

## Listen up about Listeria



### Key Facts:

1. Listeria is abundant in natural environment.
2. There are six forms of this bacteria called Listeria. While most are harmless to humans, one species named *Listeria monocytogenes* is harmful to humans.
3. It is regarded as a foodborne pathogen (anything that can cause the disease).
4. *Listeria monocytogenes* is widely spread and found in multiple places such as in soil, vegetation, sewage, water, mud and the intestinal track of humans.
5. Listeria becomes a greater risk to populations that include pregnant woman, unborn babies, new-born babies, young children, elderly people and people with weakened immune systems (persons with AIDS, cancer, diabetic, liver disease, kidney disease, and liver disease, alcoholism, and organ transplant patients).
6. These bacteria have the potential to grow in the strangest of places and survive in temperatures between 30 °C – 37°C and also has the ability to grow at near freezing temperature of refrigerators and freezers.
7. It is resistant to many of the stresses in the food industry e.g. salt (up to 10% salt), temperature (refrigeration temperature) and detergents (many detergents).
8. It can form biofilms which contribute its ability to colonise food processing facility.

### Background

Historically, it has been challenging to identify sources of *L monocytogenes* infections. The first evidence to conclude that *L monocytogenes* could be foodborne was reported in 1981 in an investigation of an outbreak in Nova Scotia, Canada that implicated cabbage. Three Studies conducted between 1986 - 1990 revealed outbreaks cases associated with milk, soft cheese made from unpasteurized (raw) milk, turkey frankfurters and ready to eat meats (RTE) including pate.





People at high risk should avoid specific foods such as soft and semi soft cheese (e.g. ricotta, feta, brie and Camembert), cold cooked chicken, manufactured and cold meats, soft serve ice cream, cold or smoked and raw seafood, prepared salads, unpasteurized (raw) dairy products and ready to eat processed food such as deli meats and hot dogs.

### **What can cause Listeria bacteria to spread?**

Vegetables becoming contaminated from the soil or manure used as fertilizers.

Animals can contaminate foods of animal origin such as meat and dairy products.

On the farm important sources include manure and improperly fermented (poor quality) silage.

Foods can become contaminated during processing, raw milk or foods made from unpasteurized milk may also contain these bacteria.

### **Symptoms and the extent of the disease**

Healthy people exposed to Listeria may not experience any symptoms or only mild symptoms. High risk groups may develop severe illness. Fever, muscle aches, headaches, tiredness, sometimes nausea, and diarrhoea are the main symptoms. If the infection spreads to the nervous system, headache, stiff neck, confusion, loss of balance convulsions may occur. In more severe cases where there may be inflammation of the brain (encephalitis), the lining of the brain and the spinal cord (meningitis) and blood poisoning (septicaemia) may occur.

### **How can one reduce the risk of Listeriosis infection?**

We can take a few simple precautions that can prevent Listeriosis infections. We can for instance do the following:

- Cook thoroughly raw meats such as beef, lamb, pork and chicken at the correct temperature.
- Avoid drinking raw (unpasteurized) milk, and do not eat food that has raw milk as an ingredient.
- Wash hands, knives, countertops and cutting boards after handling and preparing uncooked foods.
- Consume perishable and ready to eat foods as soon as possible
- Keep uncooked meats and poultry separate from vegetables, cooked foods, and ready to eat foods.
- Fruit and vegetables should be rinsed thoroughly under running tap water before eating.
- Wash your hands under running tap water after handling animals.





Safer alternatives for persons at high risk such as pregnant woman, elderly and those with weakened immune systems includes:

- Re-heat hot dogs until steaming hot (the fluid in hot dog packages may contain more Listeria than the hot dogs).
- Re heat the deli meats until steaming hot.
- Use only pasteurized milk products by checking the labels on the package.
- Cook refrigerated smoked sea food and fish.

### **What guarantees are there that Listeria is not present in tap water we use for washing hands, rinsing fresh produce and even for drinking?**

The presence of Listeria is abundant in the natural environment including numerous harmless microorganisms. However, disease causing microorganisms that are of concern in the drinking water industry and harmful to humans such as viruses, *E coli* and *Listeria monocytogenes* are destroyed during the purification process.

The surface Water used to produce the drinking water we consume every day in Gauteng undergoes a stringent purification process. Disinfection during the purification process is critical and ensures that the water is safe to drink and complies with the SANS 241 drinking water standard. During disinfection Rand Water adds chlorine to destroy microorganisms that are harmful to humans.

### **What are the regulations relating to Listeria bacteria in South Africa and in other countries?**

- In Africa, in general there is little awareness or regulation relating to *L monocytogenes*. The amended South African foodstuff, cosmetics and disinfected act (1972), has nothing on Listeria spp. In regulation 1555 relating to milk and dairy products. All pathogens are required to be absent from raw milk intended for further processing or consumption and there is no specific mention of *Listeria spp*.
- Most of the major retailers in South Africa have developed their own safety standards and audit protocols. These standards are based on National legal requirements e.g. regulation R692 governing microbiological standards for food stuff and related matters. The Dairy Standard Agency (DSA) has guidelines in its code of practice. These relates to *L monocytogenes* in raw milk for final consumption, pasteurized milk, UHT milk, cream and salted butter (absence in 25g).
- In Europe there are regulation Reg No 2073/2005 (EC 2005) relating to *L monocytogenes* that sets the microbiological criteria for this



bacteria in food that must be complied with. This regulation covers the RTE (ready to eat) products i.e. *L. monocytogenes* absent from foods (10 x 25g) intended for infants and for special Medical purposes.



- In the USA there is “zero tolerance” of *L. monocytogenes*. A zero tolerance policy means absence of *L. monocytogenes* in 25 gram samples (i.e., less than 1 in 25 g). Any occurrence is considered an offence.

