

“No joke, there is a zombie deer epidemic.”

Zombie Deer. Does it sound like the title of a bad horror movie? Unfortunately, it's not. As of March 2018, the Centers for Disease Control issued the following alert regarding Chronic Wasting Disease (CWD); “CWD in free-ranging deer, elk and/or moose has been reported in at least 23 states in the continental United States, as well as two provinces in Canada...”¹

That's right people, CWD is worldwide! But I guess you want to know how CWD leads to zombie-like deer? CWD is a prion disease. Originally identified as “proteinaceous infectious particles” by Dr. Stanley Prusiner, prions are misfolded proteins that can interfere with the folding of normal brain proteins thereby multiplying and spreading the infection throughout the brain. These misfolded proteins are resistant to enzymatic degradation; therefore, their accumulation within neurons eventually leads to neurodegeneration (holes within the brain tissue). Neurodegeneration causes the infected deer to seek out brains instead of grass... *just kidding*, but the infected deer do behave abnormally, exhibiting elevated levels of aggression, listlessness, drooling, drastic weight loss, and perhaps worse of all, lack of fear of people! These symptoms can take more than a year to manifest in the deer, and even scarier, CWD can spread among hoofed animals not just by direct contact with infected brain or muscle tissue but also through consumption of contaminated food or water! So, the CWD infection may grow even larger than the authorities current assumptions! Already, according to the CDC up to 25% of free-ranging deer and elk may be infected, while rates among captive deer have been reported as high as 79%!

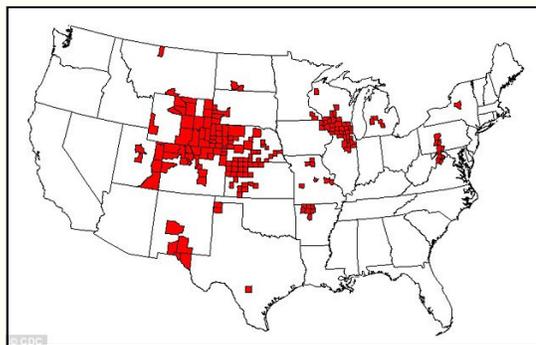


Zombie Deer ! | <http://en.goodtimes.my/wp-content/uploads/2018/02/deer-4-300x158.jpg>

Primarily the disease is spreading within the “heartland” of America and fortunately we are relatively safe from the zombie deer down here in the ATL. But is it possible that eating infected deer meat at a BBQ party this

Memorial Day, will cause you to be infected with the deadly prion disease? As of February 2018, the answer is a cautious no. According to a systematic review of over 20 empirical studies, Waddell, et al., found no documented cases of CWD transmission to humans.² However... two controlled studies using squirrel monkeys, and several others using *in vitro* models did provide evidence for CWD prion proteins infecting primate cells. The researchers concluded that if CWD were to infect humans it could have an incubation period of decades. So folks, it's possible that we are on the verge of witnessing Corporeal Walking Dead, a CWD epidemic in humans which would undoubtedly be more exciting than seasons 7 & 8 of the Walking Dead.

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Estimated spread of CWD throughout the US. | <https://www.cdc.gov/prions/cwd/occurrence.html>

References

- (1) Centers for Disease Control, 2018, <https://www.cdc.gov/prions/cwd/occurrence.html>
- (2) Current evidence on transmissibility of chronic wasting disease prions to humans - a systematic review. L Waddell *et al*, *Transbound. Emerg. Dis.*, 2018, **65**, 37