

Common Foodborne Pathogens: *Listeria monocytogenes*



What is *Listeria monocytogenes*?

Listeria monocytogenes is a bacterium commonly found in soil, water, sewage, and decaying plant material. *L. monocytogenes* is a particularly hardy pathogen, capable of surviving in damp areas, and on stainless steel and glass within the food processing environment. Once established, it is difficult to eliminate and may often be the cause of post-process food contamination.

Although easily killed by heat; refrigeration does not prevent the growth of this organism. In fact, *L. monocytogenes* is unique among foodborne pathogens in that it not only survives, but can grow at refrigeration temperatures! Foods most commonly associated with this illness are refrigerated foods that are not reheated before consumption

Who gets *Listeria monocytogenes* Infection?

Listeriosis is a severe infection caused by *L. monocytogenes*. Most healthy persons do not experience symptoms of listeriosis following ingestion of small amounts of *L. monocytogenes*. Those at highest risk of developing symptoms include pregnant women, the immunocompromised, young children, and the elderly. These populations can become ill by consuming a very small concentration.

Symptoms of *Listeria monocytogenes* Infection

The most common symptoms of listeriosis include a mild flu-like illness with persistent fever, muscle aches, nausea or diarrhea. If the infection progresses to the nervous system, headache, confusion, loss of balance, and convulsions may occur. Infection during pregnancy may lead to miscarriage, stillbirth, early delivery, or infection of the fetus.

Proper Food Handling Techniques to Avoid Infection

Heat ready-to-eat foods (i.e. hotdogs, deli meats) and leftovers until they are steaming hot. Do not consume unpasteurized milk or dairy products. Cook all poultry, meats, and seafood to correct internal temperatures for 15 seconds. Rinse fruits and vegetables thoroughly with water, especially those that will not be cooked. Refrigerate or freeze ingredients and leftovers immediately after use.

Recent Listeriosis Outbreaks in the U.S.

In 2002, a multistate outbreak of 46 culture-confirmed cases, seven deaths, and three stillbirths or miscarriages in eight states was linked to eating sliceable turkey deli meat. One intact food product and 25 environmental samples from a poultry processing plant yielded *L. monocytogenes*. Two environmental isolates from floor drains were indistinguishable from that of outbreak patient isolates, suggesting that the plant might have been the source of the outbreak. Increased plant sanitation, or cooking the deli meat before consumption may have prevented the outbreak.

Commonly Associated Foods

- Ready-to-eat foods (i.e. hot dogs, deli meats)
- Unpasteurized dairy products
- Raw fruits and vegetables
- Refrigerated pâtés, meat spreads and smoked seafood



Safe Food Handling Checklist

- Heat ready-to eat foods (hot dogs, deli meat) until steaming hot (Important for high risk populations)
- Wash fruits and vegetables with water
- Refrigerate/Freeze ingredients and leftovers after use
- Cook raw meats, poultry, and seafood to correct internal temperatures

Poultry = 165°F
Ground Beef = 160°F
Fresh Pork = 160°F
Seafood, Steak = 145°F

For More Information Contact:
Renee R. Boyer, Ph.D.
Extension Specialist
rboyer@vt.edu

Julie McKinney, Ph.D.
Food Safety Education
jmckinney@vt.edu