

U.S. Continues to Violate World Health Organization Guidelines for BSE

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The United States is violating all four concrete recommendations laid down by the World Health Organization to prevent the spread of BSE (Bovine Spongiform Encephalopathy), or Mad Cow disease, into the human population. Inadequate testing of the brains of U.S. cattle is likely missing hundreds of cases of BSE and inadequate testing of the brains of human dementia victims is likely missing hundreds of cases of the human spongiform encephalopathy, sporadic Creutzfeldt Jakob disease. New research suggests that some of these cases of the sporadic form of CJD may be caused by eating BSE-infected meat. Until we follow the guidelines set forth by the World Health Organization and the Food and Agriculture Organization of the United Nations and enact science-based safeguards proven to work in Europe—such as a total ban on the feeding of slaughterhouse waste, blood and excrement to farmed animals, and dramatically increased surveillance for both these diseases—the safety of the American food supply will remain in question.



The Organic Consumers Association is a grassroots non-profit public interest organization which deals with crucial issues of food safety, industrial agriculture, genetic engineering, corporate accountability, and environmental sustainability. Since 1998, OCA and its nationwide network of 500,000 members have played a major role in safeguarding organic standards, promoting sustainable agriculture and Fair Trade.

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**For updates on this report, and for additional information, visit:
<http://www.organicconsumers.org/madcow.htm>**

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Introduction

The U.S. Secretary of Agriculture describes government and industry efforts to safeguard the American public from Mad Cow disease as "diligent,"¹ "vigilant," and "strong."² The National Cattlemen's Beef Association adds "swift," "decisive," and "aggressive."³ However, the world's authority on these diseases disagrees.

Dr. Stanley Prusiner won the Nobel Prize in Medicine for his discovery of prions, the infectious agents thought to cause bovine spongiform encephalopathy (BSE), or Mad Cow disease. The word Dr. Prusiner uses to describe the efforts of the U.S. government and the cattle industry is "terrible."⁴ What are these "stringent protective measures"⁵ that the Cattlemen's Association is talking about, and how do they compare to global standards and internationally recognized guidelines?

In 1996, in response to the revelation that young people in Britain were dying from variant Creutzfeldt Jakob disease (vCJD), the human equivalent of Mad Cow disease, the World Health Organization (WHO) issued seven "Recommendations." Numbers 5-7 were observations and/or recommendations for further research. The first four recommendations, however, were concrete proscriptions to reduce the likelihood of Mad Cow disease spreading to human populations.⁶ To this day, the United States government continues to violate each and every one of these four guidelines.

WHO Recommendation #1: Stop Feeding Infected Animals to Other Animals

The number one recommendation of the World Health Organization was that no "part or product" of any animal showing signs of a transmissible spongiform encephalopathy (TSE), or Mad Cow-like disease, should be fed to any animal. "All countries," the guideline reads, "must ensure the slaughter and safe disposal of TSE-affected animals so that TSE infectivity cannot enter any food chain."⁷ Yet, in the U.S., it remains legal to feed deer and elk known to be infected with a transmissible spongiform encephalopathy called chronic wasting disease--and to feed downer cows untested for Mad Cow disease--to livestock such as pigs and chickens.⁸

Although science has yet to investigate whether pigs and chickens are susceptible to "mad deer" prions, there is a concern that even if these animals don't develop clinical symptoms of the disease, they could become so-called "silent carriers." Dr. Richard Race is a Senior Investigator with the National Institutes of Health.⁹ In 2001, he published a landmark paper showing that even species thought to be resistant to particular strains of prions could invisibly harbor the disease and pass it on to other animals.¹⁰ He also found that these deadly prions were somehow able to adapt to the new species, becoming even more lethal and replicating faster and faster.¹¹

Dateline NBC quoted D. Carleton Gajdusek, the first to be awarded a Nobel Prize in Medicine for his work on prion diseases,¹² as saying, "it's got to be in the pigs as well as the cattle. It's got to be passing through the chickens."¹³ Dr. Paul Brown, medical director for the U.S. Public Health Service, believes that pigs and poultry could indeed be harboring Mad Cow disease and passing it on to humans, adding that pigs are especially sensitive to the disease. "It's speculation," he says, "but I am perfectly serious."¹⁴

At a 2002 symposium on chronic wasting disease, Dr. Race expressed concern that U.S. cattle could be invisibly harboring the chronic wasting disease seen in wildlife and passing it on to humans.¹⁵ The reason Dr. Race is so concerned is because chronic wasting disease seems unique in that it's the only prion disease thought to be spread by casual contact¹⁶ through exposure to, or exchange of, bodily fluids such as saliva.¹⁷ And the best available research suggests that CWD prions can infect humans as well, perhaps even as readily as Mad Cow prions.¹⁸

Dr. Race wonders if people could also become silent carriers. And, "If these people are subclinical carriers," Race asked, "do they represent a threat to other people?"¹⁹ All transmissible spongiform encephalopathies are invariably fatal.²⁰ Consumer advocates argue that these prions should not be allowed to enter the food chain.²¹

In May 2003, the Food and Drug Administration finally drafted proposed voluntary "suggestions" for the rendering industry, recommending that deer and elk infected with chronic wasting disease, or at high risk for the disease, be excluded from animal feed.²² However, even if this proposal were enacted, it would represent only non-binding, non-enforceable "guidance" recommendations for the industry.

The FDA made these same kinds of "guidance" recommendations to pharmaceutical companies over a decade ago, discouraging the use of bovine-derived materials from countries with Mad Cow disease in manufacturing their vaccines,²³ only to learn 7 years later that major pharmaceutical manufacturers simply ignored the recommendations.²⁴

Europe's Scientific Steering Committee met in 2003 and agreed that the United States should comply with the World Health Organization guidelines and ban the feeding of animals infected with chronic wasting disease to other animals.²⁵ The United States seems to be the only country that still legally allows prion infected animals to be fed to other animals, including to those animals destined for the dinner plate.

WHO Recommendation #2: All Countries Must Establish Adequate Testing & Surveillance

The World Health Organization's second guideline was for all countries to establish adequate testing and surveillance for Mad Cow disease according to the standards set by the Office International des Epizooties (OIE, the World Animal Health Organization).²⁶ The beef industry and the USDA claim that the level of U.S. testing "far exceeds" these international testing standards.²⁷

If one goes to the USDA website and clicks on "for the latest info on BSE Surveillance," for example, one can read that "OIE recommends a surveillance level of 433 samples per year."²⁸ Although the USDA may be fraudulently inflating their testing figures,²⁹ in their 14-year testing history the USDA claims to have tested 57,000 cattle for the disease, seemingly surpassing the OIE recommendation.³⁰ But if one reads the actual recommendations,³¹ one can see that the USDA isn't telling the whole story.

The oft-cited "433" figure^{32, 33, 34} is indeed found in Article 3.8.4.2. of the OIE's International Animal Health Code, but it just represents the required minimum number of cattle showing suspicious signs that should be examined each year, for example, cows who show "excitability," or "persistent kicking when milked."³⁵ The Animal Health Code then directly goes on to state, in Article 3.8.4.3, that "Cattle that have died or have been killed for reasons other than routine slaughter (including 'fallen' stock and emergency slaughter) should be examined."³⁶ This is where the United States (and Canada) fall seriously short.

