



Coexisting  
with Wildlife  
Fact Sheet #5

# FUND FACTS

## COMMON MISCONCEPTIONS ABOUT RABIES

Often people are in a panic about rabies due to misleading media articles and folklore. It is vital to understand the facts about rabies, correct exaggerated fears, and know what sensible precautions you can take to prevent rabies exposure, such as vaccinating your companion animals, and getting prompt post-exposure shots if bitten by a possibly rabid animal. Given all the media attention, people are surprised to learn that very few people die from rabies nationwide each year. Human fatalities due to lightning strikes and bad hamburgers far exceed the number of human deaths due to rabies. This doesn't mean we shouldn't be concerned about rabies; it means we should take sensible precautions, use common sense, and calm down!

### General Concerns:

**Q: Can't I get rabies by sitting on the grass a rabid animal drooled on last night?**

**A:** The virus cannot penetrate intact skin. *People can only get rabies via a bite from a rabid animal or through scratches, abrasions, open wounds or mucous membranes contaminated with saliva or brain tissue from a rabid animal.\** In addition, the virus is short-lived when exposed to the open air — the virus isn't viable after saliva dries up. If you are handling a companion animal who has been in a fight with a potentially rabid animal, take precautions such as using gloves to prevent contact with any still-fresh saliva.

**Q: Can rabies be spread through feces or blood?**

**A:** Rabies is **NOT** transmitted through the blood, urine, or feces of an infected animal, nor is it spread airborne through the open environment. *Saliva* provides the primary



Photo by Laura Simon

*Healthy, orphaned raccoon cubs may chatter constantly and run up to people because they are hungry; yet, the same behavior in adults may indicate rabies.*

transmission medium when the animal is in the clinical stage of rabies. For the rabies virus to get to the salivary glands, it has to travel first from the site of entry (usually a bite wound) through the animal's nervous system, then to the brain. This is what causes most rabid animals to exhibit abnormal behaviors, depending on what part of the brain is infected. Finally, the virus travels to the salivary glands during the terminal stage of rabies, prior to death. It is this latter stage of rabies when an animal is most infectious because the virus is in the saliva.

**Q: Don't many people die every year of rabies in the U.S.?**

**A:** Luckily, *no human has ever died from the raccoon strain of rabies* according to the Centers for Disease Control and Prevention

(CDC). The handful of human deaths from rabies annually (average: 2.4 a year, nationwide) has been largely due to a *domestic bat strain* or *canine strain from abroad*. Between 1981-2000, there were a total of 42 human fatalities to rabies of which 62% were *bat strain* (primarily silver-haired variant) and 31% were *canine strain* contracted overseas or in Mexico. No human fatalities to rabies were reported nationally in 1999. This low incidence doesn't mean we can't contract rabies, it just means we should continue taking sensible precautions to prevent exposures and seek prompt post-exposure prophylaxis when advised to do so by a doctor or local health department.

\*If people are unsure about whether or not they have broken skin on their hands, suggest that they put their hands in rubbing alcohol to see if and where it stings.



## Species-Specific Questions:

### BATS

**Q: Don't a lot of bats carry rabies?**

**A:** Actually, a very small percentage of bats carry rabies, much less than one percent of the population. However, if you suspect that a rabid bat has bitten you, or if a bat is found in the room where a person is sleeping,

underneath (unlike birds, bats cannot fly from the ground *up* so be sure to put the bat on a tree limb or wall, off the ground). Often bats roost in attics and raise their young there, which provides a benefit to the homeowner in terms of mosquito control in the summer. The best eviction method is to create a one-way door over the attic's entry hole so that the bats can get out but not back in (see

them to be nocturnal. It is quite common to see foxes hunting by day. It is normal too for the kits to be seen playing by themselves, seeming to have no parents around, and perhaps showing little fear of people. There's usually no need for intervention — soon the parents will appear and soon the kits will learn to be wary of humans. You can bang aluminum pot tops together to help teach the foxes to be fearful of people. Only if the kits look weak or sickly should your local fish and game agency be called to help you locate a wildlife rehabilitator.

### RACCOONS

**Q: I see a baby raccoon outside in the day — does that mean the animal is rabid?**

**A:** When baby raccoons are orphaned, they don't know night from day — they only know that they are extremely hungry. This is when they tend to plunge out of trees. If the mother raccoon does not retrieve the baby after several hours (she rarely leaves her young alone for very long), then use gloves, a shovel or a trowel to put the baby in a cardboard box with a ventilated top (like a window screen) and an old shirt or cloth for comfort. The cub can be left out for a few hours after dusk to see if the mother retrieves him. Another option is to put an upside-down laundry basket over the cub with a weight on top so the cub doesn't wander off in the meantime. Be sure to put a cloth in for warmth and keep an eye on the weather. If the cub is not retrieved at night, it's a sure sign something has happened to the mother. **Do not touch the raccoon with your bare hands.** Call your local fish and game agency for the name of the nearest rehabilitator who is licensed to take in raccoons, **as long as no exposure has occurred.** If exposure<sup>1</sup> has occurred, see "Exposure" sidebar.

