

A blue glass bottle of 'Advice' medicine is the central focus, tilted diagonally. The bottle has a white label with green accents. At the top of the label, it says 'GENERAL PRACTICE MEDICINE'. Below that is a circular logo containing a white snowflake. The word 'ADVICE' is written in large, bold, blue letters. Underneath, in smaller text, it reads 'For the prevention and management of the common cold. Take as needed.' At the bottom of the label, it says 'BEST PRACTICE NEW ZEALAND'. To the right of the bottle is a clear glass filled with water. Two green, spiky virus-like particles are positioned around the bottle, one at the top right and one at the bottom left. The background is a solid teal color.

Cold season in primary care:

Advice is the best medicine

Every year New Zealanders spend significant amounts of money on supplements, over-the-counter, complementary and alternative medicines for the common cold. For most people, symptoms of the common cold are mild and self-limiting, and the products used to treat it are often expensive, lacking evidence of effectiveness and in some cases, have potentially serious adverse effects. Patients should be given advice on prevention and management and where possible, given unbiased, evidence-based information on the benefits and adverse effects of over-the-counter and alternative products.

There is no cure for the common cold

The common cold is a benign, self-limiting upper respiratory tract infection (URTI), with a multitude of symptoms caused by over 200 different respiratory viruses.¹ There is no “cure” for a cold, and few effective symptomatic treatments. Colds are a significant cause of lost work or school-days and account for a large number of presentations at general practice clinics in the winter season.

URTIs are the most common illnesses in humans, with adults experiencing on average two to five acute URTIs per year and children experiencing seven to ten per year.^{1,2} A mild winter cold is so common that self-diagnosis and self-treatment are normal. This has created a multi-billion dollar industry to supply the demand for over-the-counter and complementary and alternative medicines (CAMs). Most colds have a similar natural history, with symptoms increasing in severity over several days, followed by a gradual decline over one to two weeks.¹ The risk of complications is generally only increased in immunocompromised people, or very young or very elderly people. Because of this short, predictable natural history it often appears that CAMs, supplements and over-the-counter medicines have a curative effect, when in fact an improvement in symptoms reflects the usual course of the illness.

What is recommended for the management of the common cold?

Patients should be reassured that colds generally do not result in serious health problems, such as pneumonia,

bacterial infections or hospitalisations, and that they are not the same illnesses as influenza and pandemic infections, e.g. coronavirus.

Preventative measures

The most effective management strategy for the common cold is to avoid contracting it. Practitioners should give patients, particularly families with young children, advice on preventing and reducing the spread of illness during the winter season.

Regular hand washing, for 20 seconds with warm water and soap followed by 20 seconds of drying, is likely to be the most significant protective action for common viral illnesses. Hands should also be washed after any contact with a person with a cold. When coughing or sneezing, cover the nose and mouth with a tissue, or use the inside of the elbow, rather than the hand. Avoid touching the eyes, nose and mouth when unwell, or when others in the house are unwell.³

Having a “healthy home” is also important, particularly for children. A smoke-free home with adequate heating and insulation, warm clothing and good nutrition should always be encouraged.

Analgesia


Paracetamol can be used for general “aches and pains” and to reduce fever in children and adults. However, mild fevers (< 38°C) do not need to be treated, as fever is a beneficial immune response that reduces the duration of most infections.^{4,5}

NSAIDs, such as ibuprofen, may be used as an alternative to paracetamol, or used concurrently. A Cochrane systematic review found that NSAIDs are effective for relieving pain and myalgic symptoms in people with URTIs, but that they had no effect on relieving respiratory symptoms.⁶ Advise patients to remain well hydrated if taking NSAIDs, as renal complications are possible, particularly in children who become dehydrated.

Antibiotics should be avoided


Antibiotics are not necessary for most acute URTIs as they are caused by viruses. For the majority of people with a respiratory illness antibiotics will cause more adverse effects than benefit and will contribute to the continuing development of antibiotic resistance.⁷

However, there are some clinical instances when antibiotics are appropriate; such as when a secondary bacterial infection develops, or the initial diagnosis was incorrect. For example, there is currently a pertussis epidemic in New Zealand. The initial stage of pertussis (the catarrhal stage) is symptomatically similar to a mild cold. Antibiotics are necessary for the treatment and prophylaxis of suspected cases of pertussis. Another example where use of antibiotics may be appropriate is in the management of suspected Group A streptococcal (GAS) pharyngitis, due to the risk of rheumatic fever. In some cases, empiric treatment with antibiotics is appropriate, depending on the presence of risk factors.