The combination of these two populations--"fallen stock and emergency slaughter cattle"--is essentially equivalent to the U.S. nonambulatory or "downer" cattle population.³⁷ Every year, an estimated 195,000³⁸ to 1.8 million^{39, 40} cattle collapse in the U.S. for largely unknown reasons and are too sick or injured to rise.⁴¹ Even though these downed animals are not even fit enough to stand, an investigation of USDA slaughterhouse records showed that most of them were still ruled fit enough for human consumption.⁴²

Based on findings in Europe,⁴³ and evidence of at least one rare form of Mad Cow disease striking downer cows in the U.S. for decades,⁴⁴ downer cattle are considered to be a particularly high risk population. The OIE recommends they be tested for Mad Cow disease.⁴⁵ Since 1990, the USDA has tested less than 2% of the downer cattle in United States.⁴⁶ And in the slaughterhouses that specialize in downer cows, the meat industry gets to pick and choose which downers are tested. As one USDA inspector wrote: "We just trust the industry to pick out the most suspect cows from their own herds, then we test those and tell the public there is no Mad Cow."⁴⁷

Also, these few tests were almost exclusively limited to animals who were sent to slaughter.⁴⁸ The U.S. tests even fewer of the downer cattle on farms and ranches who never make it to the slaughterhouse, even though these animals are considered the single highest risk cattle population in the United States.⁴⁹ These dead, dying or downed cattle can still then be fed to other livestock.⁵⁰ It's no wonder that Dr. Prusiner, the world's expert on prion diseases, describes the number of tests done by USDA as "appalling."⁵¹

When asked what level of testing in the U.S. he'd be comfortable with, Prusiner replied "Well, I'd like to see every downer cattle, every fallen cow, tested. That's a beginning. And then after that, at some point, I'd like to see every cow tested, just as they do in Japan. Every single cow is being tested in Japan."⁵² In Europe, 100% of all adult downer cattle are tested,⁵³ as well as 100% of all healthy cows over a certain age who are slaughtered for human consumption.⁵⁴ And in Europe, if these animals aren't tested then, by law, they must be destroyed.⁵⁵ In July, 2003, an amendment was brought before the House that would have banned the sale of downed animals for human food in the United States. The amendment lost by two votes.⁵⁶

The USDA's welcomed decision to finally remove downer cattle from the human food supply after the first U.S. case was uncovered⁵⁷ can only be effective in conjunction with a dramatic increase in surveillance testing. In Europe, where 1 out of every 4 cows is tested, hundreds of cases of Mad Cow disease are found in animals who appear perfectly healthy.⁵⁸

In fact, even the Washington State Holstein who had Mad Cow disease didn't appear sick. Luckily it seems she had a birthing injury which left her unable to stand, and she was thus flagged as one of the small percentage of downer cows tested.⁵⁹ Had she been able to walk, she presumably would not have been tested at all. How many other cows invisibly infected with the disease are ending up in the beef supply undetected? And, in the United States, we may be at particularly high risk for just such occurrences.

The European Commission's risk assessment of the United States points out, for example, the "young age at slaughter makes it unlikely that fully developed clinical cases would occur (and could be detected)..."⁶⁰ Less than half of American dairy cows make it past their fourth birthday before being "retired" into hamburger meat.⁶¹ In fact, the industry slaughters the majority of U.S. cattle before they reach age two.⁶² While this may mean that the prion load in an infected animal may be less at slaughter (since prions accumulate with age), it also means Mad Cow disease may be harder to detect in the United States.⁶³

Younger cattle could be infected and infectious but still be slaughtered for human consumption before they started showing symptoms.⁶⁴ In fact the latest detected case of Mad Cow disease in Japan was in an animal only 21 months old.⁶⁵ The case before that was in an animal only 23 months old. Although the rapid tests used in Japan and Europe were able to detect the deadly prions in an animal so young, it seems that the test used in the U.S.--which takes days instead of hours--failed to pick up the disease.⁶⁶ The chief reason that the United States does not have more confirmed cases of Mad Cow disease could very well be because our surveillance program is inadequate.⁶⁷

The United States and Europe have similar cattle populations,⁶⁸ yet Europe tests almost a million cattle every month.⁶⁹ France, which has only a fraction of the U.S. cattle population, tests more cattle in a single week than the U.S. has tested in its 14 year testing history.⁷⁰ The USDA's plan to increase to 38,000 the number of cattle tested in 2004⁷¹ barely exceeds the number Europe tests every single day.⁷²

The USDA and the meat industry⁷³ continue to oppose comprehensive testing as too expensive and unnecessary.⁷⁴ The National Cattlemen's Beef Association believes that testing cows under 2 years of age "would be like testing first-graders for Alzheimer's."⁷⁵ Europe and Japan, however, have both found cases of BSE in cattle under 24 months of age.

The cost of testing all cattle slaughtered for human consumption as recommended by Dr. Prusiner is estimated at a few extra pennies per pound of meat.⁷⁶ The Food and Agriculture Organization of the United Nations recommends testing at least the 6 million animals over 30 months of age slaughtered every year.⁷⁷ Agriculture Secretary Veneman says there are currently no plans to further increase testing beyond the current annual 0.038 million.⁷⁸

Based on recent testing, Donald Berry, chairman of the biostatistics department at the University of Texas Cancer Research Center, has estimated that the U.S. and Canada slaughter 1,750 infected cows every year, sending millions of servings of beef from infected animals into the human food chain annually.^{79 80}

WHO Recommendation #3: Stop Feeding Bovine Brains, Eyes, Spinal Cords & Intestines to People or Livestock

The third key recommendation of the World Health Organization is that "Countries should not permit tissues that are likely to contain the BSE agent to enter any food chain, human or animal."⁸¹ This was echoed recently by the Food and Agriculture Organization of the United Nations.⁸² Basically, this means excluding cattle brains, eyes, spinal cord and intestine from the human food supply and from all animal feed.⁸³ Unfortunately, the U.S. still feeds some of these potentially risky tissues to people, pigs, pets and poultry.

High Risk Tissues in Human Food

Although beef brains, eyes and spinal cords from young cattle are still available to consumers as "variety meats," they are labeled as such and therefore represent only a small fraction of the American public's exposure to these organs.⁸⁴ People are more likely to have consumed potentially infectious tissues such as spinal cord disguised within all-American favorites, like hot dogs and hamburgers.

After a cow is slaughtered and the standard cuts of beef removed, there remains a bloody skeleton with a few scraps of meat still attached. To recover any last shreds of flesh, the bones, pre-broken or whole, used to be placed in a giant vice-like device that crushes the carcass into bone "cakes."⁸⁵ Out through a sieve at the bottom runs a "wholesome,"⁸⁶ "batter-like"⁸⁷ paste of "spread-like consistency" referred to as mechanically separated meat.⁸⁸ The potentially highly infectious spinal cord and fluid may be forced out of the backbone and spewed into the final product.⁸⁹

Mechanically separated beef had been "used as a meat ingredient in the formulation of quality meat food products"⁹⁰ in the United States since the 1970's.⁹¹ Examples of such "quality meat food products" included hot dogs, sausages and burgers.⁹² By law, hot dogs could contain up to 20% of this mechanically separated beef.⁹³ Although food containing mechanically separated beef had to be labeled as such, there are no labels on food in restaurants.⁹⁴ So people could be exposed without warning to spinal cord tissue in hot dogs, sausages, hamburgers, and ground meat products when dining out.⁹⁵

