

Chronic Wasting Disease

What you need to know

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Chronic wasting disease (CWD) is a fatal, progressive neurologic disease of ruminant animals of the Cervidae family. This family of animals includes white-tailed deer, mule deer, elk and moose. It is caused by an infectious protein particle known as a prion. Other diseases caused by prions include “mad cow disease” or bovine spongiform encephalopathy, scrapie in sheep and Creutzfeldt-Jakob disease in people. There is no curative treatment for animals that contract CWD.

Prions are smaller than bacteria and viruses and are extremely resistant to conventional methods of disinfection, including chemical and steam sterilization and irradiation. Prions can exist in soils indefinitely. These infectious particles have been observed in saliva, urine and feces from infected animals and trans-placental transmission has been documented. Prions are also deposited in the soil from decomposing, infected carcasses.

Prions cause a disease known as spongiform encephalopathy. Basically the disease process results in vacuolization or “holes” in the brain. Upon microscopic examination the brain appears as a sponge. This brain vacuolization is a slow process, occurring months to years after infection, and results in animals which have neurologic disorders. These animals may exhibit abnormal behavior, drooling and lack of coordination, and nearly all will ultimately exhibit weight loss, hence the name “chronic wasting disease.” Other causes of weight loss include malnutrition, parasitism and epizootic hemorrhagic disease. In most states these causes are much more prevalent than chronic wasting disease.

CWD was first documented in a mule deer in Colorado in 1967. Currently, CWD is found in 14 states and two Canadian provinces. It has never been documented in Louisiana. CWD has been spread from state to state by natural movement of wild animals, purposeful movement of both wild and captive cervids, and by the movement



of infected animal parts. At least one state had CWD introduced via a deer head brought in from a CWD endemic state for taxidermy.

CWD has never been eradicated from any state in which it was discovered even though states have spent millions of dollars in monumental culling and testing operations. Nonetheless, culling programs remain the standard protocol for most states because it is believed that no action in high density herds is worse. Currently, in cooperative effort between individual states and the United States Department of Agriculture (USDA), an extensive surveillance effort is underway. Louisiana, for example, has tested over 6,000 white-tailed deer carcasses for CWD since 2002.

The “gold-standard” of testing for CWD involves immunohistochemistry of the obex portion of the brainstem and the retropharyngeal lymph nodes. These tests can only be performed on dead animals; however some tonsillar biopsy testing has been performed on live, sedated animals with success. The newest technique for test-

ing live animals for CWD is the RAMALT (rectoanal mucosa-associated lymphoid tissue) test. This procedure samples the rectal tissue of live, sedated animals. Immunohistochemistry is performed on this tissue and has been proven to pick up infections earlier than tonsillar biopsy. Although still in its infancy, RAMALT testing may prove to be a useful tool in surveillance for CWD prior to moving captive deer and elk

Unlike some of the other transmissible spongiform encephalopathies, CWD has never been proven to be transmissible to humans or non-human primates. Current research has shown that cattle are also very resistant to infection by CWD. Extensive testing of mountain lions which predate heavily on CWD infected deer has never documented infection. Meat from infected animals is considered safe for human consumption; however, meat from known CWD-positive animals is generally disposed of by state and federal agencies via incineration or proper landfill disposal. When hunting in CWD positive states, it is recommended that the hunter wear dispos-

able latex gloves while field dressing game. It is also advised that the carcass be deboned on site with the hunter only removing the muscle tissue from the field. Likewise, for trophy mounts, the mount should be caped out and no brain, spinal tissue or skull plate should be removed from the field. Some states have regulations regarding importation of animal tissues for taxidermy purposes, and generally require the animal to be prepared in the aforementioned manner. Likewise, some CWD positive states provide hunter instructional videos which arm hunters with the know-how to sample their own animals. Those states will test hunter-submitted samples and relay findings to the hunters who may decide to return meat from CWD-positive animals to the state for incineration. Currently, Louisiana has no regulations on the importation of taxidermy specimens, but taxidermists are encouraged to have specimens from CWD-positive states checked by Louisiana Department of Wildlife and Fisheries biologists and are instructed to dispose of carcass parts by incineration, deep burial or landfill disposal.

Another avenue for the prevention of introduction of CWD into states involves regulations on the importation of captive deer into states which are CWD free. Currently, importation of cervids into Louisiana is limited to captive deer, elk and other exotic deer for use in Louisiana Department of Agriculture and Forestry approved alternative livestock pens (game farms). These animals must come from herds which have had no clinical cases of chronic wasting disease within the past five years. This same time-frame has been proposed by the USDA in its proposed CWD Final Rule regarding interstate transport of captive cervids.

In summation, by continued surveillance and diligent actions by hunters and wildlife managers, we can insure that Louisiana remains free from chronic wasting disease. This disease can have a dramatic impact on wildlife health and perceived wholesomeness of the venison supply, and may result in fewer deer hunters across the state. Remember that in this country, hunters provide more funds for conservation than any other single source. Any reduction in the number of active, licensed hunters means a reduction in conservation funds. Chronic wasting disease is the epitome of "an ounce of prevention is worth a pound of cure." We must take all measures possible to prevent its introduction into the deer of Louisiana. Please contact your local Louisiana Department of Wildlife and Fisheries biologist if you find a deer that you suspect of having chronic wasting disease. ■



Photo courtesy of Wyoming Game & Fish

Captive white-tailed deer (above) and elk (below) displaying symptoms of chronic wasting disease.



Photo courtesy of Wyoming Game & Fish

FOR MORE INFORMATION

More information on CWD is available on the Chronic Wasting Disease Alliance website at www.cwd-info.org or see the link on the LDWF website.