Common cold

The right clinical information, right where it's needed
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>3</td>
</tr>
<tr>
<td>Basics</td>
<td></td>
</tr>
<tr>
<td>Definition</td>
<td>4</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>4</td>
</tr>
<tr>
<td>Etiology</td>
<td>4</td>
</tr>
<tr>
<td>Pathophysiology</td>
<td>4</td>
</tr>
<tr>
<td>Prevention</td>
<td>5</td>
</tr>
<tr>
<td>Primary prevention</td>
<td>5</td>
</tr>
<tr>
<td>Secondary prevention</td>
<td>5</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>6</td>
</tr>
<tr>
<td>Case history</td>
<td>6</td>
</tr>
<tr>
<td>Step-by-step diagnostic approach</td>
<td>6</td>
</tr>
<tr>
<td>Risk factors</td>
<td>8</td>
</tr>
<tr>
<td>History &amp; examination factors</td>
<td>8</td>
</tr>
<tr>
<td>Diagnostic tests</td>
<td>9</td>
</tr>
<tr>
<td>Differential diagnosis</td>
<td>11</td>
</tr>
<tr>
<td>Treatment</td>
<td>16</td>
</tr>
<tr>
<td>Step-by-step treatment approach</td>
<td>16</td>
</tr>
<tr>
<td>Treatment details overview</td>
<td>19</td>
</tr>
<tr>
<td>Treatment options</td>
<td>20</td>
</tr>
<tr>
<td>Emerging</td>
<td>25</td>
</tr>
<tr>
<td>Follow up</td>
<td>26</td>
</tr>
<tr>
<td>Recommendations</td>
<td>26</td>
</tr>
<tr>
<td>Complications</td>
<td>27</td>
</tr>
<tr>
<td>Prognosis</td>
<td>28</td>
</tr>
<tr>
<td>Guidelines</td>
<td>29</td>
</tr>
<tr>
<td>Treatment guidelines</td>
<td>29</td>
</tr>
<tr>
<td>Online resources</td>
<td>30</td>
</tr>
<tr>
<td>References</td>
<td>31</td>
</tr>
<tr>
<td>Disclaimer</td>
<td>38</td>
</tr>
</tbody>
</table>
Most of the population experience at least one cold per year; these are usually self-limited and resolve within a few days.

Diagnosis is generally clinical, based on history and exam. Investigations may be required when symptoms worsen or do not resolve in the usual timeframe.

Treatment includes reassurance that this is a self-limiting condition, rest, adequate fluid intake, and an analgesic/antipyretic for pain/fever. Antibiotics are not recommended.

Decongestants and/or antihistamines may have a role in reducing nasal symptoms in adults; however, the evidence is limited, and these treatments are generally not recommended in young children. Antitussives may be used for cough; however, there is no evidence to support or refute their use, and opioids are not recommended for this indication in children and adolescents under 18 years of age.

Complications include bacterial infections such as otitis media, sinusitis, or pneumonia.
**Definition**

An acute, self-limited inflammation of the upper respiratory mucosa that may involve any or all of the nose, throat, sinuses, and larynx. The condition is rarely characterized by a discrete set of specific symptoms, with the illness varying according to individual and causative pathogen. Occasionally there is spread to the lower respiratory tract. Symptoms include sore throat, sneezing, blocked and/or runny nose, headache, cough, malaise, and low-grade fever. The condition is associated with more than 200 virus subtypes.

**Epidemiology**

The common cold is the most common acute illness in the US, responsible for approximately 37 million (3%) ambulatory care visits each year.[1] A US study found that 23.6% of adults had experienced a cold in the previous 4 weeks.[2] Upper respiratory tract infections, nasal congestion, throat complaints, and cough are responsible for 11% of general practice consultations in other western countries.[3] Each year, children have around 6 to 8 colds, and adults have 2 to 4 colds.[3] [4] [5] [6] [7]

There are no major sex or ethnicity differences in incidence. Most infections occur in the winter period. The condition is highly contagious, though it is unclear whether the main mode of spread is by hand-to-hand contact, aerosol between people, or contamination of surfaces by aerosol that then transfers the infective pathogen to buccal mucous membranes (e.g., when eating).

Accompanying mortality/morbidity is rare, although common colds are responsible for considerable discomfort, absenteeism from school and work, and healthcare costs.[2]

**Etiology**

The majority of common colds are caused by rhinoviruses (up to 50%), of which there are many.[1] [8] Other known pathogens include coronavirus (10% to 15%), influenza (5% to 15%), parainfluenza (5%), respiratory syncytial virus (5%), and metapneumovirus.[1] Often, no infecting organisms are identified. Reinfection can occur after re-exposure to the same viral subtype, but the illness is typically milder and of shorter duration. There is an association with adenoviruses and enteroviruses and the common cold. Pharyngitis is commonly due to adenoviruses, which can also cause lower respiratory infections. Common respiratory tract bacteria (Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis) may be associated with the common cold.[9] However, this has no implications in terms of antibiotic treatment for the typical common cold.