For years the U.S. government has excluded mechanically separated meat from baby food, but only because the product might mottle an infant's teeth as a result of increased fluoride intake⁹⁶ from all the crushed bone particles that get extruded into the paste.⁹⁷ Although Europe heeded the World Health Organization's warnings and completely banned mechanically separated meat years ago,⁹⁸ it wasn't until January 2004, seven months after the first detection of a native case of BSE in North America, that this process was banned in the United States.⁹⁹

Advanced Meat Recovery

In 1994, meat processors began using a new technology, called advanced meat recovery (AMR), to help "increase yields and profitability."¹⁰⁰ These systems also extrude meat from the remains of the carcass under pressure, but without crushing the bones.¹⁰¹ The American Meat Institute describes the process: "Just as fruit processors use machines to remove fruit from peels thoroughly and efficiently, meat companies use similar equipment to remove meat from some hard to trim bones."¹⁰²

The end product varies from a ground beef-like texture to the consistency of thick tomato sauce.¹⁰³ Prior to 1994, only cattle skeletal muscle, tongue, diaphragm, heart, and esophagus could be labeled as "beef."¹⁰⁴ But by the end of that year, the USDA had already amended the definition of "meat" to include the product of advanced meat recovery machinery.¹⁰⁵ This meant that, unlike mechanically separated meat, AMR meat was considered 100% beef and could be labeled as such.¹⁰⁶ With no special labeling requirements, adoption of AMR machinery spread rapidly throughout the industry, largely replacing mechanical separation equipment.¹⁰⁷

Today, the majority of cattle carcasses are processed using AMR.¹⁰⁸ Over twenty thousand tons of AMR beef is produced every year in the U.S., valued at over \$100 million.¹⁰⁹ AMR beef typically ends up as a hidden ingredient in hamburgers, hot dogs, sausages, and beef jerky, as well as part of ground beef in meatballs, pizza toppings and taco fillings.¹¹⁰ The danger has been that if the spinal cord isn't removed from the spinal column before entering one of these machines, some of the spinal cord is bound to be incorporated into the meat that is produced.¹¹¹

Companies are supposed to remove the animals' brains and spinal cords before processing the carcasses through the AMR machinery, but getting out all of the spinal cord can be challenging. "It requires special tools and skills," says Glenn Schmidt, a meat scientist at Colorado State University. "The workers have to reach down to the neck region of the carcass to remove the spinal cord by scraping or suction, and sometimes they don't get all of it."¹¹²

In 1997, the consumer advocacy organization Public Citizen obtained USDA inspection records through the Freedom of Information Act. These records indicated that the USDA's own testing showed that a significant percentage of AMR samples were contaminated with central nervous system (CNS) tissue (brain or spinal cord). Instead of simply requiring that the entire spinal column be removed from carcasses before being placed in advanced meat recovery systems, the USDA responded by merely directing its inspectors to continue testing samples of AMR meat for the presence of central nervous tissue.¹¹³

Despite their promise to initiate testing, the USDA took fewer than 60 samples over the next 3 years, yet still found spinal cord in a number of them.¹¹⁴ The first major study of AMR meat was published in 2001.¹¹⁵ Colorado State University researchers found that "well over 50%" of the samples of AMR beef from neck bones were contaminated with CNS tissue. The researchers then went to 7 major suppliers of large fast food chains across the country to sample hamburger patties. Six out of seven suppliers had detectable CNS tissue in their burgers.¹¹⁶

The USDA again responded only with promises to do more testing.¹¹⁷ The results of the USDA's tests were made public in 2002. Eighty-eight percent of the meat processors (30 out of 34) were producing AMR beef which contained prohibited nervous tissue.¹¹⁸

In 2001 the World Health Organization, in consultation with the World Animal Health Organization and the Food and Agriculture Organization of the United Nations, reiterated the need for countries to remove and destroy all tissues proven capable of transmitting Mad Cow disease, such as the spinal cord.¹¹⁹ So, that year, the consumer advocacy group Center for Science in the Public Interest (CSPI) petitioned the USDA to require removal of the entire spinal column before sending cattle carcasses through the machinery.¹²⁰ The petition was supported by the American Public Health Association, the Consumer Federation of America, the Government Accountability Project, the National Consumers League, and Safe Tables Our Priority.¹²¹

The petition was opposed by the National Cattlemen's Beef Association, the National Renderers Association, the National Meat Association,, the Pork Producers Council, the sheep industry, the milk producers, the Turkey Federation, and eight other industry trade groups.¹²² After all, about 50 percent of AMR meat comes from the neck bones and spine, both of which contain the spinal cord.¹²³ U.S. meat industry analysts claimed that any public health measure to remove these bones would simply be too costly for the industry.¹²⁴

The meat industry has invested at least \$40 million in AMR machines since their introduction in 1994, some of which can process 9,000 lbs. of bones per hour.¹²⁵ Industry analysts place the final figure of complying with any proposed USDA regulation that bans neck bones and backbones at close to \$200 million dollars.¹²⁶ The European Commission considers the removal of cattle brains, eyes, spinal cord and intestines from the human food supply as "the single biggest contribution that can be made to reducing the risk to humans."¹²⁷ Rather than learning from the outbreak in Europe though, the U.S. livestock industry seemed opposed to even the most minimal tightening of U.S. feed regulations.¹²⁸

The meat industry argued that voluntary compliance was enough.¹²⁹ Seven years of testing by USDA inspectors, however, has demonstrated otherwise.¹³⁰ On January 12, 2004, the USDA finally instructed processors to find a way to exclude the spinal column completely before carcasses are processed.¹³¹ The AMR processors, however, have flouted the law excluding spinal cord tissue for a decade, raising the question of whether continuing to leave it up to the "good intentions"¹³² of the meat industry is in the public's best interest. Additionally, the American public may still be exposed to bone marrow, which has been found in almost all AMR samples tested,¹³³ and which may also be infectious.¹³⁴

The Center for Progressive Regulation, a nonprofit research and educational organization of university-affiliated academics, refers to the announcement of the new USDA regulations as "at best misleading, and at worst deceptive" and the regulations themselves as "meaningless public relations measures"¹³⁵ "marred by huge loopholes" rather than a sincere effort at protecting U.S. consumers.¹³⁶

Central Nervous Contamination in Other Meat Products

The brains and spinal cords from cattle under 30 months of age continue to be allowed in the American food supply even though infection has been found in the brains of cattle as young as 20 months.¹³⁷ In Europe, these risky tissues are excluded from any cow over only 12 months of age.¹³⁸ In the U.S. the brains, eyes, and spinal cords from cattle under 30 months "can be rendered to produce products identified as beef stock, beef extract, and beef flavoring without any identification of the source materials other than 'beef'..."¹³⁹ And in Europe all the intestines are excluded from human food, from the small intestine down to the rectum,¹⁴⁰ in part because there is concern that the colon may also be infectious.¹⁴¹ Currently in the U.S., however, the plan is to exclude only the small intestine.¹⁴²

Even if Americans just stick to steak, though, they may not be shielded from risk. The "T" in a T-bone steak is a vertebra from the animal's spinal column, and as such may contain a section of the actual spinal cord. Other potentially contaminated cuts include porterhouse, standing rib roast, prime rib with bone, bone-in rib steak, and (if they contain bone) chuck blade roast and loin. These cuts may include spinal cord tissue and/or so-called dorsal root ganglia, swellings of nerve roots coming into the meat from the spinal cord, which have also been proven to be infectious.¹⁴³

