

## Virginia Department of Health

### **Appropriate Procedure and Considerations for Animal Head Removal for Rabies Testing Purposes**

Companion document to online training available at  
<https://www.train.org/virginia/welcome>, Course number 1102065

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## Appropriate Procedure and Considerations for Animal Head Removal for Rabies Testing Purposes

Rabies prevention and control efforts often include testing animals for rabies. The training module and this companion document provide rabies sample collection best practices and techniques associated with animal head removal. Using recommended practices helps protect the sample collector from injury and exposure while increasing the likelihood of good sample quality and timely result.

### **Who is responsible for collecting animal samples for animal rabies testing?**

Local health department personnel and/or their partners are responsible for performing the animal health removal procedure. These partners include:

- Animal control officers
- State agriculture personnel
- Wildlife authorities
- Veterinarians in clinical practice

### **Definition of Rabies Exposure:**

“Any bite, scratch or other circumstance where saliva or central nervous system (CNS) tissue from a suspected rabid animal enters an open, fresh wound, or comes in contact with a mucous membrane by entering the eye, mouth, or nose.”

- A rabies exposure is a serious matter. Report concerns about rabies exposures promptly to your local health department.
- Questions about handling rabies suspect samples and other aspects of rabies prevention and control such as vaccinations, animal confinement, and rabies exposure response should be directed to your local health department.
- To find your local Virginia Health Department, go to <http://www.vdh.virginia.gov/health-department-locator/>.

### **PRE-EXPOSURE VACCINATION & SAFETY**

While those performing this procedure should be pre-exposure vaccinated for rabies, *vaccination does not take the place of proper handling of rabies suspect animals or samples.*

## Personal Protective Equipment (PPE)

The type of equipment needed to protect the sample collector from injury and exposure is pictured and listed below:



As the sample collector, you are at risk of exposure if wet saliva or central nervous tissue from a rabid animal gets into your eyes, nose, mouth, or open wound.

Personal protective equipment, or PPE, creates a barrier between you and the infected animal while you perform the animal head removal procedure and provides protection from exposure to the rabies virus.

The rabies virus is found in the wet saliva and central nervous tissue of infected animals.

Procedure Equipment



Perform the procedure on a non-porous surface or table that allows you to position the animal's head so that anatomical landmarks can be easily identified. In addition, a non-porous surface can be easily cleaned once the procedure is complete.

Items such as the specific personal protective and procedure equipment, as well as the surface available to perform the procedure, may vary by locality or agency.

- ❖ Make sure you are familiar with your organization's standard operating procedures related to animal rabies sample collection.

## Animal Head Removal Procedure

The animal head removal procedure for testing is similar for most animals. These include, but are not limited to:

- Dogs
- Cats
- Raccoons
- Skunks
- Foxes

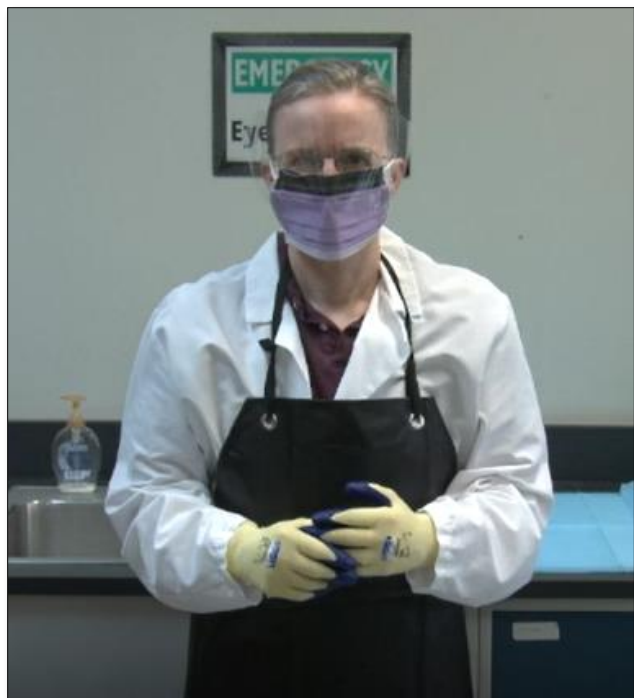
❖ Smaller rodents such as Bats and Squirrels should **NOT** undergo head removal.

