

# Bat Rabies in New York State



New York State Department of Health

## **What is rabies, how is it spread and where is it found?**

Rabies is a viral infection of mammals, usually transmitted by an infected animal's bite.

Rabies is prevalent throughout North America. Bat rabies is found throughout the continental United States and Canada; skunk rabies is found in the central and midwest regions; fox rabies, in eastern Canada, the northeastern and southwestern United States; and raccoon rabies, in the southeastern, mid-Atlantic and New England states. Bats rank third in number of rabies cases in the United States, behind raccoons and skunks.

## **Are rabid bats a threat to human health?**

Yes, although human rabies deaths are now rare in the United States. Since 1990, 21 of the 23 rabies deaths from exposures in the U.S. were from the bat variant, and only one of these had a reported bite. The only human rabies deaths in New York State over the past 40 years were a result of exposure to a bat rabies virus.

## **Are all bats rabid?**

No. Most bats are healthy and contribute to our environment in many ways, particularly by controlling insect pests.

## **Is rabies always fatal?**

Once symptoms occur, rabies is almost always fatal. The incubation period, the period of time between exposure and onset of disease, ranges from two weeks to many months. Once rabies has progressed from the incubation period, treatment is ineffective; but because of the long incubation, prompt treatment following a bite can prevent rabies in humans. Periodic vaccination in dogs, cats, ferrets, and livestock can also protect these animals against the disease.

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### How common is rabies in bats? Has incidence increased or decreased?

Rabies was first confirmed in a bat in New York State in 1957. Since then, the percentage of rabid bats among all the bats examined has remained constant (Figure 1). Most bats submitted for rabies testing have either bitten a person or a pet, have been found in close

#### Confirmed Rabies in Bats - New York State

	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99
Average rabid bats/year	11.8	18.3	30.6	45.8	45.9	64.6	86.0
Total rabid bats	59	93	153	229	229	323	430
Total bats examined	1,342	2,049	4,581	5,611	5,897	8,369	12,328
Percent rabid bats	4.4	4.5	3.3	4.1	3.9	3.9	3.5

Figure 1

proximity to someone, or have acted abnormally in some other way. The bats examined, therefore, do not represent a random sampling, and the actual percentage of rabid bats is thought to be much lower than the 3-4 percent average seen in bats tested.

### Are rabid bats more prevalent in certain areas of New York State?

No. Bat rabies is widely distributed throughout New York State (Figure 2). Differences implied by greater numbers in some counties are largely the result of higher specimen submission rates, probably because of human population densities.

### What kinds of bats get rabies in New York?

Rabies has been confirmed in all nine species of New York bats. However, the vast majority of confirmed cases occur in the big brown bat, *Eptesicus fuscus*.

### Where do the most common bats roost?

The big brown bat and the little brown bat, *Myotis lucifugus*, are common house bats that roost during spring and summer in attics,

behind shutters and in other sheltered areas of human dwellings, camp buildings, and outbuildings (barns, garages, etc.). In such locations, large numbers of bats, sometimes 500 or more, are often seen, generally in nursery colonies composed of females and, after

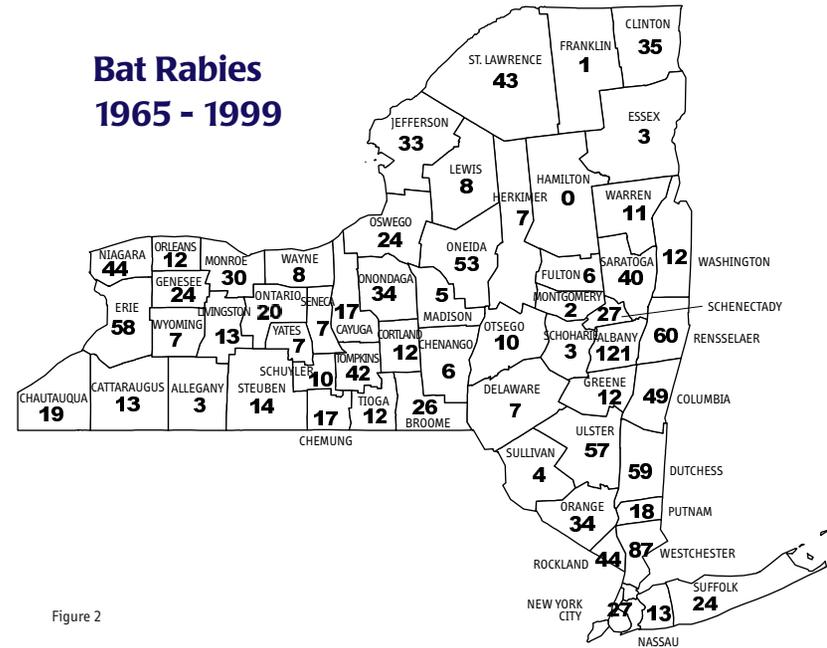


Figure 2

early June, their young. These bats leave the roost at dusk to feed on flying insects, and may return during the night for a period, and return before daylight. In the fall, virtually all these bats leave the roost to hibernate in caves and mines for the winter.

