



Paul R. LePage, Governor

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Department of Health and Human Services
Maine Center for Disease Control and Prevention
221 State Street; 12 State House Station
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Health and Environmental Testing Laboratory (HETL)
Department of Health and Human Services, 221 State Street, Station 12, Augusta, ME 04333

Guidelines for Submitting Specimens for Rabies Testing

I. Testing Criteria

1. Animals under suspicion of rabies are tested free of charge at the HETL as part of statewide surveillance.
2. The animals must have potentially exposed a human or domestic animal to its saliva or neural tissue.
3. If there is no exposure, members of the public may request rabies testing at a cost of \$150.00.
4. The entire brain must be submitted for testing.
5. For consultation to determine if testing is necessary for public health purposes, contact the Division of Infectious Disease Epi-on-Call at **1-800-821-5821**.

II. Specimen Preparation

1. Bats- the HETL accepts live bats, please indicate on the submission form if the bat is still alive. If a bat requires testing, the entire body should be submitted.
2. Domestic and wild animals (with the exception of bats) - animals submitted for testing must be euthanized. The HETL does not have the facilities to process large carcasses and they will not be accepted or tested. The HETL asks that animals be decapitated by a veterinarian or trained personnel.
3. Sample Collection- if the brain is removed from the skull cavity, the entire brain must be sent to the HETL for testing. Whole tissues of the brainstem, cerebellum and cerebrum must be provided for a diagnosis.
4. Safety- always handle the specimen with waterproof gloves and proper protective equipment to prevent an accidental exposure.

III. Packaging

1. If the specimen has sharp protruding parts (i.e., porcupine quills or shattered bones), wrap the specimen in several layers of newspaper.
2. Place the specimen in two leak proof plastic bags that are closed securely.
3. The double bagged specimen should then be placed in a box (cardboard or Styrofoam) along with refrigerant packs (**please do not use ice**) and closed securely with tape. This provides more support and allows for easier handling and labeling of the specimen. Neither the container nor animal can be returned once testing is complete.
4. Complete the Rabies Submission Form (include a complete mailing address) and attach it to the exterior of the container. An easy way to do this is placing the form in an envelope and taping that to the container.
5. If no exposure occurred and testing is still requested by the public, a payment of \$150.00 must be provided when the specimen is submitted at the HETL. The payment can be cash or check (made out to "Treasurer of the State").

IV. Transportation and Delivery of Specimens

1. The specimen can be sent by: Uniship- 207-848-7546, FedEx- 1-800-762-3725, General Courier- 207-767-6004, or a personal carrier such as ACO, Game Warden, or a person involved with the incident.
2. All transportation fees must be prepaid, and the sample should arrive at the HETL within one day.
3. Specimens can be delivered at the HETL Monday-Friday from 7:30 am -5:00 pm. For after-hours delivery, contact Capital Security (207-287-4357) for admittance. A phone is available inside the main entrance of the DHHS building at 221 State St.

V. Test Results

1. For specimens that are received prior to 11:00 am Monday-Friday, results are typically available by late afternoon of the same day. The primary person listed on the submission form ("Send Report to:") is informed of test results by phone, along with persons exposed or the owner of a domestic animal that was exposed. In the event of a positive test, public health officials are involved and advise involved persons of necessary measures to prevent the spread of rabies.
2. Specimens that are received after 11:00 am will typically have results available the following business day.
3. Urgent requests are handled on a case-by-case basis by calling 1-800-821-5821.



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Rabies Testing

In the State of Maine, the only accepted confirmation of rabies in an animal is the Direct Fluorescent Antibody (DFA) testing of brain tissue. The test is a rapid, sensitive, and a reproducible laboratory method for detecting rabies antigen in tissue. Fresh brain tissue is required, including the brainstem, cerebellum and cerebrum in their entirety. Testing cannot be completed on samples fixed in formalin.

The following guidelines will help in preparing and submitting specimens to the Health and Environmental Testing Laboratory (HETL) in Augusta, Maine, where the testing is done. It should be emphasized that when rabies testing is necessary, timeliness is very important and a health professional should be consulted early in any potential rabies situation. The decision to submit an animal for rabies testing will ultimately be made by the attending healthcare provider (when a human is exposed) or veterinarian (when a domesticated animal is exposed), and by epidemiologists at Maine CDC (1-800-821-5821).

Testing Criteria

As part of statewide surveillance, the HETL will accept specimens for rabies testing in which the animal has exposed a human or domesticated animal. If testing is requested when there is no exposure, a \$150 fee must be provided at the time of the test.

Type of Specimen to Submit

Rabies affects both domestic and wild mammals. When submitting a bat, it may be alive but please indicate 'live bat' on the submission form. The bat should be submitted in its entirety and should not be decapitated. All other animals should be euthanized in a manner that preserves the brain tissues. The HETL does not have facilities to process large carcasses, so it is asked that animals be decapitated by veterinarians or trained personnel before being submitted to the laboratory. If the brain is removed from the skull cavity, the entire brain must be submitted for proper testing. Whole tissues of the brainstem, cerebellum and cerebrum must be provided for a diagnosis.

Sample Preparation (decapitation)

It is recommended that decapitation be performed in a tub or other easily disinfected area, where body fluids and cleaning solutions can be safely drained away. When farm animals are decapitated, it may be wise to perform the procedure in or very close to the burial hole to minimize surface soil contamination with saliva and CSF fluid. Have a sturdy waterproof container ready to package the head.

