An adult with the symptom of breathlessness comes to you for help...

The Health Foundation
Inspiring Improvement

Acute breathlessness assessment

Are you with the patient?

- No → **Is the patient on the phone?**
  - Yes → If you and the patient are familiar with working together then proceed to assess by phone - if in doubt however arrange to see the patient → **Do you have access to their notes?**
  - No → Consider contacting patient's Named GP to discuss or to get a patient summary
- Yes → **Do you have access to their notes?**
  - Yes → Refer to them
  - No → Consider contacting patient's Named GP to discuss or to get a patient summary

Click to view checklist

Should the patient be admitted?

- Yes → Admit
- No → **Do you suspect they still require acute therapy in the community?**
  - Yes → Depending on readings, follow NICE guideline (Click to view notes)
  - No → **Does the patient already have a firm diagnosis?**
    - Yes → Depending on readings, follow NICE guideline (Click to view notes)
    - No → **Chronic breathlessness assessment**

Click to view notes — Taking a good history is the next and most important thing you can do

Click to view notes — Continue to use clinical examination to guide your reasoning: Look and listen to the patient and measure vital signs if not already performed

Click to view notes — Code the symptom(s) to enable breathlessness register development

Does the patient already have a diagnosis to explain their chronic breathlessness?

- Yes → Consider a number of questions (Click to view notes)
- No → **Is there a single high probability cause evident?**
  - Yes → Give and explain the diagnosis (Click to view notes)
  - No → Consider how anxious or depressed the person is and aim to find out whether the physical problem is causing the anxiety, or if other life circumstances are the cause, or a combination of both

Give and explain the diagnosis (Click to view notes)

- Offer appropriate written advice (Click to view notes) → If diagnosis is evident, and has been explained to patient, start treatment (Click to view notes)

Should further tests be carried out to confirm a diagnosis or to provide further information? Only order the test if you would act upon the results (Click to view notes)

Depending on your plan following the consultation (follow-up appointment after tests, referral etc), consider categorising severity of the patient's breathlessness using a validated scale

If you suspect COPD
use MRC Breathlessness Scale

If you suspect heart failure
use NYHA classification

Does the patient need to be seen again before making a diagnosis?

- No → Give and explain the diagnosis (Click to view notes) → Offer appropriate written advice (Click to view notes) → If diagnosis is evident, and has been explained to patient, start treatment (Click to view notes)
- Yes → By GP. Decide what tests need to be complete and consider booking the appointment for the patient directly. If they do not attend, consider if the patient is high risk, and if they are, contact the patient to follow up
  - Give and explain the diagnosis (Click to view notes) → Offer appropriate written advice (Click to view notes) → If diagnosis is evident, and has been explained to patient, start treatment (Click to view notes)
- Yes → By Specialist. Refer, following NICE guidelines for urgency or, if none available by your assessment of risk of premature mortality (Click to view notes)

Does the patient have a progressive or life-shortening condition that would benefit from advance care planning discussions and treatment escalation planning?

- No → Continue management of condition
- Yes → Work with the patient to produce an advance care plan and appropriate treatment escalation plan

IMPRESS Improving and Integrating Respiratory Services
LSE Department of Management
For IMPRESS Breathlessness TIPs for clinicians, patients, commissioners and researchers, and breathlessness prevalence modelling: http://www.impressresp.com/

Checklist

Back

Should the patient be admitted?

Check blood pressure	Relative hypotension for that patient or values < 90/60 (know normal BP for that patient).
Measure oxygen saturation and pulse using a digital pulse oximeter whilst manually confirming the rate and rhythm	Oxygen saturation on air is less than 92%. Pulse rate < 60 beats per minute (bradycardia) or > 100 per minute (tachycardia) or if the rhythm is rapid and irregular.
Measure Peak Expiratory Flow (PEF) using a peak flow meter	All people with a life-threatening asthma exacerbation (peak expiratory flow (PEF) usually < 33% best or predicted and/or oxygen saturation < 92%). People with a severe asthma exacerbation (PEF usually 33–50% best or predicted) who do not rapidly respond to initial treatment or who have a factor that warrants a lower threshold for admission. People with a moderate asthma exacerbation (PEF usually > 50% best or predicted) who have a factor that warrants a lower threshold for admission. **See NICE for list**.
Admit if criteria are reached	If respiratory rate is above 30 breaths per minute. New confusion, increased confusion or increased drowsiness, either observed or reported by carers. Central chest pain. Suspected unstable arrhythmia. Stridor and breathing effort without air movement (suspect upper airway obstruction). Unilateral tracheal deviation, unilateral breath sounds. (suspect tension pneumothorax).