### If one bat in a colony is rabid, are all the other bats rabid?

No. One rabid bat in a colony does not mean the entire colony is infected. Testing the remaining members of the colony rarely results in finding another rabid bat.

### Can bat rabies be transmitted to other mammals?

Yes (Figure 3). Bat rabies is generally independent from rabies in terrestrial mammals, but transmission from bats to other wildlife, unvaccinated domestic animals and humans can occur. Bat rabies

## Bat Rabies Virus In Other Species 1978-1999

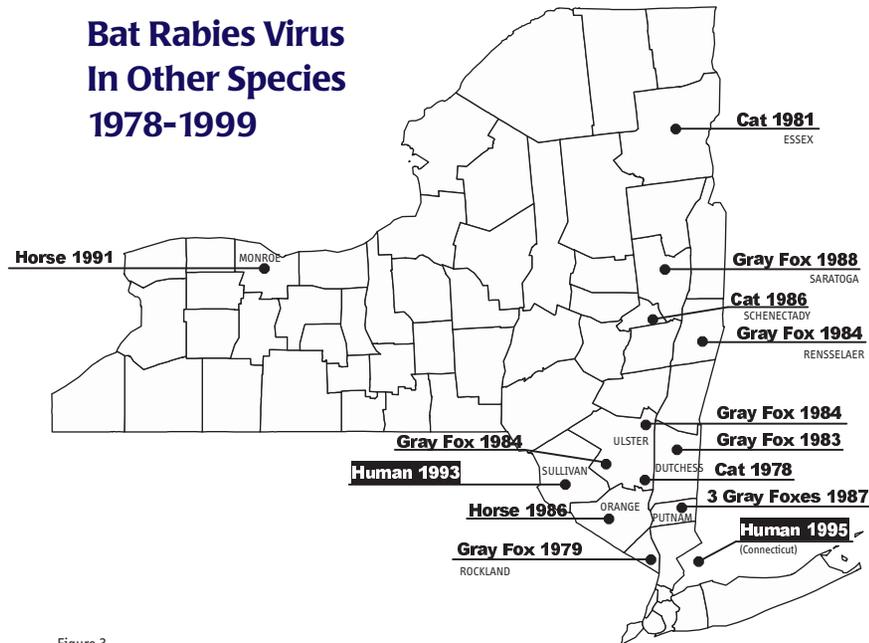


Figure 3

virus has been found in gray foxes, domestic cats and livestock in areas that were otherwise free of terrestrial animal rabies. In those cases, the rabies virus detected in the infected animal was a bat rabies variant.

### Can bats transmit rabies without showing signs of sickness?

There is no evidence that bats can transmit rabies for an extended period without being ill. Bats, like other mammals, become sick and eventually die from the disease. Bats infected with rabies may have the virus in their saliva and may transmit the disease through bites to humans and other animals.

### How can someone tell whether a bat has rabies?

Rabid bats may show abnormal behavior, such as outdoor activity during daylight; rabid bats may be grounded, paralyzed or may bite a person or animal. Not all rabid bats act abnormally, but bats that do are more likely to have rabies.

### Do rabid bats attack? Do they usually bite?

Rabid bats rarely attack humans. But, because rabies can occur anywhere and because rabies can be fatal, strictly avoid direct contact with bats. Whenever contact with a bat is suspected, the local health authority should be contacted to help evaluate the probability of exposure.

### What is an exposure to bat rabies?

Rabies exposure means either a bite or scratch from a bat, certain circumstances of direct skin contact with a bat, or a reasonable probability that these types of contact occurred (for example, if a bat is found in close proximity to an unattended child or person with mental impairment, or in a room with a sleeping person).

### Do bats transmit rabies only through biting?

As with all animals, rabies is transmitted by bats primarily through a bite. Breathing the airborne rabies virus has been reported in one bat cave under exceptional circumstances. All but one of the people who died of bat rabies in the U.S. were unaware of a bat bite; bats have small teeth which may leave marks that are not easily seen. Inapparent or unrecognized bat bites may be most likely to occur in children or someone with mental impairment who cannot interpret or report what has happened, or when someone picks up a bat or has one fly into them and contact their bare skin, or when someone is asleep.

