

Chronic Wasting Disease Sampling

A Step-by-Step Guide



m MINNESOTA
BOARD OF ANIMAL HEALTH

Healthy Animals for Healthy People and Communities

Table of Contents

Before the cervid is harvested	1
Collecting the samples.....	2
Preparing samples	6
Complete a CWD testing submission form	7
Packaging samples.....	8
Shipping CWD samples	8
Have questions or need more help?	9

Before the cervid is harvested:

If you know you will be harvesting an animal, contact your Board inspector ahead of time, and he or she will provide you with some of the necessary sampling supplies listed below free of charge and will help train you on collecting samples, if desired. If you don't know who your inspector is, contact the Board at 651-296-2942 or farmed.cervidae@state.mn.us.

- The sooner you harvest a sample, the better.
- If you will be putting down the animal, don't shoot it in the head.
- Recommended supplies (See Figure 1):
 - Gloves
 - Plastic Bags (2 small and 1 large)
 - Permanent marker
 - Modified Spoons (2), deer or elk size, as appropriate
 - Scissors
 - Forceps
 - Scalpel or Knife
 - Collection cup
 - Electrical tape
 - 10% Formalin
 - Laboratory Submission Form. You can download the form from the University of Minnesota Veterinary Diagnostic Laboratory web site's [CWD testing submission page](https://www.vdl.umn.edu/submission-guidelines/chronic-wasting-disease-cwd-testing-submission) (<https://www.vdl.umn.edu/submission-guidelines/chronic-wasting-disease-cwd-testing-submission>).

NOTE: CWD collection cups, as pictured in this guide, can also be ordered at no charge (packs of 10, shipping fee applies) from the University of Minnesota Veterinary Diagnostic Lab. Orders may be placed by phone or email.

Phone: 612-625-7095; **Email:** vdirecv@umn.edu.

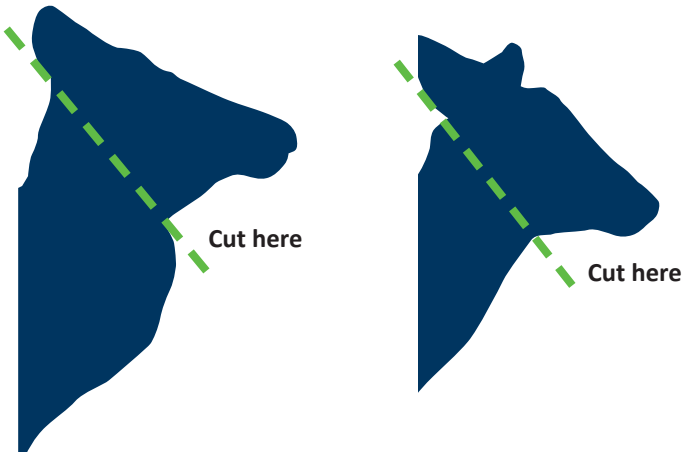


Figure 1. Tools for CWD sample collection

Collecting the samples:

Use the knife to cut into the skin at the bend in the jaw and angle your cut to align with the back side of the ears. Cut from the bend in the jaw in a straight line toward the ears. (See Figure 2). Then place the head upside down (ears down – throat up) on the table, with the ears closest to you.

Figure 2. Where to make the cut on elk or deer



NOTE: The head must be separated from the neck before attempting to collect the sample. Otherwise, it will be difficult to reach deep enough into the head to collect the part of the brain stem that includes the obex. Cervical spinal cord samples submitted will be tested but will be reported as a “location” error per USDA testing criteria.

Remove part of the ear with the ear tags attached. (See Figure 3a and 3b for acceptable ear tag samples) Do not put this sample in formalin solution. Place the tags and tissue in a small plastic bag. Resealable bags are okay. If you do not have resealable bags, place tape on the bag to keep it closed.

