

Managing the common cold

Key messages

- Mucopurulent nasal discharge and phlegm (coloured mucus) don't necessarily indicate bacterial infection.
- 'Common colds need common sense': encourage the patient to rest, maintain fluid intake and treat symptoms.
- The goal of therapy is relieving symptoms; carefully balance the benefits of treatment against the risks of adverse events.
- Refer for medical assessment if symptoms suggest more than a cold or because of underlying patient factors.

Common colds are common

The common cold is usually caused by a viral infection and begins with rhinorrhoea and sneezing accompanied by nasal congestion. Cough and sore throat may or may not be present. Systemic signs and symptoms, such as malaise and headache, are mild or absent and fever is unusual.

Symptoms last for 4 to 9 days and generally resolve spontaneously without sequelae. Cough may persist for 14 days or more. Children aged 2 to 6 years suffer about 6 colds per year; adults suffer 2 to 4 colds per year.

Coloured mucus can indicate either a viral or bacterial infection

It is a commonly held belief that yellow-green nasal discharge and/or phlegm indicate a bacterial infection and that antibiotics are needed. The presence of coloured phlegm is due to the release of peroxidases by leucocytes (white blood cells)¹ and can indicate either a viral or bacterial infection.²

The green colour of mucus should be seen as a positive sign that the body is fighting the infection by producing an immune reaction. Likewise sneezing, runny nose and cough are ways of clearing mucus.

'Common colds need common sense'

Patients require appropriate self-care information and reassurance that antibiotics are usually unhelpful and may be harmful by causing adverse effects (thrush, rash and gastrointestinal upset) and increasing bacterial resistance.³

Self-care information should include advice to rest, maintain fluid intake and treat the symptoms.

Steam inhalation is a simple measure that hydrates the airways, resulting in less viscous mucus that can be removed (coughed, sneezed, blown, drained) more easily.⁴ Steam inhalation is not recommended for young children because of the risk of burns.

Intra-nasal saline (both hypertonic and isotonic) has not been shown to be effective in treating the symptoms of colds but has not been associated with serious risks.⁵

Table 1 outlines the risks and benefits of the medicines that are available to treat the symptoms of the common cold.

Combination products

Antihistamine-decongestant-analgesic combinations are convenient and easy to use. However, randomised controlled trials (RCTs) investigating the efficacy of combination over-the-counter therapies have conflicting results: efficacy may be limited by sub-therapeutic amounts of the component drugs while the inclusion of drugs that are not necessary may give adverse effects without benefit. The potential benefits need to be balanced with the risks of adverse events on a patient-to-patient basis.

Combinations of expectorants and cough suppressants seem irrational. Likewise, antihistamine drugs have an anticholinergic mechanism and this is pharmacologically antagonistic to the effects of the expectorant.⁶

Balancing benefits and risks of adverse events

As with all therapeutic strategies it is important to balance the benefits and risks of adverse events. Given that the common cold is a self-limiting, non-life-threatening condition, the benefits of treatment are limited to symptomatic relief. Only a very low risk of minor side effects is acceptable.

At-risk populations need to be identified. Give careful attention to:

- situations where the patient may benefit from medical assessment
- drug—disease interactions
- drug—drug interactions.

Pay particular attention to drug dosage and product choice in the young, elderly and those with renal and hepatic impairment.

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Table 1: Benefits and risks of medicines available to treat symptoms of the common cold

Key to abbreviations in references:

SR: Evidence obtained from a systematic review of all relevant randomised controlled trials