 See Heart Foundation algorithm 4 for sore throat management: www.heartfoundation.org.nz

It is important to note that secondary bacterial infection is rare in people with the common cold, and usually will only occur with more serious URTIs or in people with pre-existing co-morbidities. Even when a bacterial aetiology is suspected, antibiotics are not always appropriate. In general, for illnesses that may require antibiotics, they should only be prescribed if:

- Symptoms are significant or severe
- There is a high risk of complications
- The infection is not resolving on its own

 For further information on the use of antibiotics, see: "Antibiotic treatment for common infections", [bpac^{nz}](http://www.bpac.org.nz). Available from: www.bpac.org.nz

Medicated cough and cold preparations

Cough and cold preparations are designed to provide symptomatic relief from viral respiratory infections.

Preparations commonly contain:

- Mucolytics/expectorants – loosen phlegm from the respiratory tract, making it easier to expel, e.g. bromhexine, guaifenesin
- Antitussives – reduces the urge to cough, e.g. pholcodine, dextromethorphan
- Nasal decongestants or sprays – reduces nasal symptoms through vasoconstriction and reduced nasal inflammation, e.g. phenylephrine, pseudoephedrine, xylometazoline, oxymetazoline
- Antihistamines – used based on the premise that they reduce similar symptoms in allergies (rhinitis, sneezing), e.g. promethazine, diphenhydramine

Although widely used, most cough and cold preparations containing these medicines, or combinations, are not particularly effective at reducing symptoms.⁸ Antitussives, antihistamines, antihistamine/decongestant combinations and antitussive/bronchodilator combinations are no more effective than placebo in alleviating symptoms of the cold in either children or adults.^{8,9,10,11} There is insufficient evidence to evaluate expectorants or mucolytics, although they appear to have some limited benefit.^{8,12}

The common cold affects children and adults differently, and products which may be effective for adults may not work or be appropriate for children.

It is recommended that the use of CNS-acting medicines in children is avoided. Most cough and cold preparations contain either a central nervous system (CNS) depressant, e.g. chlorpheniramine, leading to possible sedation, psychomotor impairment, dizziness and hallucinations or a CNS stimulant, e.g. phenylephrine leading to possible insomnia, tremor, hallucinations and palpitations.⁸

Medicated nasal sprays containing ipratropium, such as Otrivin Plus, are effective in reducing rhinorrhoea but not nasal congestion.¹³ They are associated with some adverse effects such as blood-tinged mucous and mucous membrane dryness. Patients are also likely to experience rebound effects after stopping the medicine, if the medicine is used for more than five days consecutively, therefore products should not be used for more than three to five days.

The placebo effect can play a significant role in the perceived effectiveness of cough and cold preparations.

Aromatic inhalants

Aromatic decongestant treatments, containing menthol and other “natural” products, are a popular over-the-counter product for colds. Preparations generally involve adding a compound to hot water and inhaling the vapour or applying a decongestant compound as a rub to the chest or neck. There is insufficient evidence to recommend the use of any such preparation.

A systematic review of steam inhalation concluded that there was insufficient evidence to determine whether there was any beneficial clinical effect when used for the common cold in adults.¹⁴ Steam inhalation may worsen symptoms of congestion for some people. In addition, accidental ingestion of aromatic oils, even in small amounts, is associated with a significant risk of CNS depression (due to toxicity) and aspiration (due to volatility).

Nasal irrigation

Nasal saline irrigation is another common treatment for congestion in people with colds. It is one of the few treatments that can be safely used in infants. A Cochrane systematic review stated that “nasal irrigation with saline is a safe treatment that may be mildly beneficial to some patients”.¹⁵ There was limited evidence of benefit found in children and adults using nasal irrigation to manage URTI symptoms.¹⁵ Symptoms and illness duration were statistically similar to control groups. The study did find that there was a reduction in days off work or school among people that used nasal saline irrigation. Adverse effects of nasal irrigation include minor nosebleeds in some children and mild discomfort.

What about complementary and alternative medicines?

Complementary and alternative remedies are frequently used for the purpose of managing or preventing the symptoms of the common cold. Some may have a small effect on reducing symptoms, however, in most cases there is limited evidence to support their use or evidence has shown that they are ineffective.

The recommended approach for advising patients about the use of CAMs

If a patient asks for advice about using CAMs, it may be helpful to consider the following points:

- Does it have any positive effect?