Figure 3a. Ear tag with tissue

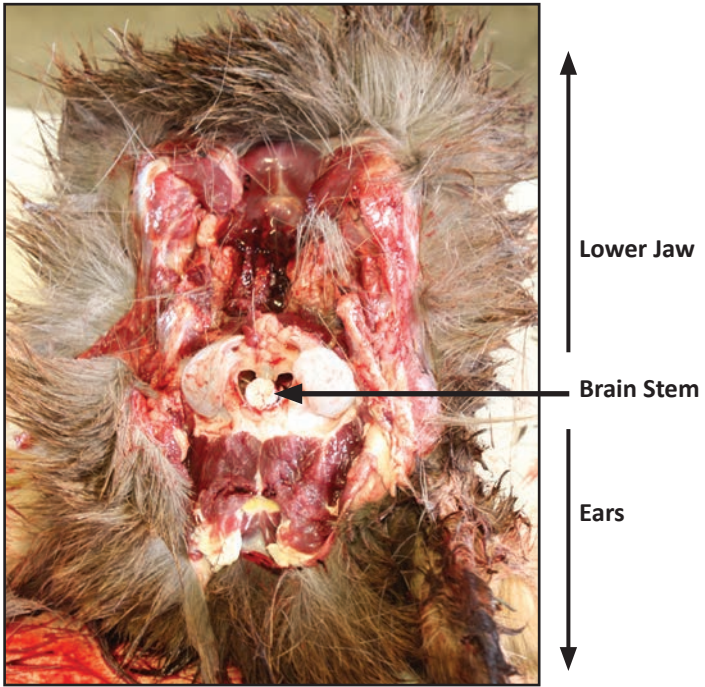


Figure 3b. Ear tag with tissue sample in plastic bag



The brain stem is white and surrounded by bone. (See Figure 4)

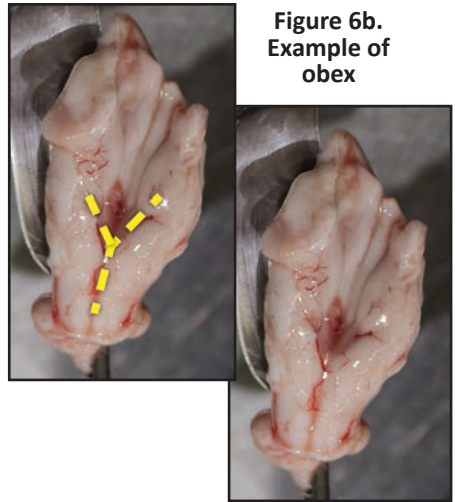
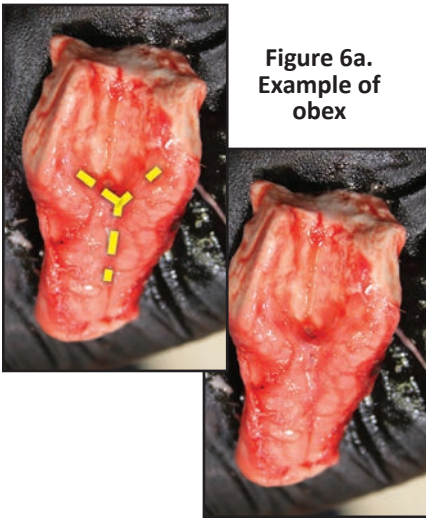
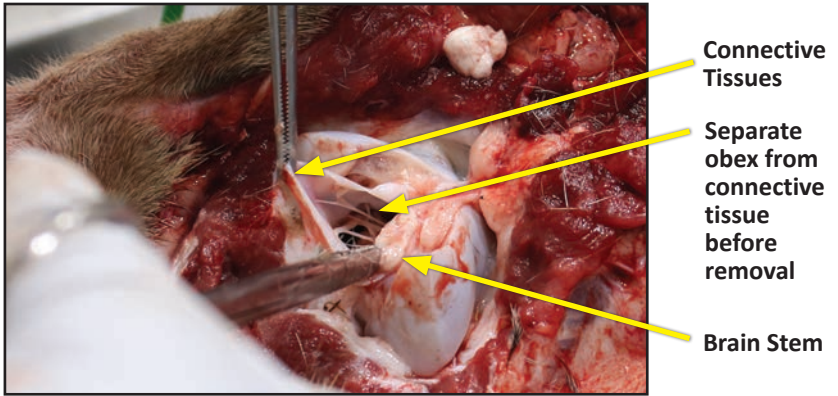
Figure 4. Location of brain stem



