

iMIS Food - Biological Hazards - Prions Table

Name	Morphology	Origin	Food Products	Health Effects	Regulation (EU)	Prevention	Inactivation	Comments
Bovine Spongiform Encephalopathy (BSE)	Misfolded prion protein (PrPSc)	Classical: Infectious via contaminated feed (MBM). Atypical: Arises spontaneously.	Beef and cattle. Specified Risk Materials (SRM) from infected cattle (e.g., brain, spinal cord).	Humans: Creutzfeldt-Jakob disease (vCJD) - Fatal. Animals: Fatal neurodegeneration.	• Reg. (EC) No 999/2001 (TSE Regulation): Mandates feed ban and SRM removal.	• Feed ban enforcement. • SRM removal. • Surveillance and testing. • Removal of positive animals. • Import controls.	Extremely Resistant. Ineffective: Cooking, pasteurization, irradiation, UV. Effective: Incineration, harsh chemicals.	Classical BSE is zoonotic. Long incubation period.
Scrapie (Classical & atypical/Nor98)	Misfolded prion protein (PrPSc)	Classical: Infectious (environment, birth fluids). Atypical: Arises spontaneously.	Sheep and goat meat and offal. Specified Risk Materials (SRM) from infected animals (e.g., brain, spleen).	Humans: Not zoonotic. Animals: Fatal neurodegeneration.	• Reg. (EC) No 999/2001 (TSE Regulation): Mandates surveillance and SRM removal.	• Feed ban enforcement. • SRM removal. • Surveillance and testing. • Removal of positive animals. • Import controls.	Extremely resistant. Ineffective: Cooking, pasteurization, irradiation, UV. Effective: Incineration, harsh chemicals.	Endemic in many regions. Long incubation.
Chronic Wasting Disease (CWD)	Misfolded prion protein (PrPSc)	Infectious transmission among cervids (deer, elk etc.) via contact and environment.	Meat and offal from cervids (venison). Specified Risk Materials (SRM) from infected animals (e.g., brain, lymph nodes).	Humans: Zoonotic potential uncertain. Advice against consuming CWD-positive animals. Animals: Fatal neurodegeneration.	• Reg. (EC) No 999/2001 (TSE Regulation): Mandates surveillance and control measures.	• Surveillance and testing. • Removal of positive animals. • Avoiding consumption of positive animals. • Proper carcass disposal.	Extremely resistant. Ineffective: Cooking, pasteurization, irradiation, UV. Effective: Incineration, harsh chemicals.	Spreading in North America & Europe. Prions persist in environment. Zoonotic risk under research.