What to Do if You Have a Potential Rabies Exposure

Rabies is a medical urgency not an emergency, but decisions must not be delayed. Any wounds should be immediately washed and medical attention from a health care professional should be sought for any trauma due to an animal attack before considering the need for rabies vaccination.

The need for rabies vaccination should be evaluated under the advisement of your physician and/or a state or local health department official. Decisions to start vaccination, known as postexposure prophylaxis (PEP), will be based on your type of exposure, the animal you were exposed to, as well as laboratory and surveillance information for the area where the exposure occurred.

What Were You Exposed To?

Rabies virus is transmitted through specific bodily excretions and tissue. **Saliva and Brain/Nervous tissue are considered infectious** materials that can transmit rabies virus. If contact with either of these has occurred the type of exposure should be evaluated to determine if PEP is necessary.

Contact such as petting or handling an animal, or **contact with blood, urine or feces does not constitute an exposure**, and therefore no postexposure prophylaxis is needed in these situations.

Rabies virus becomes noninfectious by desiccation and ultraviolet irradiation. Different environmental conditions affect the rate at which the virus becomes inactive, but in general, if the material containing the virus is dry, the virus can be considered noninfectious.

What Type of Exposure Occurred?
Rabies is transmitted only when the virus is introduced into a bite wound, open cuts in skin, or onto mucous membranes (such as the mouth or eyes).

When an exposure has occurred, the likelihood of rabies infection varies with the nature and extent of that exposure. Under most circumstances, two categories of exposure -- **bite** and **nonbite** -- should be considered.

**Bite**

Any penetration of the skin by teeth constitutes a bite exposure. All bites, regardless of body site, represent a potential risk of rabies transmission, but that risk varies with the species of biting animal, the anatomic site of the bite, and the severity of the wound.

Bites by some animals, such as bats, can inflict minor injury and thus be difficult to detect.

**Nonbite**

Nonbite exposures from terrestrial animals rarely cause rabies. However, occasional reports of rabies transmission by nonbite exposures suggest that such exposures should be evaluated for possible PEP administration.

The contamination of open wounds, abrasions, mucous membranes, or theoretically, scratches (potentially contaminated with infectious material from a rabid animal) also constitutes a nonbite exposure.

Other contact by itself, such as petting a rabid animal and **contact with blood, urine, or feces of a rabid animal, does not constitute an exposure** and is not an indication for PEP.

**Circumstances of Biting Incident and Vaccination Status of Exposing Animal**

An unprovoked attack by an animal is more likely than a provoked attack to indicate that the animal is rabid. Bites inflicted on a person attempting to feed or handle an apparently healthy animal should generally be regarded as provoked.

Other factors to consider when evaluating a potential rabies exposure include the local rabies epidemiology in the area, the biting animal’s history and current health status (e.g., abnormal behavior, signs of illness), and the potential for the animal to be exposed to rabies (e.g., presence of an unexplained wound or history of exposure to a rabid animal).

A currently vaccinated dog, cat, or ferret is unlikely to become infected with rabies.

**What kind of animal did you have contact with?**

Rabies surveillance in wild animal populations tells us that the type of animal you are exposed to affects your risk of rabies. Knowing the species of animal you were exposed to will affect decisions
regarding your treatment.

Additionally, based on what is known about rabies in different species, the animal may be held for observation or immediately tested providing information which will be used to determine if rabies Post Exposure Prophylaxis is necessary.

### Animal Type to Postexposure Prophylaxis Table

<table>
<thead>
<tr>
<th>Animal Type</th>
<th>Evaluation and Disposition of Animal</th>
<th>Postexposure Prophylaxis Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogs, cats, and ferrets</td>
<td>Healthy and available for 10 day <strong>observation</strong></td>
<td>Persons should not begin vaccination unless animal develops clinical signs of rabies</td>
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<tr>
<td></td>
<td>Rabid or <strong>suspected rabid</strong></td>
<td>Immediately vaccinate</td>
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<tr>
<td></td>
<td>Unknown (escaped)</td>
<td>Consult public health officials</td>
</tr>
<tr>
<td>Raccoons, skunks, foxes, and most other carnivores; Bats</td>
<td>Regarded as rabid unless animal is proven negative by laboratory test</td>
<td>Consider immediate vaccination</td>
</tr>
<tr>
<td>Livestock, horses, rodents, rabbits and hares, and other mammals</td>
<td>Consider individually</td>
<td>Consult public health officials.</td>
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<tr>
<td></td>
<td></td>
<td>Bites of squirrels, hamsters, guinea pigs, gerbils, chipmunks, rats, mice, other small rodents, rabbits, and hares almost never require rabies postexposure prophylaxis.</td>
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</tbody>
</table>

### Domestic Dogs, Cats, and Ferrets

The likelihood of rabies in a domestic animal varies by region; hence, the need for postexposure prophylaxis also varies.

In the continental United States, rabies among dogs is reported sporadically in states with enzootic wildlife rabies.

During 2000–2004, more cats than dogs were reported rabid in the United States. The majority of these cases were associated with spillover infection from raccoons in the eastern United States. The large number of rabies-infected cats might be attributed to fewer cat vaccination laws, fewer leash laws, and the roaming habits of cats.

In many developing countries, dogs are the major vector of rabies; exposures to dogs in such countries represent an increased risk of rabies transmission.