This concern has led the FDA to consider banning the incorporation of "plate waste" from restaurants into cattle feed.¹⁴⁴ The American Feed Industry Association's Rex Runyon defends the current exemption of plate scrapings from the 1997 feed regulations: "How can you tell the consumer 'Hey, you've just eaten a T-bone steak and it's fine for you, but you can't feed it to animals?'"¹⁴⁵ The new USDA regulations still allow such cuts of beef to be sold from animals slaughtered under 30 months.¹⁴⁶

Even boneless cuts may not be risk-free, though. In the slaughterhouse, the bovine carcass is typically split in half down the middle with a band saw, sawing right through the spinal column. This has been shown to aerosolize the spinal cord and contaminate the surrounding meat.¹⁴⁷ A study in Europe found contamination with spinal cord material on 100% of the split carcasses examined.¹⁴⁸ Similar contamination of meat derived from cattle cheeks can occur from brain tissue if the cheek meat is not removed before the skull is fragmented or split.¹⁴⁹ The World Health Organization has pointed out that American beef can be contaminated with brain and spinal cord tissue in another way as well.¹⁵⁰

Except for Jewish kosher slaughter, which involve slitting the cow's throat while the animal is still conscious, cattle slaughtered in the United States are first stunned unconscious with an impact to the head before being bled to death. Medical science has known for over 60 years that people suffering head trauma can end up with bits of brain embolized into their bloodstream; so Texas A&M researchers wondered if fragments of brain could be found within the bodies of cattle stunned for slaughter. They checked and reportedly exclaimed, "Oh, boy did we find it."¹⁵¹ They even found a 14 cm piece of brain in one cow's lung. They concluded, "It is likely that prion proteins are found throughout the bodies of animals stunned for slaughter."¹⁵²

There are different types of stunning devices, however, which likely have different levels of risk associated with them. The Texas A&M study was published in 1996 using the prevailing method at the time, pneumatic-powered air injection stunning.¹⁵³ The device is placed in the middle of the animal's forehead and fired, shooting a 4-inch bolt through the skull and injecting compressed air into the cranial vault, which scrambles the brain tissue. The high pressure air not only "produces a smearing of the head of the animal with liquefied brain,"¹⁵⁴ but has repeatedly been shown to blow brain back into the circulatory system, scattering whole plugs of brain into a number of organs¹⁵⁵ and likely smaller brain bits into the muscle meat as well.¹⁵⁶ Although Europe had banned particularly risky air injection-type stunners years before,¹⁵⁷ and Canada banned them in 2002,¹⁵⁸ they weren't banned in the U.S. until 2004.¹⁵⁹

The stunning devices that remain in widespread use drive similar bolts into the brain of the animal, but without air injection.¹⁶⁰ Operators then may or may not pith the animals by sticking a rod into the stun hole to further agitate the deeper brain structures to reduce or eliminate reflex kicking during shackling of the hind limbs.¹⁶¹ Even without pithing, which has been shown to be risky, these stunners currently in use in the U.S. today may still force brain into the bloodstream of some of these animals.^{162, 163, 164, 165}

In one experiment, for example, researchers applied a marker onto the stunner bolt. The marker was later detected within the muscle meat of the stunned animal. They conclude: "This study demonstrates that material present in... the CNS of cattle during commercial captive bolt stunning may become widely dispersed across the many animate and inanimate elements of the slaughter-dressing environment and within derived carcasses including meat entering the human food chain."¹⁶⁶

Even non-penetrating "mushroom-headed" stunners, which just rely on concussive force to the skull to render the animal unconscious, may not be risk-free. People in automobile accidents with non-invasive head trauma can still end up with brain embolization,¹⁶⁷ and these bolts move at over 200 miles per hour.¹⁶⁸ The researchers at Texas A&M conclude, "Reason dictates that any method of stunning to the head will result in the likelihood of brain emboli in the lungs or, indeed, other parts of the body."¹⁶⁹

Prion Infection Within Muscle

And, finally, even if consumers of American beef just stick to boneless cuts from ritually slaughtered animals who have had their spinal columns safely removed, the muscle meat itself may be infected with prions. The USDA¹⁷⁰ and the National Cattlemen's Beef Association continue to assure consumers that beef is safe because the deadly prions aren't found in muscle meat.¹⁷¹ Even putting aside contamination issues, it seems that they are simply behind the times.

In 2002, Stanley Prusiner, the Nobel laureate who discovered prions, proved, in mice at least, that muscle cells themselves were capable of forming prions.¹⁷² He describes the levels of prions in muscle as "quite high," and describes the studies relied upon by the Cattlemen's Association as "extraordinarily inadequate."¹⁷³ Follow-up studies in Germany confirmed Prusiner's findings, showing that animals who are orally infected may indeed end up with prion contamination throughout the muscles of their bodies.¹⁷⁴ And, a month before BSE was detected in the U.S., a study was published in the *New England Journal of Medicine* in which Swiss scientists found prions in the muscles of a quarter of human CJD victims on autopsy.¹⁷⁵

This newly discovered muscle infectivity highlights how little we know about these diseases. For example, the American Meat Institute released a fact sheet on BSE stressing that while the new variant of Creutzfeldt Jakob Disease (vCJD) was known to be caused by eating infected cattle parts, the more common classic form of CJD, the so-called "sporadic" form that afflicts hundreds of American families every year, had nothing to do with Mad Cow disease. The November 2002 fact sheet emphatically stated, "There is absolutely no evidence to suggest that CJD is caused by any food, including beef."¹⁷⁶ But by December 2002, only a month later, there was evidence.

Some Sporadic CJD May be Caused by Eating Meat

Researchers at the University College of London created transgenic mice, complete with "humanized" brains, genetically engineered with human genes to study the link between Mad Cow disease and the variant of CJD caused by eating infected meat. When the researchers injected one strain of the "humanized" mice with infected cow brains, they came down with the same brain damage seen in human variant CJD, as expected. But when they tried this in a different strain of transgenic "humanized" mice, those mice got sick too, but most got sick from what looked exactly like sporadic CJD! The Mad Cow prions caused a disease that had a molecular signature indistinguishable from sporadic CJD. To the extent that animal experiments can simulate human results, their shocking conclusion was that eating infected meat might be responsible for some cases of sporadic CJD in addition to the expected variant CJD.¹⁷⁷

The researchers concluded that "it is therefore possible that some patients with [what looks like]... sporadic CJD may have a disease arising from BSE exposure."¹⁷⁸ Laura Manuelidis, section chief of surgery in the neuropathology department at Yale University comments, "Now people are beginning to realize that because something looks like sporadic CJD they can't necessarily conclude that it's not linked to [Mad Cow disease]..."¹⁷⁹ Hundreds of Americans--maybe even thousands--die from this "sporadic" CJD every year.¹⁸⁰

This is not the first time meat was linked to sporadic CJD. In 2001, a team of French researchers found, to their complete surprise, a strain of scrapie--"mad sheep" disease--that caused the same brain damage in mice as sporadic CJD.¹⁸¹ "This means we cannot rule out that at least some sporadic CJD may be caused by some strains of scrapie," said team member Jean-Philippe Deslys of the French Atomic Energy Commission's medical research laboratory.¹⁸²