**Pathophysiology**

An influx of polymorphonuclear leukocytes (PMNs) in the nasal submucosa occurs within a few days after viral inoculation and correlates with symptoms.[10] [11] There is no evidence that purulent discharge is related to bacterial infection or responds to antibiotics.[1]
Common cold

Prevention

Primary prevention

Spread to others may be limited by physical measures[14] including hand-washing,[15] covering the mouth and nose when sneezing or coughing, efficient disposal of tissues carrying nasal secretions, and staying away from work or school. There is no evidence to support administration of facemasks.[16] [17]

Vitamin C supplementation has been found to have no benefit on the incidence of colds.[18] [19] The evidence for prophylactic echinacea is inconclusive.[20] No firm recommendations can be made with regard to prophylactic zinc supplementation because of insufficient data. Oral zinc supplements may be useful for children in regions (such as in developing countries) where there is known to be a high prevalence of zinc deficiency.[21] Studies have found that vitamin D3 supplementation does not prevent upper respiratory tract infection in children or adults, even at high doses.[22] [23]

Secondary prevention

Contact with nasal mucus or phlegm coughed up by people with the common cold should be avoided. Hands should be washed before eating or before touching nasal, eye, or oral regions. Avoiding others with a cold, especially during the first few days of illness, reduces the chance of contagious spread.[14]
Common cold

Diagnosis

Case history #1

A 30-year-old man presents with a 2-day history of runny nose and sore throat. He feels hot and sweaty, has a mild headache, is coughing up clear sputum, and complains of muscle aches. He would like antibiotics as he was prescribed them last year for similar symptoms. On examination, he is afebrile and has a normal pulse, a slightly inflamed pharynx, and nontender cervical lymphadenopathy. There is no neck stiffness and his chest is clear. He has tried over-the-counter cough medications, but has not found these helpful. He smokes 10 cigarettes per day.

Step-by-step diagnostic approach

The approach should include:

- A history eliciting a constellation of symptoms compatible with the diagnosis
- Identification of risk factors suggestive of the condition (e.g., seasonal occurrence, smoking, exposure to affected individuals)
- A brief physical exam, including temperature, examination of oropharynx, nares, neck, and chest; if the patient looks sick, consider influenza as a cause and add pulse and blood pressure to rule out septic shock from a bacterial cause (e.g., meningococcal septicemia)
- Excluding alternative diagnoses by screening for distinguishing features of similar disorders.

No laboratory tests are required in the initial stages.

History

Common symptoms include any or all of the following:

- Runny/blocked nose
- Sneezing
- Sore throat
- Cough
- Headache
- Malaise
- Fever.

An alternative or underlying diagnoses should be considered if:

- A sore throat is the main symptom (streptococcal tonsillitis should be considered especially if the patient is younger than 15 years of age). Use of the McIsaac score
- Rhinitis has been present for more than 14 days (e.g., allergic rhinitis)
- The illness started suddenly with fever, chills, and severe muscle aches (e.g., influenza or pneumonia)
Common cold

Diagnosis

• Symptoms include:
  • Pleuritic pain, large amounts of sputum, or blood in the sputum (e.g., pleurisy or pneumonia)
  • Otalgia (e.g., otitis media)
  • Facial pain (sinusitis)
  • Features of meningism are present (altered consciousness, photophobia, hypotonia, neck stiffness, seizures, and tachycardia).

Physical exam

Temperature:

• In adults, an elevated temperature is unusual, but this is common in children. A temperature greater than 100.4°F (38°C) increases the likelihood of the diagnosis being influenza.[25] Pulse and blood pressure should be measured to rule out septic shock from a bacterial cause (e.g., meningococcal septicemia) in people who look moderately sick. Meningococcal septicemia may mimic the common cold as both can present with fever and muscle aches; however, someone with meningococcal septicemia is less likely to have respiratory symptoms, such as sore throat, sneezing, and rhinitis. They will likely have a fever, tachycardia, and hypotension.

Examination of the oropharynx:

• A typical viral infection will have nonspecific erythematous inflammation of the pharynx. Purulent drainage in the posterior pharynx may be present. The presence of pus on the tonsils is suggestive of streptococcal tonsillitis and should be followed by an examination of the anterior cervical glands of the neck.

Nares:

• Erythema and edema may be present. Purulent drainage in both nares is common.

Neck stiffness:

• Should be assessed as may indicate meningism. In infants, a bulging fontanelle and a characteristic high-pitched cry may occur. A positive Kernig or Brudzinski sign indicates meningeal inflammation and is suggestive of meningitis. This is present in a minority of patients.

For a diagnosis of the common cold, a clear chest is essential. If the patient has lower respiratory signs, other diagnoses should be considered, such as an acute exacerbation of asthma or COPD or pneumonia. In children, bronchiolitis and croup should be considered.

Laboratory tests

No laboratory tests are needed to confirm the diagnosis. Using a point-of-care test for C-reactive protein in primary care settings for patients who present with acute respiratory symptoms can reduce antibiotic use, but with no effect on patient-reported outcomes.[26] There is no consensus on the place of point-of-care testing for the common cold.

At follow-up, where symptoms have persisted beyond normal disease duration or atypical features are present, certain laboratory investigations may be justified. Specific tests can confirm or exclude alternative diagnoses, such as a throat swab to exclude streptococcal pharyngitis or a chest x-ray to
confirm pneumonia. The monospot test should be ordered when there is clinical suspicion of infectious mononucleosis.

Rapid viral testing has not been shown to reduce antibiotic use; it has been shown to reduce the need for chest x-rays in the emergency department but has not been demonstrated to have any other effects on other tests or waiting times.\textsuperscript{27} Viral testing only has a place as part of research or as a tool for the early diagnosis of influenza during a pandemic.

### Risk factors

**Strong exposure to affected individuals**
- Bedroom sharing is associated with higher rates of antibody conversion to common rhinoviruses than sleeping in a room alone.\textsuperscript{8}

**young age**
- Children have more episodes than adults.\textsuperscript{3} \textsuperscript{4} \textsuperscript{5} \textsuperscript{6}

**winter season**
- Respiratory infections are more common in winter than in other seasons.\textsuperscript{8}

**daycare attendance**
- According to one study analyzing data from the US, children in daycare centers were 4.5 times more likely to be hospitalized than those in other settings and developed more upper respiratory tract infections.\textsuperscript{12}

**exposure to cigarette smoke or other respiratory irritants**
- Smokers are at greater risk of developing the condition than nonsmokers.\textsuperscript{13}

### History & examination factors

**Key diagnostic factors**

**acute onset (common)**
- Onset is rapid over the course of 1 to 2 days.

**rhinitis (common)**
- Clear or purulent rhinitis may be present. Colored secretions are often a sign of oxidation and do not necessarily indicate any complications to a viral illness bacterial superinfection.

