

## Acute bronchitis

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*Does bronchitis really exist?*

Hueston et al

About 5% of adults self-report an episode of acute bronchitis each year, and up to 90% of them seek medical advice. Viruses appear to be mainly responsible, causing up to 95% of cases of acute bronchitis in otherwise healthy adults. The viruses are the same as those that cause the common cold.

Isolated bacteria are usually commensals from the oropharynx.

- Acute bronchitis is the fifth most common reason why adults see their GP; 5% of the adult population seeks medical advice for bronchitis each year.
- On average, each attack results in 2 to 3 days off work.
- Viruses cause 85% to 95% of cases of acute bronchitis in healthy adults.
- The most common viruses are rhinovirus, adenovirus, influenza A and B, and parainfluenza virus; bacteria are usually commensals.
- Bacteria can cause bronchitis in people with underlying health problems. *Mycoplasma pneumoniae*, *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Moraxella catarrhalis*, and *Bordetella pertussis* are most commonly involved.

### Clinical course and diagnosis

Acute bronchitis is an acute infection of the tracheo-bronchial tree; its hallmark is a productive cough. Some doctors have questioned whether bronchitis is a clear diagnostic entity; maybe it is just a cold on the chest. Coloured sputum cannot be used to predict whether an infection is viral or bacterial.

There are no reliable diagnostic signs or laboratory tests, so the diagnosis of acute bronchitis is essentially a clinical one. The most important condition to rule out is acute pneumonia. This can be difficult, as patients with pneumonia and those with bronchitis can both have added lung sounds and fever (unfortunately, these signs are neither sensitive nor specific for pneumonia). Colds and sinusitis can cause productive cough. Bronchitis patients often show signs of bronchial obstruction, such as wheezing or dyspnea on exertion. However, unlike that in asthma, the inflammation in acute bronchitis is transient and usually completely resolves soon after the infection clears up.

Spirometry in acute bronchitis overlaps with asthma; forced expiratory volume in 1 second and peak flow rate decline in almost 60% of people with acute bronchitis.

- The common symptom is an acute cough, which is usually productive. The cough lasts for less than 3 weeks in 50% of patients, but for more than 1 month in 25% of patients.
- The appearance of the sputum cannot be used to distinguish between viral and bacterial bronchitis.
- There is no reliable diagnostic sign or laboratory test; the diagnosis is a clinical one.
- There is considerable clinical overlap between acute bronchitis and the other acute respiratory infections, asthma, and pneumonia.
- Results from the control groups of trials show that 85% of patients will improve without specific treatment.

### Treatment

Some of the systematic reviews found no benefit from using antibiotics; others found some modest treatment effects when antibiotics were compared with placebo. The consensus seems to be that antibiotics have a modest benefit for only a minority of patients and are not needed to treat most patients with acute bronchitis.

Amoxicillin, doxycycline, erythromycin, and trimethoprim-sulfamethoxazole seem reasonable first choices. The evidence for bronchodilators is conflicting. A review by Williamson claims that randomized clinical trials support the use of bronchodilators; however, a review by Smucny et al states that there is no consistent benefit.

Nonspecific cough therapy is commonly prescribed to patients either together with or in lieu of antibiotics, but the evidence is weak. The very recent evidence-based guideline by the American College of Chest Physicians suggests that antitussive agents are occasionally useful and can be offered for short-term symptomatic relief of coughing.

Patients should be given a realistic prediction of the duration of their cough, which will typically last for at least 10 to 14 days after the office visit. Doctors might consider calling the cough a chest cold rather than acute bronchitis.

- Antibiotics confer only minimal benefits on healthy adults with bronchitis:
  - a reduction in cough duration (number needed to treat=5) and
  - a slightly earlier return to work (number needed to treat=18).
- Antibiotics can have a modest beneficial effect in certain groups of patients, such as older and debilitated people, but smokers do not gain any additional benefit from them.
- Antibiotics cause side effects (number needed to harm=14).
- Bronchodilators can help to relieve the cough in people who show evidence of bronchospasm.
- Cough suppressants are of no value for either adults or children.

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### Competing interests

None declared

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