

LABSTRACT – June 2019

Listeria monocytogenes – Clinical and Food Testing Guidelines for Foodborne Illness Outbreaks

Audience

Health care providers, hospital and private laboratory personnel

Overview

Effective Immediately:

- Two sets of routine blood cultures should be ordered and submitted to your local hospital or private laboratory when listeriosis is being considered.
- If *Listeria monocytogenes* is isolated from the blood sample, the isolate should be sent to the Public Health Ontario (PHO) Laboratory for confirmation and molecular subtyping.
- Primary blood culture is not available at the PHO Laboratory. Blood culture tubes submitted to PHO will be rejected.
- Stool culture and serology for *Listeria monocytogenes* are not recommended.

Background

Listeriosis is a foodborne illness that usually presents as a self-limited syndrome with malaise, fever, and diarrhea with no further untoward outcome. In a minority of cases, particularly in the immunocompromised, neonates, elderly, and pregnant women, illness such as bacteremia, meningitis, and fetal loss can ensue. Ingestion of suspect food by healthy or immunocompetent persons does not necessarily result in infection with *Listeria*.

These guidelines are applicable during an outbreak investigation or when there is a known contaminated or recalled food product. The guidelines address both clinical testing and food testing for *Listeria*.

Individuals with symptoms of meningitis and/or invasive disease require clinical laboratory testing, regardless of consumption of a known contaminated or recalled food product. The optimal clinical specimens for suspected, symptomatic cases of listeriosis are blood cultures.

Testing for *Listeria* in asymptomatic people who consumed a contaminated or recalled food product is not recommended.

Table 1: Clinical testing for *Listeria*

Clinical symptoms/ exposure	Testing recommended	Where to submit testing
Asymptomatic with consumption of a known contaminated or recalled food product	<ul style="list-style-type: none"> • None • Counsel regarding potential symptoms of gastroenteritis and invasive listeriosis and to consult a health care provider should these develop 	<ul style="list-style-type: none"> • Not applicable
Gastroenteritis with or without fever and no other symptoms AND consumption of a known contaminated or recalled food product	<ul style="list-style-type: none"> • Stool for routine bacterial culture (not including <i>Listeria</i>) and susceptibility as per usual practice • Counsel regarding potential symptoms of invasive listeriosis and to return to the health care provider should these develop • If evidence of fever within 24 hours of clinical assessment, may consider 2 sets of routine blood cultures (which detect <i>Listeria spp.</i>) 	<ul style="list-style-type: none"> • Routine blood culture testing can be submitted to a hospital laboratory with a hospital requisition or a private laboratory with an OHIP requisition* • Routine blood culture testing is not available at PHO
Evidence of systemic involvement suggested by headache, stiff neck, confusion, loss of balance, or convulsions in addition to fever and muscle aches, REGARDLESS of exposure to a known contaminated or recalled food product	<ul style="list-style-type: none"> • Routine blood cultures (which will detect <i>Listeria spp.</i>). Two sets of blood cultures should be taken from different sites. A third set of blood cultures should be drawn only if endocarditis is suspected. Collect another set of blood cultures after 48 hours if the previous cultures are negative and there is ongoing concern of invasive infection with <i>Listeria monocytogenes</i>. • If clinical assessment is suggestive of possible neurological involvement (meningitis or meningoencephalitis), consider lumbar puncture and bacterial culture of cerebrospinal fluid • Culture of other potentially involved anatomic sites as needed (e.g., joint, pleural, pericardial fluid, sputum) 	<ul style="list-style-type: none"> • Routine blood and other sterile site culture testing can be submitted to a hospital laboratory with a hospital requisition or a private laboratory with an OHIP requisition* • Primary blood and other sterile site culture testing is not available at PHO

NB. Serology for *Listeria* is not available and stool testing for *Listeria* is not recommended.

*If clinical specimens are positive for *Listeria monocytogenes*, the hospital or private laboratory should forward isolates to the PHO Laboratory for molecular subtyping.

Food testing for *Listeria*:

Food testing at PHO Laboratory is performed to support local public health units to identify contaminated food products linked to human illness and mitigate ongoing exposure and risk.

Suspect foods which are implicated in laboratory-confirmed cases of listeriosis, can be submitted for testing to PHO Laboratory in support of a foodborne illness investigation after assessment by the local public health unit.

Food products that are already recalled are generally not tested. A recalled product may be considered for testing only for laboratory-confirmed clinical cases of listeriosis following an assessment by the local public health unit and Public Health Ontario.

For further information

- Contact the PHO Laboratory Customer Service Centre at 416-235-6556 or 1-877-604-4567 (toll-free), or by email at customerservicecentre@oahpp.ca
- For PHO Laboratory specimen collection information and previous Lababstracts, refer to [publichealthontario.ca/test directory](http://publichealthontario.ca/test-directory)
- The current version of the PHO Laboratory General Test Requisition and other forms are available at publichealthontario.ca/Requisitions
- To subscribe to future Lababstracts, [register on our website](#)
- To register for Autofax and receive laboratory reports by fax directly from our laboratory information system as soon as they are released, contact the PHO Laboratory Customer Service Centre.