**sore throat (common)**
- A characteristic feature.

**sneezing (common)**
- A characteristic feature.
Common cold

Diagnosis

postnasal drainage/drip (common)
• A characteristic feature.

cough (common)
• Clear sputum initially, may become purulent, may be nonproductive.

fever (common)
• More likely in children; greater than 100.4°F (>38°C) suggestive of alternative cause in adults.

nonspecific red pharynx (common)
• Common feature on examination of oropharynx.

nasal mucosal edema/erythema (common)
• Common feature on examination of nares.

purulent drainage in nares and posterior pharynx (common)
• Common feature on examination of nares/oropharynx.

pulse <100 bpm; no hypotension (common)
• Pulse should be <100 bpm and blood pressure normal for the patient's age. Pulse and BP should be checked in any patient who appears moderately sick, to rule out septic shock from a bacterial cause (e.g., meningococcal septicemia).

Other diagnostic factors

malaise (common)
• Sick but not extremely tired; persistent fatigability may suggest alternative cause.

myalgia (common)
• A constitutional symptom, suggestive of viremia.

halitosis (common)
• Nonspecific sign.

inflamed tonsils (common)
• May be suggestive of streptococcal tonsillitis if exudates are present.

Diagnostic tests

1st test to order

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>no initial test</td>
<td>clinical diagnosis</td>
</tr>
</tbody>
</table>

• Usually no tests are needed.
### Other tests to consider

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CBC</strong></td>
<td>increased WBC count, lymphocytosis</td>
</tr>
<tr>
<td>• WBC count may be elevated with lymphocytosis in viral infections.</td>
<td></td>
</tr>
<tr>
<td>• A CBC is not routinely indicated.</td>
<td></td>
</tr>
<tr>
<td><strong>throat swab</strong></td>
<td>positive for Streptococcus</td>
</tr>
<tr>
<td>• Only justified if McIsaac score of 2 to 3 or more is present.</td>
<td></td>
</tr>
<tr>
<td><strong>sputum culture</strong></td>
<td>positive culture for bacterial pathogen</td>
</tr>
<tr>
<td>• May be justified in persistent infection with spread to lower respiratory tract.</td>
<td></td>
</tr>
<tr>
<td>• A sputum culture is not routinely indicated.</td>
<td></td>
</tr>
<tr>
<td><strong>heterophile antibody test</strong></td>
<td>positive heterophile antibodies</td>
</tr>
<tr>
<td>• Also known as Monospot test, heterophile agglutination test, or Paul Bunnell test.</td>
<td></td>
</tr>
<tr>
<td>• Definitive test for infectious mononucleosis.</td>
<td></td>
</tr>
<tr>
<td>• Heterophile antibodies are present in about 80% to 90% of people with infectious mononucleosis.</td>
<td></td>
</tr>
<tr>
<td>• Indicated in a patient presenting with extreme tiredness or persisting symptoms.</td>
<td></td>
</tr>
<tr>
<td><strong>C-reactive protein (CRP)</strong></td>
<td>high CRP may indicate more serious infection</td>
</tr>
<tr>
<td>• CRP is an acute-phase response marker and in the correct clinical context is a surrogate marker of infection.</td>
<td></td>
</tr>
<tr>
<td>• A CRP is not routinely indicated.</td>
<td></td>
</tr>
<tr>
<td><strong>chest x-ray</strong></td>
<td>no change with uncomplicated infection</td>
</tr>
<tr>
<td>• Indicated if signs/symptoms suggestive of lower respiratory tract spread. Not indicated as first-line investigation.</td>
<td></td>
</tr>
<tr>
<td><strong>sinus CT scan</strong></td>
<td>air fluid level may be present in sinusitis</td>
</tr>
<tr>
<td>• Indicated in cases of chronic maxillary or forehead pain and clinical history compatible with sinusitis.</td>
<td></td>
</tr>
<tr>
<td>• Radiologic investigations are not routinely indicated in the common cold.</td>
<td></td>
</tr>
<tr>
<td><strong>viral testing</strong></td>
<td>confirmed viral infection</td>
</tr>
<tr>
<td>• Viral testing is sought only as part of research or as a tool for the early diagnosis of influenza during a pandemic.</td>
<td></td>
</tr>
<tr>
<td>• Rapid viral testing may be useful as confirmation of viral (rather than bacterial) infection, but is not routinely indicated.</td>
<td></td>
</tr>
</tbody>
</table>
## Differential diagnosis

