

Pulmonary Rehabilitation Education Programme

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Contents:

Chapter 1:	Controlling shortness of breath and goal setting	
Chapter 2:	What's gone wrong with my lungs?	
Chapter 3:	Why exercise?	
Chapter 4:	Medication – inhalers and oxygen	
Chapter 5:	Recognising symptoms/exacerbation management and what happens in hospital	
Chapter 6:	Chest clearance	
Chapter 7:	Future planning	
Chapter 8:	Stress management	
Chapter 9:	Energy conservation and ADLs	
Chapter 10:	Diet and nutrition	
Chapter 11:	Benefits advice	
Chapter 12:	What next?	

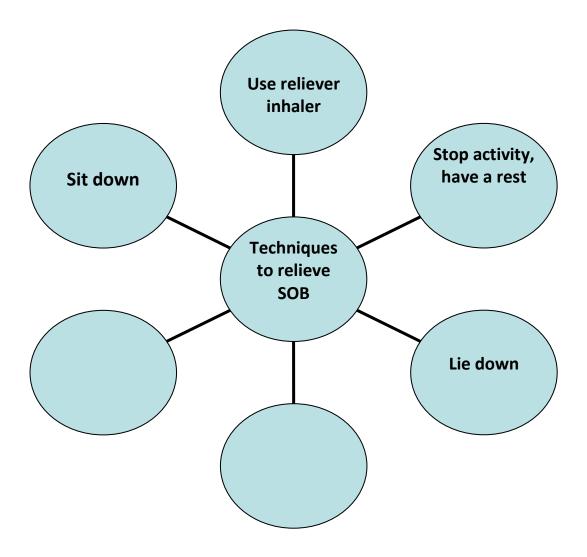
Chapter 1: Controlling shortness of breath and goal setting

How do you relieve your shortness of breath?

People with long-term lung conditions can often feel short of breath (SOB). Often daily tasks such as walking, getting dressed or doing chores around the house can cause this breathlessness. Feeling like you can't catch your breath can make you panic or feel frightened.

Learning to control these feelings of breathlessness is a skill that will help you to be less troubled by this and enable you to do more. When you are feeling breathless, <u>do not panic</u>. Your breathing will settle.

Think about some of the ways you would try to relive that feeling of breathlessness. Add any of your own techniques to the diagram below:



The positions shown below will help you to control your breathing. When you are in any of these positions it is important to relax as best you can.

1. Sitting leaning forward	2. Sitting leaning forward at a table	
3. Sitting upright	4. High side lying	
5. Standing leaning forward	6. Standing leaning back	

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You should continue to do the daily activities that might make you feel breathless. Do not hold your breath when you do any of these tasks as this can make you feel more short of breath. Use the exercises below to help control your breathing when on the go.

Breathing control

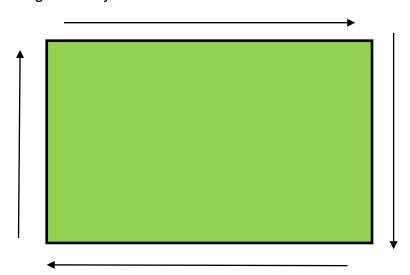
Breathing control is using the least effort to breathe gently. It will help you when feeling short of breath or fearful, anxious or panicked.

How do I do breathing control?

Make sure you are in a comfortable position. For assistance, see previous pictures which may be helpful.

- Breathe in gently through your nose and breathe out through your nose if you can. If this is too difficult, breathe out through your mouth instead.
- Try to let go of any tensions in your body with each breathe out.
- Gradually try to make each breath slower.
- Closing your eyes may help you to focus and relax.
- Do not force your breathing.
- To ensure your breath out is longer than your breath in you can try counting or visualising.
- Count in for 4 as you breathe in; count out for 7 as you breathe out.

Visualising a rectangular can help. Trace your finger up the short side as you breathe in, across the long side as you breathe out.



Relaxed slow deep breathing

Relaxed slow deep breathing is particularly useful when you are active. It should be used before starting an activity that makes you out of breath. It is not a helpful technique if you are already feeling breathless.

How do I do relaxed slow deep breathing?

- Before exerting yourself, slow down your breathing and breathe in more deeply.
- Breathe in through your nose if you can.

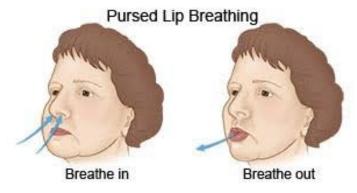
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Pursed lip breathing

This technique can be used whenever you need to help to control your breathing. You can use it whilst doing an activity that makes you short of breath.

How do I do pursed lip breathing?

- Breathe in gently through your nose.
- Purse your lips as though you were going to blow out a candle or blow a whistle.
- Blow out with your lips in this pursed position.
- Try to blow out for as long as is comfortable without forcing your lungs to empty.



Blow-as-you-go

This technique should make tasks easier. It discourages you to hold your breath when completing a task that might be difficult or cause shortness of breath.

How do I do blow-as-you-go?

- Breathe in before making the effort.
- Then breathe out while making the effort.
- For example, when lifting a heavy box, breathe in before you complete the task and breathe out as you lift the box.
- It can be useful to use pursed lips as you blow out.

Paced breathing

This is a useful technique when you are on the go, for example climbing stairs or even walking on the flat. You pace each step to your breathing. This can also be used together with pursed lip breathing and blow-as-you-go.

How do I do paced breathing?

- Count 1 as you step and at the same time breathe in
- Count 2 as you take your next step and breathe out.
- Your counting should be in time with the steps you take.
- The right number for you will depend on lots of different things and will probably differ from the next person.





- For example, breathe in when standing on the stair and breathe out as you go up a stair.
- Or breathe in as you go up one stair and breathe out as you go up another.

It is important to practise these exercises initially when you are not short of breath, so the technique becomes easier and more natural. This means you will find you can use them more readily if you become short of breath.

Goal setting

It is important to set goals so you have something to work towards. This can help to increase your motivation as you have something to work to aim for. Goals should be SMART:

Specific

Measurable

Achievable

Realistic

Time bound Specific Measurable Example of a short-term goal:

I would like to be able to walk to the corner shop to get a paper and back without stopping in 1 months' time.

Achievable / Realistic

Time bound

Example of a long-term goal: Achievable / Realistic Time bound

This time next year I want to be able to play a full round of 18 holes of golf at my local club without needing to use the golf buggy.

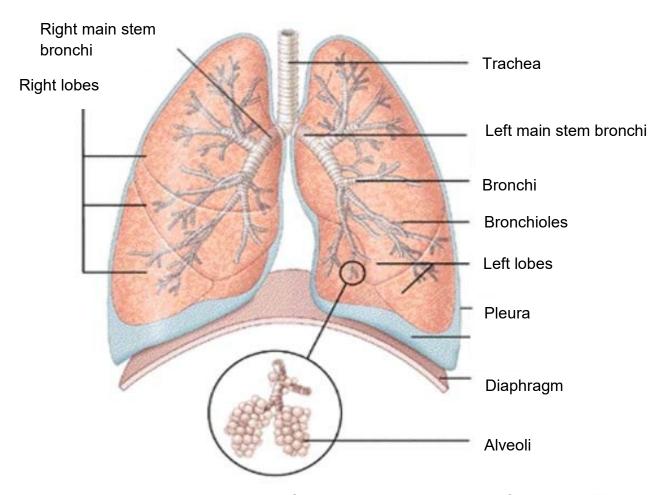
Specific

Measurable

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Chapter 2: What's gone wrong with my lungs?

