



LISTERIA AND FOOD SAFETY

The Issue

Listeria monocytogenes (commonly called *Listeria*) is a type of bacterium often found in food and elsewhere in nature. It can cause a rare but serious disease called listeriosis, especially among pregnant women, the elderly or individuals with a weakened immune system. In serious cases it can lead to brain infection and even death.

Background

Listeria is widespread in the environment - found in soil, vegetation, water, sewage, silage and in the faeces of humans and animals. Animals and humans can carry the bacterium without knowing it.

Plants and vegetables can become contaminated with *Listeria* from the soil, water and manure- based fertilizers. Farm animals that appear healthy may also carry *Listeria* and contaminate foods such as meats and dairy products.

Unlike most bacteria, *Listeria* can survive and sometimes grow on foods being stored in the refrigerator. Moreover, foods that are contaminated with this bacterium look, smell and taste normal. *Listeria* can be killed by proper cooking procedures.

Listeria is more likely to cause death than other bacteria that cause food poisoning. In fact, 20 to 30 percent of foodborne listeriosis infections in high-risk individuals may be fatal. However, it should be noted that listeriosis is a relatively rare disease in Canada.

The Health Risks of Listeria

Many people may be carriers of *Listeria*, but few will actually develop listeriosis. Those who do will likely become ill from eating food contaminated with the bacteria, often seen as an outbreak of what people would call 'food poisoning'. Symptoms may start suddenly and include:

- Vomiting
- Nausea
- Cramps
- Diarrhea
- Severe Headache
- Constipation
- Persistent fever

In some instances, these symptoms may be followed by meningitis encephalitis (an infection of the brain or its surrounding tissues) and/or septicemia (blood poisoning), either of which can result in death.

The mild form of foodborne listeriosis usually begins about one day after eating heavily contaminated food. For the more serious form of the disease, the incubation period is generally much longer – up to 90 days after exposure.

Those who are at the highest risk of serious illness include:

- Pregnant women and their unborn/newborn children. Pregnant



women are about 20 times more likely to get listeriosis than other healthy adults. If a pregnant woman develops listeriosis during the first three months of her pregnancy, she may miscarry. Up to two weeks before a miscarriage, pregnant women may experience a mild flu-like illness with chills, fatigue, headache as well as muscular and joint pain. Listeriosis later on in the pregnancy can result in a stillbirth or the birth of an acutely-ill child.

- The elderly. The risk increases with age.
- People with weakened immune systems, such as those undergoing chemotherapy, transplant patients, those with HIV, diabetics and alcoholics. The highest risk group includes those whose immune systems are highly compromised, such as bone marrow transplant patients, blood-borne cancer patients and those with full-blown AIDS. People with AIDS are at least 300 times more likely to get listeriosis than those with a normal immune system.

The disease can be effectively treated with antibiotics, but early diagnosis can be critical to the success of the treatment, especially for those at high risk. At the moment, there is no vaccine to prevent listeriosis.

Minimizing Your Risk

You can minimize your chances of contracting listeriosis (as well as other foodborne illnesses) by following these steps.

- Read and follow all package labels and instructions on food preparation and storage.
- After handling foods in the kitchen, especially raw foods such as meat and fish, thoroughly clean and sanitize all surfaces used for food preparation with a kitchen sanitizer (following the directions on the container) or use a bleach solution (5 ml household bleach to 750 ml of water), and rinse with water.
- To avoid cross-contamination, clean all knives, cutting boards and utensils used with raw food before using them again.
- Thoroughly clean fruits and vegetables before you eat them.
- Refrigerate or freeze perishable food, prepared food and leftovers within two hours.
- Defrost food in the refrigerator, in cold water or in the microwave, but never at room temperature.
- Keep leftovers for a maximum of four days only and reheat them to an internal temperature of 74°C (165°F) before eating them.
- Check the temperature in your refrigerator using a thermometer to make sure it is at 4°C (40°F) or below. As the storage temperature increases, so does the growth of Listeria in foods. The higher the number of bacteria in foods, the greater is the risk of getting sick.
- Frequently wash and disinfect the refrigerator. The more often it is cleaned, the less chance there will be for

Listeria to be transferred from contaminated food and surfaces to non-contaminated foods.

In addition, the recommendations below should be followed by high-risk individuals:

Foods to Avoid:

Hot dogs, especially straight from the package without further heating. The fluid within hot dog packages may contain more Listeria than the hot dogs.

Avoid spreading fluid from packages onto other foods, cutting boards, utensils, dishes and food preparation surfaces. Wash your hands after handling hot dogs.

Safer alternative:

Hot dogs reheated until steaming hot.

Non-dried deli-meats

Safer alternative:

Dried and salted deli-meats such as salami and pepperoni, as they generally do not support the growth of Listeria. In addition, you can reduce your risk by reheating deli-meats until steaming hot.

Soft and semi-soft cheeses

such as feta, Brie, Camembert and blue-veined cheese if they are made from unpasteurized milk.

Safer alternative:

Pasteurized milk and milk products including cheeses made from pasteurized milk.



Refrigerated pâté and meat spreads

Safer alternative:

Canned or shelf-stable pâté and meat spreads.

Refrigerated smoked seafood and fish

Safer alternative:

Cooked refrigerated smoked seafood and fish. Canned or shelf-stable smoked seafood and fish.

Raw or undercooked meat, poultry and fish

Safer alternative:

Thoroughly cooked meat, poultry and fish.

The Government of Canada's Role

Health Canada develops food safety standards and policies to help minimize the risk of food-borne illnesses. The Canadian Food Inspection Agency (CFIA) oversees the food industry to ensure that it meets its food safety responsibilities. Health Canada, in collaboration with the CFIA, has developed a Policy on *Listeria monocytogenes* in ready-to-eat foods which includes inspection and corrective measures.

Health Canada also briefs the medical community, public health officials, the food industry and the public on matters related to listeriosis. As a founding member of the Canadian Partners for Consumer Food Safety Education, Health Canada also participates in public awareness campaigns about safe food practices.

Need More Info?

For more information visit Health Canada's Food and Nutrition Web site at:

http://www.hc-sc.gc.ca/fn-an/index_e.html

For more information about food-borne illnesses, visit the Public Health Agency of Canada's Laboratory for Foodborne Zoonoses Web site at:

http://www.phac-aspc.gc.ca/lfz-llczoa/index_e.html

For more information on *Listeria* go to the Canadian Food Inspection Agency fact sheet, Food Safety Facts on *Listeria* at: <http://www.inspection.gc.ca/english/corpaffr/foodfacts/listeriae.shtml>

or the Centre for Disease Control, *Listeriosis* Web site at:

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/listeriosis_g.htm

For information on Canadian food issues/recalls, visit the Canadian Food Inspection Agency at: <http://www.inspection.gc.ca>

For more Fight BAC!® tips, visit: <http://www.canfightbac.org/english/indexe.shtml>

For more information on food-borne disease internationally go to the World Health Organization, foodborne diseases Web site at: http://www.who.int/topics/foodborne_diseases/en/

For additional articles on health and safety issues go to the It's Your Health Web site at: www.healthcanada.gc.ca/iyh
You can also call toll free at 1-866-225-0709
or TTY at 1-800-267-1245*