**Guidelines for the Management of Chronic Cough in Adults in Primary Care**

**Definition**
- Chronic cough is defined as a non-productive cough lasting more than 8 weeks.
- All smokers with NEW/ change in cough > 6 weeks should be referred to CRU#

**Introduction**
- Cough is the commonest symptom for which people seek medical advice.
- Chronic cough, as the sole complaint, accounts for 10-38% of all referrals made to respiratory physicians.
- Cough is a 3 phase expulsive motor act characterised by an inspiratory effort [inspiratory phase], followed by a forced expiratory effort against a closed glottis [compressive phase] and then by opening of the glottis and rapid expiratory airflow [expulsive phase].
- The symptom is associated in some with significant morbidity and anxiety [Table 1].
- The majority of causes are not sinister [Table 2].
- Chronic cough is more common in females and those with obesity.
- There is a heightened cough reflex.
- The presence of sputum production usually indicates primary lung pathology.

**Aims of Management**
- Rule out sinister causes of cough
  - Sinister features – Haemoptysis, weight loss, night sweats, purulent sputum, immunosuppression*¹
- Attempt trials of treatment targeted to the likely aetiology
- Control symptoms

**Table 1**

<table>
<thead>
<tr>
<th>Morbidity Associated with Chronic Cough</th>
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<tbody>
<tr>
<td>Sleep Disturbance</td>
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<tr>
<td>Irritability and Lethargy</td>
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<tr>
<td>Urinary Incontinence</td>
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<tr>
<td>Cough syncope</td>
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<tr>
<td>Social embarrassment</td>
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<tr>
<td>Poor work performance</td>
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<tr>
<td>Rib fracture</td>
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<tr>
<td>Chest Pain</td>
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**Table 2**

<table>
<thead>
<tr>
<th>Causes of chronic cough in the immunocompetent adult</th>
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<tbody>
<tr>
<td>Upper Airways Cough Syndrome [UACS]</td>
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<tr>
<td>Asthma, and Asthma Syndromes [cough variant asthma and Eosinophilic bronchitis]</td>
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<tr>
<td>Gastro-oesophageal reflux and laryngo-pharyngeal reflux disease</td>
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<tr>
<td>Chronic Obstructive Pulmonary Disease/ smoker</td>
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<tr>
<td>Persistent post-viral cough</td>
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<tr>
<td>Bronchiectasis</td>
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<tr>
<td>Use of ACE Inhibitors</td>
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<tr>
<td>Bronchogenic Carcinoma</td>
</tr>
<tr>
<td>Interstitial Lung Disease</td>
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<tr>
<td>Tuberculosis</td>
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<tr>
<td>Pleural Disease</td>
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</tbody>
</table>

Initial Assessment and Management [Primary Care]

History
The following features should be noted:

- History of infections.
- Symptoms of classic asthma [refer to MCN asthma resource pack].
- Symptoms of COPD [refer to MCN COPD resource pack].
- Smoking history.
- Allergy History and Family history of allergy/ atopy.
- Drug History including use of ACE Inhibitors.
- Occupational History including exposure to potential irritants.
- Presence / absence sinister features *¹.
- Be aware that cough characteristics may/ may not be helpful. The overall clinical picture may provide diagnostic clues.
- Nocturnal cough can be associated with asthma, heart failure and reflux.

Examination
- General examination is often unremarkable.
- Check body weight and calculate Body Mass Index [BMI].
- Check nasal passages for congestion or polyps.
- Check for wheeze or focal chest signs that may indicate ILD or bronchiectasis.
- Check for stigmata of chronic lung disease e.g. barrel chest, clubbing, cyanosis.

Investigations
The following should be done on ALL patients [BTS guidelines]:

- Spirometry
- PA Chest x-ray.

Initial Approach in Primary Care (refer to Cough Pathway page 3)

