Listeriosis
Frequently Asked Questions

1. What is Listeriosis?

Listeriosis is a serious bacterial disease caused by the Gram-positive, rod shaped bacterium, *Listeria monocytogenes*. The bacterium is widely distributed in nature and an be found in soil, water and contaminated food. Animals and food products such as vegetables can become contaminated from these sources. nfection with *Listeria* usually results in gastro-enteritis with symptoms ranging from mild to severe. However, in persons with weak immunity, Listeriosis can lead to meningitis or septicaemia. In pregnant women, Listeriosis may results in preganancy loss (abortion) along with meningitis of their infant.

2. Who can get Listeriosis?

Anyone can get Listeriosis. However, those at high risk of severe disease are newborns, the elderly, immunocompromised individuals, pregnant women and their unborn babies; and those with underlying conditions such as HIV, diabetes, cancer, chronic liver or kidney disease.

3. Where does Listeriosis occur in South Africa?

The first documented outbreak of listeriosis was from August 1977 to April 1978 where 14 cases from the Johannesburg area were reported. Sporadic cases occur throughout South Africa. In January to September 2015, seven cases were reported from a tertiary hospital in the Western Cape Province. No common source of exposure was found amongst these cases, although at least five of the seven were shown to be related on laboratory examination.

4. How is Listeriosis transmitted?

Listeriosis is usually spread through the ingestion of contaminated food products most frequently with raw or unpasteurised milk and soft cheeses, but also vegetables, processed foods, ready-to-eat meats and smoked fish products. *Listeria* can survive in normal temperatures associated with refrigeration (4°C). The *Listeria* bacterium can also be transmitted from a pregnant woman to her unborn baby during pregnancy or at the time of birth. Direct contact with the organism can cause skin lesions.

5. What are the signs and symptoms of Listeriosis in humans?

The incubation period varies and can be between 3 – 70 days (median 3 weeks). Up to 10% of people may be asymptomatic carriers. This figure may be higher in abattoir and laboratory workers who work with *Listeria monocytogenes* cultures. In the average healthy adult, infection is usually asymptomatic. Symptoms are usually mild and may include fever, myalgia, malaise and sometimes nausea or diarrhoea. In at-risk patients, spread of infection to the nervous system can cause meningitis leading to headaches, confusion, stiff neck, loss of balance or convulsions. Bacteraemia may also occur.

Pregnant women may present with mild flu-like illness associated with headache, fever and myalgia. However, infections during pregnancy can lead to premature births, infection of the newborn with permanent disability, and miscarriage or stillbirth.

6. How is Listeriosis diagnosed?

Diagnosis is made by culturing *Listeria monocytogenes* from clinical specimens such blood, cerebrospinal fluid (CSF), amniotic fluid, placenta or other sterile body fluids. A high index of suspicion is needed for diagnosis as the organisms may be mistaken for skin contaminants (diphtheroids) on Gram stain.

7. How is Listeriosis treated?

Gastro-enteritis due to *Listeria* usually does not require treatment. Meningitis or septicaemia due to *Listeria* can be life threatening and should be treated with intravenous antibiotics. Such as ampicillin alone or in combination with other antibiotics such as gentamicin, trimethoprim-sulfamethoxazole. *Listeria* is resistant to the cephalosporin antibiotics.

8. How can Listeriosis be prevented?

Unlike most other foodborne pathogens, *Listeria monocytogenes* can grow in refrigerated foods that are contaminated. To prevent this, it is recommended to have fridge temperatures below 4^{o}C; and freezer temperatures below -18^{o}C. Therefore, those at high risk of listeriosis should avoid the following foods:

- Raw or unpasteurized milk, or dairy products that contain unpasteurized milk;
- Soft cheeses (e.g. feta, goat, Brie);
- Foods from delicatessen counters (e.g. prepared salads, cold meats) that have not been heated/reheated adequately;
- Refrigerated pâtés.

There is no vaccine or pre-exposure prophylaxis for preventing infection. The main preventive measure is to always ensure that good basic hygiene is followed. This includes:

- Using only pasteurized dairy products;
- Thoroughly cooking raw foods from animal sources, such as beef, pork or poultry;
- Washing your hands before preparing food, before eating and after going to the toilet;
- Washing and decontamination of kitchen surfaces and utensils regularly, particularly after preparing raw meat, poultry and eggs, including industrial kitchens;
- Washing raw vegetables and fruits thoroughly before eating.

