

Mad Cow Disease Factsheet

General:

- Mad Cow disease, also known as bovine spongiform encephalopathy (BSE), is a fatal, degenerative disease that causes tiny sponge-like holes in the brain. The disease belongs to a family of neurological disorders called transmissible spongiform encephalopathies (TSE's) Other TSE's include scrapie in sheep and goats, chronic wasting disease in deer and elk, and Creutzfeldt-Jakob disease (CJD) in humans.
- The incubation period for mad cow disease ranges from 2 to 8 years.¹
- Mad cow disease was first diagnosed in Great Britain in 1986. As of February 2, 2004, 188,233 cases of BSE-infected cattle have been confirmed (183,616 cases in the UK and 4,617 in the rest of the world).² (Updated totals are available from the World Organization for Animal Health at http://www.oie.int/eng/info/en_esb.htm.)
- Native-born cattle infected with BSE have been found in:³
 - Austria
 - Belgium
 - Canada
 - Czech Republic
 - Denmark
 - Finland
 - France
 - Germany
 - Greece
 - Ireland
 - Israel
 - Italy
 - Japan
 - Luxembourg
 - Liechtenstein
 - The Netherlands
 - Northern Ireland
 - Poland
 - Portugal
 - Slovakia
 - Slovenia
 - Spain
 - Switzerland
 - The United Kingdom

¹ United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS). "Bovine Spongiform Encephalopathy (BSE)." <http://www.aphis.usda.gov/lpa/issues/bse/bse-overview.html>

² World Organization for Animal Health [Office International Des Epizooties (OIE)]. "Bovine Spongiform Encephalopathy (BSE)." February 2004. http://www.oie.int/eng/info/en_esb.htm

³ United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS). "Bovine Spongiform Encephalopathy (BSE)." <http://www.aphis.usda.gov/lpa/issues/bse/bse-overview.html>

- In a report released on February 4, 2004, an international panel of expert scientists appointed by the USDA stated:
 - it is probable that other [BSE] infected animals have been imported from Canada and possibly also from Europe. These animals have not been detected and therefore infective material has likely been rendered, fed to cattle, and amplified within the cattle population, so that cattle in the USA have also been indigenously infected.⁴
- In 2003, the US imported approximately 1.7 million live cattle from Canada and almost 1 million from Mexico.⁵

Human Risk:

- Evidence suggests that consumption of cattle infected with BSE has caused humans to develop the human form of mad cow disease, variant Creutzfeldt-Jakob Disease (vCJD).⁶ This is a degenerative neurological disease for which no cure exists.
- As of December 1, 2003, 153 cases of vCJD have been reported worldwide.⁷ As of February 2, 2004, 139 people have died from vCJD.⁸ (The UK Department of Health posts monthly updates of its CJD statistics at http://www.doh.gov.uk/cjd/cjd_stat.htm.)
 - 143 cases of vCJD were reported in UK, 6 in France, 1 in Ireland, 1 in Italy, and 1 in the U.S.⁹
- The incubation period for vCJD in humans is unknown. The US General Accounting Office suggested that the incubation period might be up to 30 years.¹⁰

The Science:

- Most scientists believe that mad cow disease and other TSE's are caused by an abnormal prion.¹¹ Prions (pronounced PREE-ons) are proteins that exist naturally in

⁴ United States Department of Agriculture's Foreign Animal and Poultry Disease Advisory Committee's Subcommittee on The United States' Response to the Detection of a Case of Bovine Spongiform Encephalopathy. "Report on Measures Relating to Bovine Spongiform Encephalopathy (BSE) in the United States." USDA APHIS. February 4, 2004.

http://www.aphis.usda.gov/lpa/issues/bse/US_BSE_Report.pdf p. 3

⁵ Schlosser, Eric. "The Cow Jumped over the USDA." *The New York Times*, January 2, 2004.

⁶ Brown, Paul, Robert G. Will, Raymond Bradley, David M. Asher, and Linda Detwiler. "Bovine Spongiform Encephalopathy and Variant Creutzfeldt-Jakob Disease: Background, Evolution, and Current Concerns." *Emerging Infectious Diseases*. Vol. 7 (1), January-February 2001. p 6-16.

<http://www.cdc.gov/ncidod/EID/vol7no1/brown.htm>

⁷ United States Center For Disease Control (CDC). "Fact Sheet: New Variant Creutzfeldt-Jakob Disease." CDC. January 20, 2004. http://www.cdc.gov/ncidod/diseases/cjd/cjd_fact_sheet.htm

⁸ The United Kingdom Department of Health. "Monthly Creutzfeldt-Jakob Disease Statistics." February 2004. <http://www.doh.gov.uk/cjd/stats/feb04.htm>

⁹ United States Center For Disease Control (CDC). "Fact Sheet: New Variant Creutzfeldt-Jakob Disease." CDC. January 20, 2004. http://www.cdc.gov/ncidod/diseases/cjd/cjd_fact_sheet.htm

¹⁰ United States General Accounting Office (GAO). "Mad Cow Disease: Improvements in the Animal Feed Ban and Other Regulatory Areas Would Strengthen U.S. Prevention Efforts." US GAO. 2002. <http://www.gao.gov/new.items/d02183.pdf>

humans and other mammals. Normal prions (PrP^C or PrP) are harmless. Abnormal prions (PrP^{Sc}) are believed to be responsible for causing mad cow disease, vCJD, and other TSE's.