To know what is not working in lungs that have a chronic condition affecting them, it is first important to know what the mechanisms of normal breathing are.



The <u>trachea</u> is the main airway that you can feel running down the centre of your neck. This splits once inside the lungs into two <u>main stem bronchus</u>. These split further into many <u>bronchi</u>, which further divide into smaller <u>bronchioles</u>. At the end of each bronchiole, there are hundreds of <u>alveoli</u>. These air sacs with a good blood supply allow oxygen to enter the blood and the carbon dioxide to leave in the same way.

You can think of airways as an upside down tree the trachea is the main trunk, all the way to the alveoli at the ends of the branches.

The <u>diaphragm</u> is a muscle that sits under the lungs to help with breathing in and out.

During a breath in (inspiration):

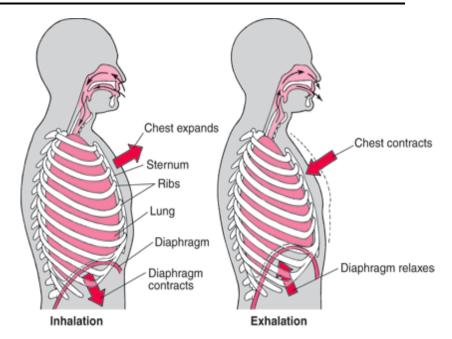
- The diaphragm flattens out and is no longer dome-shaped.
- The rib cage lifts up and out.
- The volume in the lungs increases.
- The pressure in the lungs decreases.

This process of breathing is based on Boyle's Law – 'Air moves from area of high pressure to area of low pressure.' Hence, air is drawn into the lungs.

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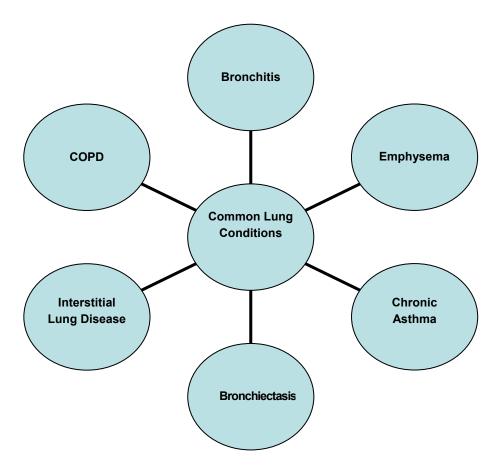
During a breath out (expiration):

- The diaphragm relaxes and returns to a dome-shape.
- The rib cage moves down and in.
- The volume in the lungs decreases.
- The pressure in the lungs increases.
- The strong elastic recoil of the lung tissue forces the air out.



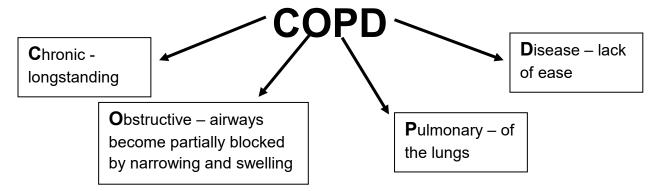
It is completely normal for your lungs to produce a clear substance called mucus. The role of

mucus is to trap dirt or dust particles, which are inhaled. Our larger airways are lined with tiny hair-like structures called cilia. These act as another barrier by trapping any dirt, dust or mucus and wafting it up the airways so it can be coughed out or swallowed.



Chronic Obstructive Pulmonary Disease:

This is an umbrella term for chronic bronchitis and emphysema.



In COPD, the airways can become more swollen and therefore narrower. The air has to push through a narrower space. This is the cause of wheezing and shortness of breath when breathing out. Through the inflammatory process, more mucus is produced and secreted as shown in the picture below. This mucus can obstruct/block the airways further if not cleared effectively.

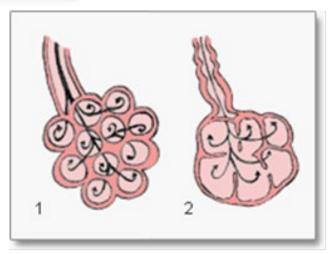
Normal bronchi







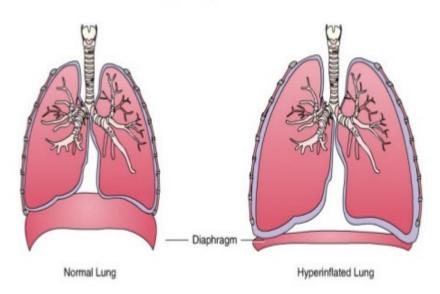
The walls of the alveoli (air sacs) become less elastic and lose their round shape. This loss of shape makes it difficult for the oxygen to get into the blood and the carbon dioxide to move from the blood into the lungs. The airways also become less elastic and close after breathing out. It is then difficult to take a full breath in again as extra effort is needed to open them back up.



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Due to the airway\s being less elastic, when you breathe out, they can collapse too soon trapping air in the alveoli. The lungs then become too big as air continues to be trapped. This is called hyperinflation. Hyper-inflated lungs push the diaphragm flatter so it cannot work as normal. Therefore, the other muscles of breathing have to work harder. As the resting position of the diaphragm is changed, it affects the ability of the lungs to achieve the volume and pressure changes required to breathe efficiently.

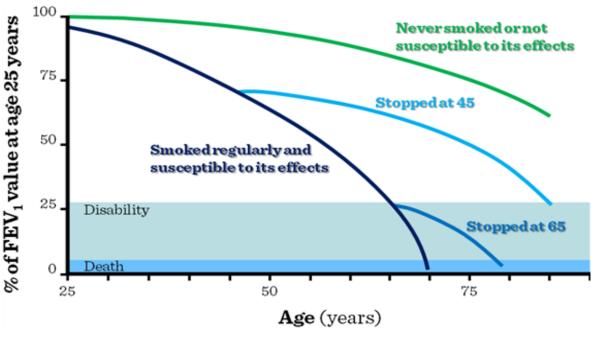
Lung Hyperinflation



How can I help my COPD?

Unfortunately, the damage that has already happened to the lungs/airways in COPD cannot be reversed. There are some things that you can do to help prevent any more damage:

1. Stop smoking – this is the most important thing you can do.



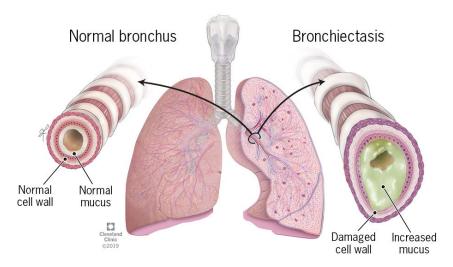
- 2. Treat chest infections early do not ignore the signs of a chest infection.
- 3. Keep healthy eating well and exercising regularly improves the body's ability to fight infections.
- 4. Take your prescribed breathing medications, including inhalers.
- 5. Keeping active the muscles become weaker and deconditioned. It is important to keep active and keep muscles strong to prevent deterioration in function.

Bronchiectasis:

In bronchiectasis, the airways become inflamed and scarred. This can change their shape and cause mucus to collect in pockets. The mucus is likely to become infected if it is not cleared, which leads to further inflammation.

Bronchiectasis could be linked to childhood illnesses, such as TB and whooping cough or a severe infection or pneumonia in adult life. However, in a large proportion of cases, the cause is still unknown.

The cilia (hair-like structures) do not work as effectively at pushing the mucus up the airways. The airways surface liquid can be depleted. This makes it more difficult for the mucus to move in the airways. As the normal muco-ciliary clearance mechanism is affected. This can lead to mucus remaining in the lungs and increase the likelihood of getting a chest infection.