9. Where can I find out more information

For more information: contact the Outbreak Response Unit or the Centre for Enteric Diseases (for use by healthcare professionals only).

- Medical / clinical related queries: NICD Hotline +27 82 883 9920;
- Results inquiries: NICD Specimen Receiving Laboratory: +27 11 386 6404.

Five keys to safer food

Keep clean

- ✔ Wash your hands before handling food and often during food preparation
- ✔ Wash your hands after going to the toilet
- ✔ Wash and sanitize all surfaces and equipment used for food preparation
- ✔ Protect kitchen areas and food from insects, pests and other animals

Why?

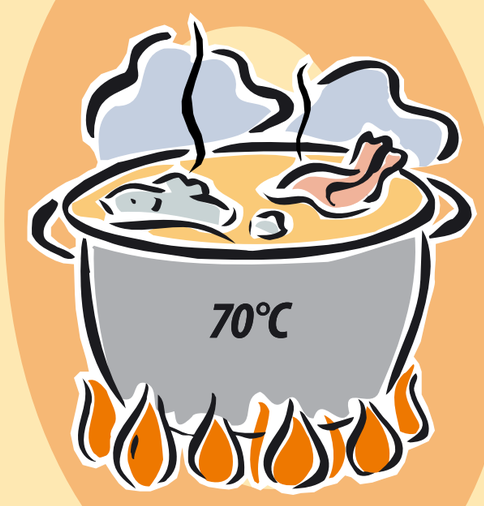
While most microorganisms do not cause disease, dangerous microorganisms are widely found in soil, water, animals and people. These microorganisms are carried on hands, wiping cloths and utensils, especially cutting boards and the slightest contact can transfer them to food and cause foodborne diseases.

Separate raw and cooked

- ✔ Separate raw meat, poultry and seafood from other foods
- ✔ Use separate equipment and utensils such as knives and cutting boards for handling raw foods
- ✔ Store food in containers to avoid contact between raw and prepared foods

Why?

Raw food, especially meat, poultry and seafood, and their juices, can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage.

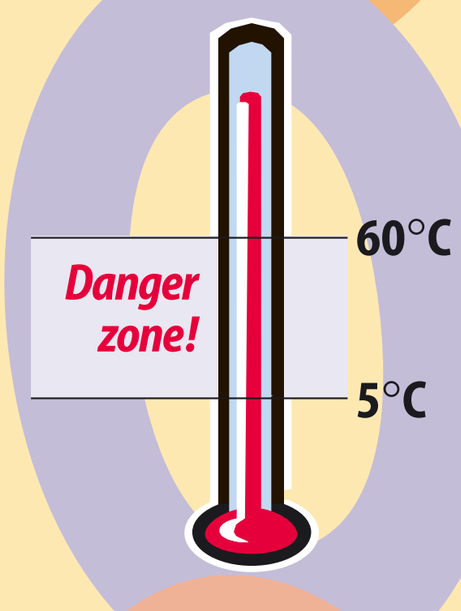


Cook thoroughly

- ✔ Cook food thoroughly, especially meat, poultry, eggs and seafood
- ✔ Bring foods like soups and stews to boiling to make sure that they have reached 70°C. For meat and poultry, make sure that juices are clear, not pink. Ideally, use a thermometer
- ✔ Reheat cooked food thoroughly

Why?

Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°C can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat and whole poultry.



Keep food at safe temperatures

- ✔ Do not leave cooked food at room temperature for more than 2 hours
- ✔ Refrigerate promptly all cooked and perishable food (preferably below 5°C)
- ✔ Keep cooked food piping hot (more than 60°C) prior to serving
- ✔ Do not store food too long even in the refrigerator
- ✔ Do not thaw frozen food at room temperature

Why?

Microorganisms can multiply very quickly if food is stored at room temperature. By holding at temperatures below 5°C or above 60°C, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°C.

Use safe water and raw materials

- ✔ Use safe water or treat it to make it safe
- ✔ Select fresh and wholesome foods
- ✔ Choose foods processed for safety, such as pasteurized milk
- ✔ Wash fruits and vegetables, especially if eaten raw
- ✔ Do not use food beyond its expiry date

Why?

Raw materials, including water and ice, may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and mouldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk.

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Food Safety
World Health Organization

Knowledge = Prevention

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