Population studies had failed to show a link between CJD and lamb chops, but this French research provided an explanation why. There seem to be six types of sporadic CJD, and there are more than 20 strains of scrapie. If only some sheep strains affect only some people, studies of entire populations may not clearly show the relationship. However, monkeys fed infected sheep brains certainly come down with the disease.¹⁸³ Hundreds of "mad sheep" were found in the U.S. in 2003.¹⁸⁴ Scrapie remains such a problem in the United States that the USDA had to issue a scrapie "declaration of emergency" to get funds to fight the disease.¹⁸⁵ It is possible that some cases of sporadic CJD in the U.S. are caused by eating sheep meat as well.¹⁸⁶

Pork is also a potential source of infection. Cattle remains, including the brains, guts and spinal cords of downer cows, are still boiled down and legally fed to pigs (as well as chickens) in this country. The FDA allows this exemption because no "naturally occurring" porcine (pig) spongiform encephalopathy has ever been found. American farmers, however, typically kill pigs at just five months of age, long before the disease is expected to show symptoms. And, because pigs are packed so tightly together, it would be difficult to spot neurological conditions like spongiform encephalopathies, whose most obvious symptoms are movement and gait disturbances. We do know, however, that pigs are susceptible to the disease--laboratory experiments show that pigs can indeed be infected by Mad Cow brains¹⁸⁷--and hundreds of thousands of downer pigs, too sick or crippled by injury to even walk, arrive at U.S. slaughterhouses every year.¹⁸⁸

A number of epidemiological studies have suggested a link between pork consumption and sporadic CJD. Analyzing peoples' diet histories, the development of CJD was associated with eating roast pork, ham, hot dogs, pork chops, smoked pork, and scrapple (a kind of pork pudding made from various hog carcass scraps). The researchers concluded, "The present study indicated that consumption of pork as well as its processed products (e.g., ham, scrapple) may be considered as risk factors in the development of Creutzfeldt-Jakob disease."¹⁸⁹

Compared to people who didn't eat ham, for example, those who included ham in their diet appeared ten times more likely to develop CJD.¹⁹⁰ In fact, the USDA may have actually recorded an outbreak of "mad pig" disease in New York 25 years ago, but still refuses to reopen the investigation, despite petitions from the Consumer's Union (the publishers of Consumer Reports magazine).¹⁹¹

The hundreds of American families stricken by sporadic CJD every year have been told that it just occurs by random chance. Professor Collinge, the head of the University College of London lab, noted "When you counsel those who have the classical sporadic disease, you tell them that it arises spontaneously out of the blue. I guess we can no longer say that."¹⁹²

We don't know exactly what's happening to the rate of CJD in this country, in part because CJD is not an officially notifiable illness.¹⁹³ Currently, CJD is not a reportable illness in most states. In spite of this, a number of U.S. CJD clusters have already been found. In the largest known U.S. outbreak of sporadic cases to date,¹⁹⁴ an incidence five times the expected rate was found to be associated with cheese consumption in Pennsylvania's Lehigh Valley.¹⁹⁵ Striking increase in CJD over expected levels have also been reported in Florida¹⁹⁶ and New York (Nassau County)¹⁹⁷ with anecdotal reports of clusters of deaths in Oregon¹⁹⁸ and New Jersey.¹⁹⁹

Perhaps particularly worrisome is the seeming increase in CJD deaths among young people in this country. For 18 years, between 1979 and 1996, only a single case of sporadic CJD was found in anyone under 30, whereas between 1997 and 2001, five people under 30 died of sporadic CJD. So, that's five young Americans dying in five years, as opposed to one young case in the previous 18 years. The true prevalence of CJD among any age group in this country remains a mystery, though, in part because it is so commonly misdiagnosed.²⁰⁰

Are Thousands of Americans Dying From Sporadic CJD?

Cases that are actually CJD are most frequent misdiagnosed among the elderly as Alzheimer's disease.²⁰¹ Neither CJD nor Alzheimer's can be conclusively diagnosed without a brain biopsy,²⁰² and the symptoms and pathology of both diseases overlap. There can be spongy changes in Alzheimer's, for example, and senile Alzheimer's plaques in CJD.²⁰³ Stanley Prusiner, the scientist who won the Nobel Prize for his discovery of prions, speculates that Alzheimer's may even turn out to be some form of a prion disease.²⁰⁴ In younger victims, CJD is more often misdiagnosed as multiple sclerosis or as a severe viral infection.²⁰⁵

Over the last 20 years, the rates of Alzheimer's disease in the United States have skyrocketed.²⁰⁶ According to the CDC, Alzheimer's Disease is now the eighth leading cause of death in the United States,²⁰⁷ afflicting an estimated 4 million Americans.²⁰⁸ Twenty percent or more of people clinically diagnosed with Alzheimer's disease, though, are found at autopsy not to have had Alzheimer's at all.²⁰⁹ A number of autopsy studies have shown that a few percent of Alzheimer's deaths may actually be CJD. Given the new research showing that infected beef may be responsible for some sporadic CJD, thousands of Americans may already be dying because of Mad Cow disease every year.²¹⁰

Nobel Laureate Gajdusek, for example, estimates that 1% of people showing up in Alzheimer clinics actually have CJD.²¹¹ At Yale, out of a series of 46 patients clinically diagnosed with Alzheimer's, six were proven to have CJD at autopsy.²¹² In another study of brain biopsies, out of a dozen patients diagnosed with Alzheimer's according to established criteria, three of them were actually dying from CJD.²¹³

An informal survey of neuropathologists registered a suspicion that CJD accounts for 2-12% of all dementias in general.²¹⁴ Two autopsy studies showed a CJD rate among dementia deaths of about 3%.^{215, 216} A third study, at the University of Pennsylvania, showed that 5% of patients diagnosed with dementia had CJD.²¹⁷ Although only a few hundred cases of sporadic CJD are officially reported in the U.S. annually,²¹⁸ hundreds of thousands of Americans die with dementia every year.²¹⁹ Thousands of these deaths may actually be from CJD, some of which may in turn be caused by eating prion-infected meat.

The incubation period for human spongiform encephalopathies such as CJD can be decades.²²⁰ This means it can be years after eating infected meat that a patient is diagnosed with the death sentence of CJD. Although only about 150 people have so far been diagnosed with variant CJD worldwide, the death toll continues to mount,²²¹ and it will be many years before the final death toll is known. In addition to demands for the USDA to enact universal testing, and for the FDA to stop the feeding of slaughterhouse waste, manure, and blood to all farm animals, consumer advocates have been calling for an active national surveillance program for CJD.²²²

In 1999, the Center for Food Safety, the Humane Farming Association, the Center for Media & Democracy, and ten families of CJD victims petitioned the FDA and the CDC to immediately enact a national CJD monitoring system, including the mandatory reporting of CJD in all 50 states.²²³ The petition was denied.²²⁴ The CDC argued that their passive surveillance system tracking death certificate diagnoses was adequate. Their analysis of death certificates in three states and two cities, for example, showed an overall stable and typical one-in-a-million CJD incidence rate from 1979 to 1993.²²⁵ But CJD is so often misdiagnosed, and autopsies are so infrequently done, that this system may not provide an accurate assessment.²²⁶

In 1997 the CDC set up the National Prion Disease Pathology Surveillance Center at Case Western Reserve University to analyze brain tissue from U.S. CJD victims in hopes of tracking any new developments. In Europe, surveillance centers have been seeing most, if not all, cases of CJD. The U.S. center sees less than half. "I'm very unhappy with the numbers," laments Pierluigi Gambetti, the director of the Center. "The British and Germans politely smile when they see we examine 30% or 40% of the cases," he says. "They know unless you examine 80% or more, you are not in touch."²²⁷ "The chance of losing an important case is high."²²⁸

One problem is that many doctors don't even know the Center exists. And, neither the CDC nor the Center are evidently authorized to reach out to them directly to bolster surveillance efforts, because it's currently up to each state individually to determine how--or even whether--they will track the disease. In Europe, in contrast, the national centers work directly with each affected family and their physicians.²²⁹ In the U.S., most CJD cases--even the confirmed ones--seem to just fall through the cracks. In fact, based on the autopsy studies at Yale and elsewhere, it seems most CJD cases in the U.S. aren't even identified as CJD in the first place.

