

## What's the Real Story Behind Chronic Wasting Disease?

(ARA) - Chronic Wasting Disease (CWD) and Mad Cow Disease (MCD) evoke heart-wrenching images of cattle, deer and elk struggling to get to their feet, reminding us that this disease can have devastating impact on its victims.

But what's the real story? What is being done to understand more about this devastating disease? Is there a link to humans?

The good news is that a group of scientists are working to understand more about CWD, which is the popular term for transmissible spongiform encephalopathy (TSE), a prion disease that affects cervids, such as deer and elk. Veterinary pathologists were the first to diagnose CWD, and today are playing a critical role on research teams working to alleviate the disease.



So, what's a prion and what does it have to do with this disease? Prions are an abnormal form of a protein produced normally by the body. Tough as nails, prions persist in the environment for long periods of time and retain their infectious capabilities. It is believed that prions may persist in the soil around the carcasses of dead animals and other locations where infected animals shed the protein in body fluids.

In fact, researchers at the University of Wisconsin-Madison School of Veterinary Medicine recently discovered that the abnormal proteins that cause chronic wasting disease (CWD) and a family of similar fatal brain disorders in animals and humans bind tightly to a common soil mineral, making them 700 times more infectious than researchers originally thought.

A critical concern in the transmission of prion diseases, including CWD, is the potential presence of prions in body fluids. Addressing this issue directly, scientists at the College of Veterinary Medicine and Biological Sciences (CVMB), Colorado State University (CSU), Fort Collins, CO, recently found infectious prions capable of transmitting CWD in saliva (by the oral route) and in blood (by transfusion). "The results help to explain the transmission of CWD among cervids and prompt caution concerning contact with body fluids in prion infections," says Terry R. Spraker, diagnostic pathologist/professor at Colorado State University and diplomate, American College of Veterinary Pathologists (ACVP).

### Risk is Small for Humans

What does that mean for humans? First, there is no evidence that chronic wasting disease (CWD) can be transmitted to humans, according to Dr. Spraker. But there is more work to do.

While a serious disease known as new variant Creutzfeldt-Jakob disease (vCJD) in humans has been tied to the eating of meat from diseased cows, a similar link between consuming game meat and human health has not been made. However, that does not mean there is zero risk of developing vCJD from eating venison, although health experts feel that the risk is very small as long as a person avoids eating the deer tissues (brain, spinal cord, spleen, lymph, eyeball and tonsils) known to concentrate the infection's agent. Prions are rarely found in muscle tissue, but because they can be found there, it is best to avoid consuming or handling meat from deer or elk in any CWD-affected area. One can further reduce the health risk by carefully processing venison according to guidelines published by the Department of Agriculture, Trade and Consumer Protection.

### CWD is Spreading

A bigger concern is the rate at which CWD seems to be spreading. In 1997, the only region in the world where prion diseases were known to occur in free-ranging animals was in northeastern Colorado and southeastern Wyoming, areas with some of the most rapidly growing cervid populations in the nation, where an epidemic of CWD had been ongoing for at least two decades. Today CWD has been found in captive and/or wild populations in over a dozen states -- Colorado, Illinois, Kansas, Minnesota, Montana, Nebraska, New Mexico, New York, Oklahoma, South Dakota, Utah, Washington, West Virginia, Wisconsin and Wyoming -- and two Canadian provinces (Alberta and Saskatchewan) and continues to march on.

While additional deer have recently tested positive for CWD in West Virginia, game commissions in other states with hoofed ruminant populations have been beefing up surveillance efforts, preventive measures, and preparedness to handle and contain CWD in the event that it is found in their area.

The U.S. Department of Agriculture (USDA) is working closely with state animal health officials to ensure a coordinated approach to CWD diagnostics, information dissemination, management, research and surveillance.

To learn more, visit [www.acvp.org](http://www.acvp.org).

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