How can I help my bronchiectasis?

- 1. Treat chest infections early do not ignore the signs of a chest infection.
- 2. Chest clearance exercises should be taught by a respiratory physiotherapist and may be practiced daily. This will be covered in Chapter 6.
- 3. Taking prescribed medications. Your doctor may try you on carbocysteine / mucodyne.
- 4. Keeping healthy eating well and exercising regularly improves the body's ability to fight infections.
- Drink plenty of fluids this stops the mucus getting too dry and sticky.

Interstitial Lung Disease:

There are over 200 different types of interstitial lung disease, however not all of these cause pulmonary fibrosis.

In this condition, the lung tissue becomes scarred. This scar tissue is much less stretchy than normal lung tissue so the lungs cannot expand as much. This means that breaths are smaller, lung volumes are reduced and the person can become short of breath very quickly, particularly on exertion. The walls of the alveoli also become scarred and thick, so it is more difficult for oxygen to pass through the walls and into the bloodstream.

In many cases, we do not know what has caused it. A few known causes are inhaled industrial pollutants or dusty substances such as asbestos, some medical treatments such as radiotherapy, or due to another disease such as rheumatoid arthritis.

Carbon dioxide Oxygen Blood vessels Normal lung Blood Alveoli Carbon dioxide Oxygen Scarring (pulmonary fibrosis) Lung with pulmonary fibrosis

How can I help my Interstitial Lung Disease?

- Treat chest infections early do not ignore the signs of a chest infection.
- 2. Take your prescribed breathing medication. Your consultant will advise whether the type of fibrosis you have will respond to medication.
- 3. Oxygen therapy if indicated. This need can be assessed during a pulmonary rehabilitation programme.
- 4. Keeping healthy eating well and exercising regularly improves the body's ability to fight infections.

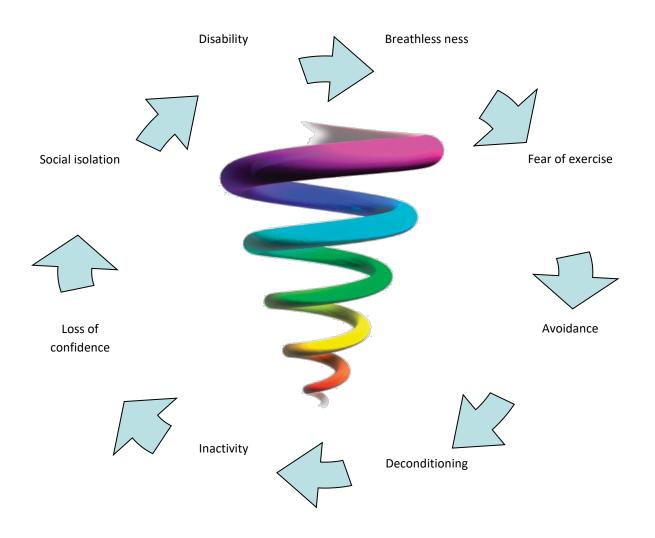
Useful resources:

https://www.asthmaandlung.org.uk/conditions www.actionpf.org

<u>www.smokefreelifeberkshire.com/</u> or Call 0800 622 6360 / 0118 449 2026 https://www.nhs.uk/better-health/quit-smoking

Chapter 3: Why exercise?

Exercise is important to keep the body healthy. When you have a chronic lung condition you may become less active to avoid the frightening sensation of sever breathlessness. This is a natural response, however the more inactive you become, the more your muscles become weaker and you fatigue more easily. This is known as de-conditioning of the muscles. If this downward spiral of inactivity continues, it will lead to a decrease in general fitness and a greater level of breathlessness with less effort. This can result in loss of confidence and social isolation.



If you exercise regularly, the benefits include:

- Reduce the feeling of breathlessness.
- Make your muscles stronger and more efficient.
- Improve balance and co-ordination.
- Reduce anxiety and depression.
- · Increase confidence and motivation.
- · Help to regulate your appetite.
- Improve your sense of well-being.

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- Slow down osteoporosis (weakening of the bones).
- · Improve sleep.
- Decrease high blood pressure.
- Improve flexibility.
- Help to loosen secretions in your airways.
- Improve posture.
- Decrease cholesterol levels.

To achieve improvements in your fitness that can be seen or felt, you need to complete a minimum of 5 sessions per week. Each daily session should be at least 20 minutes in total. This should be continued for a minimum of 6 weeks.

Once the desired level of fitness is established, you can reduce to a less vigorous programme of 3 sessions per week to maintain your current level.

However, if you stop you will return to lower level of fitness you had before quite rapidly.

Useful resources:

https://www.asthmaandlung.org.uk/living-with/keeping-active/physical-activity

Chapter 4: Medication – inhalers and oxygen.

There are different medications available that may be prescribed for you to help manage the symptoms of your respiratory disease. Many of these medicines are administered by inhalers.

Short acting medications (relievers)

(Salbutamol, Ventolin, Salamol, Terbutaline, Bricanyl)

- Tends to be blue in colour.
- It works quickly, within 5 minutes and can last 4-6 hours.
- They work by relaxing the tight muscles around your airways, making them wider so it is easier to breathe.
- It is important to always carry this inhaler with you, including a small spacer device if needed (as shown in the picture).
- Side effects include tremors of hands, palpitations, and a rapid pulse.



Long acting medications

(Tiotropium, Spiriva, Braltus, Eklira, Incruse)

- Tends to be green in colour.
- They last 24 hours so only needs to be taken once a day (Eklira twice a day).
- Side effects include dry mouth and retention of urine.

Combination inhalers

(Spiloto, Annoro, Duaklir)

- These can vary in colour and device.
- They are usually taken once a day (Duaklir twice a day).
- Side effects include dry mouth, palpitations and tremor.

Triple therapy inhalers

(Trelegy, Trimbow)

- These vary in colour and device.
- They are usually taken once a day (Trimbow twice a day).
- Side effects include dry mouth and oral thrush.

Steroid combination inhalers

(Fostair, Relvar, Symbicort, Flutiform)

 These contain a steroid, which helps to reduce the swelling/inflammation in your airways and a long acting medication to relax the airways.



- These will not be prescribed for everyone with respiratory disease but may be beneficial for those who experience many chest infections.
- If using a meter-dose inhaler, always use a spacer device.
- You should always rinse your mouth out after taking this inhaler.
- Side effects include dry, sore mouth and/or throat.

Other medications that may be used include those listed below:

Oral bronchodilators

 Theophylline (examples include Aminophylline, Slo-phyllin) helps to keep the airways open and will be prescribed if you are still experiencing attacks of breathlessness despite taking regular and maximum doses inhalers.

Antibiotics

 Given to treat chest infections. Usually Amoxicillin or Doxycycline. Remember to always finish the course of antibiotics prescribed.

Steroid tablets

- Prescribed for an exacerbation/flare-up of symptoms.
- Usually 30mg (6 tablets) or 40mg (8 tablets) given for 5-7 days.
- Should not be taken on an empty stomach.

Carbocysteine

- Prescribed for people who struggle to clear their mucus because it is of a thick consistency.
- Usually starts with a trial of 2x tablets, 3 x a day for a month. If it is beneficial then can be reduced to 2x tablets, 2x a day.

Anti-fibrotics

- Prescribed to help relieve symptoms felt.
- They will only be used certain types of pulmonary fibrosis as they are not appropriate for all.