Autopsy rates have dropped in the U.S. from 50% in the Sixties to less than 10% at present.²³⁰ One reason autopsies are rarely performed on atypical dementia cases is that medical professionals are afraid of catching the disease.²³¹ However, the primary reason for the decline in autopsy rates appears to be financial. There is currently no direct reimbursement to doctors or hospitals for doing autopsies, which often forces the family to absorb the cost of transporting the body to an autopsy center and having the brain samples taken, a tab that can run upwards of \$1500.²³²

Another problem is that the National Prion Disease Pathology Surveillance Center itself remains underfunded. Paul Brown, medical director for the National Institutes of Health, has described the Center's budget as "pitiful," complaining that "there isn't any budget for CJD surveillance."²³³ To adequately survey America's 290 million residents, "you need a lot of money." U.K. CJD expert Robert Will explains, "There was a CJD meeting of families in America in which... [the CDC] got attacked fairly vigorously because there wasn't proper surveillance. You could only do proper surveillance if you have adequate resources."²³⁴ "I compare this to the early days of AIDS," says protein chemist Shu Chen, who directs the Center's lab, "when no one wanted to deal with the crisis."²³⁵

Andrew Kimbrell, the director of the Center for Food Safety, a D.C.-based public interest group, writes, "Given what we know now, it is unconscionable that the CDC is not strictly monitoring these diseases."²³⁶ Given the presence of Mad Cow disease in the U.S., we need to immediately enact uniform active CJD surveillance on a national level, provide adequate funding, not only for autopsies but also for the shipment of bodies, and require mandatory reporting of the disease in all 50 states. In Britain, even feline spongiform encephalopathy, the cat version of Mad Cow disease, is an officially notifiable illness. "No one has looked for CJD systematically in the U.S.," notes NIH medical director Paul Brown, "Ever."²³⁷

High Risk Tissues in Animal Feed

In another direct violation of World Health Organization recommendations, Food and Agriculture Organization of the United Nations recommendations,²³⁸ and international standards,²³⁹ the tissues with the highest potential for risk--cattle brains and spinal cords--are rendered directly into animal feed that continues to be fed legally to pigs²⁴⁰ and chickens²⁴¹ in North America.^{242, 243}

The major concern in feeding rendered cattle remains to other animals is that the cattle remains may--directly or indirectly--find their way back into cattle feed, which could potentially spark a British-style outbreak of Mad Cow disease. In Mad Cow USA: Could the Nightmare Happen Here?, authors Sheldon Rampton and John Stauber revealed a 1997 Food and Drug Administration memo which predicted that once a case of BSE was discovered in the U.S., even if a total ban on feeding animal protein to animals were immediately enacted, it would still be possible that as many as 299,000 infected cows could be found in the subsequent 11 years.²⁴⁴

In the United States, slaughterhouse waste from cattle is rendered, or melted down, into "meat and bone meal" which is used in animal feed to help "animals grow bigger and faster."²⁴⁵ Over 18 million pounds of meat and bone meal are produced every day in the United States.²⁴⁶ Until May 2003, the U.S. also imported an extra 100,000 lbs. from Canada every day.²⁴⁷ While rendering can destroy conventional pathogens like viruses and bacteria, none of the rendering methods used in the U.S.²⁴⁸ or Canada²⁴⁹ have been shown to eliminate prion infectivity.

Almost all fattening beef cattle, dairy calves and adult dairy cows raised conventionally are fed meat and bone meal in the United States.²⁵⁰ In fact, each conventional dairy cow eats about a pound of meat and bone every day in North America.^{251, 252} Since the partial 1997 FDA feed ban, however, this meat and bone meal is not supposed to come from ruminants--other cattle, sheep or deer. Unfortunately, these regulations have been poorly enforced. In 2001, the Food and Drug Administration published the results of a national survey of rendering plants and feed mills. Up to one quarter of the plants were found to be in violation of the 1997 feed regulations years after the so-called "ban" went into effect.²⁵³ In 2002, the United States General Accounting Office called the FDA's data on inspections "severely flawed."²⁵⁴

Ruminant meat and bone meal, even if derived from downer cattle too sick to walk or stand, can still be sold in North America. As pointed out by Dr. Michael Hansen from the Consumers Union, "All they said is that you've got to label it, 'Do not feed to cattle and other ruminants.' Farmers can walk in a feed store and still buy it. Nobody asks, 'Are you feeding it to cattle or pigs?'"^{255, 256} As tough as it is to enforce the feed-labeling compliance among renderers and feed mills, it's virtually impossible to effectively monitor America's estimated one million livestock producers.²⁵⁷

Even in Britain, the country most affected by Mad Cow disease, inspections showed that it was impossible to enforce the feed ban. If ruminant bone meal was available and cheap, British farmers continued to illegally feed it to their cattle. The U.K. even had to ban the use of mammalian meat and bone meal as agricultural fertilizer to keep it out of the stores.²⁵⁸ Meanwhile in the United States, violations of the 1997 feed regulations continue.²⁵⁹

There's also a concern that we may import cattle from countries with even more lax standards than ours. Over the last five years for which records are available, the U.S. exported over 400,000 metric tons of meat and bone meal to Mexico²⁶⁰ and then imported over 4 million head of live cattle from Mexico.²⁶¹

According to the Renderer's Association, Mexico didn't even require labeling of ruminant meat and bone meal until 2002, and compliance with labeling has been called into question. Concerned that imported rendered cattle remains might be fed to Mexican cattle, Richard Patton, a Ph.D. nutritionist and American dairy industry consultant, said U.S. meat and bone meal in Mexico should be watched as carefully as "you would watch a hand grenade with the pin pulled."²⁶²

Even if 100% compliance with the feed regulations was met throughout North America, however, cattle remains can still legally be fed to pigs, for example, which have been found to be susceptible to BSE prions.²⁶³ Then, the pig remains can be fed back to cattle.²⁶⁴ Or, cattle remains can be fed to chickens,

and then the poultry litter can be fed back to cows.²⁶⁵ In these ways, prions may be indirectly cycled right back into cattle feed.

The Food and Agriculture Organization of the United Nations (FAO) recommends that cattle remains not be fed to pigs and poultry,²⁶⁶ advice with which most U.S. farmers seem to agree.²⁶⁷ The FAO advises that the riskiest tissues from cows, such as brain and spinal cord, be destroyed,²⁶⁸ not be fed to other animals or rendered into products like tallow for use in cosmetics (the safety of which is currently under review²⁶⁹).

