Updated February 2, 2016

CHRONIC WASTING DISEASE FAQs

What is CWD?

Chronic wasting disease affects the central nervous system of elk, deer and moose. Most scientists believe CWD is caused by an infectious protein or prion. The brain of an affected member of the deer family (Cervidae) will have a microscopic sponge-like appearance. This characteristic finding places it in a group of diseases known as transmissible spongiform encephalopathies (TSEs). Scrapie of domestic sheep and goats, bovine spongiform encephalopathy (BSE or "mad cow disease") of cattle and transmissible mink encephalopathy of farmed mink are all types of TSEs in domestic and captive-reared animals. Creutzfeldt-Jakob disease (CJD) is a human TSE that occurs throughout the world.

Isn't CJD the same as mad cow disease and CWD?

No. Although CJD, mad cow disease and CWD are all TSEs, and therefore cause similar illnesses and similar lesions in the brain of species they affect, these diseases are caused by distinct prions.

Isn't there a connection between CJD and mad cow disease (BSE)?

There are four types of CJD: sporadic, familial, iatrogenic and new-variant CJD. Sporadic, familial and iatrogenic CJD occur worldwide, including the USA, and have been recognized for decades, with a frequency of approximately 1 case per 1 million people annually.

New-variant CJD (vCJD) is a recently described and rare form of the disease, which was first reported in the United Kingdom following an outbreak of BSE in cattle. There is strong evidence that vCJD is caused by the consumption of beef or beef products contaminated with the BSE prion. Cases of vCJD primarily affect a younger age group than sporadic CJD, and clinical signs differ subtly with respect to onset and progression.

Hundreds of thousands of cases of BSE have occurred in cattle and more than 220 cases of vCJD have been reported worldwide as of October 2014. Four cases of vCJD have been reported in the United States. However, it is likely that all four cases resulted from exposure to the BSE agent in foreign countries. State, federal and international agencies, such as the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO), are currently working together to rapidly identify suspect cases of CJD and learn more about the potential connection between BSE and vCJD.

For more information on CJD, visit the Centers for Disease Control and Prevention website (http://www.cdc.gov/prions/vcjd/about.html).

Can humans get CWD?

No cases of human CJD or variant CJD have been linked to CWD in deer. It's important to remember that animals from known CWD regions in the Western U.S. have been in the human food chain for decades without a known case of related human illness. In Colorado, no cases of CWD or vCJD have been found in people or cattle living in the CWD-infected area, despite more than 20 years of monitoring.

Epidemiologists with the CDC have conducted extensive studies into the potential for human risk from CWD. They were not able to identify any association between human neurological disease and CWD and concluded that there is no evidence that CWD is linked to disease in humans. Nevertheless, based on recommendations of the CDC and the World Health Organization, the best advice is to act with common sense and to not eat meat from an apparently sick deer, elk or any animal found dead or known to be positive for CWD. Also, as a precaution in areas where CWD has been identified, hunters are advised not to eat tissues known to harbor CWD prions (lymph nodes, tonsils, spleen, pancreas, brain, and spinal cord) and to "bone out" the meat.

What does CWD look like?

The clinical signs are not unique to this disease, but loss of body weight, even as the deer or elk continues to eat, is typical. The animals may walk in the same short path, repeatedly. They may be slightly unsteady standing with legs separated wider than normal. Some have subtle head tremors and are found near streams or ponds. They may have periods when they appear sleepy or unresponsive or may carry their heads down with their ears lowered. Increased salivation, drinking and urination may also occur. Usually, months to years pass from when the animal is infected to when it shows these signs, and they have not been seen in deer younger than 17 months. Once the signs develop they usually last for months, but occasionally they end in death within just a few days.

How do we test for it?

Currently, post mortem examination of brain and lymphoid tissue is the most reliable way to diagnose CWD. Microscopic examination of the brains of dead deer reveals the sponge-like changes typical of CWD. Early in the disease, before the spongy changes of the brain occur, special chemical stains for the CWD prion will reveal its presence. Studies have shown that the CWD prion is more likely to be detected in the lymph node near the pharynx than the brain stem, although, both tissues are routinely sampled to diagnose the disease. Prion-specific stains also have been used to demonstrate the CWD prion in biopsy samples of tonsils and rectal mucosa from live deer and elk, but these tests require anesthetizing the animal.

Where did it come from?

CWD has been known by its symptoms in mule deer for more than 30 years and may have been present in free ranging mule deer for more than 40 years. It was first recognized as a TSE in 1977 and was diagnosed in captive mule deer and black-tailed deer in Wyoming. In 1979 it was diagnosed in captive elk. Also about that time a captive mule deer was diagnosed with CWD in a zoo in Ontario, but the disease did not persist in that location. In 1981 CWD was

diagnosed in a free-ranging elk in Colorado and in 1983 the first hunter harvest survey was conducted for CWD. At present, four species family Cervidae are known to be naturally susceptible to CWD. Cattle and other domestic livestock may be resistant to natural infection. CWD could have been derived from alteration of an existing TSE or the CWD prion could have occurred spontaneously. Its origin may never be known.

