



# Facts on the Fly!

## ANSWERS TO QUESTIONS ABOUT BATS AND RABIES

---

### **What is rabies, and how is it transmitted?**

Rabies is an infectious viral disease that invades the central nervous system of humans and other warm-blooded animals. A wide variety of mammals can contract or transmit the disease, but it is most often noticed in dogs, cats, foxes, raccoons, skunks, coyotes, bats, and livestock. Worldwide, more than 55,000 humans die of rabies each year, primarily from contact with rabid dogs. In the United States, due to highly successful dog-vaccination programs, transmission from dogs is now rare, eliminating the vast majority of human cases.

Rabies is nearly always transmitted by a bite, although non-bite exposures can result from contact between infected saliva or nervous tissues and open wounds or the mucous membranes of the eyes, nose or mouth. Bites during careless handling are the primary source of rabies exposure from bats.

You cannot get rabies from just seeing a bat, from simply being in a room with a bat or from contact with bat guano (feces), urine or blood. The vast majority of bats do not have rabies.

### **Do large bat populations lead to increased incidence of rabies transmission to humans?**

The largest urban bat populations consist almost exclusively of colonial species, and there is no evidence linking them to increased transmission to humans. Each summer, tens of thousands of people watch the emergences of 1.5 million Mexican free-tailed bats at the Congress Avenue Bridge in downtown Austin, Texas; in more than 20 years, no one has been attacked or harmed. In fact, while Austin, San Antonio, and several other Texas Hill Country towns likely support the highest bat densities in America, they have no recorded human cases of bat-transmitted rabies.

### **Are bats likely to cause rabies outbreaks in other wildlife or in domestic animals?**

There is no evidence that rabies from bats has triggered outbreaks in other animals. It occasionally does spill over into other species, causing individual animals to die, but even this is apparently rare. Despite the fact that numerous carnivores gather to feed on the 20 million Mexican free-tailed bats at Bracken Cave, Texas, no out-

breaks of rabies are known from this source. No transmission from bats to dogs is known to have occurred, though rare cases of transmission to cats have been documented. The presence or absence of bats is irrelevant to the fact that all dogs and cats should be vaccinated.

### **What can be done to prevent rabies transmission to humans?**

By far the most important prevention is to vaccinate dogs and cats against rabies. Also, children should be warned never to handle any unfamiliar animal. Explain that wild animals that can be touched may be rabid and dangerous. Most sick bats are not rabid, but taking a careless chance on being bitten could prove fatal. Any animal bite should be reported immediately to a family physician or public health professional for evaluation as a possible rabies exposure.

The U.S. Centers for Disease Control and Prevention recommends pre-exposure vaccinations for people who are at high risk of exposure, such as rabies researchers, veterinarians, field biologists and animal rehabilitators. Dosage and route of administration varies depending upon the vaccine used. For those at continued risk of exposure to rabies, a booster dose of vaccine or serology may be necessary at intervals of six months to two years.

### **What are the symptoms of rabies?**

Rabies causes fatal inflammation of the brain or spinal cord. Symptoms most often develop 10 days to seven months after infection (some cases take years to develop), and death follows 2 to 12 days after symptoms appear. Early symptoms in humans include pain, burning and numbness at the site of infection. Victims complain of headaches, inability to sleep, irritability, muscle spasms and difficulty swallowing. Convulsions may occur.

Rabies is sometimes referred to as hydrophobia because victims fear swallowing. Drinking or eating can cause muscle spasms of the throat. Fear of swallowing also accounts for saliva accumulation referred to as "foaming" at the mouth. Infected animals may be either agitated and aggressive or paralyzed and passive. Dogs, cats and other carnivores often become aggressive and

try to attack humans and other animals, but bats are typically passive. Bats normally bite only in self-defense if handled, and aggressive behavior is rare even among rabid bats.

### **How should potential exposures to bat rabies be evaluated and treated?**

Any mammal that bites a human should be tested for rabies as soon as possible, and post-exposure treatment should begin immediately unless the animal is confirmed negative. Bat bites are typically felt and detected at the time. Visual examination for bite marks is unreliable. If visible at all, bites may appear only as a single tiny puncture or scratch. Most punctures are a millimeter or less in diameter, and most bat-inflicted scratch marks are no more than a few millimeters long. Extenuating circumstances can make detection difficult. If a lost or sick bat hides in bedding, it could be inadvertently pinched during one's sleep, bite, and leave without detection. Also, people carrying firewood or moving outdoor lumber piles could be bitten by a bat without noticing. These are obviously remote possibilities, and wearing gloves when moving woodpiles would provide protection.

If a child or a mentally incapacitated person is found alone with a bat in the same room and the possibility of a bite cannot be eliminated, post-exposure treatment should be

considered unless prompt testing of the bat rules out infection. When questioning about possible exposure, it is essential first to calm fears of painful shots. For the majority of patients, the post-exposure shots are less painful than tetanus vaccinations. Also, people who wake up with a bat in the same room where they have been sleeping are advised to submit it for testing if possible, especially if the bat is unable to fly or seems weak.

### **What is the recommended treatment for a known or suspected rabies exposure?**

Modern rabies treatment is highly effective and relatively painless. Post-exposure rabies treatment should begin as soon after exposure as possible. According to the Centers for Disease Control and Prevention, exposed humans who have not previously been vaccinated against rabies should receive an initial intramuscular injection of Human Rabies Immune Globulin, followed by a series of four doses of rabies vaccine given on day 0, 3, 7, and 14. The vaccine is given in a muscle, usually in the upper arm. Those who have previously received rabies vaccination should receive only two of vaccine.

**Additional information is available** from the U.S. Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)).

**Join Bat Conservation International – Our members and donors make our conservation successes possible.**

*Bat Conservation International is a nonprofit organization dedicated to conservation, education and research initiatives involving bats and the ecosystems they serve. For more information visit: [www.batcon.org](http://www.batcon.org)*