### SKUNKS

**Q: There's a baby skunk running around by day — is the skunk rabid?**

**A:** It's possible, yet it's more likely that the skunk has lost sight of the mother because skunks are so near-sighted. If there's no risk of human contact, watch to see if the baby finds the den or if the mother retrieves him. Sometimes as baby skunks get older,

### FOXES

**Q: There is a fox running around in the day so the animal must be rabid.**

**A:** Foxes haven't read the textbooks telling



Photo by Erika Yery

*Opossums are amazingly resistant to rabies, yet their defensive behavior (drooling, shaking, etc.) leads people to wrongly assume that they're rabid.*

current health guidelines require that the bat be tested for rabies. Contact your local health department for instructions.

**Q: Help! I need to get a bat out of my house!**

**A:** Often healthy bats fly into houses through open windows or flues. In late summer, fledgling bats leave the roost for the first time and often take a wrong turn and end up inside a house. If there has been *no exposure*<sup>1</sup>, the best way to evict the bat is to open all windows and doors and give the bat a chance to fly out. A bat can be safely captured by putting a coffee can or shoebox over the bat and sliding a piece of cardboard

www.batcon.org for more information). **WARNING:** Baby bats are too young to fly from May to August; therefore, any eviction should take place in the fall or very early spring to prevent orphaning.

**Q: Don't bats fly into people's hair?**

**A:** Contrary to popular belief, bats do not fly into people's hair. Their swooping flight pattern is due to their long wingspan and their need to gain momentum when flying in an enclosed space like a room. They will gain altitude near the walls and lose altitude near the center of the room, giving bystanders the *feeling* that they are being attacked when actually the bat is just trying to stay airborne!

<sup>1</sup>Exposure is defined as either **Bite Exposure:** any penetration of the skin by the teeth of a rabid animal or **Nonbite Exposure:** Scratches, abrasions, open wounds or mucous membranes contaminated with saliva or brain tissue from a rabid animal. Nonbite exposures from terrestrial animals rarely cause rabies. (Source: *Advisory Committee on Immunization Practices*).



they come out to explore while the mother is away. Most of the time they don't appear without her, however. An orphaned baby will appear frantic. If the skunk appears to be truly orphaned, call your local fish and game agency to locate a wildlife rehabilitator. Keep an eye on, but don't touch, the skunk and keep all people and companion animals away. You can put a plastic laundry basket upside-down over the skunk to temporarily contain the animal while waiting for the mother to return. Approach the skunk slowly and talk softly — if the skunk gives a warning by stamping the front feet, then stand still or back off. You can approach again after the animal calms down. Do not risk being bitten.

## OPOSSUMS

**Q: There's an opossum hissing and drooling at me — is the opossum rabid?**

**A:** For unknown reasons, opossums are amazingly resistant to rabies. Hissing, drooling and swaying are part of the opossum's bluff routine to scare YOU off. Unlike other animals, opossums don't always flee when they're scared. Just leave the opossum alone and eventually the animal will wander off.

## WOODCHUCKS

**Q: I see a woodchuck circling and falling over — is it rabies?**

**A:** For some unknown reason, woodchucks are the only rodents with a higher reporting rate for rabies in the eastern United States. Woodchucks are susceptible to the roundworm brain parasite, which causes signs that *look* exactly like rabies. Roundworm is transmitted through the ingestion of an infected animal's feces. Keep people and companion animals away from any sick-acting woodchuck and contact your local animal control officer or rehabilitator for assistance.

## SQUIRRELS

**Q: I see a squirrel circling and falling over — is it rabies?**

**A:** Squirrels rarely get rabies. A more common, fatal problem for squirrels is the roundworm parasite that infects the brain and results in signs similar to rabies.

Unfortunately, roundworm is usually fatal for squirrels. Another look-alike symptom in squirrels is head trauma, caused by being

hit by a car. Contact your local wildlife rehabilitator or fish and game agency to assess strange squirrel behavior.

### Exposure:

***If you have been bitten or scratched by a potentially rabid animal, wash the wound thoroughly with soap, monitor the biting animal's whereabouts, and contact your local health department for instructions, and your local animal control officer for assistance in capturing the animal for rabies testing. If you have questions about rabies or other infectious diseases of public health importance, contact your state health department.***

### The Stats on Rabies:

***People often ask "so how many humans have died of raccoon rabies?" The answer, to everyone's surprise, is "NONE." The Centers for Disease Control and Prevention has compiled statistics on the number and type of human rabies cases in the United States since 1980. This list follows. Interestingly, most of the human rabies cases (2-3 annually) have resulted from a canine strain contracted overseas, or from the bat strain. Most of the bat cases have been of the silver-haired bat strain, which is surprising, since this species is rarely found in or around human houses.***



Photo by Laura Simon

*Adult skunks often make grunting sounds but a continual, high shriek may indicate rabies.*



## CASES OF RABIES IN HUMAN BEINGS IN THE UNITED STATES, BY CIRCUMSTANCES OF EXPOSURE AND RABIES VIRUS VARIANT, 1981-1998\*

