Module 1
The Cough
Introduction

A cough is your body’s way of keeping your throat and lungs clear of foreign particles, microbes, irritants, fluids and mucus.

Causes

What causes coughs

Some of the more common causes include:

- Viruses and bacteria leading to respiratory tract infections such as a cold or flu
- Smoking
- Asthma
- Some medication

Dust and bacteria are inhaled and trapped by mucus and the fine hairs of the nasal membranes.

Bacteria that get past these hairs stick to the mucous membranes of the trachea or windpipe, or are swept upward by the cilia or hairs of the lower respiratory tract.

However, when the lungs are compromised or not working to full capacity, the body will develop a sneeze or cough to help rid itself of bacteria.

Tracheobronchial sputum has an antimicrobial effect – kills or inhibits bacteria, because it contains:

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lysozyme</td>
<td>Enzyme that damages or breaks down bacterial cell walls</td>
</tr>
<tr>
<td>Transferrin</td>
<td>Glycoprotein that binds iron, which inhibits bacterial growth and survival</td>
</tr>
<tr>
<td>Immunoglobulins</td>
<td>Antibodies that bind to specific antigens such as bacteria and viruses</td>
</tr>
<tr>
<td>Protease inhibitors</td>
<td>Antiviral inhibitors that prevent viral replication</td>
</tr>
<tr>
<td>Fibronectins</td>
<td>Glycoprotein that promotes cell adhesion and growth, wound healing and clearance of bacteria</td>
</tr>
</tbody>
</table>

Did you know?

Post-nasal drip – where mucus drips down the back of the patient’s throat because of sinus complications – causes about 7% of coughs. Thin mucus naturally drips down the back of the throat unnoticed on a daily basis, but when the mucous lining of the throat becomes irritated it could lead to inflammation of the respiratory tract, which in turn leads to dry, tickly coughs.
The different kinds of cough: Dry vs. Wet

Patients may develop one of the following coughs when he/she has a cold or flu:

- **Dry/Tickly/Nonproductive**
  - Persistent/Constant tickle
  - Sensitive throat
  - Hacking
  - No mucus expelled
  - Coughs up mucus
  - Chest tightness
  - Difficulty breathing
  - Wheezing

- **Wet/Chesty/Productive**
  - Persistent/Constant tickle
  - Sensitive throat
  - Hacking
  - No mucus expelled
  - Coughs up mucus
  - Chest tightness
  - Difficulty breathing
  - Wheezing

The different kinds of cough: Acute vs. Chronic

Coughs are also classified according to the length of time a patient has it, and its persistence.

- **Acute**
  - Symptoms: Begins suddenly
  - Causes: Colds, flu & acute bronchitis
  - Lasts 2-3 weeks

- **Chronic**
  - Symptoms: Lasts longer than 2-3 weeks
  - Causes: Chronic bronchitis, asthma, smoking, allergies & medicines
  - Comes and goes

How symptoms for a cold or flu develop

Patients may experience different stages as their flu or cold symptoms emerge.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Symptoms</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 2</td>
<td>Something is different</td>
<td>Sore throat, dry/tickly cough</td>
<td>Colds, flu &amp; acute bronchitis</td>
</tr>
<tr>
<td>3 &amp; 4</td>
<td>Full-blown cold or flu</td>
<td>Chesty cough vs. dry hacking cough</td>
<td>Chronic bronchitis, asthma, smoking, allergies &amp; medicines</td>
</tr>
</tbody>
</table>

Stage 1 & 2
- Patient may experience lack of energy, body aches, dry/tickly coughs, symptoms that affect breathing, and a sore throat.

Stage 3 & 4
- Patients may experience either wet, chesty coughs or dry, hacking coughs.
- **RECOMMEND** a cough solution that targets multiple symptoms and various cough conditions.
**Diagnosis**

**How to diagnose a cough effectively**

A careful scrutiny of the patient’s cough will help determine a diagnosis or even a cause. Question the patient, as well as any accompanying family members, since patients can be unaware of the qualities of their cough or may underestimate its frequency and duration.

**Ask the following questions to paint a better picture:**

1. Was the start of the cough sudden and was there a cause?
2. How long has the cough been present? Is it persistent or does it come and go?
3. How often does a single coughing spell happen and how long does it last?
4. Can the patient locate the site of origin of the cough or the sputum, such as from the throat or deeper in the chest? (Is it dry or wet?)
5. Is phlegm being easily expelled when the patient coughs?
6. Is the cough an isolated only symptom, or is it associated with other respiratory or non-respiratory symptoms?
7. Was the patient exposed to any irritants, such as smoke, that may inflame his/her respiratory tract?
8. What time of the day or night is the cough or sputum production worse?
9. Has the pattern of the cough or nature of the sputum changed recently?
10. Has the patient had a similar problem with coughing in the past?