<table>
<thead>
<tr>
<th>Condition</th>
<th>Differentiating signs / symptoms</th>
<th>Differentiating tests</th>
</tr>
</thead>
</table>
| **Coronavirus disease 2019 (COVID-19)** | • Residence in/travel to a country/area or territory with local transmission, or close contact with a confirmed or probable case of COVID-19, in the 14 days prior to symptom onset.  
• Signs and symptoms are similar so it may be difficult to differentiate between the conditions clinically.  
• The situation is evolving rapidly; see our COVID-19 topic for further information. | • Real-time reverse transcription polymerase chain reaction (RT-PCR): positive for SARS-CoV-2 RNA.  
• It is not possible to differentiate COVID-19 from other causes of pneumonia on chest imaging.                                                                                                         |
| **Hay fever (allergic rhinitis)** | • Rhinitis occurs in response to exposure to specific allergens.  
• Chronic fluctuating course, according to allergen exposure and seasonal pattern.  
• The presence of sore throat would make a common cold more likely.  
• Other features of atopy suggestive of condition. | • Allergen skin patch testing and in vitro specific IgE determination are diagnostic tests.                                                                                                                                 |
| **Chronic sinusitis**          | • Symptoms longer 6 weeks. Usually diagnosed with the aid of radiologic studies. Common clinical characteristics of chronic sinusitis include hyposmia or anosmia.  
• More commonly characterized by chronic inflammation than a bacterial infection, especially in adults. | • Sinus CT scans are abnormal in sufferers of chronic sinusitis.                                                                                                                                                        |
<p>| <strong>Streptococcal tonsillitis</strong>  | • Use of the McIsaac score [VIDEO: Sore Throat (Pharyngitis) Evaluation and Treatment Criteria (McIsaac) ] can help to discriminate; a score of 2 or 3 should lead to obtaining a throat swab.[24] | • A positive throat culture for streptococcus confirms the diagnosis in most cases.                                                                                                                                      |</p>
<table>
<thead>
<tr>
<th>Condition</th>
<th>Differentiating signs / symptoms</th>
<th>Differentiating tests</th>
</tr>
</thead>
</table>
| **Acute sinusitis**    | • Acute disease often due to an infectious cause.  
  • Usually clinically diagnosed and may present with nasal congestion, cough, discolored nasal mucus, and facial pressure/pain.  
  • Facial tenderness is a rare and unreliable sign; however, reproducible pain on percussion of frontal and maxillary sinuses strongly indicates acute bacterial sinusitis.  
  • Dental pain and failure of a topical or oral decongestant increases the likelihood of acute bacterial sinusitis. | • Diagnosis is clinical.                                                                                   |
| **Infectious mononucleosis** | • Often subclinical in young children.  
  • Well-described syndrome with maculopapular rash, fatigability, fever, laryngitis, and malaise.  
  • Hepatosplenomegaly common.                                                                                                                                                                                                 | • Lymphocytosis on CBC.  
  • Positive heterophile antibody test usually diagnostic; may be false-negative in early stages of the illness.  
  • EBV antibody titers can help differentiate acute and chronic forms of EBV infection.                                                                                     |
| **Seasonal influenza**  | • Fever, headache, muscle aches, and malaise are predominant features.  
  • Symptoms more severe than URTI.  
  • Fever greater than 100.4 °F (>38°C) suggestive in adults.  
  • May lead to prolonged period of absenteeism/inactivity.  
  • Can lead to severe complications in older and immunocompromised people.                                                                                                                                                  | • Viral culture, direct immunofluorescent-antibody staining, and reverse transcriptase-polymerase chain reaction are recognized tests. |
<p>| <strong>H1N1 influenza (&quot;swine flu&quot;)</strong> | • Clinical features typical of influenza (e.g., fever, cough, sore throat, muscle aches, malaise), usually in a community where                                                                                                                                                           | • Viral culture, direct immunofluorescent-antibody staining, and reverse transcriptase-polymerase chain reaction (PCR) will |</p>
<table>
<thead>
<tr>
<th>Condition</th>
<th>Differentiating signs / symptoms</th>
<th>Differentiating tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1N1 swine influenza</td>
<td>H1N1 swine influenza is circulating or in someone who has traveled to such a community.</td>
<td>detect influenza virus. The most definitive means of identifying H1N1 influenza A virus is specific real-time reverse transcriptase-PCR testing that can be performed at specialist laboratories. It can be done directly on patient specimens (e.g., nasopharyngeal swab or aspirate, nasal wash and swab, or tracheal aspirate) or on cultured virus from patient specimens.</td>
</tr>
<tr>
<td>Avian influenza A (H5N1)</td>
<td>• Clinical features typical of influenza (e.g., fever, cough, sore throat, muscle aches, malaise), usually in a community where H5N1 virus is circulating or in someone who has traveled to such a community.</td>
<td>• Viral culture, direct immunofluorescent-antibody staining, and reverse transcriptase-PCR will detect influenza virus. The most definitive means of identifying H5N1 influenza A virus is specific real-time reverse transcriptase-PCR testing that can be performed at specialist laboratories. It can be done directly on patient specimens (e.g., nasopharyngeal swab or aspirate, nasal wash and swab, or tracheal aspirate) or on cultured virus from patient specimens.</td>
</tr>
<tr>
<td>virus infection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pertussis</td>
<td>• Initial upper respiratory symptoms may give way several weeks later to an increased severity of cough, with paroxysmal coughing first increasing in frequency, then remaining constant for several weeks. There may be inspiratory whooping and post-tussive vomiting. Inspiratory stridor may be heard on auscultation.</td>
<td>• Evidence of <em>Bordetella pertussis</em> from nasopharyngeal swabs or aspirates.</td>
</tr>
<tr>
<td>Diphtheria</td>
<td>• May be a history of exposure or travel to endemic area.</td>
<td>• Microscopy and cultures from nose and throat swabs, taken when possible from beneath the pseudomembrane, positive for <em>Corynebacterium diphtheriae</em>.</td>
</tr>
<tr>
<td></td>
<td>• Sore throat and low-grade fever (usually &lt;102°F [39°C]) followed by dysphagia, dysphonia, dyspnea, and a croupy cough if there is extension of the pseudomembrane and/or</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>Differentiating signs / symptoms</td>
<td>Differentiating tests</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Common cold</td>
<td>• Gray-brown pseudomembrane may form over the tonsils and/or pharynx after 2 to 5 days of sore throat. Without treatment, it can thicken and spread. Neck swelling and lymphadenopathy may cause characteristic bull-neck appearance.</td>
<td></td>
</tr>
<tr>
<td>Meningococcal disease</td>
<td>• May present with nonspecific respiratory signs/symptoms. May present with triad of tachycardia, low blood pressure, and high fever.</td>
<td>• Isolation of <em>Neisseria meningitidis</em> from a sterile body site (blood, CSF, joint, pleural fluid, pericardial fluid, or aspiration or biopsy of a purpuric lesion) is the definitive test for diagnosis of invasive meningococcal infections.</td>
</tr>
<tr>
<td>HIV seroconversion</td>
<td>• Many HIV-infected individuals develop an acute clinical illness that typically occurs 2 to 4 weeks after exposure to HIV.</td>
<td>• Humoral immunodeficiency shows low immunoglobulin levels. Cellular immunodeficiency indicates T-cell dysfunction and/or HIV.</td>
</tr>
<tr>
<td>illness</td>
<td>• Often recognized in retrospect since features are nonspecific.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Onset is acute and lasts up to 2 weeks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Common symptoms are a glandular fever-type illness with fever, malaise, myalgia, pharyngitis, headaches, diarrhea, neuralgia or neuropathy, lymphadenopathy,</td>
<td></td>
</tr>
</tbody>
</table>

