



LISTERIOSIS

What is listeriosis?

Listeriosis is a serious infection usually caused by eating food contaminated with the bacterium *Listeria monocytogenes*, and is an important public health problem in the United States. **The disease primarily affects older adults, pregnant women, newborns and adults with weakened immune systems.** However, rarely, persons without these risk factors can also be affected. The risk may be reduced by following a few simple recommendations.

How great is the risk for listeriosis?

In the United States, an estimated 1,600 persons become seriously ill with listeriosis each year. Of these, 260 die. The following groups are at increased risk:

- **Pregnant women:** Pregnant women are about 20 times more likely than other healthy adults to get listeriosis. About one in six (17%) cases of listeriosis occurs during pregnancy.
- **Newborns:** Newborns suffer the most serious effects of infection in pregnancy.
- Persons with weakened immune systems from transplants or certain diseases, therapies, or medications.
- Persons with cancer, diabetes, alcoholism, liver or kidney disease.
- Persons with AIDS. They are almost 300 times more likely to get listeriosis than people with normal immune systems.
- Older adults

Healthy children and adults occasionally get infected with *Listeria*, but they rarely become seriously ill

How do you get listeriosis?

You get listeriosis by eating food contaminated with *Listeria*. Babies can be born with listeriosis if their mothers ate contaminated food during pregnancy. However, healthy persons may consume contaminated foods without becoming ill. Persons at risk can prevent *Listeria* infection by avoiding certain high-risk foods and by handling food properly.

How does *Listeria* get into food?

Listeria monocytogenes is found in soil and water. Animals can carry the bacterium without appearing ill and can contaminate foods of animal origin, such as meats and dairy products. When *Listeria* bacteria get into a food processing factory, they can live there for years, sometimes contaminating food products. The bacterium has been found in a variety of raw foods, such as uncooked meats and vegetables; as well as in foods that become contaminated after cooking or processing, such as soft cheeses, processed meats such as hot dogs and deli meat (both products in factory-sealed packages and products sold at deli counters), and smoked seafood. Unpasteurized (raw) milk and cheeses and other foods made from unpasteurized milk are particularly likely to contain the bacterium.

Listeria is killed by pasteurization and cooking; however, in some ready-to-eat foods such as hot dogs and deli meats, contamination may occur after factory cooking but before packaging. Unlike most bacteria, *Listeria* bacteria can grow and multiply in some foods in the refrigerator.

What are the symptoms of listeriosis?

A person with listeriosis usually has fever and muscle aches often preceded by diarrhea or other gastrointestinal symptoms. Almost everyone who is diagnosed with listeriosis has "invasive" infection in which the bacteria spread beyond the gastrointestinal tract. The symptoms vary with the infected person:

- **Pregnant women:** Pregnant women typically experience only a mild, flu-like illness. However, infections during pregnancy can lead to miscarriage, stillbirth, premature delivery or life-threatening infection of the newborn.
- **Persons other than pregnant women:** In addition to fever and muscle aches; symptoms can include headache, stiff neck, confusion, loss of balance, and convulsions.


Can listeriosis be prevented?

The general guidelines recommended for the prevention of listeriosis are similar to those used to help prevent other food borne illnesses, such as salmonellosis. In addition, there are specific recommendations for persons at high risk for listeriosis.

How can you reduce your risk for listeriosis?

There are some general recommendations on how to prevent an infection with *Listeri*, and some additional recommendations specifically for persons who are at high risk.

General recommendations:

- Thoroughly cook raw food from animal sources, such as beef, pork, or poultry to a safe internal temperature. For a list of recommended temperatures for meat and poultry, visit http://www.fsis.usda.gov/PDF/IsItDoneYet_Magnet.pdf. 
- Rinse raw vegetables thoroughly under running tap water before eating.
- Keep uncooked meats and poultry separate from vegetables and from cooked foods and ready-to-eat foods.
- Do not drink raw (unpasteurized) milk, and do not eat foods that have unpasteurized milk in them.
- Wash hands, knives, countertops and cutting boards after handling and preparing uncooked foods.
- Consume perishable and ready-to-eat foods as soon as possible.