As a general rule, an animal whose body is as long or shorter than the length of your hand can be submitted whole to the laboratory for testing. Questions about the need for head removal should be directed to your local health department.

The animal head removal procedure consists of 8 main steps:

1. Put on personal protective equipment

- Long sleeve lab coat or coveralls
- Face protection, such as safety glasses and a face mask or shield
- Exam gloves or gloves with a cuff
  - For extra protection against injuries, you may want to wear 2 pairs of gloves such as 2 pairs of exam gloves or exam gloves covered by a pair of cut resistant, waterproof gloves.
  - If 2 pairs of gloves are worn, at least one pair should have a cuff that fits firmly around the wrist.
- Waterproof apron (if splashes are expected)



## 2. Prepare the procedure equipment

Select the appropriate incision blade and other tools for the animal. Larger animals would require a necropsy blade and smaller ones would require a scalpel. In either case, make sure the incision blade is sharp.

Make sure the non-porous surface and any equipment being used such as necropsy knife, clipper blades, etc., are clean and dry before using.

The rabies virus is susceptible to a number of disinfectants, including:

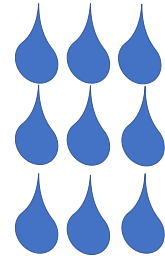
- Bleach
- Iodine
- Isopropyl alcohol
- Phenol based compounds

Remember to follow label instructions for any disinfectant, since the effectiveness of some products may vary with concentration and contact time.

### 10% Bleach Solution Recipe

1 Part Bleach

9 Parts Water



❖ Use in 24 hours

## 3. Prepare the animal

Position the animal on its back with the head hanging over the edge of the table. This will help with identifying anatomical landmarks when making the incision.



If an animal's fur is particularly thick, use clippers to shave the underside of the neck where the incision will be made. This assists with identifying landmarks and keeping the blade used for the incision sharp.

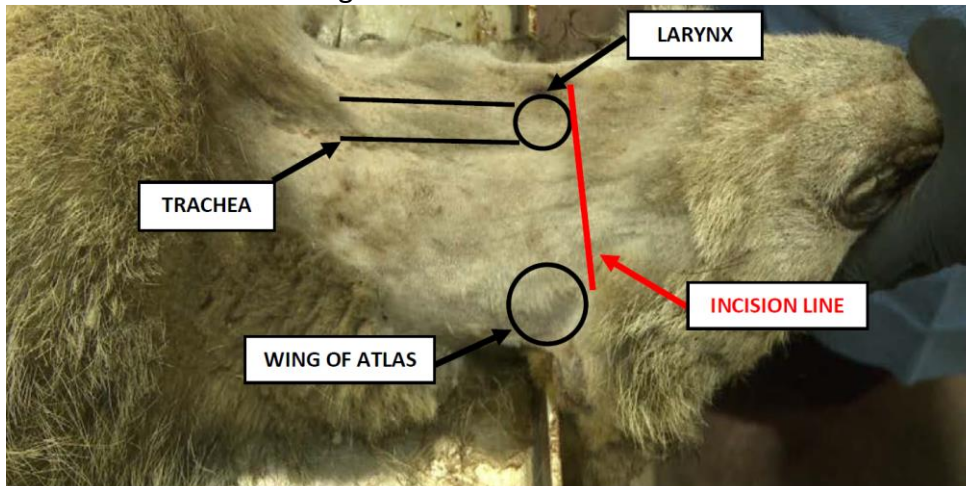


#### 4. Identify the anatomical landmarks

In general, the following anatomical landmarks are helpful to identify in order to make an incision in the appropriate place on the neck:

- The trachea or windpipe (which feels like a stiff tube in the middle of the neck).
- The larynx, which is also called the voice box. The larynx is attached to the uppermost part of the trachea and can be felt just below the jawline.
- The atlas, which is the first vertebra of the spine. This vertebra has long protrusions that extend out from the center of the spine and can be felt on either side of the neck just behind the ears.
- The base of each ear and bottom of the jaw could also be used as landmarks for the incision.