- ALL patients with sinister features need to be referred to secondary care *¹
- ALL SMOKERS SHOULD BE ADVISED AND SUPPORTED TO STOP SMOKING. Note that some patients do report an increase in cough for a period before an improvement in cough on smoking cessation. Cough > 6 weeks in smokers should be referred to CRU *¹.
- In the well, non-smoking patient, not on an ACE inhibitor, and with either a normal or unchanged from baseline chest x-ray, over 80% will have one or a combination of 3 diagnoses, which can be managed with trials of treatment.
  - Upper airways cough syndrome
  - Asthma
  - Gastro-oesophageal or laryngo-pharyngeal reflux.
- In the setting of a trial of treatment, it is essential not to miss a potential favourable response because an inadequate dose or length of treatment was employed; hence recommended 2-3 month trial of treatment.
- In patients on ACE inhibitors a trial of 2-3 months off therapy should be done before treatment trials; that way one can assess response to each intervention. ACE inhibitors cause an increase in the sensitivity of the cough reflex.
- Is there a clear diagnosis?
  - YES, 1 clear diagnosis - treatment trial of 2-3 months should be started.
  - YES, but several diagnoses – form a differential diagnosis, then the first treatment trial should be directed to the most likely diagnosis, with subsequent trials of treatment added on in order to assess response.
  - NO clear diagnosis, sequential trials of treatment for the 3 commonest causes of cough should be started, with higher doses of Inhaled Corticosteroid to treat eosinophilic bronchitis.
- A clinical study using a combination of treatment of likely diagnoses, and sequential therapeutic trials for the commonest causes of cough led to resolution of symptoms in 2/3rds of patients [Hull cough clinic].
- If treatment trials are not successful, patients should be referred to secondary care.
Presentation

Non-productive cough with duration of >8 weeks

- Full history
- Examination
- Spirometry, including reversibility if abnormal
- Arrange chest x-ray
- Smoking history
- Drug history: if on ACE-I stop

Cough >6/52 in smoker

Initial Investigations (see page 2)

Treat for any obvious cause and assess for response
If clear diagnosis/differential, treat and add on treatment options
If no clear diagnosis, sequential treatment trials

If cough persists and no obvious cause

Treatments for the 3 common causes of cough
(refer to initial approach in primary care above)

Asthma / eosinophilic bronchitis (2-3 months):
- Asthma Beclometasone Clenil Modulite 250mcg
  2 puffs BD or 2/52 prednisolone 30mg OD

Gastro-oesophageal / laryngeal reflux (2-3 months):
- Omeprazole 40mg BD
- Peptac 10ml qds
- Non-pharmacological measures, see below

Rhinosinusitis (2 months):
- Beclometasone nasal spray BD
- If patient already on above, switch to fluticasone
  (avamys 27.5 mcg/ dose, 2 puffs each nostril OD)

Key Points:

One or more of the above treatments work

- the corresponding diagnosis should be recorded
- Treatment should be titrated to lowest effective dose (refer to Step-Down of PPIs in GORD: Fife Formulary Appendix 1a; refer to asthma SIGN guidelines; refer to Fife Formulary ENT guidance).
- Cough is often multifactorial and patients may end up with more than one diagnosis and drug treatment.

None of the above treatments work

- Repeat history and examination
- Consider referral to Respiratory service
- Advise patients if no cause – idiopathic chronic cough – treatment options are limited and spontaneous resolution may occur.

Review Date August 2020
The main diagnoses
A brief description of the 3 main causes of chronic cough follows:

**Gastro-oesophageal Reflux**
- Mechanisms of cough likely to involve a variety of mechanisms.
  - Oesophageal dysmotility, micro-aspiration, lower oesophageal sphincter relaxation.
- Reflux can occur without any symptoms – silent reflux.
- GOR symptoms can include heartburn, water brash, and cough associated with food intake or on stooping forwards or on assuming an upright posture e.g. in the morning, this reflects relaxation of lower oesophageal sphincter.
- Laryngo-pharyngeal reflux symptoms can include hoarseness, loss of voice, globus, unusual throat symptoms.
- Examination may be normal, nasendoscopy may show oedema of the vocal cords.
- Treatment involves a combined approach of reflux avoidance measures, acid suppression, alginates [acts as physical barrier to reflux], and sometimes prokinetics [facilitates gastric emptying].
- Non-pharmacological reflux avoidance measures involve weight reduction [http://www.fifeleisure.org.uk/health-and-wellbeing], avoid alcohol, spicy foods, and caffeine, low-fat diet, smoking cessation, head of bed propped up are ALL essential additional measures [NICE Guidance].
- Diagnostic support can be found by the use of the Hull Cough Hypersensitivity questionnaire (APPENDIX 1). A score of 13 or below is normal. A score above 13 indicates a strong likelihood of the Cough Hypersensitivity Syndrome. The most usual cause for this is reflux.

**Upper Airways Cough Syndrome**
- Rhinosinusitis is inflammation involving the nasal/sinus passages or both.
- Rhinosinusitis can be allergic or non-allergic, seasonal [e.g. hayfever] or perennial.
- Acute occurs in under 4 weeks, subacute in 4-12 weeks, and chronic in over 12 weeks.