Links to NICE guidance

COPD: http://cks.nice.org.uk/chronic-obstructive-pulmonary-disease
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Notes

Back

Does patient already have a firm diagnosis?

- **COPD exacerbation:** see NICE.
- **Heart failure:** modify treatment involving specialist heart failure teams where helpful. If history of MI refer immediately to heart failure specialist.
- **Asthma:** see NICE.
- **Consider pulmonary embolism** as a cause of otherwise unexplained recent onset breathlessness and refer for urgent ie same day assessment in hospital.
- **Use your consultation skills** to work with the patient to run through their anxiety management and breathlessness control techniques. Ideally, if the patient's breathlessness is severe, they should have seen, or be referred to a physiotherapist or psychologist to teach them these techniques.

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Notes

Back

Take a good history

This sequence will be governed to some extent by how much you know the patient and/or their family: tailor it to the individual.

Take a detailed history to start ruling out/in common physical causes: COPD, asthma, heart failure, anaemia, obesity, anxiety and to narrow down your hypothesis.

Ask about their current and past smoking history and calculate pack years.

Ask about their alcohol use and concerns.

Assess how anxious the person is using a validated tool and how much this is affecting their breathing. Short mental health questionnaires validated for use in practice include PHQ4.

Use a mix of open and closed questions to ask about the impact of breathlessness "How does your breathing/ breathlessness make you feel?" "Has your breathlessness been frightening to you or your family?" "Tell me how your breathing is affecting your life? How do your family respond when you are breathless?"

Ask about physical activity: use the GPPAQ or ask "Physical activity can be more difficult for people with breathlessness but in the longer term can help to improve breathing symptoms. Can I ask what sorts of physical activity you are currently able to do?" A change in activity over time is helpful: "How far can you walk....how far could you walk 6 months ago/12 months ago... What stops you now?" or "Do you have to stop for a breather?"

Make sure you have established the patient's (and carer's) ideas, concerns and expectations about the consultation and their condition.

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Notes

Back

Look and listen

Assess general condition and appearance of patient. Do they appear anxious, tense, are they pale or clammy? Are they chatting normally? Look carefully at their hands (nicotine stains, anaemia, clubbing for example).

Consider these if not already done as part of the decision whether to admit:

- Measure pulse rate and rhythm/regularity (over 15 seconds) and if irregular, at the apex.
- Assess respiratory rate (over 30 seconds).
- Observe breathing pattern including use of accessory muscles.
- Assess airway patency and listen to the patient's lungs.
- Check if they have raised jugular venous pressure (JVP).
- See if they have ankle oedema and also extensive oedema.
- Measure their blood pressure: it is useful in chronic disease as may be affected by medication(s).
- Listen carefully for murmurs eg an aortic murmur, in the case of aortic stenosis, especially in an older patient.
- Take their temperature (only if you think necessary).
- Measure BMI: divide weight in kilograms by the square of their height in meters.
- Measure Peak Expiratory Flow (PEF) and % predicted (for age, sex and height).
- If tachypnoea is present but other measures are within normal limits observe their breathing pattern and consider reflecting this back to them to see if they are aware of what you have recorded and if they have any thoughts about what might be driving it.

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Notes

Back

Code the symptom

In general practice this can be entered as a Read code (symptom) until you are sure of your diagnosis. We suggest parent code **173**.

An alternative is to use a "suspected" code, or just a breathlessness score. After the principal diagnosis is made ensure that at subsequent visits additional causes of breathlessness are also considered.

When working in other settings it is very important to code similarly.

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Notes

Back

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Things to consider

Is this still the most likely diagnosis?
If **no**, review history and vital signs.
If **yes**, is the treatment right and is it being taken in the right way?

What does the patient believe is the cause of their breathlessness?

Is the patient still smoking? Could they have relapsed after stopping smoking? Explore in non-judgmental way and consider measuring carbon monoxide level.

What medicines does the patient take for their condition, and how do they take them? Do they have any concerns – such as inhaled steroid use – which may influence their adherence?

Is the prescription being dispensed? What over-the-counter medicine are they taking?

Explain to the patient what the medicines that are prescribed are for and why the treatments are needed to be taken on the days prescribed not just when the patient has symptoms to increase understanding of the necessity of treatment. If the person uses an inhaler, explain why correct technique is important.