Once the type and severity of the cough has been established it is possible to make a recommendation.

**Treatment**

**Herbal Cough Remedies**

Herbal remedies are used worldwide for a variety of diseases and conditions. Ayurvedic medicine, one of the world’s oldest holistic (“whole-body”) healing systems, was developed more than 3,000 years ago in India and uses combinations of herbs and minerals to treat and heal conditions.

Ayurvedic vs. Traditional remedies

Modern medicine treats symptoms, while Ayurveda treats the body as a whole. In Western medicine your doctor asks about your symptoms, and checks your temperature and blood pressure before writing a prescription. Ayurveda, in comparison, finds the root cause of the problem and, instead of treating symptoms, takes care of any ailments or health issues that are responsible for the symptoms, giving the body the right tools to defend itself, boost the immune system and heal faster.

**In South Africa traditional medicine plays an important role in many regions**

To assess the importance of herbal remedies in the community, patients were interviewed at a tertiary hospital in Ga-Rankuwa, 37 km outside Pretoria.

- 74% of patients interviewed indicated that they had used herbal medication in the past.
- 34% of those who used herbal treatments in the past claimed to have used them for respiratory tract infections.

This makes respiratory conditions one of the most common ailments for which herbal remedies are employed.
Wet and dry cough alleviation calls for specific requirements

<table>
<thead>
<tr>
<th>Wet/Productive Cough Alleviation</th>
<th>Dry Cough Alleviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Broncholytic</strong></td>
<td><strong>Mucolytic</strong></td>
</tr>
<tr>
<td>Agent that dilates/opens the bronchial tubes/passage</td>
<td>Agent that liquefies thick mucus/phlegm and is usually used to help relieve respiratory difficulties</td>
</tr>
<tr>
<td><strong>Anti-inflammatory</strong></td>
<td><strong>Expectorant</strong></td>
</tr>
<tr>
<td>Substance or treatment that reduces inflammation or swelling</td>
<td>Aid in clearance of mucus/phlegm from the passages of the lungs</td>
</tr>
<tr>
<td><strong>Demulcent</strong></td>
<td></td>
</tr>
<tr>
<td>Substance which provides a soothing protective coating on mucous membranes of mouth and throat</td>
<td></td>
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</tbody>
</table>

One, or a combination of the solutions above, can be used to treat a variety of different coughs. Expectorants are ideal to treat wet coughs, while antitussives (cough suppressants) are used to soothe or calm dry coughs.

Over the counter (OTC) treatment

A combination of herbal extracts that works. Naturally.

- Broncholytic
- Mucolytic
- Expectorant
- Cough calming
- Anti-inflammatory
- Demulcent
- Effective for wet and dry coughs
- Helps the body naturally defend against infections to relieve cough
- For coughs associated with colds and flu
- Available in syrup and lozenges
- For day or night use
- Alcohol free

DOKTOR MOM® helps the body naturally defend against infections to relieve cough by assisting the secretion of tracheobronchial substances, discussed above, in addition to soothing the throat.

As a result it provides:

1. Support of anti-inflammatory effects, which assists with wound healing
2. Support of immunoregulatory effects, which helps the immune system fight off infections
3. Support of iron-chelating activities, which make it difficult for bacteria to survive

This over-the-counter (OTC) treatment, in the tradition of Ayurveda, is a holistic solution that addresses the South African patient’s need for a herbal cough remedy and offers pharmacies the opportunity to grow in the home remedy sector.
**DOKTOR MOM®** is made of a blend of herbal extracts, ready mixed for the patient’s convenience.