### Other Domestic Animals

In all instances of exposure to other domestic animal species, the local or state health department should be consulted before a decision is made to euthanize and test the animal or initiate postexposure prophylaxis.
Other Exotic Pet Species

Other exotic mammalian species of animals kept as pets are considered the same as other wildlife species. Consultation should be sought from local or state health departments regarding decisions on postexposure prophylaxis.

Use of rabies vaccines in these species constitutes off-label usage. Vaccination may reduce the risk of rabies in these species, but does not eliminate the risk. Efficacy of rabies vaccines have not been demonstrated in any exotic pet species, and are not licensed for these animals. Furthermore, observation periods are not recommended with these species since virus shedding periods before onset of clinical signs are unknown. Considerations should be made to the housing of the animal, its potential to be exposed to and acquire rabies, and the circumstances of the potential exposure to a human or domestic animal.

In situations where rabies is suspected in an exotic pet species (to which a human or domestic animal exposure has occurred) it is recommended to euthanize and test the animal for rabies.

Bats

Rabid bats have been documented in all 49 continental states (Hawaii is rabies free), and bats are increasingly implicated as important wildlife reservoirs for variants of rabies virus transmitted to humans.

Recent data suggest that transmission of rabies virus can occur from minor, seemingly unimportant, or unrecognized bites from bats. Human and domestic animal contact with bats should be minimized, and bats should never be handled by untrained and unvaccinated persons or be kept as pets.

In all instances of potential human exposures involving bats, the bat in question should be safely collected, if possible, and submitted for rabies diagnosis. Rabies postexposure prophylaxis is recommended for all persons with bite, scratch, or mucous membrane exposure to a bat, unless the bat is available for testing and is negative for evidence of rabies.

Postexposure prophylaxis should be considered when direct contact between a human and a bat has occurred, unless the exposed person can be certain a bite, scratch, or mucous membrane exposure did not occur.

In instances in which a bat is found indoors and there is no history of bat-human contact, the likely effectiveness of postexposure prophylaxis must be balanced against the low risk such exposures appear to present. Postexposure prophylaxis can be considered for persons who were in the same room as a bat and who might be unaware that a bite or direct contact had occurred (e.g., a sleeping person awakens to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child, mentally disabled person, or intoxicated person) and rabies cannot be ruled out by testing the bat. Postexposure prophylaxis would not be warranted for other household members.

Wild Terrestrial Carnivores (Raccoons, Skunks and Foxes)

Raccoons, skunks, foxes, and coyotes are the terrestrial animals most often infected with rabies in the United States. All bites by such wildlife must be considered a possible exposure to the rabies virus.
Postexposure prophylaxis should be initiated as soon as possible following exposure to such wildlife unless the animal has already been tested and determined not to be rabid. If postexposure prophylaxis has been initiated and subsequent testing shows that the exposing animal was not rabid, postexposure prophylaxis can be discontinued.

Signs of rabies among wildlife cannot be interpreted reliably; therefore, any such animal that exposes a person should be euthanized as soon as possible (without unnecessary damage to the head) and the brain should be submitted for rabies testing. If the results of testing are negative, the saliva can be assumed to contain no virus, and the person exposed does not require postexposure prophylaxis.

Other Wild Animals

Small rodents (e.g., squirrels, hamsters, guinea pigs, gerbils, chipmunks, rats, and mice) and lagomorphs (including rabbits and hares) are almost never found to be infected with rabies and have not been known to transmit rabies to humans. From 1990 through 1996, in areas of the country where raccoon rabies was enzootic, woodchucks (groundhogs) accounted for 93% of the 371 cases of rabies among rodents reported to CDC.

In all cases involving rodents, the state or local health department should be consulted before a decision is made to initiate postexposure prophylaxis.

The offspring of wild animals crossbred to domestic dogs and cats (wild animal hybrids) are considered wild animals by the National Association of State and Public Health Veterinarians (NASPHV) and the Council of State and Territorial Epidemiologists (CSTE). Wild animals and wild animal hybrids should not be kept as pets. In instances where wild or hybrid animals are suspected of rabies they should be euthanized and tested for rabies.

Human exposure situations involving animals maintained in United States Department of Agriculture-licensed research facilities or accredited zoological parks should be evaluated on a case-by-case basis.

Availability of the Animal for Observation or Rabies Testing

A healthy domestic dog, cat, or ferret that bites a person should be confined and observed for 10 days.

Any illness in the animal during the confinement period or before release should be evaluated by a veterinarian and reported immediately to the local public health department.

If signs suggestive of rabies develop, postexposure prophylaxis should be initiated. The animal should be euthanized and its head removed and shipped, under refrigeration, for examination by a qualified laboratory.

If the biting animal is stray or unwanted, it should either be confined and observed for 10 days or be euthanized immediately and submitted for rabies examination.

Skunks, raccoons, foxes and bats that bite humans should be euthanized and tested as soon as
possible. The length of time between rabies virus appearing in the saliva and onset of symptoms is unknown for these animals and holding them for observation is not acceptable.

After exposure to wildlife in which rabies is suspected, prophylaxis is warranted in most circumstances. Because the period of rabies virus shedding in wild animal hybrids is unknown, these animals should be euthanized and tested rather than confined and observed when they bite humans.

_Vaccination should be discontinued if tests of the involved animal are negative for rabies infection._