Could there be an additional diagnosis? Remember both left and right heart failure are common in patients with chronic pulmonary disease and the presence of one increases the likelihood of a second, and the morbidity and mortality associated with either.

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Notes

Back

Giving the diagnosis

When giving the diagnosis address these five components (Leventhal), based on the patient's understanding, ideas and expectations:

- What is it?
- How long will it, and the treatment last?
  What treatment options are there?
- What caused it?
- What will happen now and in the future?
- Can it be cured or controlled?

Link to references

http:/www.impressresp.com

Notes

Back

Providing the right information

Provide information appropriate to the person's reading age and learning style.

Consider if the patient would prefer to read, listen or watch a film about their condition; all three types of information are now readily available.

Useful sites commonly used by GPs:

Patient.co.uk http://www.patient.co.uk/

NHS Choices http://www.nhs.uk/Pages/HomePage.aspx

Specific links:

Anxiety and breathlessness leaflet from Kings Health Partners here

COPD leaflet here

COPD pictorial advice here

Heart failure leaflet here

Asthma leaflet here

Asthma pictorial advice here

The Association of Chartered Physiotherapists in Respiratory Care have several leaflets on positions, breathing exercises, energy conservation, Buteyko breathing technique, active cycle of breathing techniques and glossopharyngeal breathing here

A group of physiotherapists with an interest in hyperventilation has produced a useful guide to breathing control here

IMPRESS resources:

IMPRESS Breathlessness IMPRESS Tips (BITs) for patients here

Notes

Back

Testing for confirmation of diagnosis

Routine blood tests should include electrolytes, urea and creatinine, estimated glomerular filtration rate (eGFR), thyroid function tests, liver function tests, fasting lipids if cholesterol not previously checked, fasting glucose, HbA1c, full blood count to check for anaemia, serum bicarbonate to pick up chronic respiratory failure and urinalysis.

Microspirometry. Perform the test with the patient sitting. Measure FEV1. Take a low measured % predicted FEV1 seriously in all patients – in patients with respiratory disease it is a direct measure of severity and in patients with cardiac disease it is a predictor of mortality You may need to repeat eg to measure steroid reversibility.

Peak Expiratory Flow (PEF). Where possible, the patient should be standing, but if they are unwell it is much better to do the test sitting than not to do it. Use % predicted unless you are sure that the patient's "best" is without symptoms. Patient should continue to measure PEF twice a day for two weeks so prescribe a peak flow meter. Remember peak flow can be modified by acute heart failure, as can FEV1/FVC ratios.

Carbon monoxide monitor. Breath test for inhaled tobacco smoke.

Serial peak expiratory flow (PEF) readings or spirometry (learn more here) that will identify variable airway obstruction and spirometry may show evidence of obstructive or restrictive lung disease.

ECG may reveal abnormal heart rate or rhythm. There may be evidence of ischaemic changes, ventricular hypertrophy or pericardial disease. Heart failure is less likely in the presence of a normal ECG but can occur. Patients may have an abnormal ECG indicating a previous MI without any history and this is a more common finding in the older patient and in people with diabetes.

Natriuretic peptides. If you suspect new heart failure and there is a history of MI refer immediately to a rapid access diagnostic HF clinic (one stop cardiologist and echocardiography).

If there is no history of MI but heart failure is possible then follow the NICE guidance: measure serum natriuretic peptides (B-type natriuretic peptide [BNP] or N-terminal pro-B-type natriuretic peptide [NTproBNP]):

If BNP <100 pg/ml or NTproBNP <400 pg/ml, heart failure is unlikely in an untreated patient: consider another cause for breathlessness.

If the natriuretic peptide is above these levels then refer immediately to the rapid access HF clinic (transthoracic Doppler 2D echocardiography and specialist cardiology assessment) quoting the natriuretic peptide level:

- People with suspected heart failure and a very raised BNP level above 400 pg/ml (116 pmol/litre) or an NTproBNP level above 2000 pg/ml (236 pmol/litre) should be seen within 2 weeks because they are at high risk of hospitalisation and have higher mortality rates. Remember the higher the level the greater the risk. If you are concerned speak to the local heart failure lead and ensure this happens as soon as possible.

- People with suspected heart failure and a raised BNP 100-400 pg/ml or NTproBNP 400-2000 pg/ml should be seen within 6 weeks, unless there is additional clinical concern, when they should be seen earlier: please then discuss with the heart failure lead.

For more information about all the recommendations for the diagnosis of chronic heart failure see pages 4 and 5 of the quick reference guide and slide 17 here.

