Center for Infectious Disease Research and Policy
University of Minnesota

Chronic Wasting Disease Response, Research and Policy Program Activity

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Testimony for the Minnesota House of Representatives
Environment and Natural Resources Finance Division
Hearing

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Chronic Wasting Disease in Cervids: Implications for Prion Transmission to Humans and Other Animal Species

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ABSTRACT

Chronic wasting disease (CWD) is a prion-related transmissible spongiform encephalopathy of cervids, including deer, elk, reindeer, sika deer, and moose. CWD has been confirmed in at least 26 U.S. states, three Canadian provinces, South Korea, Finland, Norway, and Sweden, with a notable increase in the past 5 years. The continued geographic spread of this disease increases the frequency of exposure to CWD prions among cervids, humans, and other animal species. Since CWD is now an established wildlife disease in North America, proactive steps, where possible, should be taken to limit transmission of CWD among animals and reduce the potential for human exposure.

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Chronic Wasting Disease Resource Center

CWD Response, Research, and Policy Program

The Chronic Wasting Disease (CWD) Response, Research, and Policy Program addresses the transmission of CWD in cervids and its potential for spread to humans and other animal species. The program supports current and reliable information on CWD for the public, including hunters; the medical, veterinary and public health communities; wildlife scientists and managers; and public policymakers.

About CIDRAP's CWD Program | About CWD

Expert Advisory Group

The program includes 57 national and international world-renowned and distinguished leaders in public health, medicine, science, wildlife, and agriculture.

CWD Advisory Group

Minnesota finds CWD in wild deer in just 1 area; new Wisconsin county affected

Jim Wappes | Editorial Director | CIDRAP News | Jan 23, 2020

The 27 detections from the 2019 hunting season were confined to southeastern Minnesota.

CWD CONTENT

- CWD Home
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CIDRAP CWD Program Expert Advisory Group

- CIDRAP's CWD Program receives critical input and direction from 57 national and international, world-renowned, and distinguished leaders in public health, medicine, science, wildlife, and agriculture.
- The CIDRAP CWD Program Expert Advisory Group:
  - Represents six countries (Canada, France, England, the Netherlands, Norway, and the United States).
  - Includes 34 PhDs, 12 DVMs, eight MDs, 12 wildlife managers, and eight leaders from conservation and hunting organizations.
  - Features internationally renowned experts on bovine spongiform encephalopathy (BSE):
    - Sir Roy Anderson, PhD, FRS, FMedSci
    - John Collinge, MD, FRCP, FRS

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Ongoing Activities: Science and Education

- CIDRAP's CWD Resource Center features current, comprehensive, and science-based information on CWD that is vetted by Expert Advisory Group members.

- CWD Resource Center content includes detailed FAQs, up-to-date CWD news, maps, summarized federal legislative initiatives on the issue, and extensive links to CWD content on other websites.

Frequently Asked Questions (FAQs)

Many questions about CWD remain unanswered because of incomplete scientific information, and myriad policy issues yet remain unresolved. We summarize below what we know and don't know about CWD by addressing 20 frequently asked questions (FAQs). Our goal is to aid scientists, wildlife professionals, policy makers, journalists, and hunters. We'll update the FAQs as new information becomes available.

Chronic Wasting Disease Frequently Asked Questions (as of January 28, 2020):

Ongoing Activities: CWD Strains

- Prion strains are characterized by slight differences in their shape.
- Changes in shape can take place when the prion passes through hosts.
- Unique CWD strains have emerged as disease transmission continues among farmed and wild cervid populations.
- Novel CWD strains can have unique host ranges.
- At least six unique CWD strains have now been identified.

