

## CHRONIC COUGH

### CHRONIC COUGH and THE BREATHING CONNECTION

Coughing is a normal reflex designed to help protect the lungs from taking in unwanted allergens, pollutants and organisms which may have been inhaled. This is a natural defence mechanism which can also help to get rid of phlegm or excess mucous when we have an infection.

When a cough becomes persistent or frequent it is distressing and potentially harmful. When it lasts more than 8 weeks in an adult or 4 weeks in a child, it has become a **chronic cough**. It is often accompanied by postnasal drip <sup>1</sup>, which can also trigger a cough response.



For some people a bout of coughing can be triggered by an emotional change such as laughter or getting angry or upset, or when talking a lot or even when performing regular everyday activities. This is neither healthy or normal.

Unfortunately the more you cough and the harder you cough to dislodge phlegm the more you irritate and inflame the airways, and the stickier the mucous becomes making it even harder to dislodge. It can become a vicious cycle ie **the more you cough, the more you cough!**

### Causes of Chronic coughing ?

Although it can be difficult to determine the exact cause or causes, the following reasons are commonly believed responsible <sup>2</sup>:

- 1 Postnasal drip:** When your nose or sinuses produce extra mucus, it can drip down the back of your throat and trigger your cough reflex. This condition is also called upper airway cough syndrome (UACS).
- 2 Asthma** related coughing may come and go with the seasons, appear after an upper respiratory tract infection, or become worse when you're exposed to cold air or certain chemicals or fragrances. In one type of asthma (cough-variant asthma), a cough is the main symptom.
- 3 Gastroesophageal reflux disease (GERD):** Stomach acid flows back into the tube that connects your stomach and throat (oesophagus). The constant irritation can lead to chronic coughing. The coughing, in turn, worsens GERD — a vicious cycle.
- 4 Infections:** A cough can linger long after other symptoms of pneumonia, flu, a cold or other infection of the upper respiratory tract have gone away. A common but under-recognized cause of a chronic cough in adults is pertussis, also known as whooping cough. Chronic cough can also occur with fungal infections of the lung, tuberculosis (TB) infection or lung infection with nontuberculous mycobacterial organisms.

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<sup>1</sup> **Postnasal drip** occurs when you are producing excess mucous and it drips down the throat from the nose or accumulates in the throat.

<sup>2</sup> What Causes a Chronic Cough: Medical News Today:  
<https://www.medicalnewstoday.com/articles/321597#what-causes-a-chronic-cough>

- 5 **Chronic obstructive pulmonary disease (COPD).** COPD, a chronic inflammatory lung disease that causes obstructed airflow from the lungs, includes chronic bronchitis and emphysema. Chronic bronchitis can cause a cough that brings up coloured sputum. Emphysema causes shortness of breath and damages the air sacs in the lungs (alveoli). Most people with COPD are current or former smokers.
- 6 **Blood pressure drugs.** Angiotensin-converting enzyme (ACE) inhibitors, which are commonly prescribed for high blood pressure and heart failure, are known to cause chronic cough in some people.
- 7 Less commonly, chronic cough may be caused by:
  - Aspiration (food in adults; foreign bodies in children)
  - Bronchiectasis (damaged, dilated airways)
  - Bronchiolitis (inflammation of the very small airways of the lung)
  - Lung cancer
  - Nonasthmatic eosinophilic bronchitis (airway inflammation not caused by asthma)
  - Sarcoidosis (collections of inflammatory cells in different parts of your body, most commonly the lungs)
  - Cystic fibrosis
  - laryngopharyngeal reflux (stomach acid flows up into the throat)
  - idiopathic pulmonary fibrosis (chronic scarring of the lungs due to an unknown cause)

With any of the more serious health problems it is important that you are assessed by a specialist.

If unchecked chronic coughing can result in:

- scarring and damage to the vocal chords and lungs.
- Narrowing and constriction of airways and blood vessels taxes the heart which can contribute to hypertension and blood pressure changes.
- It can become habitual which raises the health stakes if unchecked

Having a persistent cough is exhausting tiring and annoying for any listeners.



## So What's the Breathing Connection?

At **Breathe Free Clinic**, we believe that some of the 'Causes' listed above can actually be **symptoms of Disordered Breathing?**

With each of the causes listed there is a breathing connection. Understanding what this is may not only resolve or alleviate a chronic cough, but also resolve some of the causes commonly thought to be responsible.

Learning to breathe well for the treatment of coughing and narrowed airways goes back to ancient Greek times when it is understood that both the physician Galen and a 16th century doctor Paracelsus recommended breathing exercises and breath holds to alleviate coughing.

