

Listeria monocytogenes (*Lm*)

Lm is a bacteria found in moist environments, soil, and decaying vegetation. It causes the foodborne illness, listeriosis.

Transfer of *Lm* from the environment, equipment, employees, or raw food is a particular hazard of concern in retail delis.

It can cross-contaminate food contact surfaces and foods. Improper sanitation, product handling, and employee practices can lead to the transfer of *Lm* to RTE meat and poultry products at retail.

Lm forms biofilms (thin layers of microorganisms that stick to product contact surfaces) that are difficult to remove from equipment and other surfaces.

Listeriosis

Serious infection can result from eating food contaminated with *Lm*.

Infection is rare, but could result in a high fatality rate (16% compared to 0.5% for *Salmonella* or *E. coli* O157:H7).

It affects everyone, with older adults, pregnant women and fetuses, newborns, children, and adults with weakened immune systems being at higher risk.

Flu-like symptoms can begin a few days after consuming contaminated products. However, invasive listeriosis, which can affect the central nervous system and may cause stillbirth or result in death, can begin up to 2 months after eating food contaminated with *Lm*.

There are an estimated 1,600 illnesses, 1,500 hospitalizations, and 260 deaths in the U.S. each year.

Product Handling

It is important to adopt practices that protect RTE product from contamination with *Lm* (see bullets below on ways to prevent or limit the growth of *Lm* in deli products).

- Use products that contain antimicrobial agents or have received other treatments to eliminate or prevent the growth of *Lm* in RTE products.
- Monitor and limit the shelf life of an RTE product that is opened, prepared, and held in a retail setting for more than 24 hours.
- Do not pre-slice products - product should be sliced at the time it is requested by consumers.
- Remove products that are filthy, putrid, decomposed, slimy, rancid, or in off-condition from the deli area as soon as possible and thoroughly clean and sanitize areas that were contacted by such product to prevent any cross-contamination.
- Promptly return RTE products to refrigerated units (at or below 41°F), after slicing, to slow pathogen growth.
- Store and handle RTE products in separate areas from raw products. RTE products that are prepared, held, or stored near raw products can become contaminated (e.g., because of aerosolization or dripping).

A number of food safety practices are needed to control *Lm* contamination of retail foods.



Cleaning and Sanitizing

- Develop written sanitation procedures that describe how utensils and equipment (e.g., slicers) will be cleaned and sanitized prior to use.
- Clean and sanitize utensils and equipment used to handle, prepare, and store RTE products frequently (e.g., at least every 4 hours).
- Disassemble RTE food-processing equipment when cleaning and sanitizing to ensure that hard to reach areas where *Lm* can hide are addressed.
- Scrub surfaces during cleaning to prevent biofilms from occurring.
- Follow the manufacturer's recommendations for sanitizer strength and application, including exposure time, to ensure it is effective.
- Consider rotating sanitizers to provide more effective bacterial control.
- Develop a procedure to sanitize cleaning aids (e.g., cloths and scrub brushes) or have single-use items that are discarded after use.
- Use low water pressure when cleaning in the deli areas to minimize splashing and overspray.
- Use separate sinks for hand washing and cleaning product or equipment.
- Eliminate or remove unnecessary items (e.g., supplies and equipment) from the deli area.

Employee Practices

- Train employees in sanitation practices and safe food handling procedures.
- Ensure that employees wear gloves and change them as needed to prevent cross-contamination of RTE products.
- Provide adequate facilities, including soap and running water, and post instructions for employees to wash their hands.
- Implement a policy to ensure that ill employees do not work with open food items, including RTE foods.
- Limit employee traffic in the deli area and develop traffic-flow plans for product, employees, and other items to prevent contamination by consumers and employees.
- Develop practices to prevent outer clothing from spreading contamination, such as wearing disposable aprons.

For more information and a checklist of practices for your deli, go to *FSIS Best Practices Guidance for Controlling Listeria monocytogenes (Lm) in Retail Delicatessens* at <http://www.fsis.usda.gov/wps/wcm/connect/29d51258-0651-469b-99b8-e986baee8a54/Controlling-LM-Delicatessens.pdf?MOD=AJPERES>

See the FDA Food Code, 2013, at: <http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/ucm374275.htm>

Additional information on *Listeria* is at <http://www.fsis.usda.gov/wps/portal/fsis/topics/regulatory-compliance/listeria>

Facility and Equipment Controls

- Do not allow conditions in the retail facility that could cause the product to become contaminated.
- Ensure that walls, floors, drains, and overhead structures in the RTE deli and cooler areas are smooth, durable, easily cleanable, and in good repair.
- Do not perform construction (e.g., replacing floors, walls, or ceilings) when exposed RTE product is present in the deli. Thoroughly clean/sanitize the equipment and facilities after construction and before handling product.
- Maintain tables, slicers, and other food contact surfaces so that they are easily cleanable.
- Clean overhead structures as often as necessary to keep them free of condensation and ensure that sanitary conditions are maintained.
- Keep water from pooling on the floor or other surfaces within the deli area.
- Clean and sanitize surfaces between different types of RTE items (for example ham, seafood, and vegetables) when using the same equipment.
- Ensure that grinders, dicers, scoops, or other equipment are maintained in sanitary condition.
- Maintain product cases and storage at or below 41°F to slow *Lm* growth.

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Guidance for Controlling *Listeria monocytogenes* (Lm) in Retail Delicatessens

Best practice tips for deli operators

The information in this brochure is taken from *FSIS Best Practices Guidance for Controlling Listeria monocytogenes (Lm) in Retail Delicatessens*. **These are suggestions and not requirements.**

Retailers should be aware that the recommendations in this guidance, especially those based on the 2013 Food Code may be requirements in State, local, or tribal regulations.

