

FAQ

Atypical Bovine Spongiform Encephalopathy (BSE)



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What is atypical BSE?

In addition to classical BSE, which belongs to the transmissible spongiform encephalopathies (TSE) and causes fatal disease characterized by sponge-like changes in the brain of cattle, cases of atypical BSE are seen. While classical BSE is caused by feeding of insufficiently heated ruminant fats and proteins containing the pathogenic prion protein to cattle, rarely spontaneous cases of atypical BSE are seen in older animals.

There are two types (H and L) of atypical BSE, which differ from classical BSE with regard to their biological properties and the biochemical characteristics of the pathogenic prion protein. So far, cases have only been observed in animals aged eight years or older.

In the H-type the molecular mass of degradation products of the prion protein is slightly higher than in classical BSE, thus the designation “H” for “high”, while in contrast the L-type is characterized by lower molecular masses (“L” for “low”).

Where does atypical BSE come from?

The worldwide distribution of atypical BSE cases, even in countries where so far no cases of classical BSE have been reported, and the fact that the disease only occurs in older animals support the assumption that this extremely rare disease develops spontaneously. This is similar to the spontaneously occurring cases of Creutzfeldt-Jakob disease in humans, which is also caused by prions. Therefore, it must be expected that single cases of atypical BSE in cattle will continue to occur in the future, which are not associated with feeding of infectious animal products.

Is atypical BSE infectious?

Although it is assumed that atypical BSE occurs spontaneously, the disease can be transmitted, if infected animals and thus the causative agents are introduced into the feed or food chain. Feeding of insufficiently heated carcass meal derived from an animal with spontaneous atypical BSE is a possible explanation for the emergence of classical BSE. This must be kept in mind for future revisions of the BSE control measures.

In which countries has atypical BSE occurred so far?

So far, slightly more than 90 cases of two different types (H- and L-type) of atypical BSE have been detected worldwide. In addition to countries of the European Union, the USA, Canada and Japan have been affected. Both types have mainly been diagnosed in animals aged 8 years or older.

In Germany, atypical BSE so far has been detected in 4 animals. H-type BSE was observed in 2004 in a 13-year-old and in an 11-year-old beef cattle. The two L-type cases were reported in 2002 in a 15-year-old beef cattle and in 2014 in a 10-year-old beef cattle. Furthermore, in 2012 an H-type case was reported in an animal that had been born in Germany and exported to Switzerland.

Which animals are tested for BSE?

Since July 2013, healthy slaughtered cattle aged 8 years or older must be tested for BSE in Germany, sick or injured slaughtered cattle or cattle that died on the holding must be tested as of the age of 4 years.