CONDITION

Neonatal listeriosis

Neonatal listeriosis is a serious bacterial infection passed to a baby before, during, or shortly after birth.

WHAT IT IS
Listeria infection in a newborn baby

BODY SYSTEM
Blood, lungs, brain, and nervous system

MAIN SYMPTOMS
Poor feeding, breathing trouble, fever, unusual sleepiness

WHAT CAUSES IT
Infection with Listeria monocytogenes bacteria

HOW IT IS DIAGNOSED
Blood or spinal fluid culture

MAIN TREATMENT
Intravenous antibiotics and hospital supportive care

CAN IT BE CURED?
Yes - antibiotics can clear the infection

IS IT AN EMERGENCY?
Yes - suspected infection needs immediate hospital assessment

LONG-TERM OUTLOOK
Many recover, but severe infection can cause lasting problems

Overview

Neonatal listeriosis is an infection caused by the bacterium Listeria monocytogenes . "Neonatal" means that it affects a newborn baby.

A baby usually becomes infected during pregnancy when bacteria cross the placenta, the organ that supplies oxygen and nutrients in the womb. Infection may also occur around the time of birth. Infection after birth is uncommon but can happen through exposure to a contaminated environment.

Listeriosis during pregnancy may cause only mild, flu-like symptoms in the pregnant person, or no clear symptoms at all. Even so, the infection can affect the placenta and baby. It may contribute to miscarriage, stillbirth, premature birth, or serious infection in the newborn.

In a newborn, listeriosis can spread through the blood or affect the lungs and the tissues around the brain. Newborn immune systems are still developing, so the condition can become serious quickly. Prompt hospital assessment and antibiotics like amoxicillin or doxycycline are important.

Neonatal listeriosis is an acute infection, not a long-term infection that usually remains in the body. Some babies recover without lasting effects. Others, especially those who develop meningitis or severe bloodstream infection, may need longer-term monitoring.

Symptoms

The signs of neonatal listeriosis can be subtle. They may look like other newborn infections, and a baby may become unwell over hours rather than days.

Possible symptoms include:

Doctors often describe neonatal listeriosis as early-onset or late-onset infection, although the exact time limits differ slightly between medical sources.

Early-onset infection appears in the first several days after birth. It often follows infection in the womb and may be associated with premature birth. The baby may have bloodstream infection, known as sepsis, or pneumonia. Some babies have widespread small skin spots or raised areas as part of a severe, disseminated infection.

Late-onset infection usually develops after the first several days or weeks of life. Meningitis is more common in this form. Meningitis means infection and inflammation of the protective tissues around the brain and spinal cord.

Newborns do not always develop a high fever during a serious infection. A low temperature, feeding change, or reduced alertness can also be important.

- Poor feeding or refusing feeds
- Unusual sleepiness, weakness, or difficulty waking
- Irritability or a weak cry
- Fever or an unusually low temperature
- Fast, noisy, or difficult breathing
- Pauses in breathing
- Vomiting or a swollen abdomen
- Pale, mottled, or bluish skin

- Seizures or unusual repeated movements

Causes and risk factors

Neonatal listeriosis is caused by Listeria monocytogenes . These bacteria can live in soil, water, animals, and food-processing environments. Unlike many bacteria, Listeria can continue growing at refrigerator temperatures.

Pregnant people usually acquire the bacteria by eating contaminated food. The infection can then enter the bloodstream and reach the placenta and baby. A baby may also be exposed during birth if bacteria are present in the birth canal or surrounding fluids.

Factors associated with neonatal infection include:

These factors do not mean that a baby has listeriosis. Most newborn infections and episodes of premature birth have other causes.

Listeriosis is not inherited. It is not caused by something a baby or parent did after symptoms began. Ordinary contact with a healthy family member does not usually spread it.

- Listeriosis during pregnancy
- Infection of the placenta or amniotic fluid
- Premature birth
- Prolonged rupture of the membranes before birth
- Signs of infection during labour, such as fever
- Exposure linked to a rare hospital or nursery outbreak

Diagnosis

Because neonatal listeriosis can resemble other serious infections, diagnosis begins with an urgent examination and tests for sepsis. Treatment often starts before the exact bacterium is known.

A blood culture is one of the main tests. A sample of blood is placed in special containers to see whether bacteria grow. Growth of Listeria monocytogenes confirms infection in the blood.

A lumbar puncture may be performed if the baby is stable enough. During this procedure, a clinician collects a small sample of cerebrospinal fluid from the lower back. This is the clear fluid surrounding the brain and spinal cord. Testing and culturing it can confirm meningitis.

Other investigations may include:

Finding Listeria in the placenta can support the diagnosis, but it does not by itself show how severely the baby is affected. Tests on the baby remain important.

- Blood counts and markers of inflammation
- Chest imaging if breathing problems suggest pneumonia
- Tests of kidney, liver, blood-clotting, and oxygen levels
- Culture or examination of the placenta and amniotic fluid
- Additional molecular tests where available

Treatment and management

Neonatal listeriosis is treated in hospital with antibiotics given into a vein. Ampicillin is commonly used because it is active against Listeria. Another antibiotic may be given with it, particularly during initial treatment or for severe infection.

The exact antibiotic combination and length of treatment are based on factors such as whether the infection involves the blood, lungs, or tissues around the brain. Culture results, kidney function, treatment response, and local specialist guidance also matter. These decisions require a neonatal and infection-care team.

Supportive treatment may include:

Cultures may be repeated to check that bacteria have cleared. Babies with meningitis usually need a longer treatment course than those with infection limited to the bloodstream.

Parents can usually remain involved in feeding, comfort, and skin-to-skin care when the baby's condition and hospital procedures allow. The neonatal team can explain how to participate safely.