Feeding Poultry Litter to Cattle

Poultry litter is the mixture of excrement, spilled feed, dirt, feathers, etc. that gets scooped from the floors of poultry sheds every year.²⁷⁰ Because poultry litter can be as much as eight times cheaper than alfalfa,²⁷¹ the U.S. cattle industry feeds an estimated one million tons of poultry litter to cattle every year.²⁷² Although excrement from other animals is fed to livestock in the U.S., chicken droppings are considered more nutritious for cows than hog feces or cattle dung.²⁷³ A thousand chickens can make enough waste to feed a growing calf year round.²⁷⁴

Although a single cow can eat as much as 3 tons of poultry waste a year,²⁷⁵ the manure in the feed does not seem to affect the taste of the milk or the meat.²⁷⁶ Taste panels have found little difference in the tenderness, juiciness and flavor of beef made from steers fed up to 50% poultry litter. In fact, beef made from steers fed bird droppings may be even more juicy and tender.²⁷⁷ Cows are typically not fed more than 80% poultry litter, since it's not as palatable²⁷⁸ and may not fully meet protein and energy needs.²⁷⁹

Under the 1997 feed regulations, the FDA explicitly allowed the feeding of chicken litter to cattle to continue, even if the chickens had just been fed meat and bone meal made from cattle remains.²⁸⁰ Not only would the passage of infected feed through the chicken's intestinal tract be unlikely to reduce the prion infectivity, some of the feed inevitably spills on the floor and mixes into the poultry litter that's then fed to cattle.²⁸¹ Though this practice has been illegal in Canada since 1998, the cannibalistic practice of feeding cows to cows in this way continues legally in the United States to this day.²⁸²

The industry realizes that this practice of feeding poultry manure to cattle might not stand up to public scrutiny. They understand the practice carries "certain stigmas,"²⁸³ "presents special consumer issues,"²⁸⁴ and poses "potential public relations problems."²⁸⁵ They seem puzzled as to why the public so "readily accepts organically grown vegetables" grown with composted manure, while there seems to be "apparent reluctance on the part of the public" to accept the feeding of poultry litter to cattle.²⁸⁶ "We hope," says one industry executive, "common sense will prevail."²⁸⁷

The editor of Beef magazine commented, "The Public Sees It As 'Manure.' We can call it what we want and argue its safety, feed value, environmental attributes, etc., but outsiders still see it simply as 'chicken manure.' And, the most valid and convincing scientific argument isn't going to counteract a gag reflex."²⁸⁸ The industry's reaction, then, has been to silence the issue.

According to Beef magazine, public relations experts within the National Cattlemen's Beef Association warned beef producers that discussing the issue publicly would only "bring out more adverse publicity."²⁸⁹ When the Kansas Livestock Association dared to bring public attention to the issue by passing a resolution urging the discontinuation of the practice, for example, irate producers in neighboring states threatened a boycott of Kansas feedyards.²⁹⁰

The National Cattlemen's Beef Association and 14 other industry groups petitioned the FDA in 2003 to continue to allow the feeding of poultry litter to cattle.²⁹¹ As one industry executive said, the National Cattlemen's Beef Association has a history of working to prevent "unnecessary" federal regulations from "encumbering the cattle business."²⁹²

The beef industry argues that this practice is safe because poultry litter is processed to eliminate pathogens before being fed to cattle.²⁹³ This typically involves heating the litter to only about 140 degrees

Fahrenheit,²⁹⁴ which is less than your typical sauna.²⁹⁵ Prions have been shown even to survive incineration²⁹⁶, at temperatures hot enough to melt lead.²⁹⁷

In compliance with World Health Organization guidelines, Europe has forbidden the feeding of all slaughterhouse and animal waste to livestock.²⁹⁸ The American Feed Industry Association called such a ban "a radical proposition."²⁹⁹ The American Meat Institute agreed, stating "no good is accomplished by... prejudicing segments of society against the meat industry."³⁰⁰

The reason the industry may be so reluctant is that approximately 60% of the meat and bone meal produced in the United States is of ruminant origin,³⁰¹ and plant sources of protein for farm animals can cost up to 30% more than cattle remains.³⁰² However, as far back as 1993, Gary Weber, a spokesperson for the National Cattlemen's Beef Association, admitted that the industry could indeed find economically feasible alternatives to feeding rendered animal protein to other animals, but the Cattlemen's Association did not want to set a precedent of being ruled by "activists."³⁰³

Gary Weber was the beef industry spokesperson who appeared on the infamous Oprah Winfrey show in 1996. Clearly alarmed and disturbed by the fact that cows in the U.S. are fed the remains of other cattle, Oprah swore she would never eat another burger again. After Oprah tried to remind the audience that cows were supposed to be herbivores, Dr. Weber defended the practice by stating, "Now keep in mind, before you--you view the ruminant animal, the cow, as simply a vegetarian--remember that they drink milk."³⁰⁴ Besides the obvious absurdity of the statement, it's not even entirely accurate. In modern agribusiness, humans drink the milk. The calves get milk "replacer."

WHO Recommendation #4: Stop Weaning Calves on Cow's Blood

The last key recommendation of the World Health Organization was that "All countries should ban the use of ruminant tissues in ruminant feed."³⁰⁵ The USDA boasts, "To stop the way the [Mad Cow] disease is thought to spread, in 1997, FDA prohibited the use of most mammalian protein in the manufacture of animal feed intended for cows and other ruminants,"³⁰⁶ the pivotal word being "most."

Like all mammals, cows can only produce milk after they've had a baby. And most newborn calves in the United States are separated from their mothers within 12 hours--many immediately after birth--so that the mother's milk can be marketed for human consumption.³⁰⁷ Though some dairy farmers still wean their calves on whole milk, the majority of dairy producers use milk replacer--which is basically a blend of water, a source of protein, and some source of fat--as a cheaper alternative to milk.³⁰⁸ Outbreaks of Mad Cow disease in Denmark, Germany³⁰⁹ and Japan³¹⁰ have already been tentatively tied to milk replacer, which used beef tallow as a source of fat.

The protein source in milk replacer is most often milk protein (whey), but dairy farmers also suckle their calves with milk replacer made from cattle blood protein.³¹¹ The number one advantage given for using blood as a protein source in milk replacer is that it is cheaper than whey. The chief disadvantage of blood-based milk replacer, according to Jim Quigley, vice president of product development for the Animal Protein Corporation, is simply its "different color." Milk replacer containing blood concentrate typically has a "chocolate brown" color which can leave a dark residue on the bottles, buckets and utensils used to feed the liquid. "For some producers," Quigley remarks, "the difference is difficult to accept at first, since the product does not look 'like milk.'" But the "Calves don't care," he is quick to add.³¹²

The calves may not care, but Stanley Prusiner does. He was quoted in the New York Times as calling the practice of feeding cattle blood to young calves as "a really stupid idea."³¹³ The reason Prusiner is so concerned is that there is experimental proof that prions can indeed be transmitted through blood.

