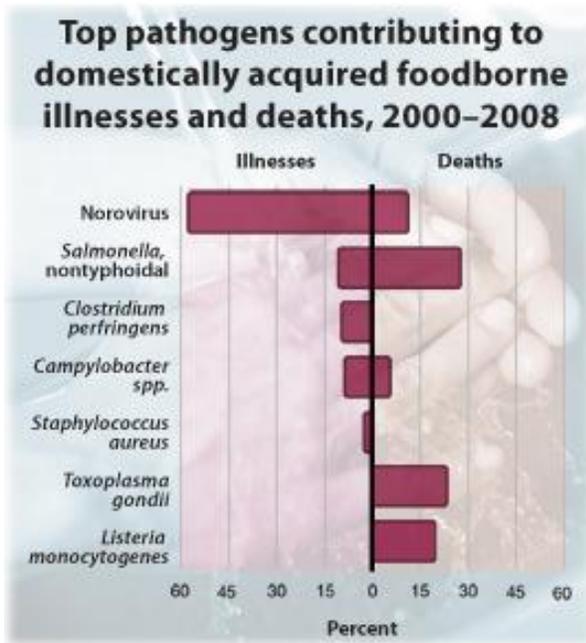




Water Quality and Health

Listeria: Thriving in the Cold

By Chris Wiant, M.P.H., PhD



Graph from [CDC website](#): 2011 Estimates of Foodborne Illness in the United States

The equivalent of 15 semi-truckloads of [Jeni's Splendid Ice Cream was recalled](#) earlier this year due to possible contamination with *Listeria* bacteria. The recall cost the company \$2.5 million, but it was the right response. Another ice cream producer, Blue Bell Creameries, [recalled all of its products](#) made at all of its facilities after *Listeria* was found in its Chocolate Chip Cookie Dough Ice Cream. According to a CDC [update](#), as of May 7, 2015, ten patients from four states had been infected with *Listeria* from Blue Bell Creameries ice cream. Three patients from Kansas have died.

CDC [estimates](#) that each year one in six Americans—about 48 million of us—experience “food poisoning.” 128,000 are hospitalized and 3,000 die. Although only about 1600 people get sick from *Listeria* each year, it is the third leading cause of death from food poisoning after *Salmonella* and *Toxoplasma gondii*.

In 2011, a *Listeria* outbreak associated with cantaloupe killed 33 people, caused one miscarriage, and sickened over 147 people in 28 states, [according to CDC](#). The outbreak was traced to unsanitary post-harvest processing on a Colorado farm, including discontinuing washing cantaloupe with a chlorine-based disinfectant solution. Cantaloupe can harbor soil and bacteria in the grooves of its irregular exterior, which can be transferred into the fruit upon slicing it with a knife.

Listeria Loves the Cold

Listeria thrives in cold environments. [An article](#) in *Infection Control Today* notes that *Listeria* may infect “ready-to-eat deli meats and hot dogs, refrigerated meat spreads, unpasteurized milk and dairy products, soft cheese made with unpasteurized milk, refrigerated smoked seafood, and raw sprouts.” Kansas State University food safety specialist Fadi Aramouni explains that although the pasteurization process destroys *Listeria* in ice



Listeria monocytogenes is a gram-positive*, rod-shaped bacterium that lives in soil, water, mud, silage, domestic and wild animals and humans.

Image from [CDC website](#)

cream, the bacteria can survive elsewhere in an environment, aided by poor sanitation procedures. In such environments, *Listeria* may persist in cool, moist areas of condensation, such as drains and light fixtures. He also points out that in the ice-cream making process, "inclusions" such as cookie dough and pecans are added post-pasteurization, presenting a potential opportunity to introduce pathogens that would not be subject to pasteurization.

On Guard for Listeria

Listeria becomes a greater risk to health as people age into their senior years. Other at-risk populations include pregnant women and their newborns, young children and people with weakened immune systems. [CDC](#) reports that *Listeria* can cause miscarriage and meningitis.

There is no way to know by inspecting it that *Listeria* has contaminated your food. Here are some tips based on [FDA advice](#) for avoiding *Listeria* in foods:

- **Respect Recalls:** Pay close attention to food recalls and discard or return any recalled products to the market. The US Food and Drug Administration offers a [free email subscription service](#) that reports all food recalls.
- **Reheat Lunch Meats:** At risk individuals should reheat hot dogs and lunch meats until steaming hot.
- **Avoid Unpasteurized Products:** Avoid unpasteurized milk and soft cheeses such as feta, brie, camembert, blue-veined cheeses, "queso blanco," "queso fresco" or Panela, unless they are made with pasteurized milk.
- **Wash all Fresh Fruits and Veggies:** Wash produce under running water just before eating, cutting or cooking, even if you plan to peel the produce first. Scrub firm produce such as melons and cucumbers with a clean produce brush.
- **Keep Refrigerated Foods Cold:** Chilling food properly is an important way of reducing risk of *Listeria* infection. Although *Listeria* can grow at refrigeration temperatures, it grows more slowly at refrigerator temperatures of 40 degrees F or less.
- **Use precooked and ready-to-eat foods as soon as you can:** The longer they are stored in the refrigerator, the more chance *Listeria* has to grow.
- **Discard leftovers after three days.**
- **Cover or Contain Refrigerated Foods:** Don't let foods (especially meat and poultry) leak juices onto other foods. If you have a leak or spill in the refrigerator, use paper towels to absorb juices and then clean and sanitize (see below).
- **Clean and Sanitize the Refrigerator Shelves and Walls Regularly:** Clean the inside walls and shelves of your refrigerator with warm water and liquid soap, then rinse. You can make your own sanitizer by combining 1 teaspoon of unscented regular bleach to one 1 quart of water, flooding the surface and letting it stand for 10 minutes. Then rinse with clean water. Let surfaces air dry or pat them dry with fresh paper towels. Bleach solutions get less effective with time, so discard unused portions daily.

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*Gram-positive bacteria are bacteria that contain a thick cell wall that absorb a violet dye when the Gram Stain Test is administered and the cells are viewed through a microscope. In contrast, gram-negative bacteria, characterized by thinner cell walls but inner and outer cell membranes, do not retain the dye, and appear red or pink in the Gram Stain Test. Gram-negative bacteria cause a wide range of infections.