This PDF of the BMJ Best Practice topic is based on the web version that was last updated: Mar 11, 2020. BMJ Best Practice topics are regularly updated and the most recent version of the topics can be found on bestpractice.bmj.com. Use of this content is subject to our disclaimer. © BMJ Publishing Group Ltd 2020. All rights reserved.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Differentiating signs / symptoms</th>
<th>Differentiating tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>maculopapular rash, and mucocutaneous ulceration.</td>
<td></td>
</tr>
</tbody>
</table>
Common cold

TREATMENT

Step-by-step treatment approach

Reassure patients about the self-limiting nature of the condition, and that symptoms usually clear within 7 to 10 days. The severity and duration of symptoms appear to be related to what the patient believes and feels about the treatment received, and empathetic treatment, as perceived by the patient, is associated with improvement in symptoms and biochemical markers.[28] [29] [30] Also advise patients about hygiene measures and limiting the spread to others, as well as the importance of rest and maintaining fluid intake to stay hydrated. The implications of increased fluid intake in acute respiratory infections have not been studied in any trials to date.[31]

Symptomatic relief is the mainstay of treatment. Many over-the-counter medications claim to alleviate symptoms of the common cold; however, quality evidence to support the use of these medications is limited.[32]

[The BMJ: what treatments are effective for common cold in adults and children?]

Fever and pain

Acetaminophen is recommended for pain and/or fever. Evidence suggests that it may also help with nasal congestion and rhinorrhea, but not sore throat, malaise, sneezing, or cough.[33] Despite this, it is still one of the most widely used analgesic/antipyretic agents, and is a first choice for many clinicians for the management of pain and fever in both adults and children.[34]

A review of nonsteroidal anti-inflammatory drugs (NSAIDs) found benefit for reducing discomfort, but found no benefit in terms of easing respiratory symptoms. Possible adverse effects need to be considered (e.g., gastrointestinal adverse effects, rash).[35] Studies of aspirin have found it to be effective for pain and fever, without serious gastrointestinal adverse effects with short-term use,[36] although a small increased risk of dyspepsia has been reported.[37] Aspirin should be avoided in children and adolescents under 18 years of age because of the risk of Reye syndrome.

Analgesics are available as single-agent or combination (with decongestants and/or antihistamines) formulations.

Nasal symptoms

There are many different formulations of decongestants and/or antihistamines available over the counter for the treatment of nasal symptoms (i.e., congestion, rhinorrhea, sneezing), including single-agent and combination formulations.

In adults, decongestants and/or antihistamines are the best option for patients with bothersome nasal symptoms; however, the effect is considered small.[32]

Decongestant monotherapy

- Sympathomimetic decongestants are available in oral (e.g., pseudoephedrine) or intranasal (e.g., oxymetazoline) formulations. There is no evidence to support the use of one route of administration over another.[32] A Cochrane review found a small benefit in the relief of nasal congestion from multiple doses of nasal decongestants (3 to 4 doses per day over 5 to 10 days), but it was unclear whether this was beneficial for patients.[38]
Common cold Treatment

• Oxymetazoline nasal spray has been shown to have an effect in reducing airway resistance, but there is limited evidence on patient-oriented benefits.[39] [40] Intranasal decongestants should be used for a maximum of 3 to 7 days due to the risk of chronic/rebound nasal congestion (rhinitis medicamentosa).

Antihistamine monotherapy

• A Cochrane review found that (older, first-generation) sedating antihistamines are associated with relief of sneezing and rhinorrhea, but not nasal congestion; sedation is commonly reported. Studies evaluating (newer, second-generation) non-sedating antihistamines show an unclear effect on nasal congestion, with no effect on sneezing or rhinorrhea.[41]

Combination formulations of decongestants and antihistamines

• Antihistamines and decongestants are often formulated together, with or without an analgesic. Certain combinations of these agents may improve congestion, rhinorrhea, and sneezing; however, the quality of trial data for these formulations is weak. Adverse effects include headache, sedation, and insomnia.[42]

Ipratropium

• Ipratropium, an antimuscarinic agent, has been shown to be effective for the treatment of nasal symptoms. A systematic review found low-quality evidence to suggest ipratropium nasal spray is effective for rhinorrhea compared with placebo, but not for nasal congestion. Adverse effects (e.g., dry mouth, nose bleeds, nasal dryness) were more frequent compared with placebo or no treatment.[43]

In children, the evidence for these treatments is more limited. There is no evidence that decongestants alleviate nasal symptoms in children, and they are known to cause adverse effects (e.g., drowsiness, gastrointestinal upset, more serious harms such as convulsions and rapid heart rate, and death). Therefore, decongestants are not recommended in children <6 years of age, and caution is recommended in children ages 6 to 12 years.[32] The Food and Drug Administration does not recommend cold products that contain a decongestant and/or antihistamine in children under 4 years of age due to possible serious and life-threatening adverse effects.[44] The advice differs in other countries. For example, in the UK and Canada, over-the-counter cold treatments are not recommended at all in children under 6 years of age.