Oxygen

- Oxygen levels can be monitored by the use of a pulse oximeter - a small clip device that is placed on your finger to give an instant reading of your oxygen level (as shown in the picture).
- If we have any concerns that your readings are low during your rehabilitation course, we will refer you to the local oxygen assessment team.
- Having home oxygen does not limit your ability to continue doing regular activities.
 - Some tips for travelling with oxygen from asthma & lung UK include:



- Check insurance arrangements for oxygen equipment.
- ❖ Keep helpline numbers for oxygen equipment handy.
- ❖ Take a copy of oxygen prescription & doctor's letters.
- ❖ Always carry a spare battery pack for your portable concentrator in case of delays.
- Charge wherever possible.
- Remember plug adaptors.

Useful resources:

https://www.asthmaandlung.org.uk/symptoms-tests-treatments/treatments/inhaler-choices https://www.asthmaandlunguk.org.uk/symptoms-tests-treatments/treatments/home-oxygen-therapy/life-with#exercise

https://www.asthmaandlunguk.org.uk/living-with/inhaler-videos

Chapter 5: Recognising symptoms/exacerbation management and what happens in hospital

What is an exacerbation?

A worsening of your respiratory condition or symptoms associated with this that lasts more than 48 hours.

What causes an exacerbation?

An exacerbation can be caused by an infection, either by bacterial or by a viral. It can also be caused by a change in the weather or air pollution.

Signs and symptoms:

Your breathlessness gets worse and this goes on for some time without getting better. You cough more.

You produce more sputum than is normal for you.

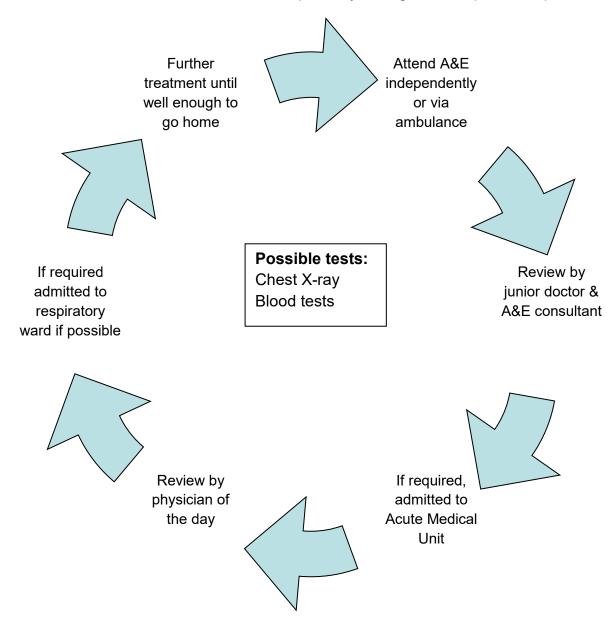
There is a change in the colour and consistency of your sputum from what is normal for you. Call 999 if you're struggling to breath or have sudden onset shortness of breath and:

- Your chest feels tight or heavy.
- You have a pain that spreads to your arms, back, neck or jaw.
- You feel or are being sick.

How can I manage an exacerbation at home?

- **Step 1:** increase your reliever inhaler (you may need to use this every 2-3hours).
- **Step 2:** start the standby antibiotics as prescribed to you by your GP (only if your sputum has changed colour from your normal).
- **Step 3:** start standby oral steroids (6x tablets every morning for 7 days).
- **Step 4:** contact your health professional and tell them when you started your standby medication if you do not feel any better after 2 days.

Below is a flowchart that shows the usual pathway through the hospital for a patient.



Chapter 6: Chest clearance

People with long-term lung conditions such as bronchiectasis and COPD may cough more and produce more mucus than others. It is important that this mucus is cleared out of the lungs to improve ease of breathing, lessen the risk of chest infections and reduce bouts of coughing.

The Active Cycle of Breathing Technique (*ACBT*) is a technique taught by a respiratory physiotherapist to people to help them to clear mucus from their lungs more easily. The ACBT involves breathing control, deep breathing and huffing.

Breathing control:

Breathing control as covered in Chapter 1 is gentle breathing with minimal effort.

- Breathe in through your nose where possible, and then breathe out through your mouth.
- If you cannot breathe through your nose, then breathe in through our mouth and out through our mouth.
- Try to make your breath slow.

It is important to practise breathing control between the more active parts of ACBT to allow your airways to relax.

Deep breathing exercises

Deep breathing is self-explanatory – take a long, slow deep breath in through your nose if you can.

- Breathe in through your nose.
- Hold this breath when your lungs a full for 2-3 seconds.
- Breathe out gently and relaxed.
- You should do 3-5 deep breaths in a cycle.

Huffing

Huffing is an exhalation through an open mouth and throat instead of a cough. It helps to move mucus up your airways so that it can be cleared in a controlled way. To 'huff' you squeeze air quickly from your lungs, out through your open mouth and throat. The best comparison is as if you were trying to mist up a mirror or your glasses. Use your tummy muscles to help you squeeze the air out, but do not force it so much that you cause wheezing or tightness in your chest. Huffing should always be followed by breathing control. There are two types of huff, which help to move mucus from different parts of the lungs.

The small-long huff

This targets the mucus in the lower areas of your chest. Take a **small** breath in and then huff the air out until your lungs for as **long** as you can until they feel quite empty using the technique above.

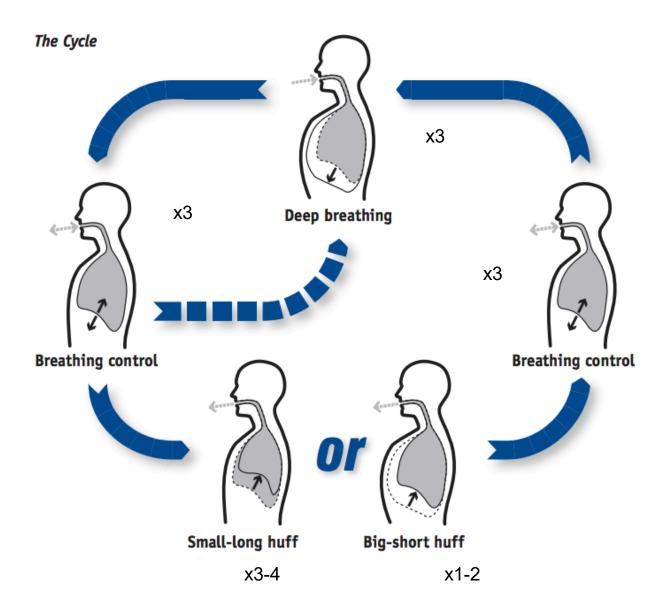
The big-short huff

This targets the mucus higher up in the chest, so use this when the mucus feels ready to be cleared to your throat and swallowed or spat out. Take a **big** breathe in then complete a **short** huff out quickly.

Your huff should move the mucus in your chest by making it 'rattle'. This will mean you are moving the mucus up the airways, it should then clear easily.

If you are wheezing with each huff, you may be huffing too hard or for too long. Make sure you do not huff too hard and always practise some breathing control after huffing to relax the airways.

If you find it hard to keep your mouth and throat open when huffing, you may find it useful to use a small tube (e.g. the mouthpiece of a peak flow meter) when practising. Ask your physiotherapists for further advise on this if you're not sure.



When should I cough?

Ideally, to clear your mucus you should huff rather than cough. Sometimes a huff may cause you to cough – this is ok. Ultimately, we want the mucus that is in your lungs to be expectorated (cleared) out either being spat out or being swallowed. There is no additional harm to you swallowing your mucus.

