

Rabies Testing of Animals:

Criteria for Testing

In North Carolina, the North Carolina State Laboratory of Public Health (SLPH) is the designated and definitive laboratory for rabies testing of animals and uses Direct Fluorescent Antibody (DFA) testing, the gold standard for rabies testing. The service is available to all health care providers in the state. **For complete information, instructions and forms, see the SLPH rabies testing web site at <https://slph.dph.ncdhhs.gov/virology-serology/rabies.asp>**

Animal Submission Policies and Criteria

The only animals appropriate for submission and testing are those assessed to be a risk for rabies transmission and that have potentially exposed (see *Types of Exposure* below) a human or a domestic animal (pet, livestock or horse) that is not vaccinated against rabies. Testing is reserved for situations where the outcome will influence patient or animal management decisions. Because rabies testing is not available at commercial veterinary labs, veterinarians who suspect an animal in their care has rabies may submit the animal for testing for diagnostic purposes.

Types of Exposure:

- **Bite:** any penetration of the skin by the teeth of a rabid or potentially rabid animal.
- **Non-bite exposure:**
 - **Open wound exposure:** introduction of saliva or nerve tissue (*i.e.*, cerebrospinal fluid, brain or spinal cord) from a rabid or potentially rabid animal into an open wound or open break in the skin; this includes scratches where introduction of saliva or nerve tissue cannot be ruled out.
 - **Mucous membrane exposure:** introduction of saliva or nerve tissue (*i.e.*, cerebrospinal fluid, brain or spinal cord) from a rabid or potentially rabid animal onto any mucous membrane (eyes, nose, mouth).
- **Bats and other exposures:** Any interaction with a rabid or potentially rabid animal where a bite, open wound, or mucous membrane exposure cannot be definitively ruled out and which there is a reasonable suspicion or probability of exposure, including:
 - direct physical contact with a bat when a bite or scratch cannot be ruled out;
 - bat found in a room with a sleeping person;
 - bat found in a room with an unattended child;
 - bat found in a room with an intoxicated or mentally compromised person;
 - bat found in close proximity to an unattended child outdoors.

Type of Exposing Animal:

Any wild mammal or domestic mammal exhibiting signs compatible with rabies and that has potentially exposed a person, or an unvaccinated pet or livestock, to rabies should be submitted for rabies testing without delay.

- **High-risk wild mammals:** Although any mammal can be infected with rabies, certain species of wildlife are considered **high risk** for rabies transmission. These include **raccoons, skunks, foxes, bats, bobcats, coyotes, groundhogs (woodchucks), beavers and other carnivores**, which are commonly diagnosed with rabies in North Carolina. These

animals are considered *rabies vector species* (RVS) which have a high risk of transmission and are potentially rabid. **Large rodents** such as beavers and groundhogs are also considered RVS and have been diagnosed with rabies in North Carolina; they are large enough to survive an attack by a rabid carnivore and thus could be infected with rabies virus. Whenever any high-risk animal has potentially exposed a human to rabies, the animal should be captured, euthanized and submitted for rabies testing without delay, even if they appear to be healthy and are not showing signs of rabies.

- **Multiple bats; bat infestations:** Bats should be submitted for testing when they have exposed a person or unvaccinated pet. However, SLPH will not test representative bats in situations where there are bat infestations or when multiple bats may have had access to living quarters and potentially exposed people, because some of the bats may have escaped and therefore are unavailable for testing. Testing *some* of the bats will not provide information about the rabies status of *all* of the bats and so cannot definitively determine whether a person came in contact with a rabid bat. Instead, post-exposure treatment recommendations in these situations will be based on careful assessments of the circumstances of the potential exposure and not on animal testing.
- **Low-risk wild mammals** are **small rodents** (squirrels, rats, mice, voles, moles, etc.) and **lagomorphs** (rabbits). These don't usually require testing and are not usually considered a risk for rabies transmission. If there are concerns about the risk of rabies in these animals based on the animal's behavior, health, or circumstances (unprovoked attack, or history that pet rodent or rabbit was housed outside in rabies endemic area), contact the epidemiologist-on-call at 919-733-3419 for a careful risk assessment. ***Approval of low-risk animals for testing is required prior to submission to SLPH.***
- **Domestic animals – dogs, cats, ferrets:** Among domestic animals tested in North Carolina, cats are the most frequently diagnosed with rabies because they are often outdoors and unsupervised. Dogs, cats and ferrets (regardless of rabies vaccination status) that bite people but that appear normal and healthy at the time of the incident should not be euthanized but instead should be [confined and observed daily for 10 days](#) from the time of exposure. However, if the dog, cat or ferret does develop signs consistent with rabies as determined by a veterinarian, or if the animal does not complete a 10-day confinement period, it should be humanely euthanized and the head should be submitted to the rabies laboratory for testing without delay.
- **Domestic animals – livestock:** Livestock and horses have tested positive for rabies in North Carolina. However, transmission of rabies to people appears to be very rare. If the animal is healthy at the time of exposure, is acting normally and has no history or evidence (e.g., bite wounds) of an exposure to a rabies vector species, then the livestock can be observed for a [15-day confinement period](#). However, if these animals have exposed a person or unvaccinated pet and are exhibiting clinical signs consistent with rabies and/or have a history of being exposed to rabies, then they should be submitted for testing.