). Some very rare cases have happened from lab accidents with rabies virus, breathing rabies virus in caves with millions of bats, and organ transplants from people who died with rabies.

The good news is rabies virus dies easily outside the body. Common cleaning products kill it. Once it dries out or sits in sunlight, it usually can't cause infection.

Preventative Treatment Works - If You Act Fast

If someone gets exposed to rabies, we can prevent infection. A series of shots that includes antibodies and vaccine can stop rabies from taking hold. This treatment is called post-exposure prophylaxis (PEP). It works because rabies takes a long time to develop after exposure. This is illustrated below:



What Makes Bats Different

Bats are the main rabies risk in the US for several reasons:

- **They're everywhere.** Bats with rabies live in all states except Hawaii. They often live in our homes and buildings, so people encounter them more often.
- **Their bites are hard to notice.** Bats are small with tiny teeth. Their bites usually leave no mark and may not hurt. People have gotten rabies after swatting a bat or handling one without knowing they were bitten.
- **They bite to defend themselves,** just like other animals.

Some pictures of bat bites are shown below to show how hard they are to see. Note that none of these bats are from the United States, however the bats in image (A) and (B) have mouths and teeth like the big brown bat and little brown bat, respectively, the two most common bats in Michigan.

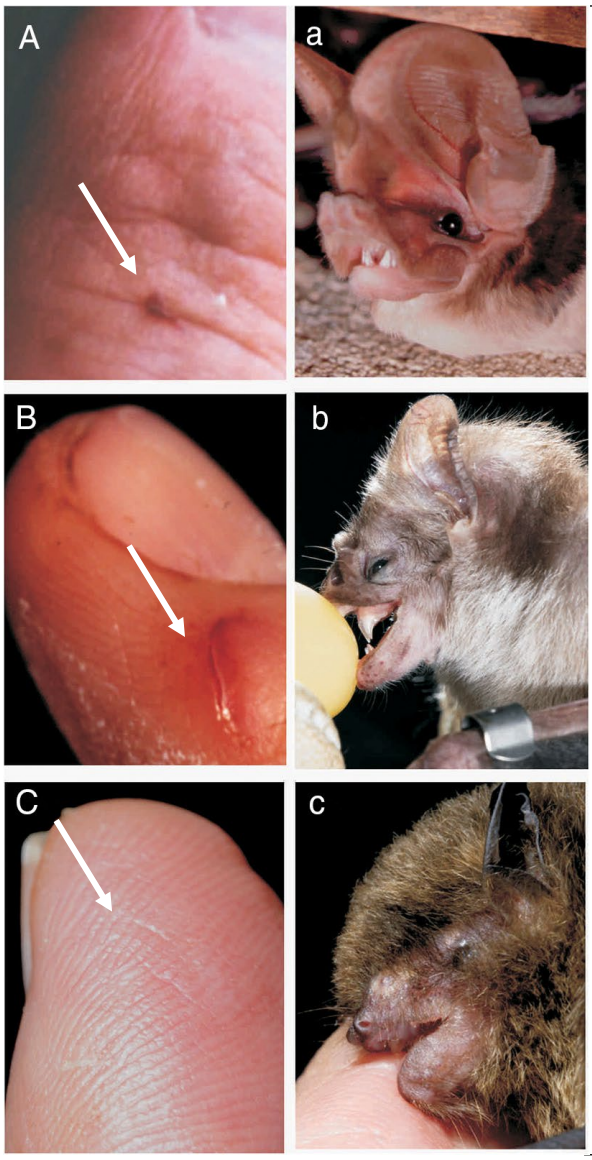


Fig. 2. A sample of bat bites.
(A) Puncture wound (arrow) inflicted by the canine tooth of a 35 g large-eared fee-tailed bat (*Otomops martiensseni*). The small size of such a bite wound could easily be overlooked. Head shot of *O. martiensseni*.

(B) Defensive bite/slash wound (arrow) from a 35 g common vampire bat, (*Desmodus rotundus*). Note how the common vampire delivers its defensive bite by embedding the upper incisors.