All personnel trained to decapitate should receive the pre-exposure rabies vaccine. There has never been a case of human rabies associated with an exposure received during decapitation; however, caution must be taken as the brain, spinal cord, salivary glands and saliva of the animal may contain rabies virus that could possibly cause rabies if splashed onto an open cut or mucous membrane. It is therefore extremely important for the veterinarian as well as any assistants and observers to wear protective gear and exercise caution with the use of sharp objects used during the procedure. If exposure does occur during this process, it must be noted on the laboratory submission form for the animal. If the animal tests positive for rabies, a physician should be consulted as soon as possible concerning the need for rabies PEP for the person involved.

Protective Clothing and Equipment

- Heavyweight autopsy gloves
- Full face shield
- Protective covering for clothing: surgical gown, plastic apron, coveralls, etc.
- Plastic sheet or body bag to protect surfaces and catch body fluids if procedure cannot be performed in a tub
- To clean surfaces and items contaminated by a rabies suspect, use a bleach solution (1/2 cup per gallon of water) as a disinfectant.

Suggested Procedure

Place the animal in dorsal recumbency and extend the head by pushing the mandible downward. Make a skin incision immediately caudal to the larynx, and then section the trachea and other soft tissues down to the dura. Identify the atlanto-occipital joint by flexing the head, and incise the ligaments to open the joint. Alternatively, forcefully extending the head backwards over a solid object will tear the ligaments, producing an audible and palpable snap. Sever the remaining muscle and skin to completely amputate the head from the body. If cutting through the vertebra is preferred, shears or a hacksaw can be used to bisect the atlas. DO NOT use an axe, hatchet, or power saw due to the danger created by flying bone and tissue, and the possibility of aerosolizing virus-



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contaminated fluids. If decapitation of a large animal was performed outdoors, any soil or vegetation contaminated with body fluids should be buried with the animal.

Carcass Disposal

Because the rabies virus is primarily concentrated in the brain and salivary glands, only the head submitted for testing is considered medical waste. The remaining carcass can be disposed of in the usual manner, either by incineration (preferred), interment in a pet cemetery, or other burial in accordance with Department of Agriculture Carcass Disposal Rules. See "Recommended Handling Procedures for Animal Carcasses" in Appendix H.

Safe Handling and Proper Specimen Packaging of Specimens

Specimens should be handled with waterproof gloves and must be stored and transported in a proper container (labeled 'Rabies Suspect') so that fluid leakage is prevented. Place in a watertight container (well tied, heavy plastic bag or a plastic pail/metal can with tight fitting lid). This container should be placed in a second, larger, waterproof container. If plastic bags are used for both layers, the specimen should then be boxed for more support, easier handling, and labeling. Immediately before transport, the space between the two watertight containers should be packed with refrigerant packs (**Do not use ice!**). The refrigerant packs should not be directly in contact with the specimen to avoid freezing it. A Rabies Submission Form should be completely filled out and attached securely to the outside of the packaging. It is suggested that a copy of this form be kept for future reference by those submitting the specimen (Appendix C).

If a specimen cannot be sent to the HETL immediately, it should be refrigerated. It is important that the brain tissue does not degenerate. A specimen should not be frozen; however, if freezing has occurred it should be kept frozen and submitted that way to the HETL. The laboratory has a better chance of getting testable tissue if it is thawed at the lab.

Transport and Delivery of Specimens

The HETL is located at 221 State Street, Augusta, Maine 04333. During regular hours (Monday to Friday, 7:00 a.m. to 5:00 p.m.), call 207-287-2727 for more information on the delivery of specimens. When delivering specimens after hours, Capital Security must be called (207-287-4154) for admittance. A phone just inside the front door of the building may be used to call security.

The responsibility for transporting specimens related to human rabies exposure belongs with the owner of the animal (if known), with the town if the animal is a stray, with the Warden Service if it's wild, or with the family of a bitten person. Professionals involved in the specific case, whether an animal control officer, animal shelter or veterinarian have a responsibility to help with coordinating transport.

The Department of Environmental Protection considers the transporting of suspected rabid animals as "Clinical Specimens," not hazardous waste. Below are specimen transportation options; this is not a complete list and some transporting companies listed do not service all areas in Maine.

Option 1:

An animal control officer or someone designated by the animal control officer may transport the clinical specimen personally to the HETL. For Undomesticated animals, a game warden may arrange transport of the specimen to the HETL.

Option 2:

For rural areas an animal control officer or someone designated by the animal control officer may transport the specimen to an area for pick-up by a delivery service.

Option 3:

Call a delivery service for a guaranteed delivery and for cost information. The State does not pay for transportation of animals to the lab so all transportation fees must be prepaid. Transportation fees are the responsibility of the owner of a domestic animal, the town for a stray, or IF&W for wild animals.

- Uniship: 207-848-7546
- FedEx: 1-800-762-3725
- General Courier: 1-800-698-5035, 207-767-6004, S. Portland, Maine
- Fleet Couriers: 1-800-734-9309

The UPS-United Parcel Service and Express Mail-U.S. Postal Service may not transport clinical specimens, but they are worth a try as some have reportedly been used successfully at times.