How often do I need to do ACBT?

We would recommend practising the Active Cycle of Breathing Technique a minimum of once a day, especially when it is new to ensure the technique is remembered. There is no harm in practising it more than once a day if you feel you have mucus on your chest to clear.

When should I do my breathing exercises?

You should do your breathing exercises to clear the mucus from your chest when it is easiest for you or if you feel mucus has built up in your lungs throughout the day. Some people may find it more beneficial to clear their chest in the morning as this is when they are coughing and productive of mucus. Others may find it more beneficial to complete this in the evening as throughout the day mucus builds up. If you find you are coughing a lot when you lie down and go to bed, we would recommend using ACBT before going to bed. Try to avoid doing ACBT straight after a meal.

How long should I do ACBT for?

You should continue to practise the ACBT until you feel you have been successful in clearing mucus from your chest. This shouldn't go on for more than 10minutes in one go.

What position should I do ACBT in?

Depending on your condition and where it affects your lungs will depend on what position would be most beneficial to complete your breathing exercises in. It can be done in sitting or lying on one side. Whatever position you use, make sure you are comfortable, well supported and relaxed. Your physiotherapists will be able to advise further if required on the position that will most benefit you.

Oscillating Positive Expiratory Pressure (OPEP):

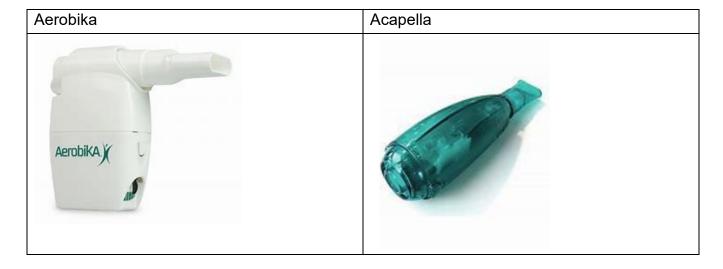
Some people may also have an OPEP device to aid their airway clearance. These are prescribed by the GP and brands include an Aerobika or Acapella, see pictures below.

You should complete 10x breaths in and out via the OPEP device, before completing 1-2 huffs as outlined in ACBT. These 10x breaths can be split into smaller, more manageable chunks with a rest in between if required.

How to clean your device?

The mouthpiece can be removed and should be cleaned at least once a week by washing in warm, soapy water and leaving to air dry. The device itself can be opened to allowing cleaning as required in warm, soapy water and leaving to air dry. The device should be replaced every 6months as per manufacturers guidance.

Please speak to a member of the Pulmonary Rehabilitation Team if you would like to know more about OPEP devices.



Useful resources:

www.acprc.org.uk

https://www.youtube.com/watch?v=SJIMaw81ulk https://www.youtube.com/watch?v=P1Cjr_BahB8

Chapter 7: Future planning

It is important to think about, discuss, decide and write down your decisions in advance for your wishes in the future. This is so people know your thoughts and decisions about what you do or don't want. It might be that sometime in the future, you can't tell them these wishes yourself.

Below are some questions listed that you might find useful as prompts:

- What matters to me most now?
- What can be done to help me if I get more out of breath?
- Do I want to be admitted to hospital if I get really ill?
- What would happen if my heart or lungs stopped working?
- Where would I like to be cared for towards the end of my life?
- What can be done to support my family and friends?
- Is there anything else I need to do about my will and financial affairs?
- What can be done to reduce any suffering I might experience?

Definitions:

DNACPR – This stands for **Do Not Attempt CardioPulmonary Resuscitation**. This is part of the RESPECT form that you should discuss with your GP or Respiratory Consultant to express your wishes for your continuing healthcare. It will also be discussed on any acute hospital admission.

LPA – This stands for **L**asting **P**ower of **A**ttorney. This is a legal document that enables you to give a person the right to make decisions on your behalf. These can be around affairs included property and financial affairs or health and welfare.

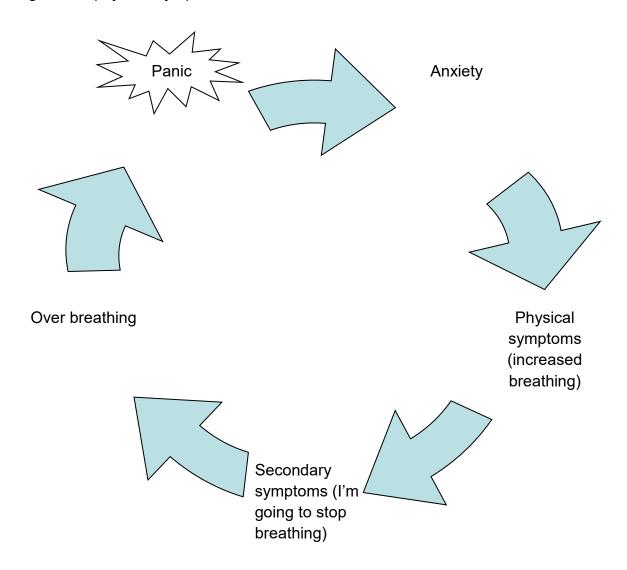
ACP – This stands for **A**dvanced **C**are **P**lan. This is a way for you to write down and tell those who are important to you, including health and social care teams, what you know about your illness, and what is important to you about your care treatment.

Useful resources:

https://www.asthmaandlung.org.uk/conditions/end-life/glossary-terms-used-about-and-life https://www.asthmaandlung.org.uk/conditions/end-life/advance-care-planning https://www.gov.uk/power-of-attorney

Chapter 8: Stress management

Stress can be common in people who have a chronic lung condition. An anxiety attack is defined as a 'sudden onset of intense apprehension, fear or terror' and can be accompanied by symptoms of shortness of breath, dizziness, palpitations, chest pain, 'butterflies', dry mouth, shaking, sweating and feelings of unreality. The whole episode can be very frightening. Thoughts such as "I am having a heart attack" or "I am going to stop breathing" can occur. This creates more anxiety and starts a spiralling vicious cycle of negative thoughts and physical symptoms.



During times of stress and/or excitement, our body activates a stress response that releases a hormone called *adrenaline* to stimulate parts of the body. This response is commonly called *fight or flight and* it enables us to face a dangerous situation or run away. This was extremely useful when we were cave dwellers, facing life-threatening situations were common and we had to fend off wild animals. Many of the stresses we face today tend not be life threatening, such as money problems, work and ill health but we still experience the same physical response.

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The reaction itself consists of the brain sending a message to pump adrenaline into the bloodstream. Blood is diverted to the essential organs of the body like the brain to make you more alert and the muscles to help you fight or run. To do this the blood is diverted away from the non-essential organs, the stomach, bowels and bladder, resulting in feelings of nausea, 'butterflies' and wanting to pass urine or open your bowels. Extra oxygen is needed so you breathe faster and your heart beats faster. As the body is working harder, it needs to cool down, so you sweat and the blood capillaries come to the surface – you blush. Hyperventilation (over breathing) can occur if you breathe more rapidly than the body needs and the fine balance between carbon dioxide and oxygen is upset. This can result in symptoms of dizziness, pins and needles and headaches.

The important thing to remember is that these physical symptoms are natural and not harmful.

The problem with anxiety attacks is that the fear reaction has become over-sensitive and is being triggered in apparently normal situations and your body cannot make sense of why you are feeling anxious. This then further increases the anxiety levels. This over-sensitivity of the fear reaction may be a result of a previous unpleasant experience. The body becomes expert in detecting subtle changes in your body that you would normally ignore.