There is low-quality evidence that saline drops or sprays may be effective and safe in younger children. They improve nasal congestion in older children, and possibly reduce rhinorrhea severity.[45]

[FDA: use caution when giving cough and cold products to kids]

Despite these warnings, data from the Pediatric Cough and Cold Safety Surveillance System indicate that the overall rate of adverse effects related to over-the-counter cough and cold medications in children <12 years of age is relatively low (1 adverse effect per 1.75 million dose units sold), with 67% of adverse effects being related to accidental unsupervised ingestion. Fatalities were extremely rare (0.6% of patients) and not associated with therapeutic doses.[46]

Cough

Many different cough suppressants or expectorants are available, including single-agent and combination formulations (often combined with decongestants and/or antihistamines). There is no evidence to support
or refute the use of over-the-counter antitussive agents, expectorants, or mucolytic agents to reduce the incidence of cough in adults or children, particularly young children.[47] [48] However, the American College of Chest Physicians recommends against the use of over-the-counter cough and cold medicines for the treatment of cough.[49]

Cough and cold medications that include opioids, such as codeine or hydrocodone, should not be used in children aged 18 years or younger as the risks (slowed or difficult breathing, misuse, abuse, addiction, overdose, and death) outweigh the benefits when used for cough in these patients.[50]

Honey has been shown to offer more relief of cough symptoms compared to no treatment, placebo, and diphenhydramine in children aged 1 to 18 years, but is not better than dextromethorphan.[51] [49]

A review of inhaled corticosteroids for acute and subacute cough found insufficient evidence to recommend their routine use for acute respiratory tract infections in adults. However, some trials have shown benefits, suggesting the need for further high-quality, adequately powered trials.[52]

**Antibiotic therapy**

Antibiotics are not effective for symptoms of the common cold and are known to cause adverse effects.[53] The US Centers for Disease Control and the American College of Physicians do not recommend antibiotic treatment.[1] Regulatory bodies in other countries also support this recommendation.[54]

Antibiotics are often requested by patients at consultation, but there is increasing evidence that this encourages resistant strains of bacteria and causes unnecessary harm. There is limited evidence that purulent nasal discharge suggestive of bacterial infection will not respond to antibiotics.[53] A delayed prescription for antibiotics, alongside advice on the natural history of the illness and symptomatic treatments, has been found to reduce the rate of antibiotic use (31%) compared with immediate antibiotics (93%) with similar rates of patient satisfaction.[55] Providing written information about the use of antibiotics to parents of children with upper respiratory tract infections can also reduce the number of antibiotics used without affecting parental satisfaction.[56] Other interventions that may have an effect on reducing antibiotic prescribing in acute respiratory tract infections in a primary care setting include C-reactive protein testing, procalcitonin-guided management of infections, and shared decision making between doctors and their patients; however, there is only moderate quality evidence for these interventions.[57]

**Other treatments with limited or no evidence of efficacy**

No other treatments are supported by adequate evidence. Interventions such as oral and nasally inhaled zinc, echinacea, and humidified air have all been studied in placebo-controlled trials.[20] [58] [59] [60] [61] [62] Overall, they have shown minimal evidence of effectiveness.

Vitamin C supplementation has been found to have no benefit on the incidence of colds.[18] [19] While one study found that vitamin C may reduce the duration of colds, systematic reviews (that included seven randomized controlled trials) found that vitamin C had minimal or no impact on the duration of the common cold in terms of the number of days at home or out of work.[63] [64] However, administration of extra therapeutic doses of vitamin C at the onset of a cold, in addition to routine supplementation, has been found to reduce the duration of colds, shorten the time of indoor confinement, and provides symptomatic relief of chest pain, fever, and chills.[65]

Commercial inhalant products are popular, although evidence from clinical trial data to support efficacy is limited. Studies evaluating a combination of intranasal and inhaled cromolyn sodium found inconclusive
Common cold

There is some evidence for the effectiveness of vapor rubs in providing symptomatic relief.[68] Based on current evidence, there is no role for intranasal corticosteroids in the treatment of common cold.[69]

Treatments for which there is evidence of benefit from a single trial or from poor-quality trials include green tea, garlic, various Chinese herbal medicines, Huo Xiang Zhengqi dropping pill, African geranium, and Pelargonium sidoides (also known as umckaloabo).[70] [71] [72] [73] [74] [75] [76] [77] There is limited evidence that sea buckthorn has no effect.[78] A systematic review found evidence to support the use of black elderberry (Sambucus nigra) to reduce upper respiratory symptoms.[79] A Cochrane review found that homeopathic products did not show any benefit in terms of cure rates or prevention of acute respiratory infections in children compared to placebo.[80]

**Treatment details overview**

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer

<table>
<thead>
<tr>
<th>Acute</th>
<th>( summary )</th>
</tr>
</thead>
<tbody>
<tr>
<td>all patients</td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>reassurance and supportive care</td>
</tr>
<tr>
<td>adjunct</td>
<td>analgesic/antipyretic</td>
</tr>
<tr>
<td>adjunct</td>
<td>decongestant and/or antihistamine</td>
</tr>
<tr>
<td>adjunct</td>
<td>antitussive</td>
</tr>
</tbody>
</table>
Treatment options

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer.
Common cold Treatment

Acute

1st
reassurance and supportive care

- Reassure patients about the self-limiting nature of the condition, and that symptoms usually clear within 7 to 10 days.