Separate the connective tissue from the brain stem. With the scissors or a modified spoon, work around the sides of the brain stem. (See Figure 5, next page) Grab the layer around the stem with forceps and not the stem itself. After you have carefully cut the connections between the brain stem (including the obex) and the connective tissue by going all the way around the brain stem with the sharp edge of your spoon, insert the spoon into the vertebral canal until the curved part of the spoon is entirely inside the canal. Next, angle the spoon sharply down and move it right and left to cut the brain stem away from the brain. Gently pull out the brain stem, including the obex, with the spoon in a scooping motion, keeping it intact. Once the obex is removed, turn it over, and the “Y” should be visible. (See Figures 6a and 6b)

DO NOT DAMAGE THE “Y”. This is the most important part of the sample. Drop the sample into the formalin.

Figure 5. Finding and separating connective tissue



Harvest the lymph nodes, which are along the center of the head, close to where the mouth cavity meets the back of the throat. Lymph nodes tend to be buried under salivary glands, fat and muscle. They are usually gray, are round to oval in shape, and should feel smooth. Try to harvest both lymph nodes whole. It's best if the nodes are cut or sliced partway before placing them into formalin, to allow the formalin through the capsule that surrounds the node. Drop them in the formalin. (See Figures 7a and 7b)

Do not collect salivary glands, which are spread throughout the lower jaw, including around the lymph nodes. They are usually tan and have a loose, inconsistent texture.

A reminder: More is NOT better. Only the obex and lymph nodes are needed for testing.

Figure 7a. Locations of lymph nodes and salivary glands.

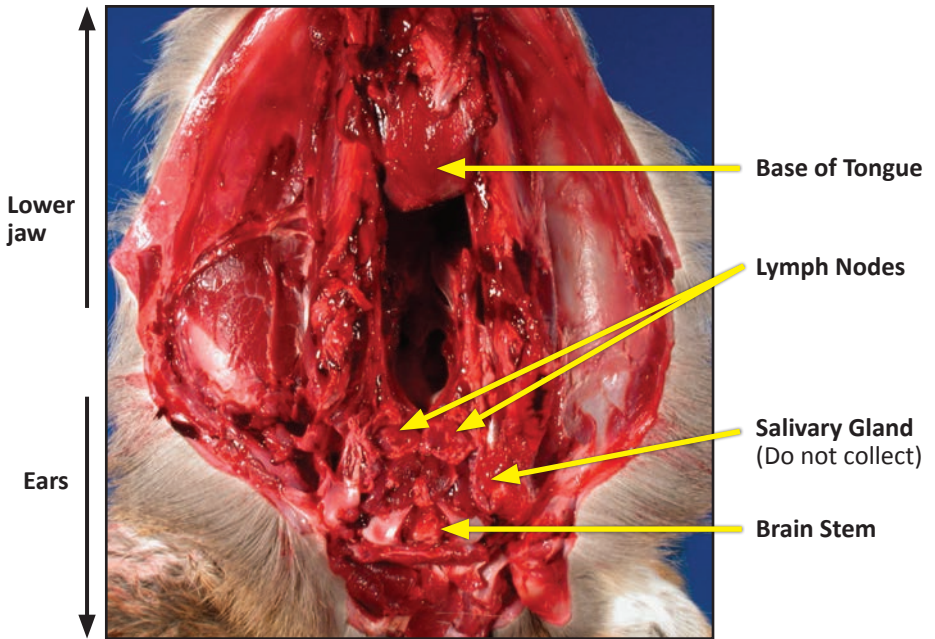
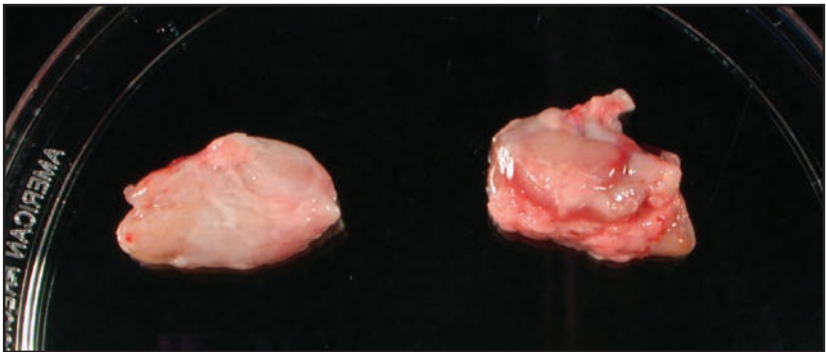


