# Bovine Spongiform Encephalopathy (BSE)

## Summary Guidance for Veterinarians

<table>
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<th>Agent</th>
<th>Self replicating prion</th>
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| **Susceptible species** | • Primarily affects cattle  
• Can also affect humans, other ruminants, pigs, cats, mink, mice, marmosets |
| **Occurrence in BC and the world** | • Most cases have been detected in the United Kingdom  
• 19 cases have been reported in Canada to-date, since the CFIA surveillance program began in 2003  
  • 4 cases of BSE in cattle have been diagnosed in BC: 2006 (1), 2007 (1) and 2008 (2).  
• No reported human cases of vCJD in BC  
  ○ There have been 2 reported cases in Canada (2002 and 2011), both attributed to exposure outside Canada |
| **Transmission** | • Ingestion of prion-contaminated tissues. No evidence of horizontal transmission  
  • Most cattle become infected by eating contaminated feed in the first year of life  
  • Atypical BSE (caused by H and L strains) believed to develop spontaneously |
| **Diagnosis** | **Clinical**  
Incubation period: 2-8 years (average 5 years)  
• Behavioral abnormalities: nervousness, aggression, teeth grinding, hesitations at barriers, increased sensitivity to stimuli  
• Physical abnormalities: gait abnormalities, ataxia, weight loss  
• Recumbency, coma and death follow weeks to months after onset of symptoms.  

**Laboratory**  
Differential diagnoses: hypomagnesemia, rabies, nervous acetonemia, lead poisoning, listeriosis, polioencephalomalacia, tremorogenic toxins  
• There is no live animal test for BSE. Rapid tests are available for screening.  
• Confirmation with immunohistochemistry (IHC) or Scrapie Associated Fibril (SAF) immunoblot on brain tissue |
| **Prevention and control** | • Import restrictions and ban on specified risk material from all animal feeds, pet foods and fertilizers  
• CFIA BSE surveillance program samples cattle >30 months of age, that are dead, down, dying or with clinical signs |
| **Zoonotic implications** | • Disease in humans called variant Creutzfeldt-Jakob disease (vCJD), caused by eating beef contaminated with BSE  
• CFIA has measures in place to eliminate the risk of contaminated beef entering the foodchain |
| **Reporting** | • BSE is a reportable disease to the Chief Veterinary Officer (CVO) in BC  
  • All suspect or confirmed cases should be reported within 24 hours (604-556-3013)  
• Veterinarians may be contacted by public health authorities for follow-up  
• BSE is a reportable disease to the CFIA  
  • Veterinarians must immediately report suspect or confirmed cases of BSE to the CFIA district veterinarian |