Shortness of breath can trigger anxiety, resulting in the breathlessness being exaggerated, leading to panic and the vicious cycle takes off.

Anxiety can begin due to a combination of causes:

- 1. The amount of stress you are under. You may have a single large worry, or more likely a number of smaller worries, which mount up. Being physically tired, run down and having many changes makes you more vulnerable to anxiety.
- The kind of person you are. Some people have a more sensitive emotional nervous system and their body's arousal response might be triggered more quickly and take longer to calm down. Some people have learnt from experience how to get anxious and how to worry.

Anxiety and panic becomes a problem when it interferes with you everyday life. Remember anxiety is a normal reaction. You cannot banish it completely from your life but you can learn to manage it.

Learning to cope with anxiety:

- Try to remember that the symptoms of anxiety are normal. They are an exaggerated reaction to stress and are not harmful.
- Try to concentrate on the present, and do not think about what might happen.
- Accept the feelings. Let them run through and they will disappear more quickly.
- Consciously relax your tense muscles by using relaxation techniques.
- Concentrate on controlling your breathing as described in Chapter 1 and do not overbreathe.

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- Understand how anxious feelings persist because of a spiralling vicious cycle between physical symptoms and worrying thoughts.
- Stay with the situation. If you run away, avoid or escape, it will be more difficult in the future.
- Use distraction or diversion techniques. Focus on a particular object in the room and study it, recite multiplication tables or count backwards.
- Practice relaxation and controlling your breathing when you are calm. This will make it easier to put into practise when you are feeling panicked.
- Practice relaxation skills regularly to recharge your batteries, especially during periods of added stress.

Useful resources:

https://talkingtherapies.berkshirehealthcare.nhs.uk/ or Call 0300 365 2000

Chapter 9: Energy conservation and ADLs

People with chronic lung conditions can use up more energy doing activities of daily living (ADLs). This is amongst other things because breathing at a faster rate requires more energy. This chapter contains advice and techniques on how to conserve energy.

Remember the 4 P's

Pacing – break activities into smaller steps interspersed with periods of rest in order to reduce fatigue. Listen to your body about what it can and cannot manage.

Before you start to feel too exhausted try to switch the activity to another, mix relaxation techniques, active tasks (getting dressed, cooking), and cognitive tasks (watching TV).

Planning – try to avoid 'Boom & Bust' days. This refers to if you are having good day try to avoid the temptation to push yourself too much (BOOM) or you may feel worse the next day (BUST). Look ahead and develop a strategy for managing/completing tasks. Plan a week in advance to ensure strenuous tasks do not all take place on the same day. Use a simple to-do list/calendar.

Prioritisation – prioritise what is important/enjoyable to you with your existing energy. Delegate jobs that are not necessary for you to other people to retain energy for those things you want to do.

Positioning – be aware of your physical position in relation to the activity. Reduce over-stretching/standing for long periods. Organise your workspace so things are in easy reach.

Below is an example of how a person may help to conserve their energy in their day-to-day life. The words/phrases underlined show practical examples of energy conservation strategies:

- I have a day out with my family tomorrow and know that I may feel tired when I get home.
 I prefer to eat food I have cooked rather than <u>ready meals</u> so I have planned to cook a <u>large batch</u> of dinner today.
- I did my food <u>shopping online</u> and made a <u>meal plan</u> for the week so I know I have all my ingredients.
- I get all the items out bending and reaching to get them. I <u>sit down</u> on my stool and plan what needs to happen first using the recipe.
- I keep the food processor on the counter so I don't have to lift it.
- I put all the prepared ingredients in the <u>food processor</u> and leave them there until I need to use them.
- I go for a sit down and call my family to arrange what we are doing tomorrow.
- I go back to the kitchen and resume my meal spooning the mix from the food processor into the pan, <u>sitting down</u> while I stir it on the hob.
- I leave the food to cool while I enjoy my favourite TV show then place the leftovers in boxes.

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- I don't have the energy to wash up so I put the items in the <u>dishwasher</u>.
- Cleaning isn't important to me so I have a <u>cleaner</u> come round once a week to hoover and change the bedding.

Examples applied to activities of daily living:

Grooming:

- Sit down to clean your teeth/wash your face/apply make-up.
- Use a toilet/suitable stool/perching stool (shown in table).
- Use easy-to-grip, large handle items. Adding rubber bands around handles provide a better grip.

Dressing:

- Sit down during dressing.
- Wear loose fitting or elasticated clothes.
- Consider a buttonhook.
- If reaching your feet is difficult, consider a long-handled shoehorn (shown in table) and/or sock aid (shown in table).

Showering / Bathing:

- · Wash your lower half first then your top half.
- Bring your legs up to your chest, as opposed to leaning down to your legs.
- Consider a shower stool (shown in table) or a bath board (shown in table).
- A long-handled sponge can help reduce the need to bend.
- Keep showering items within easy reach.
- Use a basket to keep items tidy.
- Hot water and steam can increase shortness of breath. Use lukewarm water and keep door ajar to let out steam.

Cooking:

- Plan meals ahead assemble all ingredients and utensils needs beforehand.
- Use a slow cooker to do the hard work for you.
- Make larger portions and freeze meals for when you are particularly fatigued.
- Use lightweight cook wear if possible.
- Use electrical appliances to conserve energy.

Housework:

- Sit to do tasks, rather than stand.
- Break down activities into small, manageable chunks.
- · Have frequent short breaks between activities.
- Avoid lifting items; slide them across work surfaces if it is safe to do so.
- Try creating a weekly housework plan do not complete all tasks in one day.
- Use long handled equipment to avoid bending down.

Shopping:

- Plan your route to avoid becoming exhausted.
- Organise your shopping list by aisles to reduce the length of the route.
- Seek support from friends, neighbours or relatives to help with larger/heavier items.
- Arrange home delivery service, even if it is only as a temporary.
- Try online shopping; some even bring the bags in for you!

Equipment examples:

Equipment	Image	Description
Perching stool		Could be ordered by a member of the Pulmonary Rehabilitation Team or a community occupational therapist. Can be hired or purchased from local mobility shops.
Long handled shoe horn		Can be purchased online or possibly bought in shoe shops locally.
Sock aid		Can be purchased online.

Shower stool	Can be ordered by a member of the Pulmonary Rehabilitation Team or a community occupational therapist. Can be hired or purchased from local mobility shops.
Bath board	Can be ordered by a member of the Pulmonary Rehabilitation Team or a community occupational therapist. Can be hired or purchased from local mobility shops.
Long handled grabber	Can be purchased online or in local mobility shops.
Delta Frame	Can be ordered by a member of the Pulmonary Rehabilitation Team or a community occupational therapist. Can be hired or purchased from local mobility shops.

Useful resources:

Red Cross – https://www.redcross.org.uk/

Age UK – https://www.ageuk.org.uk/berkshire/

Social Services:

- Reading https://www.reading.gov.uk/adult-care/ or call 0118 937 3747
- Wokingham https://www.wokingham.gov.uk/care-and-support-for-adults/ or call 0118 974 6000
- West Berkshire https://info.westberks.gov.uk/adultcareadvice or call 01635 503050

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Chapter 10: Diet and nutrition

People with chronic lung conditions should eat well to increase their strength, to support with improved lung function, stronger immune systems and achieving/maintaining a healthy weight. Eating well also reduces the risk of other diet-related problems such as heart disease, cancer and diabetes.

It is important to know whether you are aiming to lose weight, gain weight or maintain a healthy weight.