U.S. Public Health Service medical director Paul Brown reviewed the blood infectivity literature and found 15 published studies showing prion transmission through blood.³¹⁴ Since then, a sixteenth study has shown that even blood taken from an asymptomatic animal who was silently incubating BSE could still transmit the infection via a blood transfusion.³¹⁵ Reviewing the published science, the European Commission concluded, "There is little doubt that humans or animals could be exposed to the BSE agent by consuming blood products..."³¹⁶

The European Commission specifically condemned the practice of "intraspecies recycling of ruminant blood and blood products"--the practice of feeding cow's blood to calves.³¹⁷ Even excluding the fact that brain emboli may pass into the trough that collects the blood once an animal's throat is slit,³¹⁸ the report concludes, "As far as ruminant blood is concerned, it is considered that the best approach to protect public health at present is to assume that it could contain low levels of infectivity."³¹⁹ Yet to this day calves in the U.S. are still drinking up to 3 cups of "red blood cell protein" concentrate every day.³²⁰

The American Protein Corporation, based in Ames, Iowa, is the single largest blood spray-dryer in the world.³²¹ They advertise blood products that can even be fed "through the drinking water" to calves and pigs.³²² Indeed, the majority of pigs in the U.S. are raised in part on spray-dried blood meal.³²³ According to the National Renderers Association, although young pigs may find spray-dried blood meal initially unpalatable, they eventually get used to it.³²⁴

In response to public concerns, the industry formed the Spray Dried Blood and Plasma Producers Association to defend the practice.³²⁵ The association was founded on the commitment to "producing safe, high quality blood products to use in feeds for commercial livestock and companion animals."³²⁶ The industry points out that blood meal is one of the richest sources of protein available to the feed industry and is produced using only "clean, fresh animal blood."³²⁷ "We are winning this battle [for consumer confidence]," the president of the American Feed Industry Association recently wrote, "but it continues to be slow and precarious when it should be a slam-dunk."³²⁸

Conclusion

Since 1996, the World Health Organization has recommended that all countries stop feeding prion-infected animals to other animals, yet the U.S. government continues to allow deer infected with chronic wasting disease to be rendered into animal feed,³²⁹ and the industry continues to oppose any proposed change in the law.³³⁰

Since 1996, the World Health Organization has recommended that all countries test their downer cattle for Mad Cow disease, yet the U.S. government continues to test but a tiny fraction of this high risk population. The beef industry calls U.S. surveillance "aggressive" and doesn't think more testing is necessary.³³¹ The world's authority on these diseases just calls U.S. surveillance "appalling."³³²

Since 1996, the World Health Organization has recommended that all countries stop feeding risky cattle organs like brains to all livestock. The Food and Agriculture Organization of the United Nations agrees.³³³ The U.S. government continues to violate the guidelines. The American Meat Institute and 14 other industry groups remain vocally opposed to such a ban.³³⁴

And, since 1996, the World Health Organization has recommended that all countries stop feeding any remains of cows to cows, yet the U.S. government still allows dairy farmers to feed calves gallons worth of cow blood and fat collected at the slaughterhouse.³³⁵ Industry representatives continue to actively support this practice.³³⁶

In 2002, the USDA requested feedback on a number of options for further preventive measures, including a total ban on allowing the brains and spinal cords from downer cattle into the human food supply.³³⁷ The spokesperson for the American Meat Institute explained that the meatpacking industry would take a "significant hit" financially if the USDA enacted such a proposal.³³⁸ Even after a case of Mad Cow disease had been discovered in Canada, not only did the USDA refuse to immediately enact such a safeguard, according to an agency spokesperson, they didn't even discussing plans to increase testing for the disease.³³⁹

Internal USDA documents retrieved through the Freedom of Information Act show that as far back as 1991, the U.S. government did indeed consider a number of precautionary measures to protect the American public from Mad Cow disease. According to one such document, however, the USDA explained that the "disadvantage" of these measures was that "the cost to the livestock and rendering industries would be substantial."³⁴⁰

Years ago, when Mad Cow disease started appearing in Europe, David Byrne, the European Commissioner for Health and Consumer Protection, immediately called for a comprehensive Europe-wide surveillance program to test every cow slaughtered for human consumption over a certain age. Commenting on the program he said, "One of the major lessons I have learned in dealing with BSE is that the political establishment must be fully transparent with the public on the issue. There must be no hidden agendas. No distortions. No false assurances. Transparency, information and open dialogue must guide our actions."³⁴¹ The United States could learn much from Europe's experience.

Is it a coincidence that USDA Secretary Veneman chose Dale Moore, former chief lobbyist for the National Cattlemen's Beef Association, as her chief of staff?³⁴² Or that Veneman chose Alisa Harrison, former director of public relations for the Cattlemen's Association, as her official spokesperson?³⁴³ Or that one of the new Mad Cow committee appointees she chose is William Hueston, who was paid by the beef industry to testify against Oprah Winfrey in hopes of convicting her of beef "disparagement"?³⁴⁴

After a similar conflict of interest unfolded in Britain, their entire Ministry of Agriculture was dissolved and an independent Food Safety Agency was created, an agency whose sole responsibility is to protect the public's health. In recent years, both the General Accounting Office and the Institute of Medicine have backed the creation of a unified food-safety agency.³⁴⁵ Until we learn from Britain's lesson, and until the USDA stops treating this as a PR problem to be managed instead of a serious global threat,³⁴⁶ the American public will remain at risk.

- ¹ USDA Release No. 0166.03. 20 May 2003.
- ² USDA Release No. 0012.03. 15 January 2003.
- ³ National Cattlemen's Beef Association news release. 6 December 2000.
- ⁴ "Mad Cow Disease in Canada". May 23, 2003 9:00am KQED Forum hosted by Angie Coiro.
<http://www.kqed.org/programs/programarchive.jsp?progID=RD19&ResultStart=1&ResultCount=10&type=radio>.
- ⁵ National Cattlemen's Beef Association. FMD and BSE: What Every Producer Should Know. April 2001.
- ⁶ World Health Organization Consultation on Public Health Issues Related to Bovine Spongiform Encephalopathy and the Emergence of a New Variant of Creutzfeldt-Jakob Disease. MMWR 45(14);295-6, 303. 12 April 1996.
- ⁷ Ibid.
- ⁸ American Feed Industry Organization. Feedgram. 10 December 2002.
http://www.afia.org/Feedgram_Articles/December_10__2002/Feed_Control.html.
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- ¹⁰ R Race et al. Long-term subclinical carrier state precedes scrapie replication and adaptation in a resistant species: analogies to human BSE/vCJD. Journal of Virology 75(21):10073-89 (2001).
- ¹¹ National Institutes of Health. NIAID Release "Study Examines How Prion Disease Adapts to New Species." 17 October 2001.
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- ¹³ NBC Dateline. 14 March 1997.
- ¹⁴ Pearce, Fred. "BSE May Lurk in Pigs and Chickens." New Scientist 6 April 1996: 5.
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- ²⁰ DEFRA. Transmissible Spongiform Encephalopathy Agents. 7 May 1998. <http://www.archive.official-documents.co.uk/document/doh/spongifm/part-1.htm>.
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- ²² Guidance for Industry: Use of Material from Deer and Elk in Animal Feed. 14 May 2003.
<http://www.fda.gov/cvm/guidance/dguide158.pdf>.
- ²³ Federal Register on August 29, 1994, 59 FR 44591.
- ²⁴ Food and Drug Administration. Bovine Spongiform Encephalopathy. 9 January 2003.
<http://www.fda.gov/cber/bse/bse.htm>.
- ²⁵ European Commission Health & Consumer Protection Directorate-General Scientific Steering Committee Opinion on Chronic Wasting Disease and Tissues That Might Carry a Risk for Human and Animal Feed Chains. 7 March 2003.
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