Figure 7b. Lymph nodes



Preparing samples:

Don't rinse the tissue with water or soak in water. Instead, use formalin at a 10:1 ratio for it to work best on the tissue, meaning, the volume of formalin should be ten times the volume of the sample (See Figure 8a). Place samples in formalin immediately after removal. (See Figure 8b)

IMPORTANT: Keep formalin from freezing during storage and shipping.

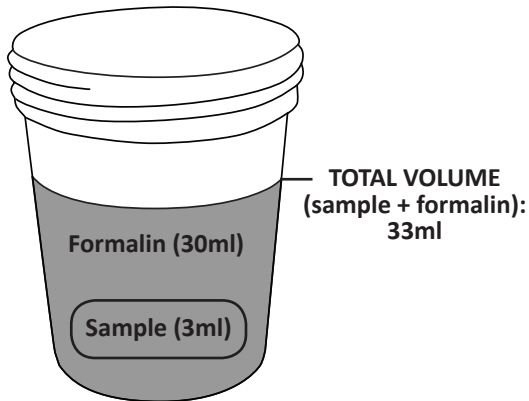


Figure 8a.
Correct 10:1 Ratio for CWD Samples

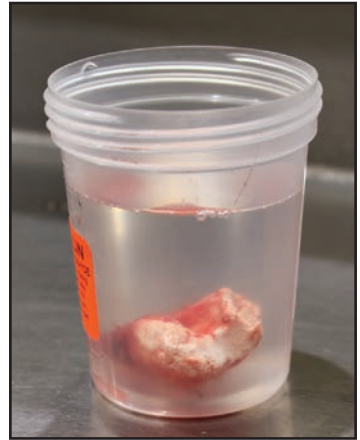


Figure 8b. Sample in formalin

Close the cup and use a permanent marker to label it with your last name and the animal's official ID number. Seal the cup with electrical tape to prevent leakage. Place the cup into a second small plastic bag. If you do not have resealable bags, place tape on the bag to keep it closed.



Place the obex/lymph node sample bag and ear tag/tissue bag inside a larger plastic bag. Seal the outermost bag.

Samples from each animal must be packaged in separate plastic bags. Don't pool samples, as they could contaminate one another in a container/bag.

Complete a CWD testing submission form:

All samples must be accompanied by a CWD testing submission form, which can be downloaded from the University of Minnesota Veterinary Diagnostic Laboratory web site's [CWD testing submission page](https://www.vdl.umn.edu/submission-guidelines/chronic-wasting-disease-cwd-testing-submission) (https://www.vdl.umn.edu/submission-guidelines/chronic-wasting-disease-cwd-testing-submission). Provide the owner's name, address, all animal identification, sex, species and age for each animal. This form also will act as the Board of Animal Health Death Report form for all animals 12 months and older if the box outlined in red is filled out completely.*

<p>Minnesota Board of Animal Health Farmed Cervidae Chronic Wasting Disease Submission Form</p> <p><i>Submit Samples and this form to:</i> Minnesota Veterinary Diagnostic Laboratory College of Veterinary Medicine 1333 Gortner Avenue St. Paul, MN 55108</p> <p>Phone: 612-625-8787 Toll free: 800-605-8787 Fax: 612-624-8707 Email: VDL@umn.edu</p>	<p>Lab Use Only</p>
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FILL IN ALL FIELDS AND PRINT CLEARLY: Date Submitted: _____