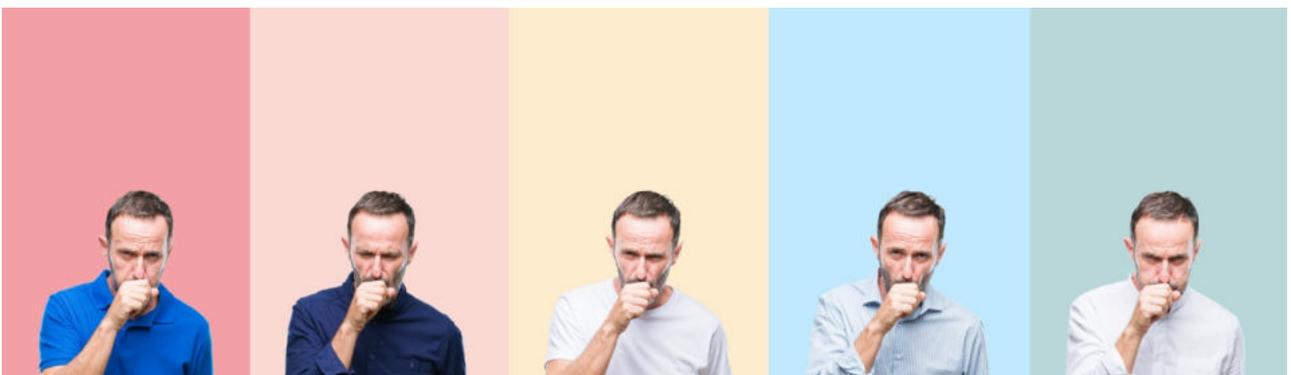
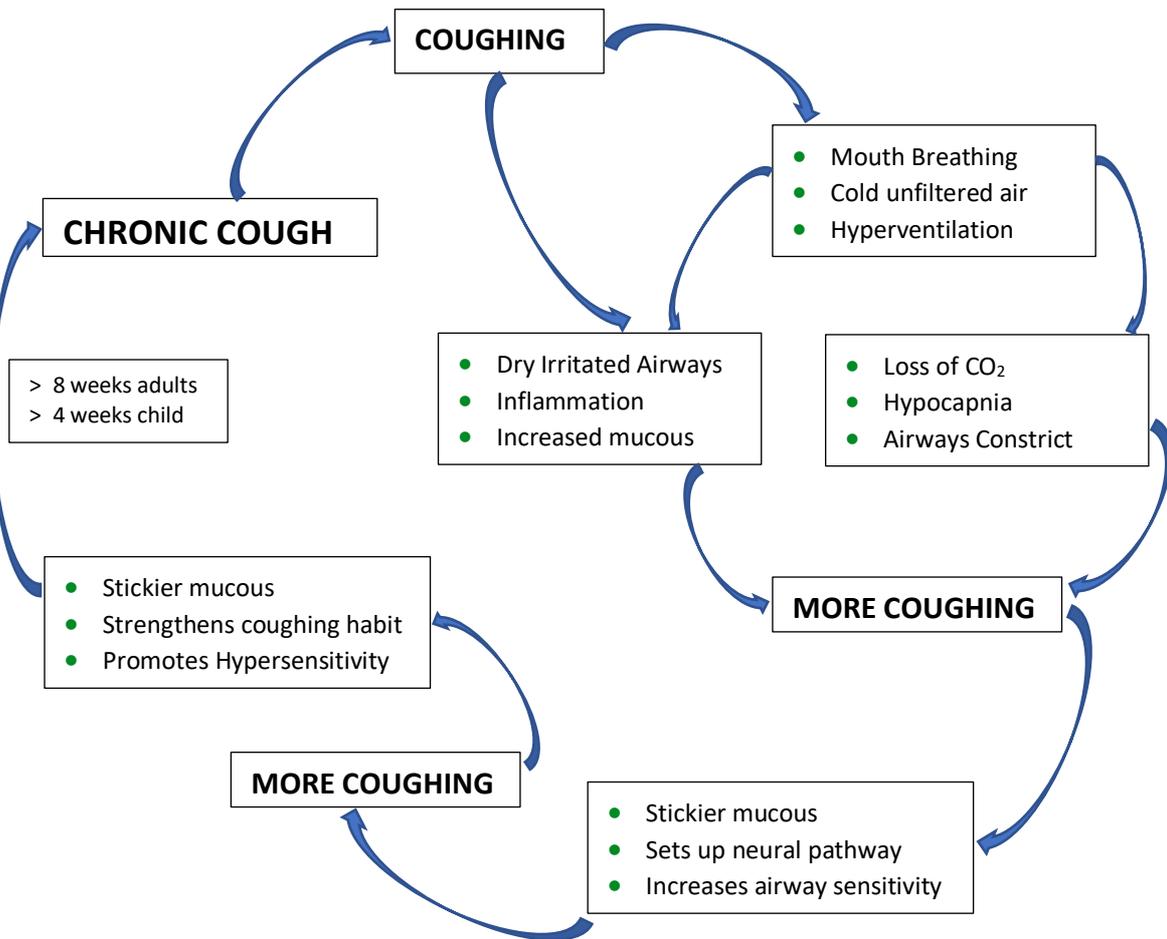
### The Trouble with Chronic Coughing