Some medicines should not be used in children

Preparations containing the following medicines should not be used in children aged less than six years:

- Antihistamines – brompheniramine, chlorpheniramine, diphenhydramine, doxylamine, promethazine or triprolidine
- Antitussives – dextromethorphan or pholcodine
- Expectorants – guaifenesin or ipecacuanha
- Decongestants – phenylephrine or pseudoephedrine

Preparations containing the following should not be used in children aged less than two years:

- Mucolytics – bromhexine
- Decongestants – xylometazoline or oxymetazoline

Cough and cold preparations are required to be labelled as such, and must include details containing active ingredients on the packaging.

A list of cough and cold preparations available in New Zealand that are affected by these restrictions is available from: www.medsafe.govt.nz/hot/alerts/coughandcold/affectedmedicinesoct2009.asp



What does the law say about doctors and alternative medicine?

The Medical Council of New Zealand states that practitioners providing information on CAMs have to inform patients *"of the nature of the alternative treatment offered and the extent to which it is consistent with conventional theories of medicine and has, or does not have, the support of the majority of practitioners"*.¹⁶ For those practitioners who do prescribe or recommend CAMs, the Medical Council of New Zealand and the Health Practitioners Competence Assurance Act 2003 state that: *"No person may be found guilty of a disciplinary offence merely because that person has adopted and practised any theory of medicine or healing if, in doing so, the person has acted honestly and in good faith"*.¹⁷ Careful attention to the process of informed consent is important whenever a patient wishes to use a potentially unproven, harmful or expensive alternative treatment.

Potential changes to the laws governing claims made by natural products

The "Natural Health and Supplementary Products" Bill is currently going through the New Zealand House of Parliament. The Bill will put in place stricter controls for the claims of benefit made by the manufacturers or importers of natural health and supplementary products. The Bill does not cover foods or prescription medicines covered under the Medicines Act 1981. It will require any claims of health benefit to be supported by either scientific research or by traditional practice evidence. Traditional use is defined as the "use of a substance based on knowledge, beliefs or practices passed down from generation to generation". The Director-General of Health determines what claims of health benefits are "allowable", on the basis of the evidence presented and the risks associated with allowing these claims. The Bill prohibits claims of health benefits on product labels or advertisements that are not allowable claims. The Bill also regulates the ingredients of natural health and supplementary products, and the manufacturing facilities of these products.

The Bill is currently awaiting its third reading, and may change the way products are advertised, and potentially how they are used. No date has been set for the third reading as yet.

 To read the full Bill, see www.legislation.govt.nz/bill/government/2011/0324/latest/DLM3984610.html

- Will it cause harm?
- Will it interact with a current conventional medicine?
- Is it likely to replace a conventional medicine?
- Could it be a financial burden?

Practitioners should always attempt to give unbiased, evidence-based advice to patients about the treatments that they are using or wish to trial. Discuss the benefits, or lack of benefits, and the potential harms. Remind the patient that most winter illnesses are brief and will resolve without treatment.

What evidence is there for the use of complimentary medicines and alternative remedies?

There is a large range of commercial products that claim to have beneficial effects on the course of winter ills. Few treatments have a strong evidence base, and often when evidence is available a strong industry bias or significant design flaws are present.

Table 1 (over page) covers a small selection of the more commonly available CAMs. Wherever possible, the results of high-level randomised controlled trials (RCT) or meta-analysis of RCTs, generally from the Cochrane Database of Systematic Reviews, were used. Of the remedies and medicines reviewed, few had a strong, positive evidence base illustrating their effectiveness. Zinc, probiotics and vitamin C were the only medicines reviewed that had a symptomatic benefit illustrated by a reasonable evidence base. Many, such as garlic and ivy leaf have evidence of small symptomatic benefits, however, in almost all instances this was tempered by the authors indicating that the reviewed studies were poor, biased or flawed. Other commonly used remedies, such as Buccaline and olive leaf extract, lack meta-analysis or RCTs of sufficient size or quality to safely recommend for or against their use. In almost all cases, a large amount of primary research is available on CAM remedies. These individual studies are generally more positive, however, the risk of bias is higher and the quality of the studies varies. In addition, primary research-level studies often use individual brands, rather than generics or classes of medicine, and are funded directly by the manufacturer further limiting what can be said about the product based on the findings of a given study.

