



Coughs in the pharmacy

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Introduction

A cough is a necessary reflex that helps remove fluid, foreign substances, and mucus from the airways. A cough can be initiated both reflexively and voluntarily. There is no 'normal' pattern of coughing, nor any information on how often a healthy person should cough; so it's important to understand when a cough should be referred for appropriate medical attention.

A cough is one of the most common symptoms for which people seek medical advice in the community pharmacy. While an acute cough is often associated with a viral upper respiratory tract infection, such as a cold or flu, a cough can also be a presenting symptom of more than 100 conditions of the respiratory system.

When a patient presents with a cough in the pharmacy, it is important to obtain information on the characteristics of the cough, smoking history, occupational history, and medication history.

Types of coughs

An acute cough is defined as a cough that has persisted for less than three weeks. It is usually self-limiting and can be caused by viral infections, bacterial infections, or inhalation of a foreign substance.

A subacute cough may be defined as a cough that lasts between three and eight weeks. It is often caused by airway hyper-responsiveness following a respiratory tract infection, where a post-infectious cough persists. Sub-acute cough is also usually self-limiting, but it is important to monitor the improvement of the cough and identify red flag symptoms (Table I) that require referral to the doctor.

A cough lasting more than eight weeks is defined as chronic. It is most commonly caused by smoking, asthma, upper respiratory

Table I: Identifying red flags

High-risk patients should be identified and, if necessary, referred to the doctor, e.g. those with weakened immune systems because of cancer or chemotherapy and older patients presenting with new cough symptoms.

Red flag symptoms in both smokers and non-smokers that require referral include:

- Excessive production of phlegm
- Fever and sweats
- Considerable breathlessness
- Unexplained weight loss
- Coughing up blood or red phlegm
- Heartburn
- Localised chest pain
- Swollen glands
- If the cough quickly gets worse or the patient cannot stop coughing
- If the cough is persistent, e.g. lasts for more than three weeks

Other signs of serious illness in patients with cough include:

- Respiratory rate of more than 30 breaths a minute
- Heart rate of more than 130 beats per minute
- Systolic blood pressure less than 90 mmHg or diastolic blood pressure less than 60 mmHg
- Oxygen saturation less than 92%

cough syndrome, upper respiratory tract infection or gastro-oesophageal reflux disease (GORD).

Cough is a symptom of COVID-19. It can also be part of a post-COVID-19 syndrome (or long COVID-19). As part of long COVID-19, a cough can continue for weeks or months after COVID-19 infection.

Coughs have also traditionally been described as either dry/non-productive or chesty/productive. While classifying coughs as either dry or wet may be considered outdated, product selection in the pharmacy is often based on differentiating between a dry and a productive cough.

A **dry or non-productive cough** can be caused by asthma, environmental irritants, or medicines such as angiotensin-converting enzyme (ACE) inhibitors. Common signs include a lack of phlegm (mucus), and patients often describe the cough as 'tickly'.

A chesty, **wet or productive cough** is characterised by the production of phlegm. Common causes include upper airway cough

Table II: Selected single-ingredient cough remedies available OTC

	Composition	Example
Expectorants	Guaiphenesin	Benylin® Wet Cough Menthol Dilinct® Junior Syrup Lennon® Cough Mixture
Cough suppressants	Pholcodine	Pholtex® Forte Liquid Pholtex® Junior Syrup
	Dextromethorphan	Benylin® Dry Cough Dilinct® Dry Cough
Mucolytics	N-acetylcysteine	Amuco® 200 Mucatak®
	Carbocisteine	Mucosolv® Mucospect®
	Bromhexine	Bisolvon® Bronchette®

syndrome (previously referred to as post-nasal drip syndrome), GORD, chronic obstructive pulmonary disease and infection caused by bacteria or viruses. Common co-existing symptoms of an infectious cough include a fever, runny nose and malaise.

If red flags have been excluded and the patient requests treatment, several over-the-counter (OTC) cough remedies are available in the pharmacy. Although little evidence has been documented in clinical trials, the choice of cough remedy in community pharmacies usually depends on the type of cough (Table II). However, many of the cough remedies available OTC are currently recommended based on custom and traditional practice, which is not supported by clinical studies of sufficient quality to meet the standards of modern evidence-based medicine.

- Productive coughs may be treated with an expectorant such as guaiphenesin, ammonium chloride, sodium citrate, glyceryl guaiacolate, or ipecacuanha, which promotes coughing and brings up phlegm.
- Non-productive coughs may be treated with a cough suppressant. There are three main categories of cough suppressants: (i) demulcents such as honey, glycerine and lemon, (ii) centrally-acting opioid-like cough suppressants

such as codeine, pholcodine and dextromethorphan, and (iii) first-generation antihistamines such as diphenhydramine, promethazine, phenyltoloxamine and triprolidine.

- Mucolytics such as acetylcysteine, carbocisteine and bromhexine may be useful in selected cases with chronic, tenacious phlegm production. Adequate hydration is essential to help reduce the viscosity of the phlegm.

Note: Suppression of a productive cough may cause mucus retention and encourage the development of infection. There is also no logic in using combination cough remedies that contain expectorants (which promote coughing) and suppressants (which reduce coughing) because of their opposing actions.

Conclusion

Coughing is a protective reflex that occurs when the airway is irritated or obstructed. After eliminating red flags, the pharmacist's assistant may opt to recommend a suitable product for a patient presenting with an acute cough. It is important to remember that cough mixtures are not harmless and that cough mixtures should preferably not be used to treat young children with a cough as part of the common cold. Although there is a lack of scientific evidence to prove that cough mixtures are beneficial, many patients say that cough remedies do help, and many health professionals continue to recommend them.

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