

## **Rabies Testing of Animals:**

### **Criteria for Testing**

In North Carolina, the North Carolina State Laboratory 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 <http://slph.state.nc.us/virology-serology/rabies.asp>.** For guidance on animal head removal, see [Suggestions for Removing Animal Heads for Rabies Testing](http://www.vdh.virginia.gov/epidemiology/DEE/rabies/documents/RabiesControlGuidelines/Attachment%204%20-%20Specimen%20Preparation%20for%20Rabies%20Testing.pdf) (<http://www.vdh.virginia.gov/epidemiology/DEE/rabies/documents/RabiesControlGuidelines/Attachment%204%20-%20Specimen%20Preparation%20for%20Rabies%20Testing.pdf>) from the Virginia Department of Health.

### **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 unvaccinated or not currently vaccinated against rabies. Testing is reserved for situations where the outcome will influence patient management decisions.

### **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;
  - A bat found in a room with a sleeping person;
  - A bat found in a room with an unattended child;
  - A bat found in a room with an intoxicated or mentally compromised person; or
  - A 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 ([http://www.cdc.gov/rabies/specific\\_groups/veterinarians/clinical\\_signs.html](http://www.cdc.gov/rabies/specific_groups/veterinarians/clinical_signs.html)) and that has potentially exposed a person, or an unvaccinated or not currently vaccinated 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, including **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) with high risk of transmission, or 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 (see *Types of Exposure* above), the animal should be captured, euthanized and submitted for rabies testing without delay.

- **Multiple bats; bat infestations:** 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, since 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 unless they are assessed otherwise by one of the public health veterinarians. 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 VPH public health veterinarians 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:** Pets, livestock and horses can get rabies if their rabies vaccinations are not current. Among domestic animals tested in North Carolina, cats are the most frequently diagnosed with rabies because they are often outdoors, 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 ([http://epi.publichealth.nc.gov/cd/lhds/manuals/rabies/docs/10day\\_domestic.pdf](http://epi.publichealth.nc.gov/cd/lhds/manuals/rabies/docs/10day_domestic.pdf)) from the time of exposure, unless circumstances demand otherwise. Rabies virus is excreted in the saliva of infected dogs, cats and ferrets during illness and/or for only a few days before illness or death. One can be assured that the animal was not shedding virus at the time of the exposure if the dog, cat or ferret shows no clinical signs of rabies after 10 days of confinement; subsequent testing is not needed. However, if the dog, cat or ferret does develop signs consistent with rabies as determined by a veterinarian, or does not survive the 10-day quarantine period, it should be submitted to the rabies laboratory for testing without delay. (See the SLPH web site at <http://slph.state.nc.us/virology-serology/rabies.asp> for complete information, or contact the state public health veterinarians at 919-733-3419.)
- **Surveillance Animals:** VPH and SLPH have made collaborative decisions to conduct surveillance on some low-risk species that meet established assessment criteria. These low-risk species must receive prior approval from either the State Laboratory or the public health veterinarians. Specimens submitted for testing that fail to meet the testing policy will be rejected and destroyed.