CONDITION

Bronchiolitis

Learn how bronchiolitis affects babies and young children, including symptoms, warning signs, diagnosis, home care, hospital treatment, and prevention.

WHAT IT IS
Viral infection of the smallest lung airways

BODY SYSTEM
Lungs and breathing

MAIN SYMPTOMS
Cough, wheezing, difficult breathing, poor feeding

WHAT CAUSES IT
Respiratory viral infection

HOW IT IS DIAGNOSED
Symptoms and physical examination

MAIN TREATMENT
Supportive care

CAN IT BE CURED?
No, immune system clears the infection

IS IT AN EMERGENCY?
Sometimes, severe breathing difficulty or apnea

LONG-TERM OUTLOOK
Most recover, with possible recurrent wheezing

Overview

Bronchiolitis is a viral infection of the smallest breathing tubes in the lungs, called bronchioles. These tubes become swollen and filled with mucus. This can make it harder for air to move through the lungs.

The condition mainly affects babies and children younger than 2 years. It is most common during the first year of life because infants have narrow airways that can become blocked more easily. Bronchiolitis is different from bronchitis, which affects larger breathing tubes and is more common in older children and adults.

Respiratory syncytial virus, usually called RSV, is the most common cause. Other respiratory viruses can cause the same illness. Bronchiolitis usually begins like a cold and then causes coughing, noisy breathing, or difficulty feeding.

Most children recover with supportive care, such as fluids and gentle clearing of the nose. Antibiotics like amoxicillin or doxycycline do not treat bronchiolitis because it is caused by a virus. Some children, especially very young infants or those with certain health conditions, need hospital care for oxygen, fluids, or breathing support.

Symptoms often become worse during the first few days before gradually improving. A cough may continue for several weeks even after breathing and feeding have returned to normal.

Symptoms

Bronchiolitis often starts with symptoms similar to a common cold:

After one or more days, the cough may become stronger. The child may breathe faster than usual or appear to work harder to breathe. Wheezing, a high-pitched sound usually heard when breathing out, may occur. Some children have crackling or rattling sounds in the chest.

Signs of increased breathing effort can include nostrils widening with each breath, the belly moving more than usual, or the skin pulling inward between or below the ribs. Infants may pause often while feeding because it is difficult to suck, swallow, and breathe at the same time.

Very young infants do not always have a cough or fever. Their main signs may be poor feeding, unusual sleepiness, irritability, or brief pauses in breathing called apnea.

When to seek emergency care

Call emergency services if a child:

Skin color changes may be harder to see on darker skin. Check the lips, tongue, gums, and areas around the eyes.

When to contact a clinician promptly

Seek prompt medical advice if the child is breathing faster or working harder than usual, is feeding much less, or has fewer wet diapers. A dry mouth, no tears when crying, or increasing sleepiness may indicate dehydration.

A fever of 100.4°F or 38°C or higher in a baby younger than 3 months requires prompt medical evaluation. Also contact a clinician early if symptoms are worsening or the child has a history that raises the risk of severe illness.

- A blocked or runny nose
- Sneezing
- A mild cough
- Fever

- Reduced interest in feeding
- Has severe difficulty breathing, is gasping, or can barely cry because of breathlessness
- Has long pauses in breathing
- Develops blue, gray, or unusually pale lips, tongue, or skin
- Is very difficult to wake, unusually limp, or not responding normally
- Has breathing that suddenly becomes much worse

Causes and risk factors

Bronchiolitis occurs when a respiratory virus infects the bronchioles. RSV causes many cases, but rhinovirus, influenza, human metapneumovirus, parainfluenza virus, adenovirus, and other viruses can also be responsible. More than one virus may be present.

These viruses spread through droplets and small particles released when an infected person coughs, sneezes, talks, or breathes. They can also spread through contaminated hands and surfaces. A person may pass along a virus before it is clear that they are ill.

Being exposed to a respiratory virus does not mean a child will develop severe bronchiolitis. However, the following factors can increase the chance of a more serious illness:

Frequent contact with other young children, such as through siblings or childcare, may increase exposure to respiratory viruses.

Handwashing, cleaning commonly touched surfaces, and avoiding close contact with people who are ill can reduce spread. No prevention method eliminates all risk.

Depending on the country, season, and a child's eligibility, protection against severe RSV may be available through vaccination during pregnancy or a long-acting preventive antibody given to the infant. These measures help prevent severe RSV illness; they do not treat bronchiolitis that has already started. A clinician can explain current local recommendations.

- Age younger than about 3 months
- Birth before full term
- Chronic lung disease, including lung disease related to premature birth
- Significant heart disease present from birth
- A weakened immune system
- Neuromuscular conditions that affect coughing or swallowing

- Exposure to tobacco smoke or vaping aerosols

Diagnosis

Clinicians usually diagnose bronchiolitis by asking about the symptoms and examining the child. They assess breathing rate and effort, listen to the lungs, and look for signs of dehydration. A small sensor placed on a finger, toe, hand, or foot may be used to measure blood oxygen.

