

Surveillance for Bovine Spongiform Encephalopathy

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In 2003 bovine spongiform encephalopathy (BSE) was diagnosed in two cows in North America; one dairy breed, one beef. These are the first native-born cattle diagnosed with BSE in North America. It is unlikely that a BSE outbreak of any magnitude will be observed because of earlier actions taken by the United States and Canada to prevent BSE from being transmitted to cattle in contaminated feedstuffs. However, it remains extremely important that veterinarians and livestock producers be vigilant for new cases of BSE.

Veterinarians should consider BSE in their list of diagnostic differentials when cattle exhibit signs of behavioral changes, ataxia, or recumbency. Clinical signs include changes in temperament (apprehension, nervousness, unwillingness to move through doorways, belligerence), drooling, itching of the head, fine muscular tremors, moaning, rapid respiratory rate, slow heart rate, incoordination, abnormal postures, abnormal gait, decreased milk production, loss of body condition despite a normal appetite, and death. The incubation period for BSE ranges from 2 to 8 years and the health of affected animals typically deteriorates over a period of 2 weeks to 6 months. Most cattle affected are between 3 and 6 years old.

BSE is reportable as a foreign animal disease. If you suspect that an animal may have BSE, contact the USDA/APHIS/VS office (in Nebraska call 402 434-2300) or the Nebraska Department of Agriculture, Bureau of Animal Industry (402 471-2351). The diagnosis is made by microscopic examination of immunohistochemistry-stained brain tissue collected at post-mortem. The tissue required is from the obex at the base of the brain-stem and underneath the cerebellum (*Figure 1*). It should be fixed in formalin.

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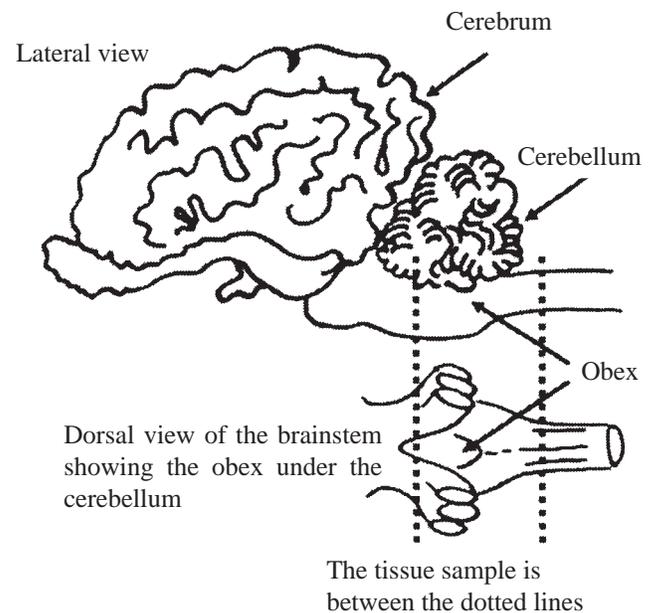


Figure 1. The obex is the portion of the brainstem most useful for diagnosing BSE. It is located under the cerebellum and just cranial to the spinal cord.

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