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Is It Safe?

New beef rules aim to stop mad cow disease. But they may not be enough--and there's too much we don't know

By Susan Brink and Nancy Shute

You know the old saw about the two things you should never watch being made, legislation and sausage? Add burgers and steaks. The discovery of mad cow disease in an animal from Washington State has many Americans wondering if they should avoid the meat counter. The U.S. Department of Agriculture's decision last week to upgrade safety regulations for beef processing reassured many, but certainly not all. "Our food supply and the public health remain safe," said Agriculture Secretary Ann Veneman. Among the new measures: keeping potentially infected brain and spinal parts away from edible meat and banning the butchering and use of animals too sick to walk.

Industry critics applauded the action but say they're concerned about enforcement and charge that the federal government waited too long before acting. Says Caroline Smith DeWaal, director of food safety for the Center for Science in the Public Interest: "We've been raising this with USDA since 1997."

Had it not been for the case confirmed just before New Year's Eve, the wait might have been longer. Just weeks before, Congress--buoyed by the powerful beef lobby--scuttled the latest effort to keep sick cows, known as "downers," out of the food supply. Meat from the infected cow, a downer, reached supermarkets in eight states, and some was consumed before Agriculture Department officials could recall it. The Food and Drug Administration, which is also charged with keeping infected beef out of the food supply, has been criticized for failing to adequately enforce a 1997 ban on feeding cow remains to other cattle--the practice that sparked Britain's mad cow epidemic in the 1980s.

Even with the newly enhanced safeguards, no one can say for sure what's safe and what's not. That's because scientists know so little about the behavior of prions, the strange infectious proteins that appear to cause mad cow disease and its human counterpart, variant Creutzfeldt-Jakob disease. For years, government officials maintained that the diseases couldn't be transmitted through blood. Yet just last month, Britain announced its first case of a person who died of Creutzfeldt-Jakob disease after a blood transfusion from an infected donor. That news, coupled with new research showing that animals can be infected through blood transfusions, has the FDA scrambling to reconsider the common practice of using cow blood as a protein supplement for cows and calves. "Blood has not been thought to be a source of infection," says Lester Crawford, deputy commissioner of the FDA. "Now there's new information, which we've been looking at very carefully."

The world has been grappling with the threat of mad cow disease, or bovine spongiform encephalopathy, since 1985, when scientists traced an outbreak of the deadly neurological disorder among cattle to the use of cow brains and other tissue in cattle feed. But it wasn't until the 1990s, when people in England who ate beef started dying of a rare dementia, that anyone realized the effect of the disease on humans. Since the outbreak, at least 136 Creutzfeldt-Jakob deaths have been linked to beef across Europe, most in the United Kingdom. The average age of the deceased: 28.

Prion-based diseases are scary because they're invariably fatal and can incubate silently for decades before they start producing symptoms. In cattle, they appear to incubate for at least 3½ years, which is why European nations now test all cows over 30 months of age. Another reason prions are so worrisome is that they're almost impossible to destroy. Even incinerating infected tissue at superhigh temperatures doesn't neutralize them.

What to do? Britain finally tamed its mad cow epidemic by enforcing a strict ban on feeding cow remains to other cattle. The FDA issued a similar ban in 1997, and it says 99 percent of feed mills have complied. But a report last year by Congress's General Accounting Office concluded that the ban lacked teeth. FDA inspectors don't test feed for cattle tissue; rather, they check the mills' paperwork. And it's still legal to feed blood and gelatin derived from cows to cattle, while blood products are often used to wean dairy calves. In light of last month's discovery, the FDA is now considering a ban on blood-based feeds, a move that dairy experts estimate could raise the cost of feeding a cow, currently around \$3.50 per day, by 50 cents to a dollar.

Some critics worry that even if the feed ban proves effective, some cows may still end up eating the remains of others. Cow products are regularly used in poultry and pig feed, and the litter from these animals sometimes gets mixed back into cattle food. "They can feed cow parts to pigs and chickens, and then feed it back to cows," said Susan Solarz, scholar-in-residence at American University.