RCT: Evidence obtained from randomised controlled trials

Agent (Pregnancy category*)	Benefits	Risks [#]	Comments
Decongestants Oral: phenylephrine (B2) pseudoephedrine (B2) Intra-nasal: ephedrine (A) oxymetazoline phenylephrine (B2) tramazoline xylometazoline Lactation: safe to use ⁷	Adults — Decrease subjective symptoms and nasal airways resistance. ^{8SR} — No difference in efficacy between topical and oral decongestants. ^{8SR} — No evidence to support regular use while unwell. ^{8SR} Children — No RCTs identified by systematic review. ^{8SR}	— Children <2 years old: adverse events such as visual hallucinations, depression of the central nervous system, hypothermia, bradycardia and sweating reported after single use. ⁸ — Rhinitis medicamentosa (rebound congestion) with greater than 4 days' use of topical decongestants. — Drug—disease precautions: diabetes, heart disease, hypertension, prostatic hypertrophy, glaucoma and hyperthyroidism. ⁷ — Drug—drug precautions: monoamine oxidase inhibitors (MAOIs), other sympathomimetic drugs. ⁷	— First-line therapy in patients > 2 years old. — Use only <i>when needed</i> . — Where caution is required use intra-nasal products to minimise systemic effects. ⁶
Sedating antihistamines azatadine (B2) brompheniramine (A) chlorpheniramine (A) cyproheptadine (A) dexchlorpheniramine (A) diphenhydramine (A) doxylamine (A) methdilazine (B2) pheniramine (A) promethazine (C) trimeprazine (C) triprolidine (A) Lactation: limited data ⁷	Children and adults Conflicting evidence surrounds the use of antihistamines for symptomatic management of colds: — Two systematic reviews found little evidence to support the use of antihistamines in colds. ^{9SR,10SR} Another found them no more effective than placebo in relieving cough symptoms. ^{11SR} — Two reviews concluded that antihistamines reduce rhinorrhoea, sneezing and weight of nasal secretions but had minimal effect on other cold symptoms. ^{12,13SR}	— Children <2 years old: associated with sudden infant death syndrome. ⁷ — Paradoxical stimulation in children resulting in excitation, hallucinations, ataxia or seizures. ⁷ — Drug—disease precautions: epilepsy [†] , prostatic hypertrophy, glaucoma, hyperthyroidism. ⁷ — Drug—drug precautions: CNS depressants, anticholinergics (e.g. tricyclic antidepressants), levodopa. ¹⁷	— Second-line for symptoms of the common cold because of conflicting evidence of efficacy and potential for adverse effects. ^{9,10}
Less sedating antihistamines cetirizine (B2) fexofenadine (B2) loratadine (B1) Lactation: avoid use ⁷	Adults — Not as effective as sedating antihistamines in reducing cold symptoms because of lack of anticholinergic activity. ¹² — No more effective than placebo in relieving cough symptoms. ^{11SR}	— Children <2 years old: avoid use because of incomplete safety and efficacy data. ⁷ — Drug—disease precaution: risk of serious ventricular arrhythmia with fexofenadine in the presence of QT prolongation on electrocardiogram (ECG). ⁷	— Not recommended for symptoms of the common cold.
Antitussives codeine (A) dextromethorphan (A) dihydrocodeine (A) pentoxyverine pholcodine (A) Lactation: no data, but should be safe ⁷	Children and adults — Codeine no more effective than placebo. ^{11SR} — One RCT favoured dextromethorphan over placebo, whereas a second did not show an effect. ^{11SR} — Dextromethorphan may be the drug of choice because of low incidence of CNS effects and less risk of dependence. ⁷	— Children <2 years old: contraindicated. ⁷ — Drug—disease precaution: respiratory failure, asthma, chronic obstructive pulmonary disease. ⁷ — Drug—drug interactions: alcohol and CNS depressants, MAOIs (dextromethorphan only). ⁷	— Avoid cough suppressants in patients with a productive cough.
Expectorants ammonium chloride (A) camphor guaiphenesin (A) senega and ammonia Lactation: avoid use ¹⁴	Adults (guaiphenesin only) — Improvement with respect to cough frequency and severity. ^{11SR} Children — No high quality studies were identified. ^{11SR}	— Children: avoid camphor containing products, associated with convulsions and respiratory failure. ⁷ — Drug—disease precaution: hepatic impairment, renal impairment, gastrointestinal ulceration. ¹⁴	— Guaiphenesin may be used <i>when needed</i> in adults with cough. ¹¹
Mucolytics bromhexine (A) Lactation: no data, but should be safe ⁷	Children and adults — Reduce cough frequency and symptom scores. ^{11SR}	— Children <1 year old: contraindicated. ⁷ — Drug—disease precaution: none reported. ⁷ — Drug—drug interactions: none reported. ⁷	— Useful for productive cough in children >1 year old and adults.
Lozenges, gargles and sprays for sore throats Local anaesthetic: benzocaine lignocaine Antiseptic: cetylpyridinium dichlorobenzyl alcohol hexylresorcinol	Children and adults — Little evidence of benefit. ⁷ — Use of antibacterial agents is questionable given that most sore throats are caused by viruses.	— Generally safe but warn people about the risk of oral burns if eating or drinking hot food after sucking anaesthetic lozenges.	— Non-medicated lozenges or hard lollies to suck may be just as effective.
Analgesics aspirin (C) ibuprofen (C) paracetamol (A) Lactation: (aspirin and ibuprofen) occasional doses are safe ⁷ Lactation: (paracetamol) safe to use ⁷	Children and adults — All effective at providing symptom relief for sore throats. ^{15SR}	Aspirin — Avoid in people <18 years old because of risk of Reye's syndrome. ⁷ Aspirin and ibuprofen — Drug—disease contraindications: active peptic ulcer disease, previous serious allergic reaction with aspirin or other NSAID, haemophilia or other bleeding disorder. ⁷ — Drug—disease precaution: heart failure, uncontrolled hypertension, asthma, history of peptic ulcer, renal impairment, hepatic impairment. ⁷ — Drug—drug precaution (aspirin): probenecid, sulfapyrazone, valproate. ⁷ — Drug—drug precaution (NSAIDs): ACE inhibitors, antihypertensives, alendronate, cyclosporin, diuretics, lithium, potassium sparing diuretics, potassium supplements and warfarin. ⁷ Paracetamol — Accidental overdose possible: marketed as many different formulations and in combination products. — Drug—disease precaution: chronic liver disease. ⁷ — Drug—drug precaution: warfarin. ⁷	— Paracetamol preferred as it has fewer adverse effects; it can be used when aspirin and ibuprofen are contraindicated. ⁷ — Adults: check total paracetamol intake, ask about use of supermarket products. — Children: check product concentration and child's weight.
Vitamin C ascorbic acid (A) Lactation: safe to use	Children and adults — Large maintenance doses do not prevent colds. ^{16SR} — Meta-analysis estimated reduction of cold symptoms to be about half a day in patients taking vitamin C. ^{16SR} This was not confirmed in a large RCT. ^{17RCT} — Doses of 80 mg/day may prevent colds in those with a marginal deficiency.	— Doses greater than 1 g per day can cause renal stones and diarrhoea. ¹⁴	— Conflicting evidence for prevention and treatment but minimal harm.
Zinc lozenges	— No evidence of reduced duration of symptoms. ^{18,19,20 (all SR)} — Possibly some reduction of symptoms if taken early in the course of the illness. ¹⁹	— Not recommended in children. — Adverse effects such as mouth irritation, unpleasant taste, feeling sick and diarrhoea are common. ^{18,19} — No reported drug—disease, drug—drug precautions. ¹⁹	— Inconclusive evidence of efficacy.
Echinacea Pregnancy: use caution Lactation: use caution	Children and adults — Inconclusive evidence of efficacy. ^{21SR,22SR} — Different species, parts of the plant, methods of extraction and other active ingredients limit comparability between preparations. ^{22SR} — Immunostimulating properties may decline if taken for 8 consecutive weeks. ²¹	— Allergic reaction reported after parenteral doses. ²² — Drug—disease precaution: autoimmune diseases, human immunodeficiency virus (HIV), multiple sclerosis and tuberculosis. ²¹ — Drug—drug precaution: immunosuppressive agents, e.g. corticosteroids, methotrexate. ²¹	— Inconclusive evidence of efficacy.

