



# Tennessee Rabies Control Manual

## – 2024 –

### *Specimen Submission Guide*



## **Introduction**

The purpose of this ‘quick’ guide is to provide current information on submission of specimens for rabies testing in Tennessee. It is intended for use by local health departments, animal control programs, and veterinarians.

## **Rabies Control Working Group and Consultants:**

### **Tennessee Department of Health**

#### [Communicable and Environmental Diseases and Emergency Preparedness](#)

John Dunn

Mary-Margaret Fill

Jane Yackley

Dilani Goonewardene

Janelle Wenstrup

Lori LeMaster

Mark Tenpenny

John Roman

Ryan Mason

Emma Roth

Paige Witucki

La’Jessica Price

#### [Laboratory Services](#)

Randall Fowler

Katie Jones

### **Partners**

#### [University of Tennessee College of Veterinary Medicine](#)

Marcy Souza

#### [Tennessee Department of Agriculture](#)

Douglas Balthaser

Kenneth Kim

#### [USDA Animal and Plant Health Inspection Service-Wildlife Services](#)

Erin Patrick

Kevin Baker

## Laboratory Testing

### Animal Rabies Testing

The TDH Division of Laboratory Services tests between 1,200 and 1,600 animals per year for rabies. A rabies specific direct fluorescent antibody (DFA) is the current standard of testing performed at public health laboratory facilities in Nashville and Knoxville. The DFA based test is highly accurate and requires at least three hours to perform.

### Permissible Submitters

City and county animal control agencies, local health departments, and veterinarians may submit specimens for rabies testing. The general public is prohibited from directly submitting a case for rabies testing to the laboratory; testing requests must be routed through a recognized professional submitter.

### Specimens for Rabies Testing

#### Acceptance Policy and Costs

Testing resources are intended for use in situations where the test result will influence public health-related decisions. Only mammals that have potentially exposed a person or domestic animal to rabies should be submitted for rabies diagnostics. (See [Guidelines for Animal Submission for Rabies Testing on page 3](#) for additional guidance).

Even though a case is sent by a recognized submitter, this does not ensure that it will be tested. TDH is the final authority in determining whether a case is tested or not. Assuming a case arrives with proper justification, rabies testing is provided by the State of Tennessee free of charge.

#### Collection, Packaging, and Identification

Brain tissue is examined for the presence of rabies virus, so animals should be euthanized in a manner that will not damage the brain (especially the cerebellum and brain stem). The state public health laboratories do not have facilities to dispose of whole carcasses; therefore, only the head should be submitted for rabies testing. Exception: when submitting bats, ship the entire animal. For large animals such as cattle and horses, submit only the brain. Consult a veterinarian for brain removal.

If it is not possible to recover the brain from a large animal, send the head only to either the CE Kord Animal Health Diagnostic Laboratory or the University of Tennessee College of Veterinary Medicine, Veterinary Medical Center, Diagnostic Laboratory (contact information at end of section).

#### Preparing a Specimen for Shipment or Drop Off

1. Within 24 hours of the animal's death, retrieve its head by severing at the midpoint between the base of the skull and shoulders. It is best to only leave 1–2 vertebrae connected to the skull.
2. Keep the specimen refrigerated but not frozen. Do not formalin fix.
3. Double bag the specimen using zip lock or heavy plastic bags and seal each bag. If sharp edges such as bone fragments are evident, wrap the specimen in newspaper to prevent puncture of the plastic bags. Place the bagged specimen in an insulated box with enough ice packs to keep it cool. Stabilize the specimen with newspaper or absorbent paper to prevent movement or damage during transport. See [Packaging Instructions for Rabies Testing \(Nashville Lab\) on page 4](#) or [Packaging Instructions for Rabies Testing \(Knoxville Lab\) on page 5](#).
4. If only submitting brain tissue, place the tissue in a hard-sided container to prevent damage during transport, double-bag the container, and keep the tissue cool with ice packs and an insulated cooler.
5. Treat any specimen infested with fleas, ticks, maggots, ants, or other pests with parasiticide prior to packing.
6. If submitting multiple specimens, make sure each is double bagged separately to prevent cross-contamination. Each specimen must have a separate [Laboratory Submission Form for Rabies Testing \(page 6\)](#) and must be clearly identified with a specimen identification number or case number that matches the number on the test request form.
7. Tape the completed submission form to the shipping container.

