

Listeriosis

Summary

Listeriosis is caused by the bacterium *Listeria monocytogenes*. Infection results from ingestion of contaminated foods or maternal transmission to the fetus or neonate. In high-risk individuals, listeriosis causes meningitis and/or septicemia. Signs and symptoms can include fever, headache, nausea, vomiting, and signs of meningitis. Pregnancy-associated infections can result in spontaneous abortion, fetal death, neonatal illness or death, and maternal death. Neonatal infection can manifest as pneumonia, septicemia, and meningitis. Laboratory diagnosis can be made by culture of blood, cerebrospinal fluid (CSF), amniotic fluid or other tissues; stool culture is not recommended. Antimicrobial therapy is indicated for patients with listeriosis. People who are at high risk of complications include newborns, pregnant people, people who take steroid medication, organ transplant patients, the elderly and people with impaired cell-mediated immunity. Pregnant people are about 20 times more likely than other healthy adults to get listeriosis, and the infection can be transmitted to the fetus. Persons at high risk of complications should avoid soft cheeses (such as brie, feta, Camembert, Mexican-style cheeses), unpasteurized or raw milk or milk products, deli meats, refrigerated smoked fish, and cold salads from salad bars. They also should reheat (until steaming) leftover or ready-to-eat foods.

Agent

Listeriosis is caused by *Listeria monocytogenes*, a facultative anaerobic, gram-positive bacillus.

Transmission

Reservoir:

The primary reservoir for *L. monocytogenes* is soil, forage, mud, and silage. Additional reservoirs include infected domestic and wild animals, fowl, and humans. Soft cheeses and prepared meats support the growth of *L. monocytogenes*. Listeria can multiply in refrigerated foods that are contaminated.

Mode of transmission:

- Foodborne transmission causes epidemics and sporadic infections. Implicated foods include contaminated unpasteurized or raw milk, soft cheeses, prepared meats (such as hot dogs and deli meat), undercooked poultry, and unwashed raw fruits and vegetables. In pregnant people, transplacental transmission or asymptomatic fecal or vaginal carriage can result in neonatal infection.

Period of communicability:

- Mothers of infected newborn infants can shed the organism in vaginal discharge and urine for 7-10 days after delivery, rarely longer.

Clinical Disease

Incubation period:

- Variable, but is longer in pregnancy-associated cases (2-4 weeks or occasionally up to 70 days.) Non-pregnancy related cases typically have an incubation period of 1-14 days. The incubation period for self-limited, febrile gastroenteritis following ingestion is 24 hours; illness typically lasts 2-3 days.

Illness:

Signs and symptoms can include fever, headache, nausea, vomiting, and signs of meningitis. Delirium, coma, and shock can occur. In non-immunocompromised hosts, the illness may be characterized by acute, mild febrile gastroenteritis. In older adults and immunosuppressed people, disease usually manifests as meningoencephalitis and/or septicemia. Infected pregnant people may experience only a mild, influenza-like illness. However, infections during pregnancy can lead to miscarriage or stillbirth, premature delivery, or infection of the newborn resulting in pneumonia, meningitis, or septicemia. The mother usually fully recovers. However, the case-fatality rate is 30% in newborns and approaches 50% when onset occurs in the newborn in the first four days of life. Spontaneous abortion can occur at any point in pregnancy.

Laboratory Diagnosis

The organism can be cultured from a variety of body fluids, including blood, cerebrospinal fluid (CSF), meconium, gastric washings, placenta, and amniotic fluid.

Stool specimens are not helpful in obtaining a diagnosis as the prevalence of stool carriage of *L. monocytogenes* is estimated to be between 1-5%. PCR can be used to identify similar strains in an outbreak setting.

Treatment

Antimicrobial therapy is indicated for patients with listeriosis. Initial therapy with IV ampicillin and an aminoglycoside (usually gentamicin) is recommended for severe infections including meningitis, encephalitis, endocarditis and infections in neonates and immunocompromised patients. In immunocompetent patients with mild infections, ampicillin alone can be used. Treatment decisions should be made in conjunction with the patient's health care provider. Infectious disease physician consultations should be considered, especially for patients with severe infections.

