

## Chronic Wasting Disease (CWD) of Elk and Deer

### What is it?

Chronic wasting disease (CWD) is a progressive, degenerative, fatal disease of the brain of free ranging or farmed cervids (elk, mule deer, white-tailed deer and moose).

CWD belongs to a group of related diseases called Transmissible Spongiform Encephalopathies (TSEs), which include Scrapie in sheep and goats, Bovine Spongiform Encephalopathy (BSE) in cattle and Creutzfeldt-Jakob Disease (CJD) in humans.

While CWD and BSE are both from the group of related diseases called TSEs, it is important to note that they are not the same disease and have differences in mode of transmission and clinical signs. Also, CWD is not known to affect humans.

TSEs are associated with the accumulation of abnormal proteins (prions) in the brain. Currently, no treatments or vaccines are available for these diseases.

Chronic wasting disease is a reportable disease under the federal *Health of Animals Act* and the provincial *Animal Health Act*.

### What are the clinical signs?

Elk and deer with CWD may not exhibit observable signs of disease for a number of years. Eventually, as

more brain tissue is affected, animals may exhibit loss of condition, excessive salivation, trouble swallowing, difficulty in judging distance, changes in behaviour and drooping ears.

Unfortunately, these signs are not specific to CWD and can occur with other diseases as well. Currently, the only way to diagnose CWD is by examining the brain and/or lymph tissues after the animal has died.

Immunohistochemistry (IHC) staining is the universally accepted "gold standard" method of confirmation, although a number of rapid tests are able to screen for the disease.

*Chronic Wasting Disease is a reportable disease under the Health of Animals Act*

### How is CWD transmitted?

The exact mechanism of transmission is unclear at this time; however, it is known that the disease can spread from one animal to another, and females can pass it to their offspring. Surveillance information from wildlife indicates that CWD is more prevalent in males than in females.

Experimental and circumstantial evidence suggests infected deer and elk probably transmit the disease through contamination of water, soil and feed by saliva, urine and/or feces. CWD seems more likely to occur where elk or deer are crowded or where they congregate at man-made feed and water stations. A heavily contaminated environment can be a source of infection.

## Are humans at risk?

There is no scientific evidence to suggest that CWD can affect humans. As a precaution, the World Health Organization recommends against allowing any meat source that may have come from a CWD-infected animal into the human food system.

## Is the disease transmissible to domestic livestock?

Scientific evidence suggests that it is unlikely that CWD can be passed to domestic cattle or bison under natural conditions. To date, research in the United States indicates cattle are not susceptible to oral exposure to CWD.

CWD has been experimentally transmitted by artificial means to mice, ferrets, mink, goats, squirrel monkeys, macaque monkeys, cats and calves.

## Where has CWD occurred?

CWD has been diagnosed in wild deer, elk or moose in multiple states in the United States and two Canadian provinces. Since 2001, CWD has been detected in wild cervids in several locations across Saskatchewan. Since 2005, CWD has been detected in Alberta's wild cervids along the Saskatchewan border.

To date, Alberta has detected chronic wasting disease (CWD) in farmed cervids on five Alberta farms. The first case (March 2002) was an elk on a farm in northern Alberta. The second case (November 2002) was a four-year-old farmed white-tailed deer (WTD) from a game farm north of Edmonton. An additional WTD from the same farm was detected during the herd de-population.

More recently, cases have been detected on three elk farms in January 2015, July 2015 and February 2016. In the January 2015 case, one additional positive elk was detected during the Canadian Food Inspection Agency investigation.

The disease has also been diagnosed in game-farmed elk and deer in South Dakota, Oklahoma, Nebraska, Kansas, Montana, Colorado, Minnesota, New York, Michigan, Wyoming, Illinois, Maryland, Missouri, New Mexico, North Dakota, Pennsylvania, Texas, Utah,

Virginia, West Virginia, Wisconsin and Saskatchewan. Please visit the [CWD Alliance \(http://cwd-info.org/\)](http://cwd-info.org/) web page for a current map and additional information.

Alberta Environment and Parks, in conjunction with hunters and landowners, monitors the occurrence and spread of CWD in wild cervids. Information regarding previous surveillance and disease control programs as well as the current status of CWD in wild cervids in Alberta is available on the [Fish and Wildlife web page \(http://aep.alberta.ca/fish-wildlife/wildlife-diseases/chronic-wasting-disease/cwd-updates/default.aspx\)](http://aep.alberta.ca/fish-wildlife/wildlife-diseases/chronic-wasting-disease/cwd-updates/default.aspx).

## What is the province's role once a case of CWD has been confirmed?

CWD is a reportable disease in Alberta under the *Animal Health Act*, but the disease is also reportable in Canada under the *Health of Animals Act* and, therefore, the lead response efforts fall under the jurisdiction of the Canadian Food Inspection Agency (CFIA).

Once a case of CWD is confirmed in a farmed cervid, the province's role is to support the CFIA in applying their control measures, which include placing the source farm under quarantine. The province also assists by providing animal movement information and priority lab analysis as well as by keeping the livestock industry and the public informed.

## What if CWD is diagnosed on a game farm?

Present federal policy is to eradicate CWD from Canada, which may involve placing affected farms under quarantine and then evaluating, euthanizing, sampling and destroying the remaining animals. Animals that have left the affected herd may also be euthanized or put under quarantine. The feasibility of an eradication approach has been under review and changes to this approach may be implemented in the future.

## When animals are destroyed, are owners compensated?

Yes, under the current eradication approach, compensation is paid by the federal government for the market value of all animals ordered destroyed under the authority of the *Health of Animals Act*. This Act also allows for payment of destruction and disposal costs.

## What policies does the province have to prevent or control further spread of CWD in Alberta?

Alberta initiated a voluntary CWD surveillance program in farmed cervids in October 1996. In August 2002, Alberta's Mandatory CWD Surveillance Program was implemented. Elk and deer farmers are required to submit the heads for CWD testing from all farmed animals over one year of age that die or are slaughtered. Products from slaughtered animals must be held at abattoirs pending CWD negative test results.

In July 2004, the Alberta Government ended a moratorium on importing elk and deer by approving a cervid import protocol that allows elk, white-tailed deer and mule deer to be imported into the province from Saskatchewan for immediate slaughter at federally inspected abattoirs.

In September 2004, the Alberta Government adopted stringent import protocols allowing elk, white-tailed deer and mule deer from anywhere in Canada and the United States to live on Alberta farms. To qualify for importation into Alberta, cervids must meet strict criteria to ensure that CWD is not imported into the province. Both of these policies were developed based on a scientific risk assessment.

As of the end of 2016, nearly 75,000 farmed cervids have been tested in Alberta since the initiation of the surveillance program in 1996. Monthly CWD testing results in Alberta are available at the [CWD Surveillance](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/cpv7958) web page ([http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/cpv7958](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/cpv7958)).

**For more information about CWD, contact your local veterinarian or consult these web pages:**

Canadian Food Inspection Agency  
website: <http://www.inspection.gc.ca/eng/1297964599443/1297965645317>

Alberta Agriculture and Forestry  
website: [agriculture.alberta.ca](http://agriculture.alberta.ca)

Alberta Environment and Parks  
website: <http://aep.alberta.ca>

The Animal and Plant Health Inspection Service (APHIS)  
website for updates on CWD in the United States:  
<https://www.aphis.usda.gov/aphis/home/>

**Or call the Alberta Ag-Info Centre**

Call toll free: 310-FARM (3276)  
Website: [agriculture.alberta.ca](http://agriculture.alberta.ca)