Move these issues out of the laboratory and into the family dining room, and they have a yuck factor that's off the charts. Take downer cows. Of the 36 million cattle slaughtered annually, an estimated 130,000 to 190,000 are sick or disabled animals. The beef and dairy industries have long argued that most of those animals are healthy, suffering only broken legs. Congress has pretty much bought the argument. More than half the members--33 of 51--of the powerful House Agriculture Committee received campaign contributions from dairy political action committees, and when the panel voted on a downer ban in July, 85 percent of those who had received contributions opposed it. In November, the Senate passed the ban on a voice vote, but then GOP leaders cut the provision from the giant spending package passed just before Christmas. That bill is now languishing in the Senate. Though it will top the agenda when Congress returns, even legislators friendly to the beef industry worry about the prospects for

tougher safety rules. "We need to do something about the inordinate influence that the packers have on the process," says one such congressman, North Dakota Democrat Earl Pomeroy.

Prevention. But even without Congress, the Agriculture Department can move to regulate the food supply. That's what it did last week with the ban on downers. The new rule would have prevented the sick cow in Washington State from making its way to market.

Another new rule, still in proposal form, also would have prevented the meat from reaching consumers. Since the disease is carried in high-risk tissue like the brain and spinal cord, those tissues were removed from the sick cow for testing. Before results were known, however, the meat was sent on for processing, sale, and consumption. A new proposed regulation calls for waiting until test results are known--the procedure used in Europe and Japan--before the meat can be processed. But it's unclear how many cattle would be tested.

Other new, proposed regulations have brought to light some more things many meat eaters would prefer not to think about. One says that cattle can no longer be stunned with air injections before slaughter, a practice that can send brain tissue into muscle, contaminating it. New restrictions would also be imposed on a process called advanced meat recovery, which cuts meat very close to the bone. It is widely used in ground meat for pizza, hot dogs, and sausage. An FDA survey found that 35 percent of meat sampled from this kind of process in 2002 contained traces of high-risk nervous-system tissue.

Regulations are one thing, enforcement another. Except for the immediate ban on downer cattle, the regulations are not yet written. Carol Tucker Foreman, director of food policy for the Consumer Federation of America, cautions that no one knows exactly what they'll say or how aggressively they will be enforced. "Because they were clearly put together quickly, they were very general. We have had occasions with this administration where the final product was substantially less than promised." One example this year, she says, was a proposal to require testing for the toxic form of listeria, bacteria found in processed food such as lunch meat. "The industry didn't want that, so they dropped that. For us, that was the linchpin of the rule."

One cow has forced Americans to look at the gruesome path taken by the beef they eat. The food-safety answers are far from clear. Some 5,200 people die in the United States each year of food-related illnesses. Not one of those deaths has been from mad cow. It could take years, if not decades, to learn the true risk and figure out how to minimize it. "With other illnesses, it's clear what the response is. With SARS, you quarantine immediately. With AIDS, you say use condoms and don't share needles," says Robert Klitzman, codirector of the Center for Bioethics at Columbia University. "Here, it's not certain how much disease is out there. In the worst-case scenario, if someone got infected from this

cow, that person wouldn't suffer symptoms for 10 years. You don't want to make people hysterical, but you don't want to deny the illness, either."

With Terence Samuel

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Safety At The Dinner Table

One "mad cow" has raised many questions about the disease and meat safety. Here are some answers:

What causes mad cow disease?

There's some debate, but most researchers agree that misshapen versions of proteins called prions, in a cow's brain and nervous system, are at the root of the disease. Proteins need to fold into intricate knots to work properly. If a prion is flat instead, it can flatten the prions around it. When there are a lot of the misshapen, malfunctioning proteins, the brain develops spongy holes and stops working.

Do people get it?

People get a version of the spongy brain illness called variant Creutzfeldt-Jakob disease, also thought to be caused by prions. It is extremely rare. Symptoms take years to develop after infection. Victims develop dementia and are unable to control their muscles. The illness has no treatment or cure and is invariably fatal. Death usually comes within two years of the symptoms' onset.

