

Chronic Wasting Disease of Deer and Elk Kansas State Diagnostic Lab now Performing CWD Testing

Chronic Wasting Disease (CWD) is a specific, infectious, neurological disease of deer and elk in the United States and Canada. The disease is one of a group of diseases called Transmissible Spongiform Encephalopathies (TSEs). It is similar to, but not the same as, scrapie in sheep, bovine spongiform encephalopathy (mad cow disease), and to a disease in humans called new variant Creutzfeldt-Jakob Disease (nvCJD). There is convincing evidence that the new variant form of Creutzfeldt-Jakob Disease is caused by the same agent that causes bovine spongiform encephalopathy and is the result of ingesting beef contaminated with brain or spinal cord tissue from affected cattle. Bovine spongiform encephalopathy (BSE) has never been found in the United States. Scientific evidence to date indicates CWD of deer and elk is a distinct disease from these other diseases.

The cause of CWD, and the other TSEs, is not known for sure, but has been associated with the accumulation of an abnormal, protease-resistant protein referred to as prion protein in the brain and in some instances, eyes and lymphoid tissue of affected animals. Demonstration of this protein in tissue is the basis of current diagnostic tests.

Current evidence suggests that deer and elk may become infected by ingestion of feed or water contaminated by infected saliva, urine and/or feces.

Captive and free-ranging mule deer, white-tailed deer, and elk are all susceptible. Experimental work to date suggests other ruminants such as wild and domestic sheep, goats, cattle, pronghorn antelope, bison, and moose are either resistant or less susceptible.

Affected animals have been found in farmed and/or free-ranging deer and elk in Colorado, Wyoming, Nebraska, Montana, Minnesota, South Dakota, Kansas, Wisconsin, Illinois and Oklahoma. As far as is currently known, people are not susceptible to CWD. This disease has been known since the late 1960s and no cases have been discovered linking any disease in humans or livestock to CWD. Even where wild, free-ranging deer and elk share common pastures with domestic livestock, there has been no evidence of natural transmission to livestock.

While there is no known threat to the human food supply from CWD, because of Britain's experience with nvCJD in people, which has been linked to BSE, and the fact that there is still a lot to learn about CWD, public health and animal health officials are suggesting a few common sense precautions to hunters:

- √ Do not shoot, handle or consume any animal that is acting abnormally or looks sick or emaciated.
- √ If you see a deer or elk that fits that description, immediately contact the nearest Kansas Department of Wildlife and Parks conservation officer or district wildlife biologist.
- √ Wear rubber or latex gloves when field dressing a harvested deer or elk.

√ When boning out deer or elk meat, do not include brain or spinal cord and discard brain, spinal cord, eyes, spleen and lymph nodes. Infective material has not been found in skeletal muscle. Normal field dressing coupled with boning out of carcasses will remove most, if not all, of these body parts. Cutting away all fatty tissue should remove remaining lymph nodes.

√ Wash hands and instruments thoroughly after field dressing is completed.

√ Avoid consuming brain, spinal cord, eyes, spleen, tonsils, and lymph nodes of harvested animals. Avoid consuming the meat from any animal that tests positive for the disease.

√ To test a harvested deer or elk for CWD, the head should be removed between the first cervical vertebrae and the skull and a segment of the brain stem immediately behind the cerebellum submitted in formalin to a laboratory performing the test.

√ Bury the unused parts of the carcass.

√ Request your animal be processed individually, without meat from other animals being added to the meat from your animal.

Research to date indicates that this protease-resistant prion protein does not accumulate in muscle tissue, but prudence suggests that meat from positive animals not be consumed even though, as mentioned above, there is no known evidence that humans are susceptible to CWD.

The KSU Diagnostic Laboratory is now performing CWD testing on formalin-fixed brain tissue from deer and elk. This is a sensitive test, but very dependent on examining the proper area of the brain. The area required is the obex, which is the portion of the brain stem just behind the cerebellum where the fourth ventricle goes into the spinal canal. Without this portion of the brain, the test can not be properly interpreted and will have to be reported as unsuitable.

The KSU Diagnostic Laboratory is not able to accept whole heads or carcasses as we have no way of disposing of positive heads or carcasses.

If planning to submit specimens for CWD testing, please call the Lab in advance to make arrangements for testing details and fee information. The number to contact is (785) 532-5650. Our web site address is <http://www.ksu.edu/cwd>.