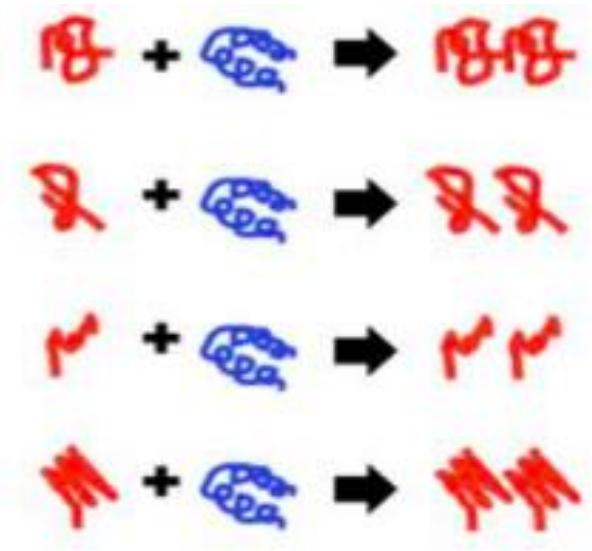

Image from Norwegian Vet Institute

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Research Letter

Chronic Wasting Disease Prion Strain Emergence and Host Range Expansion

Allen Herbst[1], Camilo Duque Velásquez[1], Elizabeth Triscott, Judd M. Aiken, and Debbie McKenzie
Author affiliations: University of Alberta, Edmonton, Alberta, Canada

Cite This Article

Abstract

Human and mouse prion proteins share a structural motif that regulates resistance to common chronic wasting disease (CWD) prion strains. Successful transmission of an emergent strain of CWD prion, $H95^{+}$, into mice resulted in infection. Thus, emergent CWD prion strains may have higher zoonotic potential than common strains.

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Chronic Wasting Disease Resource Center

December 11, 2019 Webinar:
Chronic Wasting Disease (CWD) Strains

Presenter:
Debbie McKenzie, PhD

Associate Professor,
Department of Biological Sciences and Centre for Prions and Protein Folding Disease, University of Alberta

Moderator:
Michael Osterholm, PhD, MPH

Regents Professor, McKnight Presidential Endowed Chair in Public Health, Director,
Center for Infectious Disease Research and Policy, University of Minnesota

cidrap.umn.edu/cwd

Ongoing Activities: Science and Education

- Visitors have access to current information directly from leading experts in the field through an ongoing series of webinars and podcasts.
  - Upcoming podcast on CWD background information for legislators and legislative staff featuring:
    - MN Representative Rick Hansen
    - WA Representative Ed Orcutt
    - Russ Mason
    - Nick Pinizzotto

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The CWD Pod

CIDRAP

Science

Listen on Apple Podcasts ↗

2 episodes

The CWD Pod focuses on Chronic Wasting Disease (CWD), a prion disease that affects several cervid species: deer, elk, reindeer, sika deer, and moose. Listen for conversations with national and international experts and experienced profess more

NOV 25, 2019

Russ Mason

Listen to our discussion with Dr. Russ Mason, current Executive in Residence with the Michigan Department of Natural Resources and Adjunct Professor with Michigan State University's College of Agriculture and Natural Resources, regarding some of the numerous challenges that CWD prese

▶ PLAY

NOV 25, 2019

Nick Pinizzotto

Listen to our discussion between the director of CIDRAP, Dr. Michael Osterholm, and Nick Pinizzotto, President and CEO of the National Deer Alliance, regarding the current status of federal leadership on CWD and what contributions the National Deer Alliance is making.

▶ PLAY

Ongoing Activities: Management of Infected Cervid Carcasses

- Prions can persist in the environment for years to decades, making infected carcasses that are improperly disposed of on the landscape a risk for transmission and spread.

- Concern has grown regarding the safety of prions in a landfill environment among waste management agencies, landfill operators, and the general public.

Ongoing Activities: Management of Infected Cervid Carcasses (cont'd)

- CIDRAP has formed a CWD carcass management work group to proactively address this issue and provide a comprehensive document that will be a resource to stakeholders.
  - Members of the group include world experts in landfill engineering, prion biology, human health, and wildlife management.
  - Includes organizational representatives from the Centers for Disease Control and Prevention, the National Prion Disease Pathology Surveillance Center, four academic institutions, and three state and provincial agencies.

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Conclusions

- CWD remains a critical wildlife management challenge that is spreading both by the movement of infected wild and captive cervids.
- The Alliance for Public Wildlife estimated that 7,000-15,000 CWD-infected cervids were consumed in 2017.
- The newly emerging CWD prion strains represent a new consideration for the risk of interspecies transmission.
- Our work is addressing the public health concern with the potential transmission of CWD prions to humans.

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