People with healthy lungs use as little as 70kcal for respiration, whereas somebody with COPD needs an extra 430-720 calories a day, just to complete the work of breathing! To fight off an exacerbation, you need a strong immune system, which comes from a balanced diet, including a good supply of 'micronutrients.' Micronutrients are the vitamins and minerals that help the different cells in our body to function properly.



What is a healthy weight?

We use a person's Body Mass Index (BMI) to calculate if they are of a healthy weight.

Underweight	Less than 18.5kg/m ₂
Normal range	18.5-24.9kg/m ₂
Overweight	25-29.9kg/m ₂
Obese	More than 30kg/m ₂

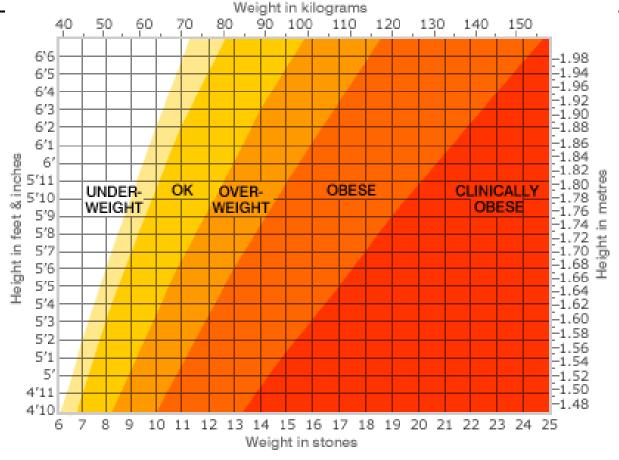
BMI is a measure of your weight in comparison to your height as shown in the graph below. It is important to monitor your weight weekly or daily if you take water tablets or are on regular steroids.

Please contact your GP if you experience more than 5% of your body weight loss unintentionally.

Being overweight or obese can put strain on your heart and lungs and make breathing more difficult. Losing weight, through planned weight loss, is recommended as it reduces this strain as well as reducing the risk of associated conditions.

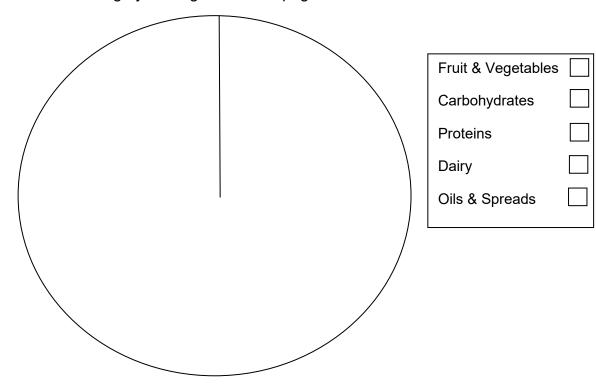
Being underweight can cause increased weakness and tiredness. Gaining weight is recommended to promote muscle maintenance/gain and help the body fight chest infections. If you have a BMI less than 18.5 and you have experienced unplanned weight loss over the last 6months, please speak to your GP who may refer you to a dietician for a 1:1 consultation.

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What does healthy eating look like?

Below is a 'plate of food'. Divide the plate into sections based on what you think a balanced diet contains. No cheating by looking at the next page for the answer.....



The Eatwell Guide represents a healthy balanced diet for a healthy individual, therefore if you have specific medical conditions or special dietary requirements this plate model may differ to meet your individual needs, e.g. Type 2 diabetes.

You do not need to achieve this balance with every meal, but try to get the balance right over a day or even a week.



Fruit and vegetables

These provide vitamins, minerals, antioxidants and fibre for our diet. This helps protect against heart disease and cancer. Fibre is important to lower cholesterol and helps us to feel full up. The recommended portions of this are at least 5 times a day, 80g per portion (or 150ml of fruit juice). For convenience, you can buy frozen, dried or tinned fruit/vegetables as they have the same nutritional value.

If you are trying to gain weight then add butter to veg, have fruit with cream/ ice cream/ custard/ evaporated milk/ yogurt, or tinned fruit in syrup.

If you are trying to lose weight, ensure half your plate is full of vegetables at main meals, and try tinned fruit in natural juice.

Carbohydrates

These provide our main source of energy and a good source of B vitamins and fibre, helping to prevent constipation. It is recommended to have starchy carbohydrates with each meal, like bread, potatoes, rice, grains, pasta. For convenience you can freeze bread, breakfast cereals, have dry/tinned rice and pasta.

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If you are trying to gain weight then aim to have carbohydrates with the main meals and with snacks, e.g. crackers, breadsticks; you can add some cheese or dips with these.

If you are trying to lose weight ensure quarter of your plate is carbohydrates, and try to choose whole meal varieties such as brown pasta, bread or rice.

Animal and plant based proteins

These help with the body's maintenance and repair. It is recommended to have 2-3 portions a day. This could be in a variety of forms, such as 3-4oz meat or oily fish; 4-5oz white fish, 3 tbsp baked beans, pulses or eggs. Meat is a good source of iron. Beans and pulses contain fibre. Oily fish 1-2 times a week provides omega 3.

If you are trying to gain weight focus on this part of the meal first if you are not managing full meals, Try to choose high fat versions and cooking methods.

If you are trying to lose weight, use lean versions of meat and remove any visible fat.

Dairy

These are an important source of protein and calcium, which are needed for strong bones especially where steroids can increase the risk of osteoporosis (weakening of the bones). It is recommended to have 2-3 portions a day. A portion includes half a pint of milk, 1 matchbox size piece of cheese, 1 small pot of yoghurt. Vitamin D is required for our body to be able to absorb calcium; therefore sometimes Vitamin D supplementation is required to enable this.

If you are trying to gain weight, use full fat products.

If you are trying to lose weight, choose low fat or low sugar dairy products.

Oils and spreads

These are a source of essential fatty acids the body cannot make. They also help the body absorb vitamin A, D and E. It is recommended to use *a*round 1tsp in cooking per person, maximum of 1tbsp.

If you are trying to gain weight, use extra fats in cooking and on foods, e.g. add extra butter to mashed potatoes or add extra oil to vegetables.

If you are trying to lose weight, opt for healthier fats such as olive oil or vegetable oil rather than ghee or butter. Aim to reduce intake of excess fat e.g. use a low fat spray oil.

Foods and drinks high in sugar in fat

Examples of these include most takeaways, pies & pastries, crisps, chocolate, biscuits, cakes, sweets, cola, energy drinks. Having these in excess can increase the risk of obesity, diabetes, and cardiovascular disease. These foods are high in calories but do not provide much nutritional benefit.

If you are trying to gain weight, consume more of these foods to increase your BMI. If you are trying to lose weight, consume these foods in moderation. For example choose sugar free squashes and soft drinks, low fat and low sugar products, and watch portion sizes.

Fluids

This is important because the cells in your body that repair and fight off infections work best when well hydrated. This is similar for your kidneys. It also helps to keep your mucus thin, which makes it easier to cough up. You should aim for 6-8 glasses a day (8oz or 250ml).

If you have heart problems and are on a fluid restriction, you should stick to this and the recommendations from your GP on fluid intake.

Salt

Having too much salt can increase the risk of developing high blood pressure, which puts extra strain on your heart. It can also increase the risk of water retention, which may make breathing harder. The recommended amount is 6 grams of salt daily.

To reduce your salt intake, use little or no salt in cooking. Using extra herbs and spices instead; black pepper can be a good substitute. Cut down on salty processed foods and ready meals and try to make your own if you can. Using the traffic light labels on the front of packaging can help you make smarter choices.