- Abnormal prions tend to accumulate in the brain, spinal column, eyes and other nervous system tissue of cows.¹²
- Prions cannot be destroyed by conventional heat, sterilization, chemical disinfection or irradiation.¹³
- Studies conducted at the UK Veterinary Laboratories Agency indicate that cattle can be orally infected with BSE by ingesting as little as 10 milligrams of infected brain tissue.¹⁴ 10 mg is approximately the weight of half of a grain of uncooked white rice.

Advanced Meat Recovery and Slaughter:

- Meat processed using advanced meat recovery (AMR) techniques has been known to contain the high-risk spinal and nervous tissue thought to transmit mad cow disease and vCJD. In 2003, a USDA study determined that 35% of meat samples collected from U.S. AMR processing plants were contaminated with unacceptable nervous tissue.¹⁵
- According to the American Meat Institute, an estimated 45 million pounds of AMR beef is produced every year in the US.¹⁶
- AMR meat is commonly found in lower quality meats like ground beef, sausages and hot dogs and is served to children nationwide in the school lunch program. It's also found in meat used by fast food chains.¹⁷
- An international panel of expert scientists appointed by the USDA recommended that the government ban AMR processing of skulls and vertebral columns of all cattle over 30 months of age.¹⁸

¹¹ United States General Accounting Office (GAO). "Mad Cow Disease: Improvements in the Animal Feed Ban and Other Regulatory Areas Would Strengthen U.S. Prevention Efforts." US GAO. 2002. <http://www.gao.gov/new.items/d02183.pdf>

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¹³ United States General Accounting Office (GAO). "Mad Cow Disease: Improvements in the Animal Feed Ban and Other Regulatory Areas Would Strengthen U.S. Prevention Efforts." US GAO. 2002. <http://www.gao.gov/new.items/d02183.pdf>

¹⁴ United States Department of Agriculture's Foreign Animal and Poultry Disease Advisory Committee's Subcommittee on the United States' Response to the Detection of a Case of Bovine Spongiform Encephalopathy. "Report on Measures Relating to Bovine Spongiform Encephalopathy (BSE) in the United States." USDA APHIS. February 4, 2004. http://www.aphis.usda.gov/lpa/issues/bse/US_BSE_Report.pdf

¹⁵ United States Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS). "Analysis of 2002 FSIS Bovine AMR Products Survey Results." USDA. February 2003. <http://www.fsis.usda.gov/oa/topics/AMRAnalysis.pdf>

¹⁶ American Meat Institute. "AMI Factsheet: Meat Derived by Advanced Meat Recovery." 2003. http://www.meatami.com/content/presscenter/factsheets_Infokits/FactSheetAdvancedMeatRecovery.pdf

¹⁷ Friends of the Earth. "Mad Cow Disease: Are Americans At Risk?" <http://www.foe.org/factoryfarms/madcowfactsheet.pdf>

¹⁸ United States Department of Agriculture's Foreign Animal and Poultry Disease Advisory Committee's Subcommittee on the United States' Response to the Detection of a Case of Bovine Spongiform

BSE Testing:

- Approximately 35 million cows are slaughtered in the US each year. In 2003, only 20,543 cows were tested for BSE.¹⁹ This is less than 1% of all slaughtered cows.
- In the wake of the December 2003 discovery of mad cow in the United States, the government is proposing to increase testing to 40,000 animals a year, still less than 1% of the cattle annually slaughtered in this country.
- Japan tests every cow slaughtered for human consumption.²⁰
- In the European Union, all cattle older than 30 months are tested before entering the food chain.²¹ In Europe, about 200,000 animals are tested each day.²²
- France tests more cows in one week than the US tests in a decade.²³
- On February 4, 2004, an international panel of expert scientists appointed by the USDA recommended mandatory BSE testing for all cattle older than 30 months in the following high risk BSE categories: cattle exhibiting BSE symptoms, cows that die on farms or during transport, and all downer cows.²⁴

Encephalopathy. “Report on Measures Relating to Bovine Spongiform Encephalopathy (BSE) in the United States.” USDA APHIS. February 4, 2004.

http://www.aphis.usda.gov/lpa/issues/bse/US_BSE_Report.pdf

¹⁹ American Plant and Animal Health and Information Service (APHIS). “BSE Surveillance: Yearly Totals May 1990 - FY 2003.” USDA APHIS. 2004.

<http://www.aphis.usda.gov/lpa/issues/bse/surveillance/figure2f.html>

²⁰ The Ministry of Foreign Affairs of Japan. “Countermeasures of Bovine Spongiform Encephalopathy (BSE).” November 2001. <http://www.mofa.go.jp/policy/economy/fishery/bse0111.html>

²¹ Killman, Scott, Steve Stecklow, and Laurie McGinley. “Mad-Cow Case In U.S. Shows Gaps in System Finding Raises Questions About Rural Economy, Safety of American Beef.” *The Wall Street Journal*, December 26, 2003.

²² Parker-Pope, Tara. “Why Blaming Canada Isn’t Enough: U.S. Mad Cow Inspections Lack Teeth.” *The Wall Street Journal*, December 30, 2003.

²³ Knight, Andrew. “U.S. Slow to Act on Mad Cow Tests.” *Toronto Star*, January 6, 2004.

www.organicconsumers.org/madcow/knight1604.cfm

²⁴ United States Department of Agriculture’s Foreign Animal and Poultry Disease Advisory Committee’s Subcommittee on the United States’ Response to the Detection of a Case of Bovine Spongiform Encephalopathy. “Report on Measures Relating to Bovine Spongiform Encephalopathy (BSE) in the United States.” USDA APHIS. February 4, 2004.

http://www.aphis.usda.gov/lpa/issues/bse/US_BSE_Report.pdf