## **Rabies Laboratory Result Notification Procedure**

**Urgent results:** These are positive or unsatisfactory rabies test results, as well as situations in which testing cannot be completed or confirmation is pending further analysis at CDC. Urgent results will be reported by the state public health laboratory to the TDH Environmental Health (EH) office by telephone. Public health veterinarians will be notified via email. Outside of normal office hours, unless prior arrangements have been made, laboratory personnel should report these results to the on-call epidemiologist (615-741-7247).

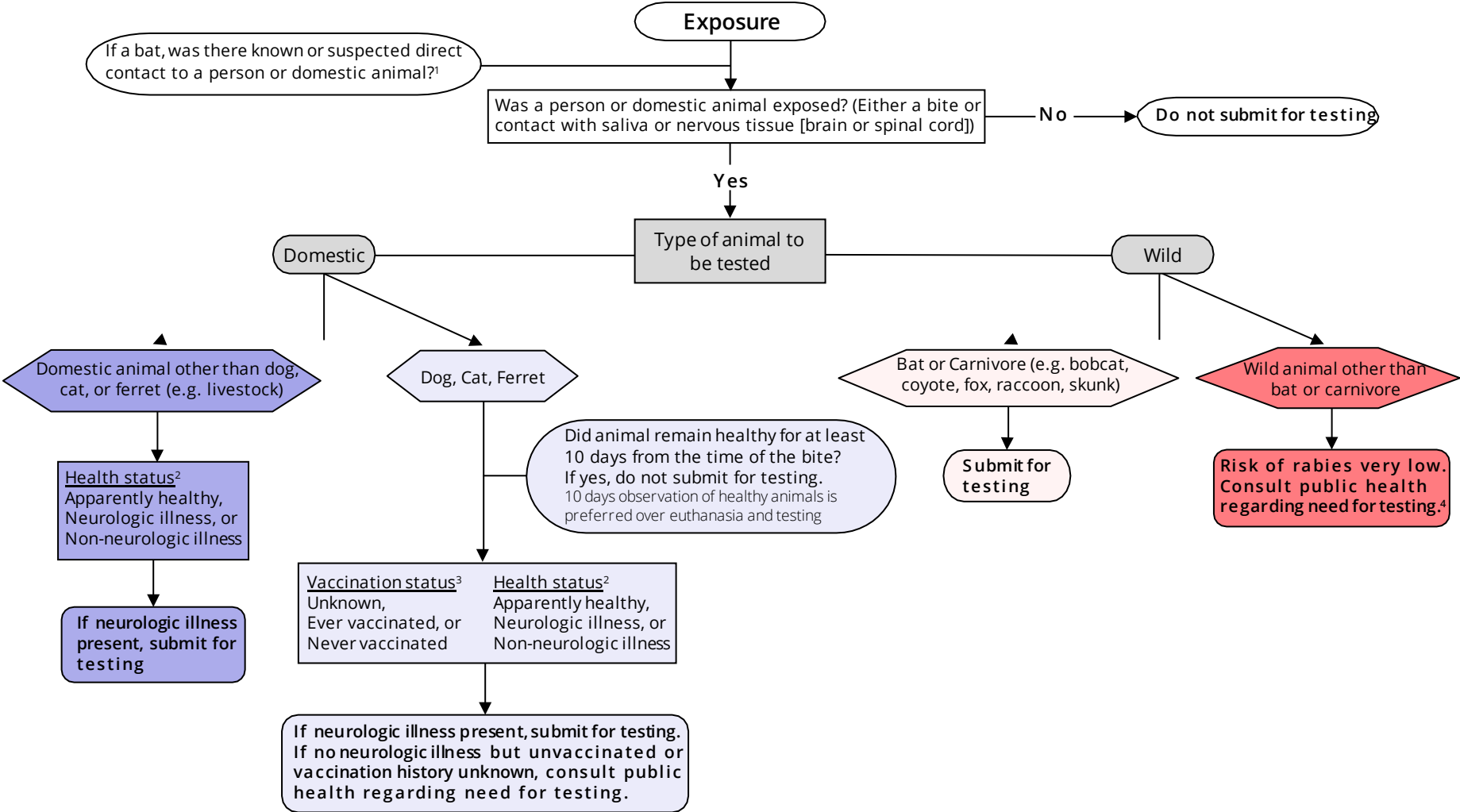
EH will perform the following functions when notified of an urgent lab result:

