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| Reducing the risk of *Listeria monocytogenes* |
| Information for health services |
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# Purpose

This fact sheet outlines *Listeria monocytogenes* prevention and risk mitigation strategies for health services, such as hospitals, and aims to raise awareness of the risks among hospital CEOs, dietitians, and key food service staff, including food service managers.

# Key messages

* Health services play an important role in the prevention of listeriosis by ensuring patients at increased listeriosis risk (outlined below) are not served high-risk foods within health services.
* *Listeria monocytogenes* is common in the environment and in many foods. Health services should implement a range of listeriamanagement strategies.
* Management strategies include menu controls and a food safety plan that ensures good handling and storage practices and staff training. Your food safety program should include measures to mitigate the risk to patients in your care.
* Avoid serving high-risk foods to patients at increased risk of listeriosis (e.g. by placing at-risk patients on ‘low listeria risk diets’ on admission).
* Those most at risk of listeriosis should be served foods from the lower risk food categories and where sandwiches are offered these should be made fresh to order from “lower risk” filling substitute choices (Table 1).
* Counsel patients at increased risk of listeriosis about symptoms and avoidance of high-risk foods. Provide written information to patients where possible (e.g. [FSANZ factsheet](https://www.foodstandards.gov.au/publications/listeriabrochuretext)).

# Background

## *Listeria monocytogenes* as a food-borne pathogen

*Listeria monocytogenes* is the bacterium that causes listeriosis in humans, and its presence in food can be a serious health risk to people at increased risk. *L. monocytogenes* is commonly present in the environment and can be present in food processing facilities. One of the key characteristics of this bacterium is that it continues to grow slowly at refrigerated temperatures (5°C and lower) if present in stored food and can survive freezing. Thorough cooking of foods to at least 70°C kills *L. monocytogenes*.

## People at increased risk of listeriosis

People who are at increased risk of listeriosis include:

* Older people (aged 65 and over)
* Pregnant women and their unborn and newborn babies
* People who are immunocompromised or are on immune-suppressing medication
* People with underlying health conditions like cancer, liver or kidney disease, diabetes, cardiac disease and HIV infection.

Common symptoms include fever, intense headache, nausea, and vomiting. For people at a higher risk, illness can also present as sepsis, meningitis, or meningoencephalitis. Symptoms can worsen very quickly. Listeriosis during pregnancy can lead to miscarriage, stillbirth, premature delivery, or neonatal sepsis.

# High-risk foods

The best way to prevent listeriosis is to avoid high-risk foods. *L. monocytogenes* cannot be completely eliminated in these foods, so it is safest not to eat them. Foods commonly associated with *L. monocytogenes* are those with a long shelf-life that are kept refrigerated and do not undergo further cooking prior to consumption (also known as ‘ready-to-eat’ foods). Lower risk foods include those that are freshly cooked and remain hot. *L. monocytogenes* can be found in a wide variety of food products, including those to avoid in Table 1. People at increased risk of listeriosis should not eat these foods.

Table 1. Food substitution or method of preparation changes to decrease the risk of listeriosis in patients at increased risk (adapted from *Guideline for the Control of Listeria in Food Service to Vulnerable Persons,* SA Health (2019) <<https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/public+health/food+safety+for+businesses/food+industry+sector/hospital+food+safety+requirements>>)

| Food type | Action | High risk food to avoid and lower risk options to substitute |
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| Cold, ready-to-eat meat and poultry meat products eaten without further cooking or heating | Avoid | Pre-packaged ready-to-eat meats including those pre-sliced and unpackaged, such as ham, salami, processed/fermented meat products, and cold pre-cooked chicken, pâté and meat pastes. |
| Lower risk substitute | Meats cooked in bag or post pack pasteurised, canned or shelf stable meats. Cook ready-to-eat meats before service (e.g. pizza). |
| Ready-to-eat and leftover food | Avoid | Ready-to-eat foods including leftover meats, which have been refrigerated for more than one day and will not be further reheated/cooked. |
| Lower risk substitute | Serve freshly prepared/cooked food. |
| Fruits, vegetables, herbs and salads | Avoid | Fresh produce that will be eaten raw and cannot be effectively washed (e.g. seed sprouts, mushrooms, curly leaf lettuce and garnishes such as fresh curly leaf parsley, rockmelon).  Raw or lightly cooked sprouts including green sprouts like alfalfa and bean sprouts.  Pre-prepared, pre-cut, or pre-packaged fruits and vegetables.  Drinks made from fresh or frozen fruit and vegetables where washing procedures are unknown, such as juices and smoothies (excluding pasteurised or canned juices). |
| Lower risk substitute | Thoroughly cook all fresh produce and avoid garnishing with uncooked fresh produce (e.g. seed sprouts, curly leaf parsley and herbs).  Process whole, fresh fruit and vegetables intended to be eaten raw, in-house.  Canned or shelf stable pre-packaged fruit or vegetables. |
| Dairy | Avoid | Unpasteurised dairy products, including milk and foods made from unpasteurised milk.  Soft cheeses such as brie, camembert, ricotta, blue-vein, and feta.  Soft serve ice cream.  Sliced/shredded hard cheeses such as cheddar. |
| Lower risk substitute | Soft cheeses that are cooked before service.  Hard cheeses such as cheddar. |
| Seafood | Avoid | Ready-to-eat seafood that will not be further cooked – including smoked seafood (such as fish, mussels, and oysters), raw seafood (such as sashimi, sushi, and oysters).  Frozen, cooked ready-to-eat seafood including and cooked/chilled seafood (such as peeled prawns). |
| Lower risk substitute | Seafood that is cooked immediately before service.  Canned seafood or shelf stable seafood. |
| Dips | Avoid | Refrigerated ready-to-eat dips such as hummus, pesto, guacamole, and tahini. |
| Lower risk substitute | Dips that have been processed and cooked in-house. |
| Pre-prepared sandwiches, wraps and sushi | Avoid | Any pre-prepared sandwiches, wraps or sushi, that are not made to order.  Sandwiches containing any of the high-risk ingredients to avoid mentioned above or with a shelf life greater than 2 days. |
| Lower risk substitute | Sandwiches, wraps or sushi made in house/to order containing any of the lower risk ingredients mentioned above. |