### How should an encounter with a bat be managed?

First, determine if a human, pet or livestock may have had contact with the bat. Contact is considered to be a bite, scratch, or other physical contact. If contact occurred, immediately wash the affected area thoroughly with soap and water, seek medical attention, and contact the local health authority. The possibility of contact exists if a bat may have been close to an unattended young child, a person who was sleeping, a person with sensory or mental impairment, or a pet.

In 1998 and 1999, testing 1,217 bats that bit or had other contact with a person revealed that 96% of those bats were not rabid. Thus, testing prevented more than a thousand unnecessary rabies postexposure treatments and saved a million dollars in treatment costs. If there is any possibility that contact occurred, capture the bat, without touching it and without damaging its head. To capture the bat, close windows, room and closet doors, turn on lights if the room is dark and wait for the bat to land. Wearing gloves, cover the bat with a coffee can or similar container. Slide a piece of cardboard under the can, trapping the bat. Tape the cardboard tightly to the can. Immediately contact your local health authority to determine if rabies examination of the bat is recommended.

For persons with a known or probable rabies exposure, postexposure treatment should be given as soon as possible if the test results are positive for rabies or if the bat is not captured and tested.

Treatment begins with a single dose of human rabies immune globulin and includes five doses of rabies vaccine beginning with

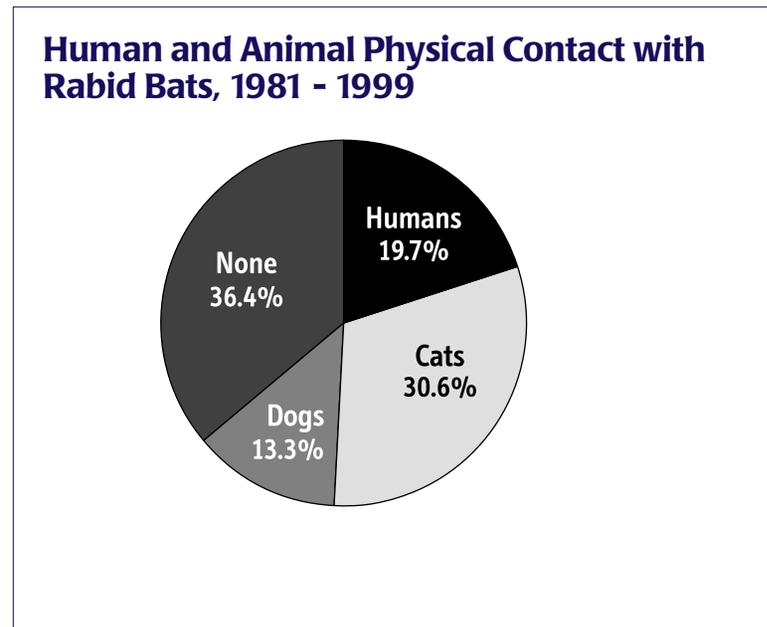


Figure 4

one dose administered at the same time as the immune globulin, and additional single doses given 3, 7, 14 and 28 days later.

Pets and other domestic animals with up-to-date rabies vaccinations that have had contact with a bat that is confirmed rabid or is untestable must be given a rabies booster vaccination within five days. Unvaccinated animals similarly exposed must be quarantined for six months or euthanized.

If you are certain that no human or domestic animal contact with the bat could have occurred, even to an unattended child or a sleeping person, the bat can be allowed to leave on its own, or if it is in your home, it can be released. Close room and closet doors, open windows, turn on a light and observe the bat until it leaves. If the bat does not leave, wait for it to land, and wearing gloves, cover the bat with a coffee can or similar container. Slide a piece of cardboard under the can, trapping the bat. Tape the cardboard tightly to the can. If you are certain there was no contact while capturing the bat, release it outdoors, away from populated areas and preferably after dark.

### **Can a person be vaccinated before exposure, and who should consider that vaccination?**

Persons can be vaccinated before an exposure under certain circumstances. Rabies pre-exposure vaccination—three doses of human rabies vaccine administered in the arm during a month's time—should be considered by wildlife biologists, bat researchers, veterinarians, licensed wildlife rehabilitators, nuisance wildlife control specialists, taxidermists and others who handle wildlife regularly. If an exposure occurs, pre-exposure vaccination does not eliminate the need for rabies treatment but it reduces the number of shots needed.