- EH central office will notify the local environmental health specialist, the district supervisor, the regional field office manager (or metro county director of environmental health), and the central office public health veterinarians.
- The local environmental health specialist or supervisor will notify the specimen submitter, animal owner, and person bitten.
- EH or local animal control staff will follow up on all potential animal exposures to rabies.
- Any potential human exposures to rabies will be referred to communicable disease staff at the local health department or regional health office.

Central office public health veterinarians will contact communicable disease staff at the metro/regional health office to verify that appropriate follow-up is completed for all potential human exposures to rabies.

**Negative tests:** The state public health laboratory will mail a copy of the test result to the specimen submitter. These copies are mailed the morning after testing is completed (typically 2 business days after receipt of specimen).

# Guidelines for animal submission for rabies testing



<sup>1</sup> If a bat was in the room with a sleeping person or an unattended young child or pet, unrecognized direct contact may be suspected.  
<sup>2</sup> If animal was healthy at the time of bite/exposure, it is very unlikely to be rabid. Neurologic illness greatly increases the likelihood of rabies.  
<sup>3</sup> If animal has ever received at least 2 rabies vaccines, it is very unlikely to be rabid.  
<sup>4</sup> Small rodents (e.g. squirrels, chipmunks, mice, hamsters, rats) are not considered a risk for rabies transmission and generally will not be tested.



# Fed-Ex Category B Compliant Rabies Specimen Packing Instructions (Nashville)

### ITEMS NEEDED:

- 2 heavy zip lock bags, or 1 heavy zip lock bag and 1 heavy plastic bag
- 1 Category B certified insulated (Urethane, Polystyrene, Styrofoam, etc.) cardboard shipper (meets IATA drop/crush standards)
- 1 envelope
- 1 biohazard label and 1 UN3373 Biological Substance, Category B label
- Packing tape
- Newspaper/packing paper
- Ice packs
- Rabies Submission Form

**STEP 1:** Place animal head in a liquid-tight zip lock or heavy plastic bag and make sure it is adequately sealed. **\*\*If there are any bone fragments that might puncture the bag, wrap the head in several layers of newspaper/absorbent paper.\*\***

**STEP 2:** Place first bag into a second zip lock or heavy plastic bag along with absorbent material such as paper towels and ensure it is adequately sealed. Label the specimen bag with an identification name or submitter number given on the Submission Form (if applicable). Place a biohazard label (required) on the specimen bag.

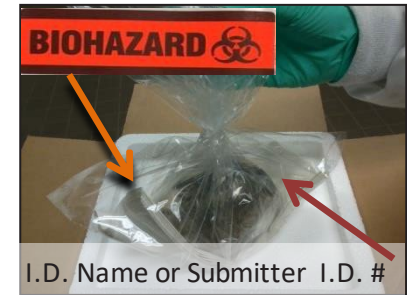
**STEP 3:** Place labeled specimen in a Category B certified insulated cardboard box surrounded by ice packs. Fill any empty space with newspaper, etc. to stabilize the specimen and prevent movement during transport.