<table>
<thead>
<tr>
<th>Herbal Extract</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Glycyrrhiza glabra</em> (Liquorice Root)</td>
<td>Helps to loosen and thin mucus in airways. Used as an expectorant and suppressant to accelerate tracheal mucus secretion, a demulcent to treat sore throats, and an anti-inflammatory agent.</td>
</tr>
<tr>
<td><em>Zingiber officinale</em> (Ginger)</td>
<td>Employed in the treatment of colds and flu. Used as an anti-inflammatory agent to treat headaches and upper respiratory tract infections, coughs and bronchitis.</td>
</tr>
<tr>
<td><em>Emblica officinalis</em> (Indian Gooseberry)</td>
<td>Found in India, the Middle East and some southeast Asian countries, all parts of the plant have been employed in Ayurvedic medicine for thousands of years. Used as an antiviral and antibacterial substance, an expectorant and an antioxidant.</td>
</tr>
<tr>
<td><em>Levomenthol</em> (Mint)</td>
<td>Mint is used to treat the common cold, coughs, inflammation of the mouth and throat, sinus infections and respiratory infections. Levomenthol is used as a decongestant and expectorant agent to thin mucus, and for its soothing and cooling properties.</td>
</tr>
<tr>
<td><em>Ocimum sanctum</em> (Holy Basil)</td>
<td>Holy Basil or tulsi is valued for its medicinal properties. Used as an expectorant, anti-asthmatic and anti-catarhal. Also used in the treatment of bronchitis, the common cold, fever, influenza and catarh.</td>
</tr>
<tr>
<td><em>Curcuma longa</em> (Turmeric)</td>
<td>Turmeric is derived from the dried rhizome of Curcuma longa. Used for the treatment of headaches, bronchitis, the common cold and respiratory infections.</td>
</tr>
<tr>
<td><em>Adhatoda vasica</em> (Malabar Nut)</td>
<td>The leaf of the Malabar Nut plant is used to make medicine. Used as an expectorant to loosen chest congestion and as a bronchodilatory agent to open the breathing tubes (bronchi).</td>
</tr>
<tr>
<td><em>Solanum indicum</em> (Indian Nightshade)</td>
<td>Both the root and berries of Indian Nightshade are used for medicinal purposes. Used as an expectorant and treatment against bronchitis, and to treat dry and spasmodic coughs.</td>
</tr>
<tr>
<td><em>Inula racemosa</em> (Indian Elecampane)</td>
<td>Indian Elecampane, inula or pushkarmool, is a powerful Ayurveda herb known for its antiseptic, antibacterial and anti-inflammatory properties. Used to treat respiratory diseases such as coughs, bronchial asthma and bronchitis.</td>
</tr>
<tr>
<td><em>Piper cubeba</em> (Cubeb Pepper)</td>
<td>Cubeb Pepper or tailed pepper is native to India. Used for its expectorant qualities and stimulating effect on the mucous membranes of the respiratory tract and to ease the symptoms of chronic bronchitis.</td>
</tr>
<tr>
<td><em>Terminalia bellerica</em> (Bahera Fruit)</td>
<td>Terminalia bellerica is grown throughout India. Used as an expectorant and treatment for respiratory conditions, including respiratory tract infections, coughs and sore throats.</td>
</tr>
<tr>
<td><em>Aloe barbadensis</em> (Aloe Vera)</td>
<td>Aloe Vera is the juice extracted from the leaves of the succulent Aloe plant. It has been used medicinally since 2200 BC in Mesopotamia for its anti-inflammatory properties and to help treat asthma and colds.</td>
</tr>
</tbody>
</table>
**DOKTOR MOM®** Herbal Cough Syrup and Herbal Cough Lozenges alleviate coughs and boost the effectiveness of the lungs:

- **Wet Cough** - Alleviates wet or productive coughs
- **Dry Cough** - Alleviates dry or tickly coughs
- **Natural Defence** - Helps the body naturally defend itself against infections to relieve coughs

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**Top tip for pharmacy staff**

Since **DOKTOR MOM®** is a herbal cough remedy, it can also be recommended to patients by front shop assistants.

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**DOKTOR MOM® HERBAL COUGH SYRUP**

For the relief of coughs

The syrup contains **11 herbal extracts** already mixed for the patient’s convenience:

Aloe | Indian Elecampane | Turmeric | Mint | Cubeb Pepper | Ginger | Holy Basil | Indian Nightshade | Liquorice Root | Bahera Fruits | Malabar Nut

- Effective partner in assisting in cough relief associated with colds and flu
- Relieves wet and dry coughs
- Soothes the throat
- Losens mucus
- Opens airways
- Ideal for use day or night
- Helps the body naturally defend against infections to relieve cough
- Alcohol and tartrazine free

Available in a 100 ml bottle.

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**DOKTOR MOM® HERBAL COUGH LOZENGES**

For cough relief on the go

The lozenges are made from a blend of **4 herbal extracts**:

Liquorice Root | Ginger | Indian Gooseberry | Mint

- Relieves coughs
- Soothes the throat
- Ideal for use day or night
- Alcohol and tartrazine free
- Effective partner in assisting in cough relief associated with colds and flu

Available in a pack of 20 lozenges.

Comes in 4 soothing flavours:

Lemon | Pineapple | Berries | Mixed Fruit

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**Quick Question**

In addition to soothing the throat, mention three ways in which **DOKTOR MOM®** provides support.

1. ...........................................................................................................
2. ...........................................................................................................
3. ...........................................................................................................

“DISCLAIMER: As stipulated in Section 22A subsection 4 and 5 of the Medicines and Related Substances Act 101 of 1965, product recommendations can only be made by Pharmacists and Pharmacist Assistants acting under the personal supervision of a pharmacist (S1-S2). Any customer seeking medical advice from a Front Shop Assistant should be referred to the Pharmacist on duty.”

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**Top tip for pharmacy patients**

**DOKTOR MOM®** Herbal Cough Syrup can be used during any stage of illness when you experience a cough or throat irritation. Advise patients to keep a bottle at home, so they can soothe their throats when they start feeling sick.


