



Mad cow disease spreads to people extremely rarely

With all the media furor about the cow in Washington state "presumptively diagnosed" with mad cow disease, or bovine spongiform encephalopathy (BSE), most people are left with more questions than answers. Life is definitely not risk-free, but it is important to put risks that you can control into a reasonable perspective.

Question: What causes BSE?

Answer: The most widely accepted theory is that the disease is caused by a small protein called a prion. The controversial concept that a small protein, rather than a bacteria or virus, could transmit a disease has kept the scientific debate going for over 30 years.

Q: What is a prion?

A: A prion is a tiny protein typically found in the brain cells of animals (including humans). At this time these prions have no known function and do not cause disease. The prions found in BSE cows are a different form of prion and cause disease conditions that adversely affect the brain and other major components of the nervous system.

Q: Are prions destroyed by cooking?

A: No. Although heat can change the structure of most proteins and prevent adverse effects, this does not appear to happen with prions.

Q: What is the risk of being infected by the BSE prion?

A: In only 163 cases worldwide are humans known to have been infected by the BSE prion. By developing an understanding of the facts and of the small possibility of being affected, each person must assess their tolerance for risk.

Statistically, the risk of other deadly food-borne illnesses is much greater. The Centers for Disease Control estimate that about 5,000 Americans die each year from food-borne illness even though the food supply in the United States is one of the safest in the world.

We tend to think of animal foods as the most risky, but according to the New York Times, almost as many cases of food poisoning were caused by produce as by beef, poultry, fish and eggs combined during the year 2000. Serious outbreaks of

hepatitis A have been traced to foods such as scallions and strawberries. Salmonella has been found on cantaloupes.

Q: Should you stop eating beef?

A: Obviously, if you stop eating beef, your BSE risk will be minimized. But taking other precautions can lower your risk while allowing you to keep eating beef. Because the BSE prion has been found only in the brain and spinal cord of diseased cattle, these are the most risky parts to eat, according to Brent Buckley, beef specialist in the College of Tropical Agriculture and Human Resources at the University of Hawaii. Limiting consumption of oxtail soup (commonly made from cow's tail) reduces risk, as the spinal cord extends into the tail.

The best ways to minimize risk of food-borne illnesses include washing your hands well before and after handling food, washing fruits and vegetables, cooking meats thoroughly and cleaning knives and cutting boards thoroughly after food preparation.

Alan Titchenal, Ph.D, CNS and Joannie Dobbs, Ph.D, CNS
are nutritionists in the Department of Human Nutrition, Food and Animal Sciences,
College of Tropical Agriculture and Human Resources, UH-Manoa.
Dr. Dobbs also works with the University Health Service.