

## *Drug Treatment of Cough*

### I. Peripheral Acting Agents (Demulcents)

These act on the afferent side of the cough reflex to reduce irritation.

Drug/Method	Site of Action	Key Information
<b>Warm Water Vapor</b>	Below the larynx	Promotes secretion of dilute mucus to provide a protective coating.
<b>Lozenges / Syrups licorice or methylcellulose</b>	Above the larynx	Uses to coat mucous membranes.
<b>Menthol / Eucalyptus (vapor or lozenges)</b>	Local	Reduces irritation through a local anesthetic effect; can be combined with warm water vapor.

### II. Agents Acting on the Efferent Side

These drugs make secretions easier to remove to increase cough efficiency. 1. Mucolytics (Reduce Viscosity)

Drug Name	Mechanism of Action	Additional Info
<b>Bromhexine</b>	Causes depolymerization of mucopolysaccharide fibers.	Makes mucus large and less viscous for expectoration.
<b>Acetylcysteine Carbocysteine Mecysteine</b>	Contains free sulfhydryl (-SH) groups to open disulfide (-S-S-) bonds in mucus thus reducing its viscosity.	Best results via inhalation or nebulization <b>Can cause GI irritation and allergic reactions</b> , Can also be given orally. Water vapor inhalation or hydrating a dehydrated patient also reduce viscosity of bronchial secretions.
<b>Dornase alfa</b>	phosphorylated glycosylated recombinant human deoxyribonuclease.	The blocked airways and sputum trap pathogens and inflammatory cells, which when lysed produce substantial amounts of free and very viscous DNA. Inhalation or nebulization to patients with <b>cystic fibrosis</b> , where there is a genetic defect in Cl-transport leading to viscous sputum.

## 2. Expectorants (Liquefy Secretions)

Agents which increase the amount of, and liquefy bronchial secretions.

Drug Name	Mechanism of Action	Additional Info
<b>Mentholated water vapor</b>	-	-
<b>Guaifenesin</b>	Reduces adhesiveness and surface tension of mucus.	Facilitates removal of mucus and soothes dry, irritated membranes Questionable clinical value. <b>side effects</b> include nausea, vomiting and headache.

## III. Centrally Acting Agents (Antitussives)

-These suppress the cough center in the medulla of the brain.

-Opioids and related drugs:

- Lower doses are needed to suppress cough than those needed to produce analgesia.
- Antitussive effect is **not** blocked by the opiate antagonist, Naloxone

Drug Name	Category	Key Information
<b>Codeine (Methylmorphine)</b>	Opioid	Antitussive dose is 15mg. Part of the antitussive effect is due to sedation. Inhibition of ciliary activity in the bronchioles along with dryness of secretions leads to reduced clearance and retention of thick sputum and is also associated with constipation.
<b>Dextromethorphan</b>	Non-narcotic non-analgesic, non-constipating	Equal efficacy to codeine but non-addictive and <b>does not</b> inhibit mucociliary clearance. <b>Adverse effects</b> are minor at therapeutic doses.
<b>Diphenhydramine</b>	H1-histamine Receptor Blockers	Suppresses cough through substantial sedation; used in children <b>only</b> at night.

### Important Clinical Rules:

- Cough is a reflex mechanism,stimulated by irritation, inflammation or tumors.
- **Useful vs. Useless:** Productive (useful) coughs **should not** be suppressed ,unproductive(useless) coughs **should** be made useful or suppressed.
- **Antitussives** suppress cough without affecting the underlying cause.
- **Contraindications:** Antitussives **should not** be used for bronchial asthma or suppurative lesions.
- **Pediatrics:** Cough in children is almost always useful and generally should **NOT** be suppressed.
- The best antitussive treatment is treatment of the **underlying cause**.

ولسوف  
يُعْطِيكَ  
رُبُّكَ  
فترضني  
♡

اللهم اجعل أجر هذا العمل صدقة جارية عن روح عمر عطيه عوده المرابي

اللَّهُمَّ اغْفِرْ لَهُ وَارْحَمْهُ، وَاعْفُ عَنْهُ وَاعْفَافِهِ، وَأَكْرِمْ نُزُلَهُ، وَوَسِّعْ مُدْخَلَهُ، وَ  
اغْسِلْهُ بِمَاءٍ وَثَلْجٍ وَبَرْدٍ، وَنَقِّهِ مِنَ الْخَطَايَا كَمَا يُنْقَى الثَّوْبُ الْأَبْيَضُ مِنَ الدَّنَسِ.

اللَّهُمَّ أبدله داراً خيراً من داره، وأهلاً خيراً من أهله، وأدخله الجنة، وأعذه من  
عذاب القبر ومن عذاب النار.

اللهم يمّن كتابه، ويسّر حسابه، وثقل بالحسنات ميزانه، وثبّت على الصراط  
أقدامه، وأسكنه في أعلى الجنات، بجوار حبيبك محمد صلى الله عليه وسلم.

اللهم اغفر لحينا وميتنا وشاهدنا وغائبنا وصغيرنا وكبيرنا وذكرنا وأنثانا اللهم  
من أحييته منا فأحيه على الإسلام ومن توفيته منا فتوفه على الإيمان اللهم لا  
تحرمنّا أجره ولا تضلنا بعده.

اللهم اغفر له وارفع درجته في المهديين، واخلفه في عقبه في الغابرين،  
واغفر لنا وله يا رب العالمين، وافسح له في قبره، ونور له فيه.

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اللهم لا تفجعنا بأنفسنا ولا أهلنا ولا أحببتنا، اللهم أعوذ بك من فواجع الأقدار  
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