- Advise patients about hygiene measures and limiting the spread to others, as well as the importance of rest and maintaining fluid intake to stay hydrated. The implications of increased fluid intake in acute respiratory infections have not been studied in any trials to date.[31]

- Antibiotics are not recommended for the common cold.[1] [53] [54] A delayed prescription for antibiotics, alongside advice on the natural history of the illness and symptomatic treatments, has been found to reduce the rate of antibiotic use (31%) compared with immediate antibiotics (93%) with similar rates of patient satisfaction.[55] Providing written information about the use of antibiotics to parents of children with upper respiratory tract infections can also reduce the number of antibiotics used without affecting parental satisfaction.[56]

adjunct
analgesic/antipyretic

Treatment recommended for SOME patients in selected patient group

Primary options

- acetaminophen: children: 15 mg/kg orally every 4-6 hours when required, maximum 75 mg/kg/day; adults: 325-1000 mg orally every 4-6 hours when required, maximum 4000 mg/day

OR

- ibuprofen: children: 5-10 mg/kg orally every 4-6 hours when required, maximum 40 mg/kg/day; adults: 200-400 mg orally every 4-6 hours when required, maximum 2400 mg/day

OR

- naproxen: adults: 250-500 mg orally twice daily when required, maximum 1250 mg/day

OR

- aspirin: adults: 325-650 mg orally every 4 hours when required, maximum 4000 mg/day
Acetaminophen is recommended for pain and/or fever. Evidence suggests that it may also help with nasal congestion and rhinorrhea, but not sore throat, malaise, sneezing, or cough.[33] Despite this, it is still one of the most widely used analgesic/antipyretic agents, and is a first choice for many clinicians for the management of pain and fever in both adults and children.[34]

A review of nonsteroidal anti-inflammatory drugs (NSAIDs) found benefit for reducing discomfort, but found no benefit in terms of easing respiratory symptoms. Possible adverse effects need to be considered (e.g., gastrointestinal adverse effects, rash).[35]

Studies of aspirin have found it to be effective for pain and fever, without serious gastrointestinal adverse effects with short-term use,[36] although a small increased risk of dyspepsia has been reported.[37] Aspirin should be avoided in children and adolescents under 18 years of age because of the risk of Reye syndrome.

**Adjunct decongestant and/or antihistamine**

Treatments recommended for SOME patients in selected patient group

**Primary options**

- **Oxymetazoline nasal**: (0.05%) children ≥6 years of age and adults: 1-2 drops/sprays in each nostril two to four times daily when required

OR

- **Ipratropium bromide nasal**: (0.06%) children 6-11 years of age: 2 sprays in each nostril three times daily when required; children ≥12 years of age and adults: 2 sprays in each nostril three to four times daily when required

OR

- **Cetirizine/pseudoephedrine**: children ≥12 years of age and adults: 5 mg/120 mg (1 tablet) orally (extended-release) twice daily when required

There are many formulations available aimed at treating rhinorrhea, nasal congestion, or sneezing, including single-agent and combination formulations. Decongestants are available as oral or intranasal formulations. A few examples are provided; however, this list is...
Common cold

Treatment

Acute

not exhaustive and a local formulary should be consulted.

» Decongestants and/or antihistamines are the best option for adults with bothersome nasal symptoms; however, the effect is considered small, and use should be limited to 3 to 7 days.[32]

» Decongestants and/or antihistamines are not recommended in children <6 years of age, and caution is recommended in children ages 6 to 12 years. There is no evidence that they alleviate nasal symptoms in children, and they are known to cause adverse effects (e.g., drowsiness, gastrointestinal upset, more serious harms such as convulsions and rapid heart rate, and death). There is low-quality evidence that saline drops or sprays may be safe and effective in young children.[32]

» The Food and Drug Administration does not recommend cold products in children under 4 years of age.[44] In the UK and Canada, cold products are not recommended in children under 6 years of age. [FDA: use caution when giving cough and cold products to kids]

» Intranasal decongestants should be used for a maximum of 3 to 7 days due to the risk of chronic/rebound nasal congestion (rhinitis medicamentosa).

» Ipratropium has been shown to be effective for the treatment of nasal symptoms. Adverse effects (e.g., dry mouth, nose bleeds, nasal dryness) were more frequent compared with placebo or no treatment.[43]

» [The BMJ: what treatments are effective for common cold in adults and children?]

adjunct antitussive

Treatment recommended for SOME patients in selected patient group

» There is no evidence to support or refute the use of over-the-counter antitussive agents, expectorants, mucolytic agents, or antihistamines (including combinations of these agents) to reduce the incidence of cough in adults or children, particularly young children.[47] [48] However, the American College of Chest Physicians recommends against the use of over-the-counter cough and cold medicines for the treatment of cough.[49]
### Acute

» Cough and cold medications that include opioids, such as codeine or hydrocodone, should not be used in children aged 18 years or younger as the risks (slowed or difficult breathing, misuse, abuse, addiction, overdose, and death) outweigh the benefits when used for cough in these patients.[50]

» Honey has been shown to offer more relief of cough symptoms compared to no treatment, placebo, and diphenhydramine in children aged 1 to 18 years, but is not better than dextromethorphan.[51] [49]
Emerging

IMP-1088

IMP-1088, a dual inhibitor of human N-myristoyltransferases (NMT1 and NMT2), blocks a key step in viral capsid assembly. The drug targets NMT in human cells rather than the virus itself. As viruses use human NMT for capsid formation, blocking this protein results in antiviral activity against multiple rhinoviruses. IMP-1088 is in the early stages of discovery, and human trials are not expected to start for a few years.[81]

Probiotics

A systematic review reported that probiotics were better than placebo in reducing the number of participants experiencing episodes of acute upper respiratory tract infections (URTI), the mean duration of an episode of acute URTI, antibiotic use, and cold-related school absence. This indicates that probiotics may be more beneficial than placebo for preventing acute URTIs, although probiotics did have more adverse effects, mainly gastrointestinal. However, the quality of the evidence was low or very low.[82]

Acupuncture and moxibustion

More research is required before recommendations can be made concerning therapies such as acupuncture and moxibustion for treating common cold symptoms.[83]

Vaccines

No vaccines have been developed for the common cold due to the difficulty of isolating the numerous etiologic agents.[84]
Recommendations

Monitoring

Most patients do not require monitoring. An alternative diagnosis should be considered when symptoms persist beyond 2 weeks. A chest x-ray should be sought if a cough persists beyond 4 weeks. If complications such as otitis media or sinusitis have resulted from previous episodes, extra surveillance may be warranted. When there is a history of COPD or previous pneumonia, a higher degree of vigilance may be required for superimposed infections and more serious complications such as lung cancer. A patient with fever, tachycardia and hypotension, and/or neck stiffness warrants immediate referral to the hospital and/or parenteral antibiotics for suspected meningococcal septicemia.