Surveillance

Case Definition:

- **Confirmed** - A person who meets confirmatory laboratory evidence.
- **Probable** - A person who meets the presumptive laboratory evidence, OR A mother or neonate who meets the epidemiologic linkage but who does not have confirmatory laboratory evidence.
- **Suspect** - A person with supportive laboratory evidence.

Laboratory Evidence:

- Confirmatory:
 - Isolation of *L. monocytogenes* from a specimen collected from a normally sterile site (e.g., blood or cerebrospinal fluid).
 - *Maternal isolates*: Isolation of *L. monocytogenes* from products of conception (fetal tissue, amniotic fluid)
 - *Neonatal isolates*: Isolation of *L. monocytogenes* from a non-sterile neonatal specimen (e.g., meconium, tracheal aspirate, but not products of conception) collected within 48 hours of delivery.

- Presumptive:
 - Detection of *L. monocytogenes* by culture-independent diagnostic testing (CIDT) in a specimen collected from a normally sterile site (e.g., blood or cerebrospinal fluid).
 - *Maternal isolates*: Detection of *L. monocytogenes* by CIDT from products of conception (fetal tissue, amniotic fluid).
 - *Neonatal isolates*: Detection of *L. monocytogenes* by CIDT from a non-sterile neonatal specimen (e.g., meconium, tracheal aspirate, but not products of conception) collected within 48 hours of delivery.
- Supportive
 - Isolation of *L. monocytogenes* from a non-invasive clinical specimen (stool, urine, wound) other than those specified under maternal and neonatal specimens in the Confirmatory laboratory evidence section.

Reporting:

Report all cases of listeriosis to the Center for Health Protection at 833-796-8773. Information needed includes: patient's name, age, sex, race, ethnicity, home address, home phone number, occupation, and health care provider.

Case Investigation:

Complete the CDC Listeria Case Form and email securely to DOH-Foodborne@doh.nm.gov, or fax to 505-827-0013. Investigation information should also be entered in NM-EDSS per established procedures.

Control Measures

1. Case management
 - 1.1. Isolation: None required.
 - 1.2. Prophylaxis (for fetuses of pregnant people): Antimicrobial therapy for infection diagnosed during pregnancy may prevent fetal or prenatal infection and its consequences.
2. Contact management
 - 2.1. Isolation: None required.
3. Prophylaxis: Not applicable
4. Prevention
 - 4.1. People at high risk of complications from listeriosis should avoid soft cheeses (such as brie, feta, Camembert, Mexican-style cheeses including queso blanco, queso fresco, and queso panela), unpasteurized or raw milk or milk products, deli meats, refrigerated smoked fish (including salmon, trout, whitefish, cod, tuna or mackerel, especially those labeled nova-style, lox, kippered, smoked or jerky), and cold salads from salad bars.
 - 4.2. Emphasize good hand hygiene practices (i.e., proper hand washing after using the toilet, changing diapers, before and after handling food).

General guidelines for preventing foodborne illness include:

 - Thoroughly cook raw food from animal sources
 - Wash raw fruits and vegetables before eating
 - Keep uncooked meats separate from vegetables, fruits, cooked foods and ready-to-eat foods

- Avoid unpasteurized or raw dairy products
- Wash hands, knives, and cutting boards after handling uncooked foods
- Use precooked and ready-to-eat foods as soon as possible
- Keep refrigerator set at 4°C/40°F or colder

4.3. Immunization: Not applicable.

Management of Listeriosis in Child Care Centers

Contact the Center for Health Protection at 833-796-8773 for recommendations.

References

American Academy of Pediatrics. In: Kimberlin, DW, et al eds. Red Book: 2021-2024 Report of the Committee on Infectious Diseases. 32nd ed. Itasca, IL: American Academy of Pediatrics;2021.

Heymann, DL, ed. Control of Communicable Diseases Manual. 21stth edition. Washington, DC: American Public Health Association; 2022.

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<http://www.nlm.nih.gov/medlineplus/ency/article/001380.htm> [Accessed 27 December 2006]

See Listeriosis Fact Sheets ([English](#)) ([Spanish](#))



COMMUNICABLE DISEASES MANUAL

INFECTIOUS DISEASE EPIDEMIOLOGY BUREAU