For a child with typical, mild bronchiolitis, a chest X-ray, blood tests, and viral tests are usually unnecessary. An X-ray can show changes that resemble bacterial pneumonia even when no bacterial infection is present. This may lead to treatment that is not needed.

Testing may be considered when symptoms are severe, the diagnosis is uncertain, or another condition may be present. Hospitals may also test for specific viruses to guide infection-control arrangements.

Several conditions can cause similar symptoms. Depending on the child's age and history, a clinician may consider pneumonia, asthma or recurrent viral wheezing, whooping cough, a swallowed or inhaled object, heart problems, or another infection. A sudden start to coughing or wheezing, especially during eating or play, is important to report.

Treatment and management

There is no medicine that routinely cures viral bronchiolitis. Treatment focuses on helping the child breathe comfortably, take in enough fluid, and recover while the immune system clears the infection.

At home, saline nose drops or spray may loosen mucus. Gentle suction can help before feeding or sleep, especially in infants who cannot blow their nose. Frequent or forceful deep suction can irritate the nose and should be avoided.

Offer smaller amounts of breast milk, formula, or other age-appropriate fluids more often. A child who is breathing quickly may manage small feeds better than a usual full feed. Do not force feeding if the child is struggling to breathe.

A fever medicine may help with discomfort, but it does not shorten the illness. Use only a product suitable for the child's age and follow the label or a clinician's advice. Do not give aspirin to a child. Ask a clinician before giving medicine to a young infant.

Over-the-counter cough and cold medicines can cause serious side effects in young children

and do not treat the airway swelling caused by bronchiolitis. Honey should not be given to a child younger than 1 year because of the risk of infant botulism.

Continue safe sleep practices during the illness. Place an infant on their back on a firm, flat sleep surface without pillows, positioners, loose blankets, or stuffed objects. Propping up the mattress or allowing routine sleep in a car seat, swing, or reclined device is not a safe way to treat congestion.

Medicines that open the airways, called bronchodilators, do not routinely improve bronchiolitis and are generally not recommended as standard treatment. Corticosteroids like prednisone or hydrocortisone also do not routinely help. Antibiotics are used only when a clinician finds evidence of a bacterial infection in addition to bronchiolitis. They do not work against RSV or other viruses.

A child may need hospital assessment or admission if oxygen levels remain low, breathing effort is significant, feeding is inadequate, dehydration develops, or there are pauses in breathing. Hospital treatment may include:

The decision to admit a child depends on the overall examination, age, medical history, ability to feed, and whether safe observation and follow-up are available at home.

- Supplemental oxygen
- Fluids through a vein or feeding tube
- Suctioning when nasal blockage interferes with breathing or feeding
- Closer monitoring of breathing, hydration, and oxygen levels
- Noninvasive or mechanical breathing support in severe cases

Complications

Dehydration is a common reason children with bronchiolitis need additional care. It can develop when nasal blockage, fast breathing, and tiredness make feeding difficult.

Some infants develop apnea, particularly those who are very young or were born prematurely. Low blood oxygen may occur when swollen, mucus-filled airways limit airflow. A small number of children develop respiratory failure and need intensive breathing support.

A bacterial infection can occur at the same time, but bacterial pneumonia is not a routine feature of bronchiolitis. Ear infections may also occur during a viral respiratory illness.

Children who have had bronchiolitis may wheeze again with later viral infections. Bronchiolitis is also associated with a higher chance of later recurrent wheezing or asthma, but this does not

mean that bronchiolitis always causes asthma. Shared airway sensitivity, genetics, and the type of virus may all play a role.

Follow up

Follow-up needs depend on the child's age, health history, and symptom severity. A clinician may recommend a recheck for a very young infant, a child with a higher-risk medical condition, or anyone whose feeding or breathing needs closer observation.

During recovery, watch the child's breathing, fluid intake, wet diapers, alertness, and color. Symptoms often worsen before they improve, commonly reaching their greatest intensity around days 3 to 5 of the illness. Nasal congestion and feeding usually improve first. The cough may last for several weeks.

Arrange routine follow-up if the cough is not gradually improving, symptoms return after improvement, wheezing keeps recurring, or there are concerns about feeding, growth, or sleep. A lingering cough by itself does not always mean that antibiotics or an X-ray are needed.

Seek urgent medical advice rather than waiting for a routine visit if breathing becomes harder, the child drinks much less, wet diapers decrease, or the child seems increasingly sleepy or unwell. Use emergency services for severe breathing difficulty, blue or gray color, prolonged pauses in breathing, or reduced responsiveness.

Before returning to childcare, consider whether the child is fever-free, able to participate comfortably, and feeding well enough. Childcare programs may have their own illness policies.

Sources

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