What's the connection to mad cows?

People probably get the disease the same way cows do, by eating cattle products carrying deformed prions. A tiny dose is enough.

Is some beef safer than other beef?

Yes. Muscle tissue doesn't seem to transmit the disease, so boneless cuts are safest. (Preliminary studies in mice raised some doubts about this, but rodents are very different from cows.) Cuts of beef on the bone may have some nerve tissue, which can harbor prions. Ground beef may have the same problem, because the machines used to get scraps of muscle off the bone may get shreds of nerve, too. If you're worried about buying ground beef, buy a regular cut of beef and have the butcher grind it for you, says Jean Halloran, director of the Consumer Policy Institute at Consumers Union. "Then you have at most the risk of one cow, and the least infectious part of the cow." Cooking won't help. Even incinerating meat doesn't destroy prions.

Are there cases of Creutzfeldt-Jakob disease that don't come from beef?

Yes. The "ordinary" disease usually occurs randomly, although it is rare--only 213 Americans died of Creutzfeldt-Jakob disease in 2000, the most recent statistics available. People have also gotten CJD from human growth hormone, tissue grafts, and even surgical instruments, since prions survive normal sterilization. Transmission through blood transfusion is also possible. That's why the Red Cross won't take blood donations from people who have spent more than three months in the United Kingdom since 1980.

Where can I learn more?

[The Centers for Disease Control and Prevention](#)

[The U.S. Department of Agriculture](#)

[Consumers Union](#)

[The National Cattlemen's Beef Association](#)

-Helen Fields

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Attention Shoppers: Sale On Beef

Low-carb dieters may find cause to rejoice in the mad cow scare. The industry expects beef prices to drop 15 percent in the coming weeks because almost every country in the world now refuses to buy U.S. meat. Exports were nearly 10 percent of the market--about 2.7 billion pounds of red meat annually--all of which will now be swelling supplies headed for American supermarkets and restaurants.

Prices could plummet further if U.S. consumers begin to turn up their noses at beef. But so far, Americans appear to be maintaining their renewed love affair with steaks and burgers. Although no figures are yet available, fast-food chains, upscale restaurants, and grocery stores all report no falloff in beef sales, which amount to \$70 billion annually. Consumer demand for beef has been strong, thanks in part to the popularity of high-protein diets like Atkins and South Beach. The industry had also repositioned its product by providing more easy-to-prepare frozen and partially cooked choices. Leading the marketing charge with tricks it had learned in the poultry trade was Tyson Foods, which became the beef industry leader with 27 percent of the U.S. market when it purchased the nation's biggest meatpacking business, IBP, in 2001.

Pricey. U.S. consumers had been paying a pretty penny for beef. Cattle prices hit a record \$109.33 per 100 pounds in October, a 60 percent jump over last year's average price. Supplies were low because drought in the Great Plains had reduced cattle herds.

Last week, as Japan and other countries rebuffed U.S. lobbying to lift import bans, prices had already begun to fall. The wholesale price of boneless rib-eye dropped to \$4.87 per pound, down about 10 percent from \$5.46 per pound on the day the mad cow case went public. Consumers probably will see supermarket specials in about a month. But they should be aware that wholesale prices still are running high; that \$4.87-per-pound rib-eye was \$4.18 last year at this time. That means that unless domestic demand deteriorates, the impact on the cattle industry should not be devastating. Even Tyson, which will take immediate losses on current inventory, may not suffer long term, says Mark Hugh Sam, a Morningstar analyst. Although the company most likely will reduce prices, as a middleman it will also buy at lower cost and make money on the spread.

Within the beef industry, "nobody likes to see this situation at all," says Darrell Mark, agricultural economist at the University of Nebraska. "But the one good thing, as far as timing, is that it occurred when prices were relatively high so it brought us back to price levels that are still within the normal trading range." –

Marianne Lavelle