<table>
<thead>
<tr>
<th>Common symptoms in Rhinosinusitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasal congestion/ blockage</td>
</tr>
<tr>
<td>Nasal discharge [anterior discharge]</td>
</tr>
<tr>
<td>Post-nasal drip [posterior discharge]</td>
</tr>
<tr>
<td>Catarrh at back of throat, Recurrent throat clearing</td>
</tr>
<tr>
<td>Facial pain/ pressure</td>
</tr>
<tr>
<td>Reduction/ loss of smell</td>
</tr>
<tr>
<td>Fever</td>
</tr>
<tr>
<td>Malaise</td>
</tr>
</tbody>
</table>

- Treatment is determined by the underlying aetiology – refer to [NHS Fife Formulary ENT guidelines](#).
- Allergic Rhinitis
  - Anti-histamine/ intranasal corticosteroid/ +/- allergen avoidance if possible e.g. cetirizine 10mg OD/ beclometasone 50mcg/spray, 2 puffs BD each nostril, follow BNF guidance.
Non-allergic rhinitis
- 7 days nasal decongestant, then intranasal corticosteroid eg 0.9% saline nasal drops for 7 days then stop, then beclometasone 50mcg/spray, 2 puffs BD each nostril, follow BNF guidance.

Sinusitis
- Nasal decongestants/ nasal corticosteroids e.g. 0.9% saline nasal drops for 7 days then stop, then beclometasone 50mcg/spray, 2 puffs BD each nostril, follow BNF guidance.
- If symptoms of infection NHS Fife formulary guidance recommends 7 days amoxicillin 500mg-1g TDS or Doxycyline 200mg STAT followed by 6 days 100md OD.

Asthma Cough Syndromes
- For asthma please refer to Respiratory MCN asthma resource pack.
- Cough variant asthma
  - May not have typical asthma presentation, may be no evidence of airflow variability. Cough may be the sole symptom. Spirometry is normal. Airway hyper-responsiveness is present on metacholine challenge testing. Responds to inhaled corticosteroids and leukotriene receptor antagonists. BTS guidelines suggest follow asthma treatment guidelines, with earlier use of leukotriene receptor antagonists, and avoid long acting beta-2 agonists.
- Eosinophilic Bronchitis. Cough with eosinophilic airway inflammation, increased Th2 expression but NO airway hyper-responsiveness or variable airflow obstruction. Responds to high-dose inhaled corticosteroids. Elevated expired nitric oxide levels confirms the diagnosis. Think of this condition as a ‘corticosteroid-responsive chronic cough without abnormalities of airway function that characterize asthma.’

Palliative Care Management of Cough
- Follow advice in the Scottish Palliative Care Guidelines
Appendix 1

HULL COUGH HYPERSENSITIVITY QUESTIONNAIRE

Name: _____________________________________________
D.O.B:____________________________ UN: _________________
DATE OF TEST: ________________________________________

Please circle the most appropriate response for each question

<table>
<thead>
<tr>
<th>Within the last MONTH, how did the following problems affect you?</th>
<th>0 = no problem and 5 = severe/frequent problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoarseness or a problem with your voice</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Clearing your throat</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>The feeling of something dripping down the back of your nose or throat</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Retching or vomiting when you cough</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Cough on first lying down or bending over</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Chest tightness or wheeze when coughing</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Heartburn, indigestion, stomach acid coming up (or do you take medications for this, if yes score 5)</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>A tickle in your throat, or a lump in your throat</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Cough with eating (during or soon after meals)</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Cough with certain foods</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Cough when you get out of bed in the morning</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Cough brought on by singing or speaking (for example, on the telephone)</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>Coughing more when awake rather than asleep</td>
<td>0 1 2 3 4 5</td>
</tr>
<tr>
<td>A strange taste in your mouth</td>
<td>0 1 2 3 4 5</td>
</tr>
</tbody>
</table>

TOTAL SCORE________________ /70

International Society for the Study of Cough
http://www.issc.info/HullCoughHypersensitivityQuestionnaire.html
References


Classification of Cough as a Symptom in Adults and Management Algorithms CHEST Guideline and Expert Panel Report Richard S. Irwin, MD, Master FCCP; Cynthia L. French, PhD, RN, ANP-BC, FCCP; Anne B. Chang, MBBS, PhD, MPH; Kenneth W. Altman, MD, PhD; on behalf of the CHEST Expert Cough Panel* CHEST 2018; 153(1):196-209

Chronic Cough Due to Nonasthmatic Eosinophilic Bronchitis ACCP Evidence-Based Clinical Practice Guidelines Christopher E. Brightling, MBBS, PhD, FCCP. CHEST 2006; 129:1165–121S


For information on PPI doses within this guideline https://www.nice.org.uk/guidance/cg184/chapter/appendix-a-dosage-information-on-proton-pump-inhibitors