CONDITION

Acute bronchitis

Learn what causes acute bronchitis, how long its cough may last, when antibiotics are not helpful, and which symptoms need prompt medical care.

WHAT IT IS
Short-term inflammation of the large airways

BODY SYSTEM
Lungs and airways

MAIN SYMPTOMS
Cough, mucus, chest soreness, mild shortness of breath

WHAT CAUSES IT
Usually viral infection

HOW IT IS DIAGNOSED
Symptoms, medical history, physical examination

MAIN TREATMENT
Supportive care

CAN IT BE CURED?
Yes, most cases improve with time

IS IT AN EMERGENCY?
Sometimes, severe difficulty breathing or blue lips

LONG-TERM OUTLOOK
Most recover without lasting lung damage

Overview

Acute bronchitis is short-term inflammation of the bronchi, the large airways that carry air into the lungs. It is sometimes called a "chest cold." The inflammation causes coughing, with or without mucus.

Most cases develop after a viral respiratory infection. The same viruses that cause colds, influenza, COVID-19, and respiratory syncytial virus infection can cause acute bronchitis. Antibiotics like amoxicillin or doxycycline do not treat these viruses and are not routinely recommended for uncomplicated acute bronchitis.[1][2]

The cough often lasts longer than other symptoms. Many people improve gradually over two to three weeks, although coughing can sometimes continue for several weeks. A lingering cough does not necessarily mean that antibiotics are needed.

Acute bronchitis is different from pneumonia. Bronchitis mainly affects the airways, while pneumonia is an infection of the lung tissue and may require different treatment. It is also different from chronic bronchitis, a long-term condition usually associated with chronic obstructive pulmonary disease, or COPD.

Because cough can have many causes, a clinician may need to check for pneumonia, asthma, COVID-19, influenza, whooping cough, or another condition when symptoms are severe, prolonged, or unusual.

Symptoms

Cough is the main symptom. It may begin as a dry cough and later produce mucus, also called sputum or phlegm. The mucus may be clear, white, yellow, or green. Colored mucus can occur as the immune system responds to infection and does not, by itself, show that the illness is bacterial.[1]

Other possible symptoms include:

Symptoms often overlap with other respiratory illnesses. Fever, muscle aches, or marked fatigue may occur with influenza or COVID-19. Repeated bursts of coughing, vomiting after coughing, or a "whoop" when breathing in can occur with pertussis, also called whooping cough.

A high or persistent fever, significant trouble breathing, or sharp chest pain is not typical of uncomplicated acute bronchitis. These symptoms should be assessed because they may point to pneumonia or another medical problem.

- Chest soreness or a burning feeling with coughing
- A sore throat, stuffy nose, or runny nose
- Tiredness
- Mild body aches or headache
- A low-grade fever
- Wheezing, which is a whistling sound during breathing
- Mild shortness of breath, especially during coughing spells

Causes and risk factors

Viruses cause most cases of acute bronchitis. They spread through respiratory droplets and

small airborne particles, as well as through contaminated hands and surfaces. Acute bronchitis may develop during or shortly after an upper respiratory infection.

Bacterial causes are much less common. One important example is Bordetella pertussis , the bacterium that causes whooping cough. Antibiotics may be used when pertussis is confirmed or strongly suspected. Their main purpose in that setting is often to reduce spread to other people rather than to quickly stop an established cough.

Airway irritants can also cause or worsen bronchitis symptoms. These include tobacco smoke, cannabis smoke, vaping aerosols, dust, chemical fumes, and air pollution.

Factors that may increase the chance of bronchitis or make symptoms more difficult include:

People with asthma or COPD may develop an exacerbation, meaning a flare of their underlying lung condition, during a viral infection. This is not always the same as uncomplicated acute bronchitis and may require a separate treatment plan.

- Close contact with people who have respiratory infections
- Smoking or frequent exposure to secondhand smoke
- Workplace exposure to dust, fumes, or chemicals
- Asthma, COPD, or another lung condition
- A weakened immune system
- Older age or significant heart or lung disease

Diagnosis

There is no single routine test for acute bronchitis. A clinician usually makes the diagnosis from the symptoms, medical history, and physical examination. They may ask how long the cough has lasted, whether it produces mucus, and whether there is fever, wheezing, chest pain, or shortness of breath.

The examination may include listening to the lungs and checking temperature, breathing rate, heart rate, and oxygen level. The main goal is often to rule out pneumonia and other causes of acute cough.[1][3]

A chest X-ray is not usually needed when vital signs and the lung examination are reassuring. It may be considered when pneumonia is possible, symptoms are severe, or a person has risk factors that make the examination less reliable.

Depending on the situation, testing may be appropriate for COVID-19, influenza, or pertussis. Testing is more useful when the result could affect treatment, infection-control steps, or

protection of close contacts.

A clinician may also consider asthma, allergies, acid reflux, medication side effects, or heart problems if the cough is recurrent, lasts longer than expected, or does not fit the usual pattern. Cough caused by an angiotensin-converting enzyme inhibitor like lisinopril or ramipril, or ACE inhibitor, is one example of a medication-related cough.