These structures can be found by palpating the underside of the neck while hanging the animal's neck over the edge of the table.

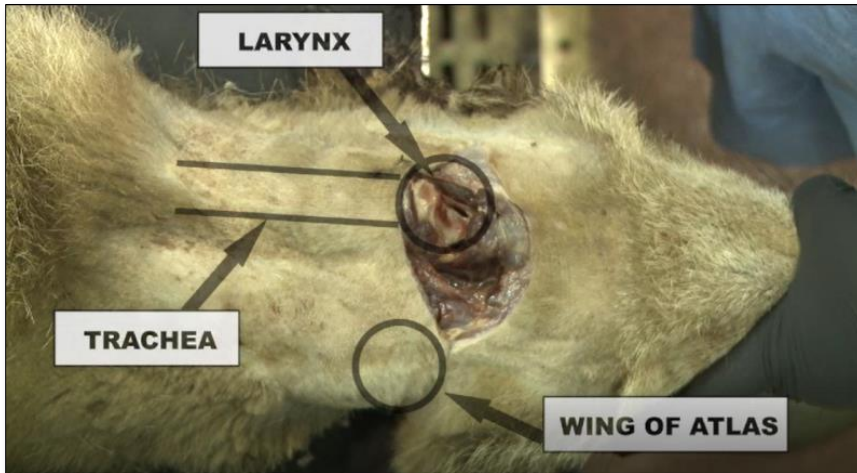


5. Make the incision

Using a scalpel or necropsy knife, position the blade between the larynx and the bottom of the jaw. Make an incision that extends from the bottom of the jaw on one side of the neck straight across to the bottom of the jaw on the other side of the neck.



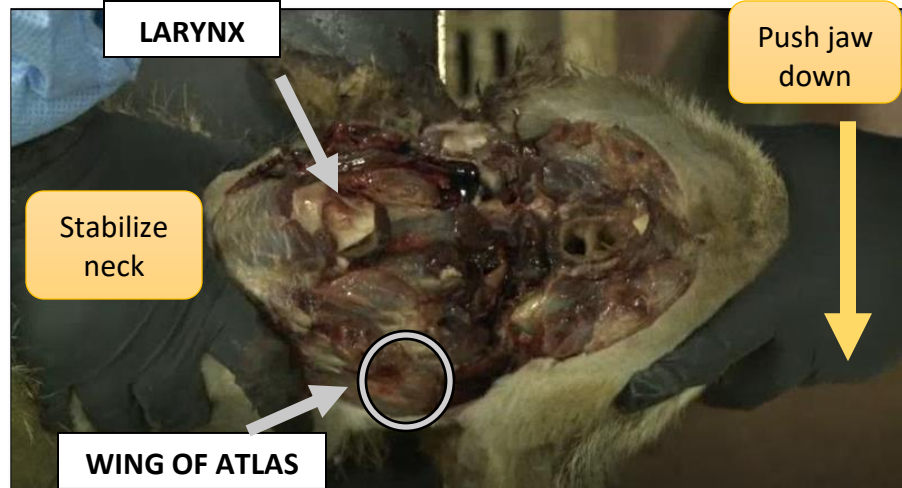
Remember to use paper towels or other absorbent, disposable material, as needed, throughout the procedure. This will decrease the amount of blood and other fluids that might obscure helpful anatomical landmarks.