Recommendations for persons at high risk, such as pregnant women and persons with weakened immune systems include the following in addition to the above recommendations:

- **Meats**
 - Do not eat hot dogs, luncheon meats, cold cuts, other deli meats (e.g., bologna), or fermented or dry sausages unless they are heated to an internal temperature of 165°F or until steaming hot just before serving.
 - Avoid getting fluid from hot dog and lunch meat packages on other foods, utensils, and food preparation surfaces, and wash hands after handling hot dogs, luncheon meats, and deli meats.
 - Do not eat refrigerated pâté or meat spreads from a deli or meat counter or from the refrigerated section of a store. Foods that do not need refrigeration, like canned or shelf-stable pâté and meat spreads, are safe to eat. Refrigerate after opening.
- **Cheeses**
 - Do not eat soft cheese such as feta, queso blanco, queso fresco, brie, Camembert, blue-veined, or panela (queso panela) unless it is labeled as made with pasteurized milk. Make sure the label says, "MADE WITH PASTEURIZED MILK."

- **Seafood**

- Do not eat refrigerated smoked seafood, unless it is contained in a cooked dish, such as a casserole, or unless it is a canned or shelf-stable product. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna, and mackerel, is most often labeled as "nova-style," "lox," "kippered," "smoked," or "jerky." These fish are typically found in the refrigerator section or sold at seafood and deli counters of grocery stores and delicatessens. Canned and shelf stable tuna, salmon, and other fish products are safe to eat. "

Recommendations to keep food safe:

- Be aware that *Listeria monocytogenes* can grow in foods in the refrigerator. Use an appliance thermometer, such as a refrigerator thermometer, to check the temperature inside your refrigerator. The refrigerator should be 40°F or lower and the freezer 0°F or lower.
- Clean up all spills in your refrigerator right away—especially juices from hot dog and lunch meat packages, raw meat, and raw poultry.
- Clean the inside walls and shelves of your refrigerator with hot water and liquid soap, then rinse.
- Divide leftovers into shallow containers to promote rapid, even cooling. Cover with airtight lids or enclose in plastic wrap or aluminum foil. Use leftovers within 3 to 4 days.
- Use precooked or ready-to-eat food as soon as you can. Do not store the product in the refrigerator beyond the use-by date; follow USDA refrigerator storage time guidelines:
 - **Hot Dogs** – store opened package no longer than 1 week and unopened package no longer than 2 weeks in the refrigerator.
 - **Luncheon and Deli Meat** – store factory-sealed, unopened package no longer than 2 weeks. Store opened packages and meat sliced at a local deli no longer than 3 to 5 days in the refrigerator.

How do you know if you have listeriosis?

If you develop fever and chills while pregnant or if you are very sick with fever and muscle aches or stiff neck, consult your doctor. A blood or spinal fluid test (to look for the bacteria) will show if you have listeriosis.

What should you do if you've eaten a food recalled because of *Listeria* contamination?

The risk of an individual person developing a *Listeria* infection after consumption of a contaminated product is very small. If you have eaten a contaminated product and do not have any symptoms, no tests or treatment are recommended, even if you are in a high-risk group. However, if you are in a high-risk group, have eaten the contaminated product, and within 2 months of eating it you become ill with fever or other symptoms of listeriosis, you should contact your physician immediately and inform him or her that you were exposed to a product contaminated with *Listeria*.

Can listeriosis be treated?

Antibiotics given promptly can cure the illness and prevent infection of the fetus. Even with prompt treatment, some *Listeria* infections result in death. This is particularly likely in older adults and in persons with other serious medical problems.

What is the government doing about listeriosis?

Government agencies and the food industry have taken steps to reduce contamination of food by the *Listeria* bacterium. The [Food and Drug Administration](#) and the [U. S. Department of Agriculture](#) monitor food regularly. When a

processed food is found to be contaminated, food monitoring and plant inspection are intensified, and if necessary, the implicated food is recalled.

The [National Center for Emerging and Zoonotic Infectious Diseases](#) (NCEZID) at CDC is tracking listeriosis in [FoodNet](#) sites to measure trends in illness and thus help evaluate the impact of prevention activities. CDC also assists health departments in detecting and investigating outbreaks.

Listeriosis is a nationally reportable disease. Healthcare providers and laboratories should report cases and outbreaks of listeriosis to their public health department. Local and state health departments collect detailed information on every case through CDC's [Listeria Initiative](#), which helps identify sources of infection and outbreaks, which in turn prevents more cases because contaminated food is then removed from the market.