Treatment and management

Most uncomplicated cases improve with time and supportive care. Treatment focuses on comfort, hydration, and watching for symptoms that suggest another illness.

Helpful self-care may include rest, drinking enough fluids, and using warm liquids to soothe the throat. Honey may reduce coughing for some adults and children older than 1 year. Honey should never be given to a child younger than 1 because of the risk of infant botulism.

Avoid smoking, vaping, and exposure to secondhand smoke while the airways are recovering. A clean humidifier or steam from a shower may feel soothing, although evidence that humidified air shortens the illness is limited.

Nonprescription pain or fever medicines may help with discomfort when used according to the product label. These medicines are not suitable for everyone, so people who are pregnant, take other medicines, or have kidney, liver, stomach, bleeding, or heart problems should ask a healthcare professional before using them.

Cough and cold products have limited evidence of benefit and may cause side effects or interact with other medicines. Extra caution is needed for children because some products are not recommended for young age groups. A pharmacist or pediatric clinician can help select an age-appropriate option.

Antibiotics are not routinely helpful for uncomplicated acute bronchitis. Research shows that they provide little overall benefit for most otherwise healthy people while causing possible side effects such as nausea, diarrhea, allergic reactions, and yeast infections.[2][4] Unnecessary antibiotic use also contributes to antibiotic resistance, which makes bacterial infections harder to treat.

Antibiotics may be appropriate if a clinician identifies a bacterial infection such as pertussis or pneumonia. Their use should be based on the likely diagnosis rather than mucus color alone.

Medicines that open the airways, called bronchodilators, are not routinely needed. A clinician may consider one when wheezing or an underlying airway condition is present. Oral or inhaled corticosteroids like budesonide or fluticasone are also not routine treatment for uncomplicated acute bronchitis, although they may be used for a separate condition such as an

asthma or COPD flare.[2][3]

If influenza or COVID-19 is diagnosed, some people may qualify for antiviral treatment. These medicines work best within specific time windows and depend on factors such as age, medical history, and risk of complications. A clinician can decide whether they are appropriate.

Complications

Most people recover without lasting lung damage. The most important possible complication or alternative diagnosis is pneumonia. Signs that raise concern include worsening shortness of breath, persistent fever, rapid breathing, low oxygen levels, confusion, or chest pain that is not limited to coughing.

A respiratory infection can trigger an asthma or COPD flare. This may cause increased wheezing, breathlessness, chest tightness, or a greater need for prescribed rescue medicine.

Strong or frequent coughing may disturb sleep, cause temporary urine leakage, or strain the muscles of the chest and abdomen. Rarely, severe coughing can cause fainting or a rib injury, particularly in people with fragile bones.

Some people develop a postinfectious cough. This means that airway irritation continues after the original infection has cleared. The cough usually improves over time, but persistent symptoms should be reviewed to rule out asthma, pertussis, pneumonia, reflux, or another cause.

Follow up

Routine follow-up is reasonable if the cough is not clearly improving after about three weeks, continues beyond several weeks, or repeatedly returns. Contact a clinician sooner if symptoms improve and then become worse, fever develops after being absent, or wheezing and breathlessness continue.

People who are pregnant, immunocompromised, older and frail, or living with serious heart or lung disease may need earlier assessment. Parents should also seek medical advice promptly for infants or for children who are breathing harder than usual, drinking poorly, or behaving unusually.

Seek prompt, same-day medical care for:

Call emergency services for severe difficulty breathing, blue or gray lips or face, new confusion, fainting, severe or persistent chest pain, or coughing up a large amount of blood.

For routine recovery, reduce exposure to others while feverish or acutely unwell, cover coughs, wash hands, and follow current public health advice if COVID-19 or influenza is suspected. Staying up to date with recommended vaccines can reduce the risk of some infections that cause acute cough.

- New or worsening shortness of breath
- Persistent or high fever
- Repeated vomiting or signs of dehydration
- Coughing up blood, even in a small amount
- Symptoms suggesting whooping cough
- A worsening asthma or COPD action-plan reading or response

Sources

- Centers for Disease Control and Prevention. "Outpatient Clinical Care for Adults: Antibiotic Prescribing and Use." Updated April 16, 2024.
- National Institute for Health and Care Excellence. Cough (Acute): Antimicrobial Prescribing . NICE Guideline NG120. Published February 7, 2019.
- Smith MP, Lown M, Singh S, et al. "Acute Cough Due to Acute Bronchitis in Immunocompetent Adult Outpatients: CHEST Expert Panel Report." Chest . 2020;157(5):1256-1265.
- Smith SM, Fahey T, Smucny J, Becker LA. "Antibiotics for Acute Bronchitis." Cochrane Database of Systematic Reviews . 2017;6:CD000245.
- Kinkade S, Long NA. "Acute Bronchitis." American Family Physician . 2016;94(7):560-565.