# *Listeria monocytogenes* in health services

Health services have a high proportion of patients at increased risk of listeriosis. Early recognition of potentially contaminated food and implementation of control measures are key to reducing the effects of food associated outbreaks for patients in health services.

## Strategies to manage *Listeria monocytogenes* in health services

Practices for minimising the risk of microbial contamination of foods apply to the control of contamination of food with *L. monocytogenes*, such as:

* Ensuring food handlers maintain good hygiene and food preparation practices, including strict adherence to temperature control during processing, transportation, and storage should be maintained to ensure foods remain either above 60°C or below 5 °C.
* Limiting access to the food handling environment.
* Maintenance of equipment and facilities.
* Maintaining cleaned and sanitised environments. This may include thorough cleaning of food contact and non-contact surfaces, and all equipment to prevent *L. monocytogenes* becoming a resident in the food handling area.
* Effective monitoring and verification.

Menu controls minimise the risk of *L. monocytogenes* in foods prepared for service to patients at increased risk of listeriosis:

* Implementing menu controls to avoid high risk food.
* Preparation modifications that substitute high risk foods with lower risk alternatives.
* Shortening the shelf life of foods to minimise the potential for growth.
* High risk food in sealed packaging, whether it has been heated or otherwise treated to prevent the growth of bacteria, should be used and discarded within 24 hours once the package is opened.

### Microbiological testing of food and environment samples

For health services that prepare food, it is best practice to develop a *L. monocytogenes* monitoring program. Such a program should have a testing plan and a response plan to initiate corrective action. Microbiological testing of *L. monocytogenes* should include environment, equipment, food contact and non-contact surfaces and food product samples. Health services should consider regular environmental swabbing of food contact and non-contact surfaces as part a monitoring program. Standard 1.6.1 of the [Australia New Zealand Food Standard Code](https://www.foodstandards.gov.au/food-standards-code) (the Code) sets limits for *L. monocytogenes* detection in food products. The limit requires ‘not detected in 25 g’ (sampling plan n=5, c=0) for ready-to-eat food in which growth can occur. For ready-to-eat food in which growth will not occur, a limit of 100 CFU per gram is allowed (sampling plan n=5, c=0).

### Food safety program

An effective food safety program must be implemented in food service facilities to manage food safety hazards including *L. monocytogenes*. Compliance with the Victorian *Food Act 1984* (section 19D) and Standard 3.2.2 of the Code will assist in the management of *L. monocytogenes* through the use of good hygiene and food handling practices, processing and storage control measures, and food safety/hygiene training. The food safety program should also clearly define responsibilities of each individual involved in the supply chain and corrective actions if contamination occurs.

### Staff training and education

It is important to provide appropriate training and education to staff members who are involved in production, handling and serving food in healthcare settings. Training programs should cover topics such as the nature of *L. monocytogenes* and its infections, growth and spread in the environment, cross-contamination, high risk foods, control measures for reducing the risk of listeriosis, and testing and management of *L. monocytogenes* in food service facilities.

**Reminder**: Information provided in this sheet is neither a comprehensive nor a definitive reference on the prevention of *L. monocytogenes* contamination in every circumstance. Therefore, each health service is responsible for ensuring that the measures to manage *L. monocytogenes* in their settings are effective, appropriate, and adequate.

# More information

* FSANZ (2023). <https://www.foodstandards.gov.au/publications/listeriabrochuretext>
* SA Health (2019). Guideline for the Control of Listeria in Food Service to Vulnerable Persons <<https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/public+health/food+safety+for+businesses/food+industry+sector/hospital+food+safety+requirements>>

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