* Categorised according to Australian Drug Evaluation Committee.

† Methdilazine, promethazine and trimeprazine only.

This is not a comprehensive list of drug contraindications or interactions. Consult the *Australian Medicines Handbook* or product information for full information.

When to refer

While the common cold is most often a self-limiting condition with no complications, patients may need referral for medical assessment because of:

- underlying patient factors or medical conditions
- symptoms indicating more than a common cold.

Underlying patient factors or medical conditions

Babies aged less than 6 months definitely require referral; children aged 6 months to 2 years probably should be referred.

Antibiotics are recommended in acute sore throat in patients:

- aged 2 to 25 years with an acute sore throat in communities with a high incidence of acute rheumatic fever, e.g. Aboriginal communities in Central and Northern Australia and some other underprivileged communities
- with a history of rheumatic fever.³

People with chronic respiratory disease, e.g. asthma, chronic obstructive pulmonary disease, do not necessarily require antibiotics but they may need advice for managing an exacerbation of their condition.

Immune compromised people (e.g. HIV, leukaemia) are at risk of atypical infections.

People with diabetes who use insulin for blood sugar control may need careful management during periods of illness.

Symptoms that indicate more than a common cold

Dysphagia (difficulty swallowing): some degree of dysphagia is expected with a sore throat. If more than the expected degree of difficulty is experienced then severe inflammation of the throat is likely.

Dyspnoea (shortness of breath) may indicate pneumonia, pulmonary embolism, or heart failure.

Chest pain may be muscle strain caused by coughing or something more sinister such as pneumonia, pneumothorax, or pulmonary embolism especially if associated with dyspnoea and calf-swelling.

Brassy or barking cough or stridor (high pitched sound made when taking a breath) indicates partial airway obstruction. This may occur in croup (viral infection of the trachea and larynx) or epiglottitis (inflammation of the epiglottis). The cough is often severe and violent, occurring in bouts.⁶ Children between the ages of 6 months and 2 years are most at risk.

Rash, severe headache, difficulty in waking up, a high fever and photophobia may indicate **meningitis**.

Long-standing or recurrent symptoms

- Dry cough in children may indicate asthma especially if worse at night or when exercising.
- Dry cough in adults may indicate lung cancer or tuberculosis especially if accompanied by haemoptysis (blood in the sputum), night sweats and unintentional weight loss.
- May indicate adverse drug reactions, e.g. cough associated with ACE inhibitors or inhaled corticosteroids.
- Recurrent sore throat in teenagers and young adults may indicate glandular fever.⁶

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The information contained in this material is derived from a critical analysis of a wide range of authoritative evidence. Any treatment decisions based on this information should be made in the context of the individual clinical circumstances of each patient.



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