(C) Scratch marks (arrow) on a human finger from the canine tooth of a 4 g elegant myotis (*Myotis elegans*). Close-up of an elegant myotis biting a human finger. Photo credits: Sherri Fenton and Brock Fenton.

From: Fenton, M. B., Jackson, A. C., & Faure, P. A. (2020). Bat bites and rabies: the Canadian scene. Facets, 5(1), 367-380.

About 1% to 2.5% of healthy wild bats in North America have rabies. In Michigan, 3.5% of the over 6,000 bats sent in for testing in the last 5 years had rabies. Bats get rabies from bites by other infected bats. Some bats fight off rabies on their own and develop antibodies. Other bats get infected and sick just like any other animal. The

incubation period of rabies in bats is days to months, then they get sick and die. Bats may spread the virus in their saliva for days or weeks before showing symptoms. Sick bats may:

- Act aggressive or irritable
- Fly strangely
- Seem uncoordinated
- Have tremors
- Attack without reason
- Hurt themselves
- Have different behavior, like be active in the day or be inside a house
- Appear tame and friendly

Once sick with rabies, bats don't recover and will die.

Protecting Bats Matters Too

Bats are misunderstood animals. Most bats don't have rabies, but many get killed unnecessarily for testing. This is a problem because bats help our environment and economy by:

- Controlling pests
- Pollinating plants
- Spreading seeds

Bat populations are declining due to habitat loss, white-nose syndrome (a fungal disease), and other threats. We need to balance protecting people and protecting bats. The Idaho Department of Fish and Game, Idaho Department of Health and Welfare, Bat World Sanctuary, and Centers for Disease Control and Prevention created a 10 minute film called "Protect People, Protect Bats, Avoid Rabies!" that does a great job discussing the balance between protecting bats and rabies prevention (link here https://youtu.be/O0IUxHkbXzI?si=Lyjur-ovmfM5k6OC).

How to Stay Safe

Prevent bat bites:

- Don't touch bats
- Teach children not to touch bats
- If you must handle bats, wear thick gloves that bats can't bite through

When to worry about exposure:

- Anyone bitten by a bat
- Anyone who handled a bat without gloves
- Finding a bat in a room where someone was sleeping who might not know if they had contact (young children, people with cognitive impairment, intoxicated people, or deep sleepers)

What to Do If Someone Gets Exposed

- Wash the bite thoroughly with soap and water right away
- Try to safely capture the bat and have it euthanized (usually by animal control or a veterinarian)
- Contact your local health department
- Submit the bat for testing through your health department

If the bat tests negative for rabies, no treatment is needed. If the bat isn't available for testing, treatment is usually recommended.

If You Have Bats in Your Home or Building

Remove them safely and humanely. Find and seal any openings between where bats roost and where people live or work. This prevents future exposure. Bats in buildings – Bat Conservation International

Recommendations:

1. Avoid bat bites - Don't touch bats and teach children the same. Use thick gloves if you must handle bats.

2. Contact your health department if anyone is bitten or might have been bitten by a bat. Try to safely capture the bat for testing.

3. Remove bats safely from buildings and seal entry points.

Resources:

- Video: “Protect People, Protect Bats, Avoid Rabies!” https://youtu.be/O0IUxHkbXzI?si=Lyjur-ovmfM5k6OC
- Michigan DNR: Bats https://www.michigan.gov/dnr/education/michigan-species/mammals/bats
- Bat Conservation International: https://www.batcon.org/about-bats/bats-in-homes-buildings/
- How to safely catch a bat: https://www.youtube.com/watch?v=_YhnV5WJQBA
- Michigan Rabies Information: www.mi.gov/rabies

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- Veterinary Public Health Los Angeles County Department of Public Health. 2024 Animal Health Advisory: Human rabies death from a bat in California. http://publichealth.lacounty.gov/vet/docs/AHAN/AHAN_HumanRabiesDeathFromCaliforniaBat_12102024.pdf
- U.S. Fish and Wildlife Services. Bats are one of the most important misunderstood animals. https://www.fws.gov/story/bats-are-one-most-important-misunderstood-animals