Chest x-ray (CXR) that may reveal chest wall abnormalities, evidence of pleural disease, neoplastic lesions, consolidation, interstitial lung disease, cardiomegaly or cardiac failure as well as sometimes unexpected problems like pneumothorax.

Neck circumference, a measure of cardiometabolic risk because unlike BMI it measures body fat. Ask the patient to stand and to look straight ahead. Place flexible tape measure around their neck at right angles to the spine just below their "Adam's apple". Be guided by local guidance on normal and at risk ranges that reflect local demography.

Waist circumference if manageable. Ask the patient to stand and look straight ahead. Place a flexible tape measure around their waist at the level of their belly button. Be guided by local guidance on normal and at risk ranges that reflect local demography.

Notes Back

Treatment options

Depending on the patient's history, physical and mental health assessment and chronicity decide on one of these options:

- **Start treatment or refer to a treatment service eg breathing training provided by respiratory physiotherapists.**
- **Treat as part of the diagnosis.** For example, start a course of medicines eg oral corticosteroids +/- antibiotics if you think it is an exacerbation of COPD (AECOPD), then arrange a review at a specified time after the course of medicine and when test results are received.
- **Carry out further tests before starting treatment**.

Follow NICE guidelines and ensure that each of your patients is offered the highest value interventions for their condition and, if appropriate, offered it at every consultation until it is accepted. Value is defined as patient outcomes, divided by the cost of producing those outcomes. IMPRESS has looked at the value of COPD interventions for a population and concluded that investment is justified for supporting stop smoking, increasing physical activity and programmed rehabilitation. Meanwhile, there is scope to reduce waste in prescribing. The interventions that need to be considered for people with breathlessness include influenza vaccination, stop smoking support, weight management, physical activity, cardiac and pulmonary rehabilitation programmes, anxiety management, prescribed medicines, checking inhaler technique and oxygen (for hypoxia only and after assessment by a HOSAR service). Give information about the effects of hot and cold weather and air quality on breathing, the importance of keeping the temperature warm enough in their homes, and if appropriate, refer to the local authority Warm Homes scheme.

Personalised management plan
Offer the patient a personalised management plan guided by local protocols which will summarise the interventions that you have agreed and provide guidance on how to access advice, contact details for the main healthcare professional contact and details of follow-up arrangements.

Behavioural interventions
In addition to smoking and alcohol, don't be afraid to address issues such as obesity and general levels of fitness. Patients who are breathless will benefit from you offering psychological interventions to help them change the behaviours causing or aggravating their breathlessness (eg smoking, weight management, incorrect inhaler use, lack of physical activity, dysfunctional breathing). We do not yet know which psychological interventions work best for which conditions, therefore use the psychological intervention that you are most competent in, and consider additional training for you and your team so that you can tailor the psychological intervention to the individual.

Multiple morbidity
It is possible that there may be more than one contributing factor to breathlessness. The patient may have anxiety, COPD and anaemia. The objective of the assessment is to identify the prime cause because it will affect the treatment plan. The consultation itself forms the beginning of talking therapy, if a person is anxious. If you prescribe drugs for each of the contributing factors consider:

- Will you repeat all the prescriptions each time?
- How will you assess the potential benefit of each?
- How will you ever remove any?
- What will you do if the symptoms aren't successfully managed?

For more detail see IMPRESS Breathlessness Implementation Tips for clinicians here

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Notes

Back

Refer to a specialist clinic:

Where this is the NICE guidance eg heart failure one-stop diagnostic clinics, or

If the person would benefit from breathing training that is offered by respiratory physiotherapists, or

If you cannot establish the underlying cause for the patient's breathlessness, or

If the symptoms are disproportionate to the severity of their disease, or

If there is an unexpected response to therapy, including no response to treatment despite maximum therapy, or

If the patient would benefit from multi-disciplinary services not available in primary care (and, ideally, including psychology), or

Where further tests are indicated to stage and treat a diagnosed cause (eg lung cancer), or

Where it is mandated by specialist commissioning specifications in England eg bariatric surgery.

Increased risks of premature mortality:

Note that certain patient groups are at increased risk of premature mortality and may need a different threshold for referral: dependent smokers, those with mental illness, those with learning disabilities and those post-exacerbation.

Ensure that you meet the guidelines for access. For example, the NICE heart failure standard for a patient with heart failure to be seen within two weeks should be taken as seriously as the two week standard for breast cancer.