**STEP 4:** Ensure the insulated cardboard box is sealed and place the Rabies Submission Form in an envelope taped to the top of the insulated (not outer cardboard flaps) lid.

**STEP 5:** Tape the cardboard flaps closed. Place the Fed Ex mailing label on the top of the package. Place a "UN3373 Biological Substance, Category B" label (required) on the front of the package. Check SATURDAY Delivery if sent out on Friday. Call the TDOH Laboratory Services (Nashville) if there are questions: 615-262-6350.



Step 1



Step 2



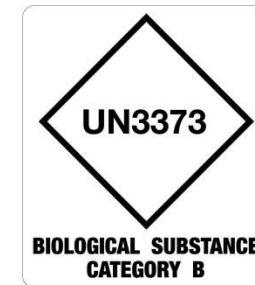
Step 3



Step 4



Step 5



Send FedEx Priority Overnight

Tennessee Dept Health –  
 Laboratory Services  
 c/o Rabies Lab  
 630 Hart Lane  
 Nashville, TN 37216

Send Fed EX tracking  
 to  
[NCL.Rabies@tn.gov](mailto:NCL.Rabies@tn.gov)





# Fed-Ex Category B Compliant Rabies Specimen Packing Instructions (Knoxville)

## ITEMS NEEDED:

- 2 heavy zip lock bags, or 1 heavy zip lock bag and 1 heavy plastic bag
- 1 Category B certified insulated (Urethane, Polystyrene, Styrofoam, etc.) cardboard shipper (meets IATA drop/crush standards)
- 1 envelope
- 1 biohazard label and 1 UN3373 Biological Substance, Category B label
- Packing tape
- Newspaper/packing paper
- Ice packs
- Rabies Submission Form

**STEP 1:** Place animal head in a liquid-tight zip lock or heavy plastic bag and make sure it is adequately sealed. \*\*If there are any bone fragments that might puncture the bag, wrap the head in several layers of newspaper/absorbent paper.\*\*

**STEP 2:** Place first bag into a second zip lock or heavy plastic bag along with absorbent material such as paper towels and ensure it is adequately sealed. Label the specimen bag with an identification name or submitter number given on the Submission Form (if applicable). Place a biohazard label (required) on the specimen bag.

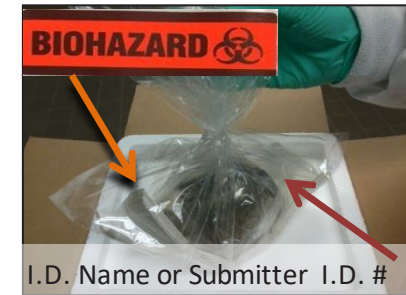
**STEP 3:** Place labeled specimen in a Category B certified insulated cardboard box surrounded by ice packs. Fill any empty space with newspaper, etc. to stabilize the specimen and prevent movement during transport.

**STEP 4:** Ensure the insulated container is sealed and place the completed Rabies Submission Form in an envelope taped to the top of the insulated (not outer cardboard flaps) lid.

**STEP 5:** Tape the cardboard flaps closed. Place the Fed Ex mailing label on the top of the package. Place a “UN3373 Biological Substance, Category B” label (required) on the front of the package. Obtain authorization from the Knoxville Regional Lab if there is a need to send a specimen on a Friday. If authorized, check SATURDAY Delivery if sent out on Friday. Call the TDOH Laboratory Services (Knoxville) if there are questions: 865-549-5201.