Date of Death	State of Residence	Exposure History	Rabies virus Variant+
4 Jul 81	OK	Unknown	Skunk, South Central
11 Sep 81	AZ	Dog bite - Mexico	Dog, Mexico
28 Jan 83	MA	Dog bite - Nigeria	Dog, Nigeria
9 Mar 83	MI	Unknown	Bat, Ln/Ps
8 Aug 84	TX	Unknown- Laos	Dog, Laos
29 Sep 84	PA	Unknown	Bat, Msp
1 Oct 84	CA	Dog bite - Guatemala	Dog, Guatemala
20 May 85	TX	Unknown - Mexico	Dog, Mexico
15 Dec 87	CA	Unknown - Philippines	Dog, Philippines
3 Feb 89	OR	Unknown - Mexico	Dog, Mexico
5 Jun 90	TX	Bat bite - TX	Bat, Tb
20 Aug 91	TX	Unknown	Dog/coyote
25 Aug 91	AR	Unknown	Bat, Ln/Ps
10 Oct 91	GA	Unknown	Bat, Ln/Ps
8 May 92	CA	Dog bite - India	Dog, India
11 Jul 93	NY	Unknown	Bat, Ln/Ps
9 Nov 93	TX	Unknown	Bat, Ln/Ps
21 Nov 93	CA	Dog bite - Mexico	Dog, Mexico
18 Jan 94	CA	Unknown	Bat, Ln/Ps
21 Jun 94	FL	Unknown - Haiti	Dog, Haiti
11 Oct 94	AL	Unknown	Bat, Tb
15 Oct 94	WV	Unknown	Bat, Ln/Ps
23 Nov 94	TN	Unknown	Bat, Ln/Ps
27 Nov 94	TX	Unknown	Dog/coyote
5 Mar 95	WA	Unknown	Bat, Msp
2 Sep 95	CA	Unknown	Bat, Tb
3 Oct 95	CT	Unknown	Bat Ln/Ps
9 Nov 95	CA	Unknown	Bat, Ln/Ps
8 Feb 96	FL	Dog bite - Mexico	Dog, Mexico
20 Aug 96	NH	Dog bite - Nepal	Dog, Asia
15 Nov 96	KY	Unknown	Bat, Ln/Ps
19 Dec 96	MT	Unknown	Bat, Ln/Ps
5 Jan 97	MT	Unknown	Bat, Ln/Ps
18 Jan 97	WA	Unknown	Bat, Ef
17 Oct 97	TX	Unknown	Bat, Ln/Ps
23 Oct 97	NJ	Unknown	Bat, Ln/Ps
3 Dec 98	VA	Unknown	Bat, Ln/Ps
20 Sept 00	CA	Unknown	Bat, Tb
9 Oct 00	NY	Dog bite - Ghana	Dog, African
10 Oct 00	GA	Unknown	Bat, Tb
25 Oct 00	MN	Bat bite	Bat, Ln/Ps
1 Nov 00	WI	Unknown	Bat, Ln/Ps

\*All laboratory-confirmed cases of rabies in human beings who developed the disease in the United States through November 1998. Excluded are three persons who were exposed to the disease and died of their infections while outside the United States. ~Data for exposure history are reported only when the biting animal was available and tested positive for rabies, when plausible information was reported directly by the patient (if lucid or credible), or when a reliable account of an incident consistent with rabies exposure (e.g., dog bite) was reported by an independent witness (usually a family member). +Variants of the rabies virus associated with terrestrial animals in the United States are identified with the name of the animal reservoir, whereas variants of the rabies virus acquired outside the United States are identified with the names of the reservoir animal (dog, in all cases shown), followed by the name of the most definitive geographic entity (usually the country) from which the variant has been identified. Variants of the rabies virus associated with bats are identified with the names of the species of bat(s) in which they have been found to be circulating. In some instances the known or presumed geographic location of human beings when they were infected may rule out one of the species indicated in for the variant known as the silver-haired/pipistrelle variant (Ln./Ps). Because information regarding the location of the exposure and the identity of the exposing animal is almost always gathered retrospectively and much information is frequently unavailable, the location of the exposure and the identity of the animal responsible for the infection are often limited to deduction.

Ln/Ps=Lasionycteris noctivagans or Pipistrellus subflavus, the silver-haired bat or the eastern pipistrelle; Msp=Myotis, species unknown; Tb=Tadarida brasiliensis, the Brazilian (Mexican) free-tailed bat; Ef=Eptesicus fuscus, the big brown bat.

There was a single human rabies case (=death) on 31 December 1998. The variant involved was that associated with rabid silver-haired and eastern pipistrelle bats. Source: Centers for Disease Control and Prevention. "Cases of Rabies in Human Beings in the United States, by Circumstances of Exposure and Rabies Virus Variant, 1981-1998." <http://www.cdc.gov/ncidod/dvrd/rabies/Epidemiology/humans-98.htm>. For the cases in 2000, please refer to "Human Rabies " California, Georgia, Minnesota, New York, and Wisconsin, 2000" (<http://www.cdc.gov/mmwr/weekcvol.html>) reported in *MMWR Weekly* 15 Dec 2000 Vol. 49: 1111-5. No human rabies cases were reported during 1999.