- **Mouth breathing** occurs with coughing, usually as a result of gulping in air in between each cough. This allows **a lot more air** in with each breath than nasal breathing and as importantly **bypasses your natural nose filters**.
- **Cold, dry air is drawn directly into the airways** as well as **more allergens and pollutants** which increases irritation, inflammation and mucous production.
- The **greater volume of air** inhaled with each cough causes a **big loss of carbon dioxide**.
- This loss of carbon dioxide (CO<sub>2</sub>) causes smooth muscle to go into spasm so the **airways start to constrict**.
- **Hypocapnia** (low CO<sub>2</sub>) occurs causing **inflammation and increased mucous production**.
- Coughing **irritates and dries mucous membranes** also **increasing mucous production**.
- **Mucous** becomes **stickier** so **coughing intensifies** and becomes **more frequent** in order to try to **dislodge the stickier mucous**.
- **Vocal chords** also dry out and **don't vibrate with such ease** making them **more prone to injury**<sup>3</sup>.
- Taking **big breaths** **slams the vocal chords** which can **cause nodules** to develop over time.
- Chronic coughing can be the result of a **cough becoming habitual** reinforcing the vicious cycle.

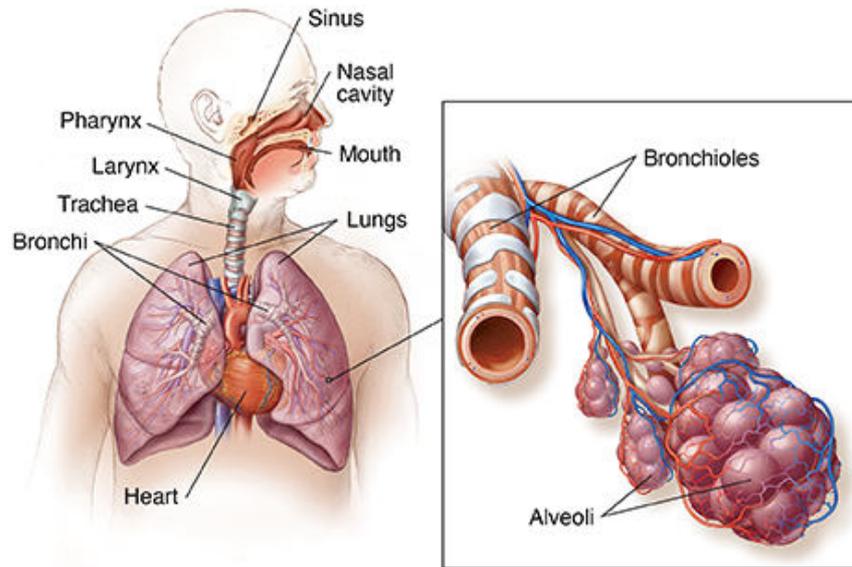


<sup>3</sup> Hadas Golan: Speech-Language Pathologist and Buteyko Educator, Dept of Otolaryngology, Boston Medical Centre 'Breathing for Speech and Singing' Workshop, Oct 2019

## THE VICIOUS CYCLE



Coughing is initiated by the irritation of cough receptors which are found in the pharynx and larynx (throat region), the trachea<sup>4</sup>, the branching points of the trachea and large airways (bronchi), and in the smaller distal airways (8 branches into the bronchioles).



The pressure of coughing or throat clearing on the cough receptors can trigger more coughing and when this happens repeatedly it sets up a habit – by reinforcing neural patterns to react more quickly to triggers. In other words you can become hypersensitive<sup>5</sup>. Unfortunately when coupled with disturbance to breathing patterns from coughing and the larger volumes of air being inhaled, symptoms worsen, again becoming a vicious cycle.

Although the coughing reflex is considered complex, you can help yourself by preventing the vicious cycle of cough perpetuating cough before it becomes and a chronic disorder<sup>6</sup>. Sorting your breathing can really help.

If you would like to know how  
 contact the Breathe Free Clinic.



