



# Facts on the Fly!

## ANSWERS TO QUESTIONS ABOUT BATS AND PUBLIC HEALTH

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### How dangerous are bats?

Bat rabies accounts for approximately one human death per year in the United States. Thus, some people consider bats to be dangerous. Nevertheless, dogs which often are considered "man's best friend," attack and kill more humans annually than die from bat rabies in a decade. Statistically speaking, pets, playground equipment, and sports are far more dangerous than bats. Clearly, bats do not rank very high among mortality threats to humans. Nevertheless, prudence and simple precautions can save lives.

### Which bat variances of the rabies virus have been transmitted to humans?

Rabies virus variances associated with six of the 47 bat species living in the continental United States have been transmitted to humans. These include the silver-haired bat (*Lasionycteris noctivagans*), the Mexican free-tailed bat (*Tadarida brasiliensis*), the big brown bat (*Eptesicus fuscus*), the eastern pipistrelle (*Perimyotis subflavus*), and two species that were not positively identified. These are suspected of having been western (*Myotis ciliolabrum*) and eastern (*M. leibii*) small-footed myotis.

### Are there other diseases to be concerned about from bats?

The only other disease of public health concern in the United States is histoplasmosis, which is caused by a fungus, *Histoplasma capsulatum*. This fungus lives in soil enriched by bird or bat droppings. Human infection is common in and adjacent to the Ohio and Mississippi River drainages where warm, humid climates favor fungal development. The fungus is rare in dry western and cool northern climates. It can be present, but is uncommon in dry, hot attics of buildings. Infection is caused by inhalation of air-borne spores in dust enriched by animal droppings. The vast majority of histoplasmosis cases in humans are asymptomatic or involve no more than flu-like symptoms, though a few individuals may become seriously ill, especially if exposed to large quantities of spore-laden dust. The disease can be avoided by not breathing dust suspected of being enriched by animal feces. Risks from bats are no different from those

of birds.

### Are there reasons for conserving bats?

Most bats are valuable allies, well worth protecting. Worldwide, they are primary predators of vast numbers of insect pests that cost farmers and foresters billions of dollars annually and spread human disease. In the United States, little brown bats often eat mosquitoes and can catch up to 1,200 tiny insects in an hour. An average-sized colony of big brown bats can eat enough cucumber beetles to protect farmers from tens of millions of the beetle's rootworm larva each summer. Large colonies of Mexican free-tailed bats eat hundreds of tons of moth pests weekly. Bats play key roles in keeping a wide variety of insect populations in balance. Yet, they rank as North America's most rapidly declining and endangered land mammals. The largest known cause of decline is exaggerated human fear and persecution.

### Is it safe to put up bat houses?

Statistically, it's safer than owning a dog or planting flowers. Flowers attract bees whose stings account for far more human fatality than bats. Just banning bicycles or swimming pools would be hundreds of times more effective in saving lives, but how safe do we really want to be?

### Which kinds of bats are attracted to bat houses, and what are the risks and benefits?

In the northern United States and Canada, little brown and big brown bats are the most frequent bat house users. No one has been known to have contracted a disease from little brown bats, while only three have been known to have contracted rabies from big brown bats in all of U.S. history. In southern areas, the two most frequent bat house users are twilight bats (*Nycticeius humeralis*) and Mexican free-tailed bats. The twilight bat has a perfect safety record. Only eleven humans have been known to have contracted rabies from free-tailed bats, making them far safer than having dogs in a neighborhood. Children should be warned to leave bats alone, just as they learn to leave bees and unfamiliar dogs alone. Bats that live in our yards, in addition to eating pests, serve as natural insect repellents. Many yard pests,

especially moths that attack gardens, lawns, and shrubs, can hear bats from over 100 feet away and attempt to avoid them by leaving the area.

### **Should bats be tolerated or encouraged in our neighborhoods?**

There are clear benefits to sharing our neighborhoods with bats, but as with any wild animal, they never should be tolerated inside our living quarters. Most bats that enter living areas are lost youngsters with no greater interest than a safe escape. They can be chased out through an open door or window or caught in a butterfly net, a leather gloved hand, or a coffee can slowly placed over them while a piece of cardboard is slid between the bat and wall. Rabies testing is expensive and unnecessary unless a possible rabies exposure has occurred.

In the vast majority of cases, exclusion of bats from human living quarters is simple, inexpensive, and can be accomplished by the homeowner with minimal instruction. Exclusion of bats from an entire building is also feasible in most cases, though professional advice may be needed. More than 80% of bat colonies living in buildings go undetected by human occupants, but large colonies can cause odor or noise problems that justify exclusion. Many people simply exclude bats from entering living quarters while permitting them to remain in outer walls or in unused attics.

When bats must be entirely excluded from a building, providing an adequate-sized bat house nearby can resolve a nuisance without sending it to a neighbor. Without such an alternative, evicted bats will attempt to move into a neighbor's home, or sicken and die, increasing the probability of being picked up by children or pets.

### **How can human living quarters be protected against bat entry?**

Most bats that wander into human living quarters enter through a loose-fitting door to the outside or an attic, an open window, an unscreened chimney, or a gap

in an outside wall. They must have spaces at least 3/4-inch in diameter or 3/8 by 7/8 of an inch to enter. A room by room search will quickly reveal such possible entry points. Holes or crevices are easily plugged with steel wool or silicone caulking. Chimneys can be covered with half-inch hardware cloth screening, and loose fitting doors may be fitted with draft guards. Unlike rodents, bats do not chew holes, so are easily excluded. Even when bat colonies cannot be excluded from walls or attics, they can be kept out of human living areas.

### **Are there risks of people overreacting to news of rabies in bats?**

Rabies incidents involving bats are often distorted during media reporting. When risks are not kept in perspective, panicked people overreact in ways that increase rather than decrease the risk of rabies. Attempts to poison or exclude bats from buildings by inappropriate methods can dramatically increase human contact, as sick or homeless bats scatter to exposed positions throughout an entire neighborhood.

Efforts to kill or evict bats invariably center on colonial species. Silver-haired bats and eastern pipistrelles, the two bat variances of the rabies virus most implicated in transmission to humans, overlap big and little brown bats in both roosting and feeding behavior. In urban settings, silver-haired bats are apparently less able to compete with the more colonial species and are scarce. When frightened humans declare war on bats, they may actually help these species by reducing their primary competitors.

The public needs to recognize the inescapability and desirability of coexisting with bats, as well as how to minimize contact and associated risks. Collaboration between bat researchers, conservationists, public health and animal control officials is essential to progress.

#### **Additional References**

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