Some 'classes' of CAM, such as traditional Chinese medicines, are difficult to investigate due to the large variety of products available. There is also significant variation in the level and type of active ingredients in most CAMs, and significant variation in the additional substances included. As such, even high-level

meta-analyses are unable to identify sufficient quantities of evidence to make broad statements. For example, a Cochrane systematic review of 430 studies on Chinese traditional medicine, of which 17 studies met the inclusion criteria (patient sample size = 3212), found that there was insufficient

available evidence to recommend the use of any Chinese herbal medicine for the common cold.¹⁸ A review of 13 RCTs (sample size = 640) found no evidence to support the use of Chinese medicine in the treatment of severe acute respiratory syndrome.¹⁹

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Table 1: Supplements, herbal remedies and products for preventing or treating the common cold

| Product | What is it used for? | Evidence of clinical benefit | Direct adverse effects* | What is the evidence? |
|------------------------------------------------------|---------------------------------------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Buccaline tablets** | Prophylaxis of bacterial infection secondary to URTIs | Inconclusive | Inconclusive | No RCTs were identified and primary research has significant bias and/or flaws |
| Echinacea | Preventing and managing acute URTIs | No | None | A Cochrane systematic review of 16 included studies out of 58 (sample size = 2601), testing a range of preparations, from different parts of the three main species of Echinacea found highly inconsistent evidence indicating no preventative benefit for the common cold, although there may be some symptomatic benefit if the aerial section (leaves, stems, etc) of the plant is used early in the illness. ²⁰ Multiple preparations are available, and there may be difference in effect with different brands. |
| Garlic | Preventing and reducing the duration of the common cold | Possible, but inconclusive | Some participants reported malodour | A Cochrane systematic review of one included study out of six trials, which randomised participants to garlic capsules or placebo, found that garlic may slightly reduce the incidence of common cold. ²¹ However, the sample size was too small to gain strong statistical significance. |
| Homeopathy (a system of alternative medicine) | Multiple suggested uses | No | None | Meta-analysis and aggregations of meta-analyses have concluded that there is no evidence that homeopathy is more efficacious than placebo for any clinical condition. ²²⁻²⁴ |
| Honey | Symptomatic treatment of the common cold | Inconclusive | None N.B. Honey should not be used in children aged < 1 year due to a rare association with infant botulism ²⁵ | A Cochrane systematic review of two included trials out of 79 (sample size = 268), stated that honey may be better than “no treatment” for acute cough in children, but that there was insufficient evidence to strongly suggest for or against honey. ²⁶ |
| Ivy leaf extract | Relief of respiratory symptoms | Possible effect on respiratory symptoms | Inconclusive | A literature review of RCTs concluded that ivy leaf preparations have some effect on improving respiratory function, but there is insufficient evidence to make any recommendations for their use. A strong industry bias was present. ²⁷ |



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|-------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Olive leaf extract | Prevention of the common cold | Inconclusive | Inconclusive | A review of the available literature was unable to identify any sound, unbiased evidence. |
| Probiotics (e.g. BLIS) | Prevention of the common cold and sore throat | Reasonable benefit for preventing respiratory infections | Adverse effects are minor: nausea, rarely vomiting | A Cochrane systematic review of 14 included studies out of 27 (sample size = 3451), found there may be some reduction in the incidence in URTI. ²⁸ No RCT studies on the use of probiotics for sore throat were identified. There is a strong industry bias in the available evidence. |
| Vitamin C | Prevention of the common cold and duration reduction | Small preventative benefit against URTI; no symptomatic effect, no reduction in URTI duration | None | A Cochrane systematic review of 55 included studies out of 173 (sample size prophylaxis = 23587; sample size therapeutic action = 5957), found limited evidence for prophylaxis and for therapeutic treatment of the common cold with vitamin C; a prophylactic benefit was observed, but no benefit in duration or symptom reduction was found. The effect was slightly greater in children. ²⁹ |
| Zinc | Prevention of the common cold | Reasonable evidence for positive effect in URTI | Toxic in high doses (> 40 mg/day in adults). Mild adverse effects are common (nausea, constipation, diarrhoea, abdominal pain, irritation) | A Cochrane systematic review of 15 included studies out of 57 (sample size = 1394), found a significant reduction in duration, severity and incidence of common cold in patients using zinc supplementation. ² An independent meta-analysis of 683 studies yielding 17 trials (sample size = 2121) found similar results; that zinc reduces the incidence, severity and duration of the common cold, but has adverse effects. ³⁰ |

* Only direct adverse effects, from the substance, have been included

** An oral antibacterial product that contains inactivated bacteria. The product claims to increase immune response to the included bacteria, thereby creating a protective immunity

