Cough in Adults


Patient presents with cough

History

Refer to the Hertfordshire Stop Smoking service as Required
http://www.enhertsccg.nhs.uk/

Indications for emergency referral

Consider if chest x-ray indicated

≥40 and HISTORY of SMOKING/ASBESTOS - indications for urgent (within 2 weeks) CXR

≥40 with NO HISTORY of SMOKING/ASBESTOS - indications for urgent (within 2 weeks) CXR

If no red flags but cough has lasted more than 3 weeks order CXR

Cough <3 weeks and spuutm, wheeze, dyspnoea, pleuritic pain, focal chest signs, fevers, myalgia, temp >38

Other investigations

Review CXR and act accordingly

Is history is consistent with respiratory tract infection prior to the cough?

Post-Infectious cough

Other causes - allergen or irritant exposure - manage

Patients with no respiratory tract infection prior to cough
Go to >8 week pathway

Is it history consistent with respiratory tract infection prior to the cough?

Patient has a cough for <3 weeks
Simple upper respiratory tract infection on examination

Listen to chest x-ray

Consider treatment for simple URTI

Patient has a cough for >8 weeks

Likely chest infection

Wheeze, sputum, dyspnoea, pleuritic pain, focal chest signs sweats, fevers, myalgia, Temperature >38

Treat as acute bronchitis

Wheeze without other symptoms or signs
Consider chest x-ray (as above)

Treat as Community Acquired Pneumonia

Possible serious disease - follow appropriate care map
• COPD
• lung cancer
• TB
• pneumonia – offer antibiotics

See pathway Community Acquired Pneumonia – Suspected
(under development)

See pathway Community Acquired Pneumonia - Primary Care
(under development)

See pathway Diagnosing COPD:
http://www.enhertsccg.nhs.uk/

See pathway Asthma in Adults – Suspected
(under development)

New onset or exacerbation of pre-existing condition

Other causes - allergen or irritant exposure - manage

Pertusis – offer antibiotics during the initial phase

See pathway Pertusis – offer antibiotics during the initial phase

Patient has a cough for 3-8 weeks

Subacute cough

See pathway Community Acquired Pneumonia
–Primary Care
(under development)

See pathway Community Acquired Pneumonia – Suspected
(under development)

See pathway Asthma in Adults – Suspected
(under development)

See pathway Pertusis – offer antibiotics during the initial phase

Patients with no respiratory tract infection prior to cough
Go to >8 week pathway

See pathway Pertusis – offer antibiotics during the initial phase
Points to consider in history taking include:

- age
- occupational history
- smoking history
- duration and onset of cough:
  - whether sudden or gradual
  - whether coughing began after an URTI
- whether cough is dry or productive – significant sputum production is usually a sign of primary pulmonary pathology
- diurnal variation of cough:
  - cough that abates overnight may be due to reflux
  - cough that wakes patient may be due to asthma, infection, or heart failure
- whether severe coughing spasms are present:
  - may be associated with syncope
  - people at risk of syncope should not drive
- whether stress incontinence is present – may be a major concern in women
- cough triggers:
  - abnormally sensitive cough reflex is suggested by cough triggered by change in air temperature, scent, aerosols, or exercise
  - reflux cough is suggested by cough on eating or postprandially, or on phonation
  - change in voice may indicate vocal cord palsy
- acute cough with increasing breathlessness should be assessed for asthma or anaphylaxis
- acute cough with any of the following should be assessed for possible serious acute lung infection:
  - fever
  - malaise
  - purulent sputum
- history of recent infection
- medication history – cough may take several months to resolve after withdrawal of ACE inhibitors
- thorough medical history:
  - cough in COPD is usually associated with phlegm production and breathlessness
  - bronchiectasis – usually associated with sputum production, but ‘dry’ bronchiectasis can cause persistent cough
  - Lung cancer, or treatment for it, can cause cough
  - persistent pertussis infection can cause chronic cough
  - atopic disease – can cause respiratory symptoms
  - heart disease can lead to chronic cough and risk of MI
  - organ-specific auto-immunity has been found to have an association with chronic cough
  - ‘honking’ cough that disappears with sleep may be psychogenic or habit cough
  - symptoms of post-nasal drip may only reflect co-existent rhinitis – absence of dyspepsia does not exclude reflux as cause of cough

Ask about occupational and environmental causes of cough.
Examination

Examination should pay particular attention to the:

• chest
• heart
• pharynx
• nose
• ears

For acute cough
Physical findings on chest examination that are common in pneumonia include:

• dullness on percussion
• bronchial breathing
• crackles on auscultation

At the outset of the common cold, the following may be present:

• clinical evidence of a rhinitis and pharyngitis
• serious otitis on inspection of the ears

For chronic cough:

• concentrate on the afferent sites of the vagus nerve most commonly associated with the irritation leading to chronic cough
• ENT examination may reveal:
  • evidence of nasal obstruction
  • secretions draining in the posterior pharynx
  • tonsillar enlargement – tonsillectomy can improve cough reflex sensitivity
• chest auscultation may reveal:
  • coarse crackles in patient with bronchiectasis
  • widespread fine late inspiratory crackles in diffuse parenchymal lung disease
  • finger clubbing in a smoker with pleural effusion or lobar collapse usually suggests diagnosis of bronchogenic carcinoma
• if patient has family history of chronic cough, perform neurological examination of the legs for signs of familial neuropathy
Indications for emergency referral

Arrange emergency admission for patients with:
- suspected pulmonary embolism
- suspected pneumothorax or aspiration
- signs or symptoms of serious illness, including:
  - respiratory rate greater than 30 breaths per minute
  - tachycardia greater than 130 beats per minute
  - systolic BP less than 90mmHg, or diastolic BP less than 60mmHg, unless this is normal for the patient
  - oxygen saturation less than 92% or central cyanosis, unless the patient has a history of chronic hypoxia
  - peak expiratory flow less than 33% of predicted
  - altered conscious level
  - use of accessory muscles
  - signs of exhaustion

Arrange emergency admission or urgent referral using clinical judgement for patients with suspected foreign body (FB) aspiration:
- suggested by:
  - sudden-onset cough
  - stridor
  - reduced chest wall movement on the affected side
  - bronchial breathing
  - reduced breath sounds
- urgent bronchoscopy should be carried out if an inhaled FB is suspected
- suspicion of inhaled foreign body
≥40 with NO HISTORY of SMOKING/ASBESTOS - indications for urgent (within 2 weeks) CXR

Offer an urgent CXR (to be performed within 2 weeks) to assess for lung cancer in people aged ≥ 40 if they have 2 or more of the following unexplained symptoms:

- cough
- fatigue
- shortness of breath
- chest pain
- weight loss
- appetite loss

Consider an urgent chest x-ray (to be performed within 2 weeks) to assess for lung cancer in people aged 40 and over with any of the following:

- persistent or recurrent chest infection
- finger clubbing
- supraclavicular lymphadenopathy or persistent cervical lymphadenopathy
- chest signs consistent with lung cancer
≥40 and HISTORY of SMOKING/ ASBESTOS - indications for urgent (within 2 weeks) CXR

Offer an urgent CXR (to be performed within 2 weeks) to assess for lung cancer in people aged ≥ 40 if they have 1 or more of the following unexplained symptoms:

- cough
- fatigue
- shortness of breath
- chest pain
- weight loss
- appetite loss

Consider an urgent CXR (to be performed within 2 weeks) to assess for lung cancer in people aged ≥ 40 with any of the following:

- persistent or recurrent chest infection
- finger clubbing
- supraclavicular lymphadenopathy or persistent cervical lymphadenopathy
- chest signs consistent with lung cancer
- thrombocytosis
Cough <3 weeks and sputum, wheeze, dyspnoea, pleuritic pain, focal chest signs, fevers, myalgia, temp >38

If cough <3 weeks and any of:
- sputum,
- wheeze,
- dyspnoea,
- pleuritic pain,
- focal chest signs,
- fevers,
- myalgia,
- temp >38
- sweats

Order CXR
Other Investigations

Consider:
- pulse oximetry
- in acutely unwell patients
- peak expiratory flow rate
- if asthma is known or suspected
- pertussis serology:
- if whooping cough is suspected

If cough > 8 weeks (chronic cough):
- spirometry is mandatory
- refer for rigid bronchoscopy if inhaled foreign body (FB) is suspected - even if x-ray normal