<sup>4</sup> Trachea: the tube linking the larynx (voice box) and the bronchi of the lungs

<sup>5</sup> Hypersensitivity: also called hypersensitivity reaction or intolerance refers to **undesirable reactions produced by the normal immune system**, including allergies and autoimmunity. They are usually referred to as an over-reaction of the immune system and these reactions may be damaging and uncomfortable.

<sup>6</sup> De Blasio, F et al: Cough management: a practical approach. Cough Journal 10 Oct 2011, 7(1):7

Check out the tips below that can help you start – remember these are like first aid tips and in order to make a lasting difference you will need to change your breathing habits which takes knowledge and practice until sufficient change is made (usually about 6 weeks).

Chronic coughing has in fact been reported to be the fifth most common complaint seen by primary care physicians in the world and the third in Italy <sup>7</sup>.

### So to recap What's Wrong with Chronic Coughing?

A chronic cough can interrupt your sleep and leave you feeling exhausted. It can lead headaches or cause dizziness, even passing out (syncope) and, over time, loss of bladder control (urinary incontinence).

In severe cases, chronic coughing can cause vomiting, excessive sweating, light-headedness and even rib fractures.

At the Breathe Free Clinic you will learn how to breathe well, calm the respiratory system and reduce or even eliminate chronic coughing altogether. Even when you have an infection you can reduce your need to cough significantly by learning a few helpful breathing tips.

### LEARN HOW TO STOP THE COUGH!

Contact the **Breathe Free Clinic** to book your Assessment today.



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<sup>7</sup> Poverino, Mario et al; Anatomy and Neuro-Pathophysiology of the Cough Reflex Arc. Multidiscp Resp Med: 2012; 7(1): 5

## TIPS TO STOP THE COUGH

**PLEASE NOTE:** You will benefit most from these tips if you use them in conjunction with a breathing programme to improve your baseline breathing health.



### 1 Grow Your Awareness

The first step with most habits is to build your awareness so that you can change it.

- Keep score - start noting down every time you cough or clear your throat
- Learn your triggers – these may range from hyperventilation, emotional change to exercise, temperature changes, humidity, airway irritants, asthma, GERD, allergies, upper respiratory infection, laughing, playing an instrument, talking, singing, odours, chemicals.

### 2 Prevention

Learn to recognise the sensation and pick up the warning signal that you are about to cough or clear your throat and then try to intervene by preventing, delaying or interrupting the cough. While it can be very challenging not to cough, if you focus on this and prioritise it for a few you can make progress and start to interrupt the cycle.

Coughing is both voluntary and involuntary and active suppression of a cough has been shown to decrease cough sensitivity and the urge to cough and to raise the cough threshold due to reduced laryngeal irritation <sup>8</sup>.

- When you feel the first tickle pause your breath for 3 to 5 seconds after your exhale (a Mini-Pause) and repeat for 3-4 breaths until it's gone.
- Every time you cough take a sip of a drink (warm or cold), preferably water.
- Do an effortful swallow (dry or with water).
- Suck on ice or non-medicated glycerine lozenges (eg Sambucol or Grethers Pastilles).
- Relax the exhale.
- Sniff to inhale then exhale slowly through a straw or through pursed lips on 'sss' or 'fff' for a count of 8-10.

The sniff abducts (brings apart) the vocal folds. Exhaling on the 'sss' or 'fff' or through a straw helps regulate the airflow and shift the pressure to the lips rather than the larynx.

<sup>8</sup> Ryan NM, Vertican AE, Bone S, Gibson PG. Cough reflex sensitivity improves with speech language pathology management of refractory chronic cough. Cough. 2010;6:5

### 3 Control

If you are unable to stop the cough then try to control it.

- First, avoid the large inhalation through the mouth that normally accompanies coughing. Breathe gently in through your nose before coughing as gently and silently as possible while keeping your mouth closed. This helps to protect your delicate airway, tissues and cilia.
- Cough into cupped hands and re-inhale through the nose to boost CO<sub>2</sub>.
- If a cough gets away on you do the Mini-pause (above) every 3-4 breaths until it's gone
- If you are coughing at night try breathing under the covers for short periods, breathing gently through the nose. This will boost CO<sub>2</sub> slightly by rebreathing the CO<sub>2</sub> in the expired air. It will also increase the humidity of the air you are breathing in and reduce the irritation on the airways caused by breathing cold, dry air.
- Avoid eating within 3 hours of going to bed.
- Use a dry salt inhaler.

**CONTACT the Breathe Free Clinic for your free 20 minute phone Consult.**

IMPORTANT:

You may have an undiagnosed condition such as GERD, LPR or PVFM that requires referral to a specialist.