Step 1



Step 2



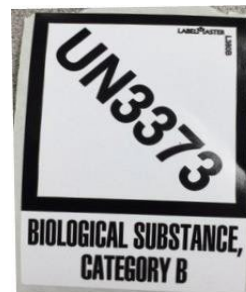
Step 3



Step 4



Step 5



Send FedEx Priority Overnight

Tennessee Dept Health –  
Knoxville Regional Lab  
c/o Rabies Lab  
2101 Medical Center Way  
Knoxville, TN 37920

Send Fed-EX tracking to

[KRL.Rabies@tn.gov](mailto:KRL.Rabies@tn.gov)



Tennessee Department of Health  
Division of Laboratory Services  
Rabies Submission

**Place State Lab Accession  
Label Here**  
(TDH use only)

**\*Indicates required fields**

**SPECIMEN COLLECTION INFORMATION**

<b>*Kind of Animal:</b>		<b>*Date Specimen Collected:</b> /      /	
Specimen Collector Name:			Phone Number: (    )    -
Animal Collection Site (Address or GPS):			
City:	<b>*County:</b>	State:	Zip Code:

**SUBMITTER INFORMATION**

<b>*Submitting Facility:</b>		Submitter I.D. Number:	
Address:			
City:	County:	State:	Zip Code:
Phone Number: (    )    -	Fax Number: (    )    -	E-mail:	

**OWNER OF ANIMAL**

Last Name:	First Name:	Middle Initial:
Address:		Phone Number: (    )    -
City:	County:	State:
		Zip Code:

**\* PUBLIC HEALTH RISK ASSESSMENT INFORMATION**

<input type="checkbox"/> Person Exposed (fill out exposure info below)		<input type="checkbox"/> Other Animal Exposed (fill out exposure info below)		<input type="checkbox"/> Surveillance	
Was the Animal Submitted Exposed to a Farm, Agriculture, and/or Raw Milk Source? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Has a Public Health Official been contacted regarding this submission <input type="checkbox"/> Yes <input type="checkbox"/> No			Name of contact: _____		
Was the attack provoked? <input type="checkbox"/> Yes <input type="checkbox"/> No			Date of Death:      /      /		
Method of Death: <input type="checkbox"/> Humanely euthanized		<input type="checkbox"/> Killed by another animal		<input type="checkbox"/> Terminated, slaughtered, exterminated	
<input type="checkbox"/> Illness <input type="checkbox"/> Trauma		<input type="checkbox"/> Unknown		<input type="checkbox"/> Other _____	
Vaccination History:					
List of Clinical Signs (include neurological):					
Date of First Clinical Signs:      /      /			International Travel/Importation within 1 year? <input type="checkbox"/> Yes <input type="checkbox"/> No		

**\*PERSON EXPOSED (REQUIRED IF MARKED IN RISK ASSESSMENT SECTION ABOVE)**

Last Name:	First Name:	Middle Initial:
<input type="checkbox"/> Male <input type="checkbox"/> Female	Date of Birth:      /      /	Date of Exposure:      /      /
Address:		Phone Number: (    )    -
City:	County:	State:
		Zip Code:
Exposure Type: <input type="checkbox"/> Bite <input type="checkbox"/> Saliva Contact <input type="checkbox"/> Neurological Tissue <input type="checkbox"/> Other _____		
Exposure Site: <input type="checkbox"/> Arm <input type="checkbox"/> Foot <input type="checkbox"/> Hand <input type="checkbox"/> Head <input type="checkbox"/> Leg <input type="checkbox"/> Throat <input type="checkbox"/> Torso <input type="checkbox"/> Other _____		

**\*OTHER ANIMAL EXPOSED (REQUIRED IF MARKED IN RISK ASSESSMENT SECTION ABOVE)**

Type of Animal Exposed:	Date of Exposure:      /      /	
Owner Last Name:	Owner First Name:	Owner Middle Initial:
Address:		Phone Number: (    )    -
City:	County:	State:
		Zip Code:

**ADDITIONAL SPECIMEN INFORMATION**

--	--

**LABORATORY FACILITIES**

Nashville Central Laboratory 630 Hart Lane Nashville, TN 37216 615-262-6350	Knoxville Regional Laboratory 2101 Medical Center Way Knoxville, TN 37920 865-549-5201
--	---