

Listeriosis Outbreaks Associated with Soft Cheeses

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Sarah Gregory] Hi, I'm Sarah Gregory and today I'm talking with Kelly Jackson, a surveillance coordinator at CDC. She co-authored an article on listeriosis outbreaks linked to soft cheeses. Welcome, Kelly.

[Kelly Jackson] Hi, Sarah. Thank you for having me. It's a pleasure to be here.

[Sarah Gregory] Tell us about Listeria. What it is and how serious is it?

[Kelly Jackson] Listeria monocytogenes germs are a bacteria that live in the environment and can grow at refrigeration temperature. People usually become infected after eating contaminated food. The infection, called listeriosis, usually affects the bloodstream, causing sepsis, or brain, causing meningitis or encephalitis. In pregnant women, listeriosis is usually a mild flu-like illness, but it can cause miscarriage, stillbirth, newborn illness, or newborn death. Listeriosis during pregnancy results in fetal loss in about 20 percent of cases and newborn death in about three percent. Most people with listeriosis require hospital care and about one in five people with bloodstream or brain infection die.

[Sarah Gregory] This study implicated Latin-style soft cheeses, such as queso fresco, in two-thirds of the outbreaks associated with soft cheeses you looked at. Why is this?

[Kelly Jackson] The issue of listeriosis outbreaks linked to Latin-style cheese, which is also known as Hispanic-style cheese, is not new. In fact, the earliest reported U.S. listeriosis outbreak was in 1985 and it was linked to Hispanic-style cheese. Since then, many improvements in food safety have been made. However, we continued to find Listeria outbreaks associated with Hispanic-style soft cheese during our study period, from 1998 through 2014, including soft cheese made in home and commercial settings. The U.S. Hispanic population increased from 11 percent to 17 percent during this period, and that may have created an increase in consumer demand for Hispanic-style soft cheeses.

[Sarah Gregory] Who is at risk during a Listeria outbreak?

[Kelly Jackson] Listeriosis primarily affects pregnant women and their newborns, adults aged 65 and older, and people with weakened immune systems. Other people can be infected, but they rarely become seriously ill.

People in higher risk groups should avoid certain foods regardless of whether a Listeria outbreak is occurring. These foods include raw or unpasteurized milk and products made from it, such as soft cheese, ice cream, and yogurt made from unpasteurized milk; raw or lightly cooked sprouts; hot dogs, lunch meats, cold cuts, or other deli meats, and fermented or dry sausages, unless these foods are steaming hot just before serving; refrigerated pate or meat spreads, unless they are canned; and refrigerated smoked seafood. These smoked seafood items are often labeled as "nova-style," "lox," "kippered," "smoked," or "jerky" and are usually found at seafood or deli counters of grocery stores and delicatessens.

[Sarah Gregory] Well, what did your study look at?

[Kelly Jackson] Our study looked at *Listeria* outbreaks in the United States from 1998 through 2014 that were reported to CDC's Foodborne Disease Outbreak Surveillance System. We determined how many were linked to soft cheese each year. For the soft cheese outbreaks, we described the number of illnesses, hospitalizations, deaths, and fetal losses. We also examined the proportion of cases that were pregnancy-associated and the proportion of cases that occurred among Hispanic people. Finally, we described whether the implicated cheeses were made from pasteurized milk, and issues or observations that were noted during inspections of facilities that produced the cheeses.

[Sarah Gregory] The study also distinguished between soft cheese made from pasteurized and non-pasteurized milk, as we've sort of already talked about. What is pasteurization and how does it help prevent illness?

[Kelly Jackson] Pasteurization is the process of heating milk to a high enough temperature for a long enough time to kill disease-causing germs, including *Listeria*. Routine pasteurization of milk began in the United States in the 1920s and became widespread by 1950 as a way to reduce contamination and human illness. It worked, leading to a dramatic reduction in both illnesses and outbreaks. Public health professionals and health care providers consider it one of public health's most effective food safety interventions ever.

For example, studies estimate that someone is 50 to 160 times more likely to get listeriosis from eating certain soft cheeses made from unpasteurized milk instead of pasteurized milk. However, as our study noted, pasteurized milk products, such as soft cheese, do sometimes cause outbreaks. Usually, this happens if cheeses are contaminated during the cheese-making process.

[Sarah Gregory] Should we avoid eating all soft cheese?

[Kelly Jackson] CDC recommends people avoid drinking unpasteurized milk and eating products made from it. In addition, CDC recommends people at higher risk—including pregnant women, older adults, and people with weakened immunity—avoid eating soft cheese, such as queso fresco, queso blanco, panela, brie, Camembert, blue-veined, or feta, unless it's labeled as made with pasteurized milk. Soft cheeses made with pasteurized milk, including commercial cottage cheese, cream cheese, and processed mozzarella, are generally considered safe. However, some soft cheeses made with pasteurized milk, including Hispanic-style soft cheeses, have been produced in facilities with improper processing conditions, resulting in *Listeria* contamination. You can't tell whether a cheese was made in a clean, safe facility based on its label. We advise people at higher risk for listeriosis to carefully consider whether to eat Hispanic-style or other soft cheeses implicated in previous outbreaks.

[Sarah Gregory] What are the conclusions from this study?

[Kelly Jackson] We concluded that eating contaminated soft cheese made in unsanitary conditions continues to be a common cause of listeriosis outbreaks in the United States. Most soft cheese outbreaks were linked to Hispanic-style cheese. These outbreaks disproportionately affected Hispanic pregnant women and their newborns.

[Sarah Gregory] Are there recommended next steps?

[Kelly Jackson] We recommend that all cheese manufacturers implement robust sanitation and *Listeria* monitoring programs to prevent illnesses and outbreaks. We also recommend that people

in high-risk groups follow this food safety advice I mentioned before. They can find this in more detail on CDC's website at cdc.gov/listeria. The website also contains educational materials in English and Spanish on soft cheese and pregnancy, including a photo novela, infographic, and poster. And it has a page for clinicians.

[Sarah Gregory] Okay, Kelly, tell us about your job and how it relates to this study.

[Kelly Jackson] I worked with state health departments on the Listeria Initiative, an enhanced surveillance system that collects reports of cases of listeriosis. The goal of the Listeria Initiative is to find and stop outbreaks by interviewing all patients with listeriosis. We use a questionnaire to collect detailed information about the foods people ate before they got sick. State health departments and CDC identify clusters of Listeria illnesses by monitoring the DNA fingerprints of Listeria bacteria isolated from sick people. We then use data from our questionnaires to quickly investigate and figure out what food is causing the illnesses. All state health departments report information about outbreaks to the Foodborne Disease Outbreak Surveillance System.

[Sarah Gregory] Thank you, Kelly. Listeners can read the June 2018 article, "Listeriosis Outbreaks Associated with Soft Cheeses, United States, 1998–2014" online at cdc.gov/eid.

I'm Sarah Gregory for *Emerging Infectious Diseases*.

[Announcer] For the most accurate health information, visit cdc.gov or call 1-800-CDC-INFO.