Premises ID:	<i>Veterinarian Submissions (veterinarian will automatically receive copy if filled out)</i>
Owner Name:	Veterinarian Name:
Mailing Address:	Mailing Address:
City, State, Zip:	City, State, Zip:
Phone:	Phone:
CHECK ONE:	CHECK ONE:
<input type="checkbox"/> Mail Results (using address above)	<input type="checkbox"/> Mail Results (using address above)
<input type="checkbox"/> Fax Results – number:	<input type="checkbox"/> Fax Results – number:
<input type="checkbox"/> Email Results – address:	<input type="checkbox"/> Email Results – address:
Death Report Information (*Samples must be submitted to lab within 14 days of collection)	
Name of Sample Collector:	
Sample Collection Date:	Date of Animal Death:
<input type="checkbox"/> Slaughtered at slaughter facility <input type="checkbox"/> Harvested on farm <input type="checkbox"/> Died on Farm <input type="checkbox"/> Other: _____	

*Completely fill out the Death Report Information section to use this form as the Board of Animal Health Death Report.

ALL FIELDS REQUIRED:						CHECK ALL THAT APPLY:		
Animal	Official ID (required)	Add'l Tag(s)	Species	Age	Sex	Brain Stem	Lymph Node	Whole Head
1						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Form version 09-2017

(Additional samples can be listed on page 2 of this form)

Page 1 of 2

Packaging samples

- If you are using a cardboard box to send a sample, please place the sample(s) in a waterproof liner and seal it (once box is packed) to prevent leakage.
- Put the submission form in a sealed plastic bag to keep it dry. Place the form on top of the sample(s) in the shipping container.
- Use frozen gel packs to keep samples refrigerated.
- Clearly mark the outside of the box as a frozen/refrigerated laboratory specimen.

Shipping CWD samples

OVERNIGHT COURIER

Shipping by overnight courier is preferred. The sender is responsible for postage or special delivery charges. Address and send to:

Veterinary Diagnostic Laboratory

1333 Gortner Avenue
University of Minnesota
St. Paul, MN 55108

Samples can also be delivered after hours to the Veterinary Medical Center (VMC) address:

Veterinary Diagnostic Laboratory

c/o Veterinary Medical Center Emergency Receiving
College of Veterinary Medicine
University of Minnesota
1365 Gortner Avenue
St. Paul, MN 55108

The VMC is open 24/7 and will refrigerate samples to be delivered to the VDL at the start of the following business day.

For Saturday deliveries, please use either FedEx or UPS. Do NOT use the United States Postal Service.

See next page for MPTL Courier Service option.

MPTL COURIER SERVICE

Producers or Board inspectors can bring samples to the Minnesota Poultry Testing Laboratory (MPTL) in Willmar before 9:00 a.m. Monday through Friday for no-cost, same-day courier service to the VDL. Please follow the MPTL guidelines when submitting samples:

- Samples must be delivered before 9:00 a.m. for same-day delivery.
- Whole head samples will not be accepted.
- Samples must be properly bagged and labeled with identification, as directed in this guide. Sample bags and/or samples will not be opened.
- Samples received after 9:00 a.m. on Friday will be stored and sent on the following Monday.

NOTE: CWD samples will not receive a case number at the MPTL. Case numbers will be assigned by the VDL upon arrival.

The MPTL address is:

Minnesota Poultry Testing Laboratory

622 Business Hwy 71 NE
Willmar, MN 56201-0126

Have questions or need more help?

The Minnesota Board of Animal Health is committed to helping producers submit successful CWD samples. If you would like in-person training on sample collection, we're here to help. Contact your Board inspector or our office:

Phone: 651-296-2942

Email: farmed.cervidae@state.mn.us

MINNESOTA BOARD OF ANIMAL HEALTH

Healthy Animals for Healthy People and Communities

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St. Paul, MN 55155

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www.mn.gov/bah