NB: Unexplained (idiopathic) cough:
- BTS guidelines recommend this is only diagnosed after assessment at a specialist cough clinic
- American College of Chest Physicians (ACCP) guidelines recommend this should not be diagnosed until:
  - thorough diagnostic evaluation has been performed
  - specific, appropriate treatment has failed
  - uncommon causes have been excluded – these include:
    - pulmonary disorders
    - airway stenosis/strictures
    - connective tissue disorders
    - vasculitides
    - oesophageal disorders
    - inflammatory bowel diseases
    - thyroid disorders
- Failsafe: if cough persists after consideration of the most common causes, consider CT scan and consider referral (bronchoscopy and other investigations may be necessary even if CT is normal)
Patient has a cough for > 8 weeks (chronic persistent cough)

- Chronic cough lasting for > 8 weeks is common in the community. Chronic cough is reported by 10-20% of adults
- Risk factors include atopy and smoking. Cough may be work-related and a thorough occupation history is very important in assessment
- Most cases reflect the presence of an aggravant (asthma, drugs, environmental, gastro-oesophageal reflux, upper airway pathology) in a susceptible individual

Common causes
- Smoking (active or passive)
- Asthma (and its variants, i.e. cough variant asthma, eosinophilic bronchitis)
- COPD
- GORD
- Postnasal drip
- Environmental pollution
- ACE inhibitors
- Occupational exposure to irritants
- Whooping cough - in young adults

Less common causes
- Cardiovascular - left ventricular failure, pulmonary emboli, aortic aneurysm
- Chronic infections - bronchiectasis, tuberculosis, cystic fibrosis, lung abscess
- Postinfectious cough - may be more likely following infection with *Mycoplasma pneumoniae*, chlamydial pneumonia and whooping cough
- Parenchymal lung diseases - interstitial lung fibrosis, emphysema, sarcoidosis
- Tumours - lung cancer, metastatic carcinoma, lymphoma, mediastinal tumours, benign tumours
- Upper airway conditions (other than chronic rhinitis, above) - chronic tonsil enlargement, obstructive sleep apnoea, chronic snoring, irritation of external auditory meatus. Laryngeal problems are increasingly recognised as being part of chronic cough
- Foreign body in large airways - recurrent aspiration, inhaled foreign body, endobronchial sutures
- Rarely, cough may be due to cardiac arrhythmias
- Cough only when supine - may be due to collapse of large airways
- Diffuse panbronchiolitis - a recognised cause in Japan, responds to low-dose macrolide antibiotics (but resistant to steroids).
- Chronic cough may be a presentation of a complex involuntary tic (e.g. as sometimes seen in Tourettes Syndrome)
- Idiopathic or psychogenic - a diagnosis of exclusion
Patient has a cough for < 3 weeks (acute self-limiting cough)

Acute cough is most commonly due to an acute respiratory tract infection. Other considerations include an acute exacerbation of underlying chronic pulmonary disease, pneumonia, and pulmonary embolism.

In absence of significant co-morbidity, an acute cough is normally benign and self-limiting.

Indications for further investigations include haemoptysis, prominent systemic illness, suspicion of inhaled foreign body, suspicion of lung cancer:

- if CXR is normal, consider the following diagnoses:
  - viral respiratory tract infection, e.g. influenza
  - bacterial infection, i.e. acute bronchitis
  - inhaled FB
  - inhaled toxic fume
**Treat as acute bronchitis**

An aim of treatment is to ease symptoms whilst the immune system clears the infection. The most useful treatments are:
- Taking paracetamol, ibuprofen, or aspirin to reduce high temperature (fever) and to ease any aches, pains and headaches
- Ensuring sufficient hydration if presenting with a fever
- Stop smoking. Bronchitis, chest infections and serious lung diseases are more common in smokers

The use of over the counter cough and cold remedies

There is little evidence of any impact on the infection but they may be useful for certain symptoms. For example, a decongestant nasal spray may help to clear a blocked nose

Remind the patient that cold and cough remedies often contain several ingredients, which may cause drowsiness. Some contain paracetamol, so the patient must be careful not to take over the maximum safe dose if already taking paracetamol tablets
Patient has a cough for 3-8 weeks (subacute cough)

- the American College of Chest Physicians (ACCP) defines subacute cough as one that lasts 3-8 weeks
- the BTS notes that this 'grey area' is difficult to define aetiologically, and that an URTI that lasts > 3 weeks is usually described as postviral cough
- Following specific infections (e.g., M. pneumoniae), an increase in bronchial hyper-responsiveness may persist, which can cause or maintain subacute cough that can remain bothersome for a period of weeks even after the inciting infection has completely resolved
**Post-infectious cough**