### **Can animals be protected from rabies?**

Periodic vaccination of domestic animals is available, but must be administered by a licensed veterinarian using a federally approved rabies vaccine. First time rabies vaccinations for animals are effective for one year. Revaccinations for dogs, cats and sheep following this first injection, can be effective for up to three

years depending on the vaccine used. Be sure your pets have up-to-date rabies vaccinations. Because cats often capture bats, even inside homes (Figure 4), it is particularly important to vaccinate all cats, even indoor cats. Bat rabies virus has been responsible for rabid cats in NYS (Figure 3). Valuable livestock housed in structures where bats may roost can also be protected by periodic rabies vaccination.

### What if a pet is bitten by a bat?

Whenever a dog, cat or other domestic animal with up-to-date rabies vaccination is bitten by or comes into contact with a bat, capture the bat if possible. Immediately arrange with the local health authority for the bat to be tested for rabies. If the bat is rabid or is not available for testing, the animal must be given a rabies booster vaccination within five days. If an unvaccinated animal has contact with a rabid or suspect rabid bat, the animal must be quarantined for six months or euthanized.

### What can be done to keep bats out of a home or other buildings?

Unnecessary killing of bats is not environmentally sound, humane, or a permanent solution to the problem. There are no chemicals or pesticides registered for this purpose, and use of unregistered pesticides and chemicals creates a risk of long-term toxic exposure to humans and causes sick or dying bats to be grounded in the community, further increasing the chance of contact with people and pets.

Bats should be kept out of places with a high risk of bat contact with humans or pets (for example, schools, hospitals, prisons, homes, children's camps) by closing or covering openings that allow entry to the roost (Figure 5). To find these openings, watch bats leave or enter the building at dusk or just before dawn. To "batproof" (prevent reentry), use polypropylene bird netting, fly screening, sheet metal, wood, various caulking compounds, or other construction materials impervious to bats. Keep in mind that some house bats can pass through crevices as thin as a pencil. Before batproofing, make sure there are no bats already in the roost. The best time to batproof is late fall through winter when most bats are hibernating in caves, or at

### Common Points of Entry and Roosting Sites of Bats

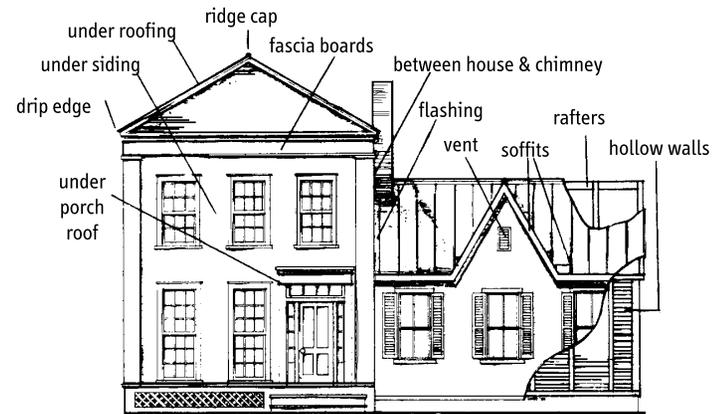


Figure 5

night when bats are feeding away from the roost. Batproofing should not be done during the period from late May until mid-August, to avoid trapping baby bats in the roost. All openings except one or two major exits may be closed in advance, and the last openings sealed while the animals are away.

Enclosed building overhangs can be opened to eliminate known bat roost sites. To discourage roosting behind shutters, these should be spaced an inch or more from the wall to allow more light and ventilation. Old roofing materials may need to be replaced, and spaces between chimneys and exterior walls may need to be filled as well. Because bat boxes may bring bats into closer contact with people, their use close to homes or populated areas is not recommended. However, bat boxes may be beneficial in certain circumstances when carefully used as part of a comprehensive bat roost management program.

### What help is available?

If assistance is needed in removing a bat from living quarters or in resolving a long-term bat problem, call the Department of Environmental Conservation regional office for a list of local

nuisance wildlife control personnel. For rabies-related problems or questions and to report a suspected rabies exposure, call your local health authority, who may also be able to provide guidance on bat problems.

It is important that everyone, especially children, be educated about bats and rabies. Emergency room personnel and physicians also should keep informed about the proper management of bat bites. Additional educational materials may be available from your local health authority.

**Bats should never be handled.** Bats seen foraging on summer evenings, roosting in unoccupied buildings or hibernating in caves or mines should be enjoyed from a distance—and not disturbed.



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