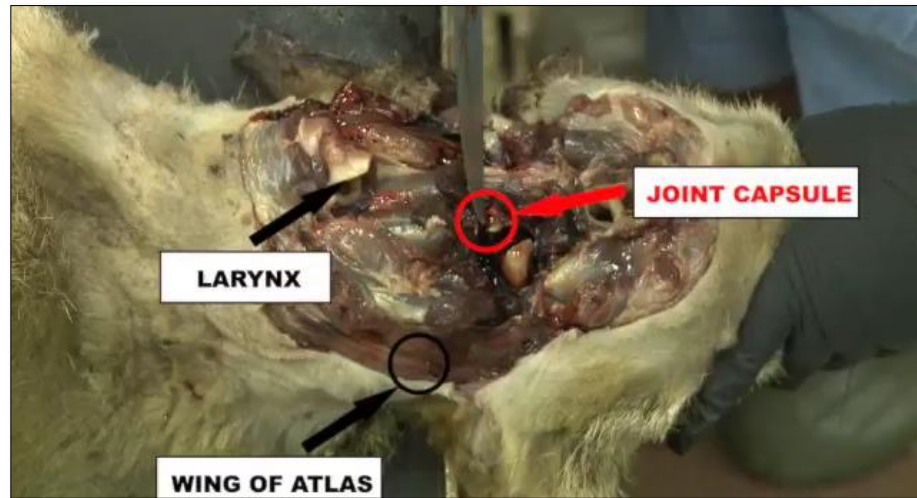
After making an incision through the skin the first anatomical structure you will encounter is the larynx. It will appear as a stiff tube. Make the incision deeper by cutting through the top edge of the larynx.

Continue your incision through the top edge of the larynx and the surrounding soft tissue. Next, your blade will contact bone, the vertebrae of the neck. Cut through the majority of neck muscles and other soft tissues along the incision line to identify the joint capsule between the base of the skull and the atlas.

To visualize the joint capsule, hang the head over the edge of the table and push or stretch the jaw downward with one hand while firmly stabilizing the neck with the other hand.



This will allow you to see the contrast between the boney tissues, like the base of the skull, and the soft tissue that makes up the joint capsule.



Make an incision through the joint and the rest of the soft tissue of the neck in order to remove the head completely. If cutting through the joint is problematic, it may be necessary to cut through the vertebra instead. If so, use pruning shears or saw to cut through the spine.



The animal's head should then be packaged and stored per local health department guidelines until ready for submission.

6. Dispose of the remainder the animal's body  
The remainder of the animal's body should be incinerated or handled as per local ordinance.

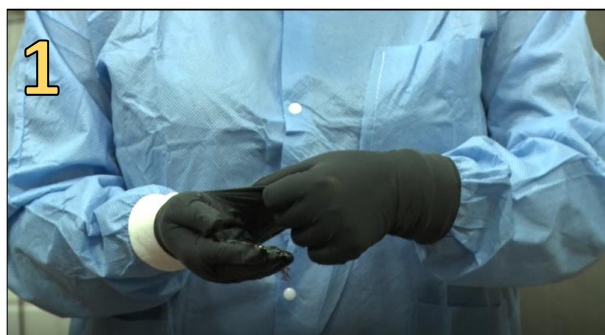
7. Clean instruments and contaminated surfaces

Wash and disinfect non-disposable equipment and work surfaces using an appropriate disinfectant and dry prior to reusing.

8. Remove personal protective equipment

Personal protective equipment should be removed in a way to avoid bare-skinned contact with visibly soiled areas.

Gloves should be removed by grabbing the outer part of the cuff of the first glove and pulling forward. Remove the second glove by using the first glove, now inside out, as a barrier through which you grab the second glove by the outer part of the cuff and pull forward.



Wash your hands once your gloves are removed.





The specimen can now be prepared for submission to a laboratory.

Animal rabies sample submission is coordinated through the local health department. Contact your local health department if you have questions about temporary specimen storage prior to transfer. A directory of local health departments can be found at <http://www.vdh.virginia.gov/health-department-locator/>.

For more information about rabies, visit [www.vdh.virginia.gov/rabies](http://www.vdh.virginia.gov/rabies).

See Module 2 for more information on handling, packing, and shipping animal rabies specimens.
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