- subacute cough frequently starts with an acute RTI, but lingers on and typically falls into the category of post-infectious cough
- cough in many of these cases is probably due to:
  - persistent postnasal drip
  - upper airway irritation
  - mucous accumulation due to hypersecretion or decrease clearance
  - manifestation of bronchial hyperresponsiveness – either transient or associated with exacerbation of asthma
- consider ongoing allergen or irritant exposure, or lingering effects of infection, e.g. pertussis, as well as pneumonia or acute exacerbation of chronic bronchitis
New onset or exacerbation of pre-existing condition

Cough may reflect new onset or exacerbation of pre-existing condition, e.g.:
- postnasal drip – in the presence of prominent upper airway symptoms, consider 1 month trial of topical corticosteroid
- bronchitis – offer antibiotics for acute exacerbation of chronic bronchitis if bacterial infection is thought to be present. See link to antimicrobial guidelines: http://www.enhertscgp.nhs.uk/infections
- asthma
- GORD
Information for patients

Cough leaflet from Patient Info: http://patient.info/health/cough-leaflet


'The Active Cycle of Breathing Technique' (ACBT) YouTube video: https://www.youtube.com/watch?v=_n0nuy8VWml

'Cough' from NHS Choices: http://www.nhs.uk/Conditions/Cough/Pages/Introduction.aspx
**LEICESTER COUGH QUESTIONNAIRE-acute (LCQ-acute)**

This questionnaire is designed to assess the impact of cough on various aspects of your life. Read each question carefully and answer by CIRCLING the response that best applies to you. Please answer ALL questions, as honestly as you can.

1. In the last 24-hours, have you had chest or stomach pains as a result of your cough?  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

2. In the last 24-hours, have you been bothered by sputum (phlegm) production when you cough?  
   - Every time  
   - Most times  
   - Several times  
   - Sometimes  
   - Occasionally  
   - Rarely  
   - Never

3. In the last 24-hours, have you been tired because of your cough?  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

4. In the last 24-hours, have you felt in control of your cough?  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

5. How often during the last 24-hours have you felt embarrassed by your coughing?  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

6. In the last 24-hours, my cough has made me feel anxious  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

7. In the last 24-hours, my cough has interfered with my job, or other daily tasks  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

8. In the last 24-hours, I felt that my cough interfered with the overall enjoyment of my life  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

9. In the last 2 weeks, exposure to paints or fumes has made me cough  
   - All of the time  
   - Most of the time  
   - A good bit of the time  
   - Some of the time  
   - A little of the time  
   - Hardly any of the time  
   - None of the time

10. In the last 24-hours, has your cough disturbed your sleep?  
    - All the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

11. In the last 24-hours, how many times have you had coughing bouts?  
    - All the time (continuously)  
    - Most times during the day  
    - Several times during the day  
    - Some times during the day  
    - Occasionally through the day  
    - Rarely  
    - None

12. In the last 24-hours, my cough has made me feel frustrated  
    - All the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

13. In the last 24-hours, my cough has made me feel sad  
    - All the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

14. In the last 24-hours, have you suffered from a hoarse voice as a result of your cough?  
    - All the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

15. In the last 24-hours, have you had a lot of energy?  
    - All of the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

16. In the last 24-hours, have you worried that your cough may indicate a serious illness?  
    - All of the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

17. In the last 24-hours, have you been concerned that other people think something is wrong with you, because of your cough?  
    - All of the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

18. In the last 24-hours, my cough has interrupted conversation or telephone calls  
    - All the time  
    - Most of the time  
    - A good bit of the time  
    - Some of the time  
    - A little of the time  
    - Hardly any of the time  
    - None of the time

19. In the last 24-hours, I feel that my cough has annoyed my partner, family or friends  
    - Every time I cough  
    - Most times when I cough  
    - Several times when I cough  
    - Some times when I cough  
    - Occasionally when I cough  
    - Rarely  
    - Never

Thank you for completing this questionnaire.

**LCQ Scoring**

1. **Domains (questions):**  
   - Physical: 1,2,3,9,10,11,14,15  
   - Psychological: 4,5,6,12,13,16,17  
   - Social: 7,8,18,19

2. **Domain Scores:** Total score from items in domain / number of items in domain (range 1-7)

3. **Total Scores:** Addition of domain scores (range 3-21)