Patient instructions

Reassure patients about the self-limiting nature of the condition, and that symptoms usually clear within 7 to 10 days. Rest and regular fluid intake are recommended. Advise patients to return if symptoms worsen or if they exceed the expected recovery time.

General hygiene measures are recommended to limit the spread. Tissues or handkerchiefs contaminated with nasal secretions should be hygienically disposed of. Hands should be washed thoroughly during food preparation and at meal times. Time off work or school is advised to limit spread to others.

[CDC: common colds - protect yourself and others]
## Complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>Timeframe</th>
<th>Likelihood</th>
</tr>
</thead>
<tbody>
<tr>
<td>otitis media</td>
<td>short term</td>
<td>medium</td>
</tr>
<tr>
<td>Presents with fever and pain in young children. In older children, ear pain may be localized. A purulent middle ear effusion and a tympanic membrane with a loss of landmarks and characteristic bagel or doughnut appearance (evidence of positive pressure) is pathognomonic. Antibiotics should be given for confirmed infection.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>asthma, acute exacerbation</td>
<td>short term</td>
<td>low</td>
</tr>
<tr>
<td>Progressive worsening of symptoms, such as SOB, wheezing, cough, and chest tightness. Administration of bronchodilators and corticosteroids relieves airflow obstruction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>acute sinusitis</td>
<td>variable</td>
<td>medium</td>
</tr>
<tr>
<td>Bacterial sinusitis is suspected following 2 weeks of nasal congestion, postnasal drainage, cough, headache, or facial pain; treatment is symptomatic and includes topical corticosteroids and oral decongestants. Facial tenderness is a rare and unreliable sign; however, reproducible pain on percussion of frontal and maxillary sinuses, dental pain, and failure of topical and oral decongestants is highly suggestive of acute bacterial sinusitis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bronchospasm</td>
<td>variable</td>
<td>low</td>
</tr>
<tr>
<td>Dyspnea, wheezing, cyanosis, and cough are the presenting features. The patient may be too breathless to speak; a silent chest with a tachycardia may be present in severe cases. Antibiotics are not recommended. Oxygen and nebulized beta-agonists may be required in severe cases.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pneumonia, community-acquired</td>
<td>variable</td>
<td>low</td>
</tr>
<tr>
<td>In older or immunocompromised individuals, spread from the upper respiratory tract may lead to life-threatening illness.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPD, acute exacerbation</td>
<td>variable</td>
<td>low</td>
</tr>
<tr>
<td>Acute exacerbations of COPD are commonly triggered by bacterial or viral pathogens or pollutants and present with an acute, sustained worsening of respiratory symptoms and functional status.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Prognosis

Most people recover within 2 weeks. In a study of children ages 6 months to 12 years, 26% still had symptoms 7 days from onset and 6% after 14 days.[85] Cough is the most common persistent symptom, lasting from 15.3 to 28.6 days.[86] It is important to advise patients of this to reduce their expectations of a quick improvement and pre-empt a visit seeking additional treatment (e.g., antibiotics). Recurrence is common, although it is not clear whether the causative pathogen is the same virus, a subtype, or a different pathogen altogether.

The most challenging part of the consultation is often the negotiation about diagnosis and treatment options, and antibiotics in particular. It should be emphasized that symptoms do not resolve immediately.
Treatment guidelines

International

Pharmacologic and nonpharmacologic treatment for acute cough associated with the common cold: CHEST expert panel report [49]

Published by: American College of Chest Physicians

Last published: 2017

Appropriate antibiotic use for acute respiratory tract infection in adults: advice for high-value care from the American College of Physicians and the Centers for Disease Control and Prevention [1]

Published by: American College of Physicians; Centers for Disease Control and Prevention

Last published: 2016
Online resources

1. The BMJ: what treatments are effective for common cold in adults and children? (external link)

2. FDA: use caution when giving cough and cold products to kids (external link)

3. CDC: common colds - protect yourself and others (external link)
Key articles


References


44. US Food and Drug Administration. Use caution when giving cough and cold products to kids. February 2018 [internet publication]. Full text


50. Food and Drug Administration. FDA drug safety communication: FDA requires labeling changes for prescription opioid cough and cold medicines to limit their use to adults 18 years and older. January 2018 [internet publication]. Full text


Disclaimer

This content is meant for medical professionals. The BMJ Publishing Group Ltd (“BMJ Group”) tries to ensure that the information provided is accurate and up-to-date, but we do not warrant that it is. The BMJ Group does not advocate or endorse the use of any drug or therapy contained within nor does it diagnose patients. Medical professionals should use their own professional judgement in using this information and caring for their patients and the information herein should not be considered a substitute for that.

This information is not intended to cover all possible diagnosis methods, treatments, follow up, drugs and any contraindications or side effects. We strongly recommend that users independently verify specified diagnosis, treatments and follow up and ensure it is appropriate for your patient. This information is provided on an “as is” basis and to the fullest extent permitted by law the BMJ Group assumes no responsibility for any aspect of healthcare administered with the aid of this information or any other use of this information.

View our full Website Terms and Conditions.

Contact us

+1 855-458-0579 (toll free from USA)
ussupport@bmj.com

BMJ Americas Office
2 Hudson Place,Suite 300
Hoboken,New Jersey 07030