- Oxygen or breathing support
- Fluids and nutrition through a vein or feeding tube
- Medicines to support blood pressure
- Treatment for seizures
- Monitoring of blood sugar, kidney function, and clotting
- Intensive care for severe sepsis or respiratory failure

Complications

Listeriosis can cause sepsis, a serious whole-body response to infection. Sepsis may interfere with breathing, circulation, blood clotting, and organ function.

Other possible complications include:

Prematurity can add separate breathing, feeding, and developmental challenges. It may be difficult to distinguish the effects of infection from those of being born early.

Complications are not inevitable. Many treated babies recover, but doctors cannot always predict the outcome during the first days of illness.

- Pneumonia
- Meningitis
- Seizures
- Respiratory failure
- Injury to the brain or other organs
- Hearing or vision problems
- Delayed movement, learning, or communication skills
- Death in the most severe cases

Prevention

Neonatal listeriosis cannot always be prevented. A pregnant person may have no symptoms, and contamination is not always visible, smellable, or avoidable.

Reducing exposure to Listeria during pregnancy can lower the risk. Food-safety measures include:

Pasteurisation uses heat to kill harmful germs. Check food labels because packaging and recommendations differ between countries.

A pregnant person who develops fever or flu-like symptoms after eating food recalled because of Listeria should contact their maternity team promptly. Testing or treatment is not automatically needed after every possible exposure; symptoms, pregnancy stage, and public-health advice guide the response.

In hospitals, careful hand hygiene, equipment cleaning, and infection-control procedures help prevent rare nursery-linked transmission.

- Avoiding unpasteurised milk and foods made from it

- Following current local advice about soft cheeses
- Heating deli meats and hot dogs until steaming hot
- Avoiding refrigerated pâté or meat spreads
- Avoiding refrigerated smoked seafood unless it is cooked
- Cooking meat thoroughly
- Washing raw produce under running water
- Keeping raw foods separate from ready-to-eat foods
- Refrigerating foods promptly and using leftovers safely
- Cleaning the refrigerator and food-preparation surfaces

Living with it and what to expect

Neonatal listeriosis is usually an intense, short-term illness rather than a chronic condition. The first days focus on controlling the infection and supporting breathing, feeding, and circulation.

A baby who improves may still remain in hospital until intravenous antibiotics are complete and feeding, temperature, and breathing are stable. Premature babies may need additional care unrelated to whether the infection has cleared.

After discharge, follow-up may include checks of:

Babies who had meningitis, brain injury, severe sepsis, or extreme prematurity may need follow-up for months or years. Some difficulties become noticeable only when a child reaches a stage where more complex movement, language, or learning is expected.

Most follow-up visits are routine. They are intended to identify concerns early, not to suggest that a problem will definitely develop. Hearing services, physiotherapy, speech therapy, or other early-support services may help when difficulties are found.

Listeriosis does not usually remain dormant after successful treatment. A later fever is more likely to have another cause, but any fever in a young infant still needs urgent assessment.

- Growth and feeding
- Hearing and vision
- Muscle tone and movement
- Speech, learning, and social development
- Seizure control, if seizures occurred

When to get medical help

Suspected infection in a newborn is an emergency. Seek immediate medical assessment if a baby under 3 months has a temperature of 38°C or higher, unless the baby's medical team has provided different instructions for a specific situation.

Emergency assessment is also needed for:

Call emergency services if the baby is struggling to breathe, turns blue, has a seizure, is unresponsive, or cannot be woken normally.

If listeriosis was diagnosed during pregnancy or found in the placenta, contact the newborn or maternity team promptly, even if the baby appears well. The team may recommend examination, observation, or tests based on the circumstances.

Routine follow-up is appropriate for concerns about slower weight gain, feeding progress, hearing, movement, or developmental milestones when the baby is otherwise well. Bring these concerns to the baby's scheduled clinician, but seek earlier care if there is a sudden change.

- Difficult, fast, or paused breathing
- Blue, grey, very pale, or markedly mottled skin
- A seizure
- Severe limpness or difficulty waking
- A weak cry or little response to touch
- Sudden refusal of feeds
- Repeated vomiting
- An unusually low temperature
- Rapid worsening or a strong sense that the baby is seriously unwell

Common questions

Can a baby get listeriosis through breast milk?

Transmission through breast milk is not considered a usual cause of neonatal listeriosis. Breastfeeding or expressed milk may often continue, but the hospital team may adjust feeding during severe illness or if there are other clinical concerns.

Can a baby look healthy at birth and become ill later?

Yes. Late-onset infection may appear after an initially well period, often with poor feeding,

fever, unusual sleepiness, irritability, or signs of meningitis. Any concerning change in a newborn needs prompt assessment.

Does maternal listeriosis mean the baby is infected?

No. Maternal infection increases concern but does not prove that the baby is infected. The baby's condition, timing of the maternal illness, placental findings, examination, and test results help guide care.

How long does neonatal listeriosis treatment take?

Treatment length is based on the site and severity of infection and how quickly cultures clear. Meningitis generally requires longer treatment than infection limited to the blood. The neonatal team determines the course rather than using one standard duration for every baby.

Will neonatal listeriosis cause developmental problems?

Not always. Many babies recover without clear long-term effects. The risk is greater after meningitis, seizures, severe sepsis, brain injury, or very premature birth. Developmental and hearing follow-up helps identify any difficulty early.

Can neonatal listeriosis come back?

Relapse is uncommon after adequate treatment, and Listeria does not usually remain dormant. A new fever or feeding change still needs urgent assessment because young babies can become unwell from many different infections.

Sources

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