Is it in New Jersey?

From 1997-2015, 6,254 wild deer, 136 captive deer, 6 captive elk and 2 captive reindeer have been tested in New Jersey. All were negative for CWD. For more information on the New Jersey CWD surveys see the survey updates in this website.

Where is it?

Information on the current distribution of CWD in North America can be found here:

http://www.cwd-info.org/index.php/fuseaction/about.map

How is it spread?

CWD can be transmitted among adult deer and the prions have been found in the brain, eyes, spinal cord, spleen, tonsils and lymph nodes. This pattern of transmission and association of prions with lymph tissue in the mouth and intestinal tract has led to the hypothesis that the CWD agent may find its way through saliva, feces and urine onto grasses and other food. Deer eating contaminated food may contract the disease. It has also been shown that affected organs of deer dying in the wild or discarded may be a source of contamination for other deer feeding at the site. The prion is very resistant to traditional disinfectants and persists a long time in the environment. Healthy deer restored to cleaned, disinfected pens developed CWD. In Colorado, prevalence of CWD in free-ranging deer (15%) has been higher than in elk (1%). Over half the 154 deer in a captive herd in Nebraska tested positive for CWD. The rate of infection in free-ranging deer surrounding the captive herd's enclosure steadily declined with distance. The captive animals were probably the source of infection for the wild deer.

How can it be prevented or controlled?

The strategy that makes most sense is one of surveillance to detect the disease, of limiting movement of infected animals and of slaughtering known infected herds. In June 2012 the U.S. Department of Agriculture announced an interim final rule to establish a national CWD herd certification program, which could be used to declare a captive herd free of CWD. As a herd certification program is being developed in New Jersey, the most reliable protection is to prohibit the import or export of members of the deer family. This is accomplished in part under authority of the Director of the NJ Division of Fish and Wildlife through restriction of permits to possess captive deer. The ban on imports has already been taken, and policies on captive herd health surveillance focus on good record keeping, reporting of unexplained deer or elk deaths, and inspections. Active surveillance through sampling hunter-killed deer and passive surveillance through submissions of sick deer to the Division's Office of Fish and Wildlife Health and Forensics are important to monitoring the CWD threat to New Jersey.

How can the hunters help?

Hunters are asked not to shoot sick or abnormally behaving deer, but note the animal's location and report it to the Division's Office of Fish and Wildlife Health and Forensics at 908-236-2118 or a local Division field office with numbers listed in the Digest as soon as possible. Hunters can cooperate in donating the heads of their deer when asked by a Division biologist or through butcher shops. Those NJ residents returning from hunting in states with CWD in their deer and elk populations must follow the rules of those states and bone out the meat being sure to remove brain, spinal cord, and lymph nodes which may harbor the prions. The following deer parts are safe to bring back to New Jersey:

- Meat that is cut and wrapped (either commercially or privately).
- Quarters or other portions of meat to which no part of the spinal column is attached
- Meat that has been deboned
- Hides with no heads attached
- Finished taxidermy heads
- Antlers with no tissue attached
- Clean skull plates with no lymphoid or brain tissue attached
- Clean skulls with no lymphoid or brain tissue attached
- Upper canine teeth (also known as buglers, whistlers or ivories)

Skull plates, antlers or skulls from which residual brain tissue has been removed should be soaked in 30% Clorox solution for 15 minutes to destroy the prions. Deer carcasses with meat removed must be disposed of in the trash rather than discarded in fields where deer may have contact with the remains.

Hunters should also be aware of the Urine-Based Deer Lures Advisory

How can captive deer owners help?

Don't export or import deer in New Jersey until a herd certification system is approved and the Division lifts the ban on such movement. If you have a deer, elk or other member of the deer family die of natural causes - especially one which is skinny at death - ensure the head is kept cool (not frozen) and immediately notify the NJ Division of Fish and Wildlife at 908-236-2118 so arrangements can be made for CWD testing.

How can butchers and taxidermists help?

Use food waste dumpsters for disposal of waste materials from your facility. This is particularly important if you receive deer or elk from any of the states or provinces listed as having CWD in wild and/or captive deer. This will eliminate possible exposure of deer to contaminated waste, which in the case of taxidermy operations may include attractive salty tissues.

Links for chronic wasting disease, its management and related diseases:

http://www.cwd-info.org/ Information on CWD and links to state-specific information and regulations

http://www.cdc.gov/prions/cwd/index.html Centers for Disease Control and Prevention

https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/sa_alternate_livestock/sa_cervid_health/sa_cwd/ct_cwd_index U.S. Department of Agriculture – Animal and Plant health Inspection Service

http://cpw.state.co.us/learn/Pages/ResearchCWD.aspx Colorado Parks and Wildlife