Compare salt levels among similar products and try to choose those lower in salt. Ask in restaurants and takeaways for no added salt.

Factors that can affect your intake of food:

- 1. Shortness of breath
- 2. Reduced appetite/increased appetite
- 3. Eating when feeling ill
- 4. Diarrhoea / constipation
- 5. Heartburn
- 6. Nausea / vomiting
- 7. Taste changes
- 8. Dry / sore mouth

1. Shortness of breath

- If oxygen is prescribed wear your cannula whilst eating.
- Clear your airways fully before eating (use medications if prescribed).
- If necessary, choose soft foods that are easier to chew.
- If struggling to finish 3 large meals, have 5-6 small meals.
- Eat slowly!
- Rest and get your breath back before meals.

2. Reduced appetite

- · Avoid drinking too much fluid before meals.
- Eat little and often (5-6 small meals per day).
- Eat high protein and high calorie snacks (ice cream, biscuits, puddings, milkshakes, cheese and biscuits.
- Fortify food with oils, butter, cream, cheese.
- Discuss supplements with your GP.
- Plan meals around favourite foods.

3. Eating when feeling ill

- Keep convenience foods in your fridge and freezer.
- Eat main meal early in day (have a big breakfast).
- Enquire about 'meals on wheels' in your area, e.g. Wiltshire Farm Food or Oak House Foods.
- · Rest before eating.
- Keep store cupboard full (tinned foods, deserts, cereal, cakes).
- Try having a liquid snack e.g. milkshake or supplement.

4. Diarrhoea / constipation

Diarrhoea	Constipation
Reduce fibre intake if consuming large amounts	Aim for 6-8 glasses of fluid per day
Avoid food that will upset bowel habit	Increase soluble fibre (fruit, veg, oats)
Check your regular medications with GP	Try mild laxatives such as Senna
	Check your regular medications with GP

5. Heartburn

- Check which foods give you the worst symptoms and avoid them.
- Common problem foods / drinks are fatty, spicy and acidic foods, caffeinated drinks, alcohol.
- Other things that can make heartburn worse: smoking, lying down or sitting leaning back after meals, being overweight or obese and constipation.

6. Nausea / vomiting

- Have your anti-sickness (anti-emetic) medication before eating if possible.
- Try cold foods if smells are making you nauseous.
- Avoid very sugary, fatty and spicy foods.
- Avoid lying down after meals.
- Avoid drinking fluids with meals.

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Adopt the 'little and often' eating approach.

7. Taste changes and dry / sore mouth

- Check your regular medications with your GP.
- Find foods that are acceptable (less/more flavoursome).
- Try using mouthwash/chewing gum.
- Practice good oral hygiene.
- Have boiled sweets.
- Avoid hard, dry, salty foods.

Useful resources:

https://www.bad.uk.com/food-health/food-facts.html

https://www.asthma.org.uk/living-with/healthy-eating/eating-well

To maintain weight: https://www.malnutritionpathway.co.uk/library/green/pdf

If you have a poor appetite: https://www.malnutritionpathway.co.uk/library/yellow.pdf

If you have poor appetite and need to gain weight:

https://www.malnutritionpathway.co.uk/library/red.pdf

Chapter 11: Benefits advice

Types of benefits people can seek:

- Employment and Support Allowance (ESA): The new style ESA is appropriate for those under State Pension age, who have a disability or health condition that affects how much you can work.
 - You also need to have been employed or self-employed before AND have paid enough National Insurance contributions (usually in the last 2-3years).
- Personal Independence Payment (PIP): Eligibility for PIP includes being above 16 years old, having a long-term physical or mental health condition or disability. You should be under State Pension age if you have not received PIP before.
 - You are eligible if you have difficulty doing certain everyday tasks or getting around and you anticipate these difficulties to last at least 12months from when they started.
- Universal Credit: you may be able to claim this if you are on a low income or need help
 with your living costs. This includes being out of work, working (including self-employed or
 part-time), unable to work due to a health condition. To claim you must live in the UK, be
 over 18, be under State Pension age and have £16,000 or less in money, savings &
 investment.
- Attendance Allowance: helps with extra costs if you have a disability severe enough that you need someone to help look after you. You must be over State Pension age to claim this.
- Carers Allowance: for those who provide care for someone at least 35hours a week and that person is in receipt of certain benefits.
- Pension Credit: provides extra money to help with living costs if you are over State
 Pension age and on a low income. It can also help with housing costs such as ground rent or service charges.
- Other benefits are available for people on a low income in certain circumstances. These
 include Housing Benefit, Council Tax Support / Reduction, Support with Mortgage Interest
 and Tax Credits.

Useful resources:

https://www.caba.org.uk/help-and-guides/information/understanding-benefits-uk-basics-explained

https://www.gov.uk/browse/benefits

https://www.citizensadvice.org.uk/benefits/

Age UK – https://www.ageuk.org.uk/?gclid=EAlalQobChMl88OGjqmf6gIVF-

vtCh2EMQ27EAAYASAAEgK 3fD BwE

Age UK Berkshire - 0118 959 4242

Chapter 12: What next?

you can think of below e.g., reduce the	s of exercise listed in Chapter 3? List all the ones feeling of breathlessness

Have a look back at Chapter 3 to remind yourself of the benefits of exercise.

Remember that to improve your fitness, you should be aiming for 5 sessions per week of at least 20 minutes. To maintain your current fitness level, you should be aiming for 3 sessions per week of at least 20 minutes.

Top tips to stay active after this course:

- ✓ Choose activities you enjoy and vary them to stay motivated.
- ✓ Set goals to keep you on track & use strategies like an exercise diary to monitor your progress and symptoms.
- ✓ If possible, get a friend or family member to join in with you. This can help you feel motivated and make it feel safer and more enjoyable.
- ✓ If you have a flare up resume exercise promptly after being unwell so you don't lose fitness gains you have already made. Remember you may need to restart at a lower level of exertion initially.

Asthma and Lung UK has various classes and groups on offer that you may wish to attend. Below are listed the two closest locations to RG1 for each of their activities.

Breathe Easy Support Groups	Singing Classes	Pulmonary Fibrosis Support Groups
Surrey Health A+LUK Support Group, Camberley (GU15 2AD) Last Thursday of every month, 1-3pm Call 0300 222 5800	Singing for Lung Health Fulham, London (W6 8RF) Tuesday 3-4pm Call 0203 311 7161 (Edmund)	Oxford pulmonary fibrosis support group, Sandford-on- Thames (OX4 4YN) 2 nd Thursday of every month, 10.30am-12pm Call 07487 658886 (Carmine)
Basingstoke & District A+LUK Support Group, Basingstoke (RG22 4NN) Last Tuesday every month, 1.30-3.30pm Call 01256 475933 (John)		Hertfordshire pulmonary fibrosis support group, Berkhamsted (HP4 3GW) Tuesday of every other month, 11am-1pm Call 01442 869550

For more information, visit their website listed in the resources section at the end of the chapter.

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Age UK provides a large number of different services that can be accessed, some of which are listed below. These will differ slightly depending on your geographical location.

- Love to Move chair-based age and dementia-friendly gymnastics exercise programme developed by British Gymnastics.
- **Dementia walks** walks across Berkshire for those living with dementia or the people who care for them. Places need to be booked on in advance for these.
- **Friendly Gardeners group** aimed at the Over 60s to enjoy indoor and outdoor gardening between March and October.
- Tai Chi gentle exercise sessions in Tilehurst weekly to improve, coordination and muscle strength.
- **Singing groups** fun, friendly group based in Tilehurst led by our enthusiastic singing coach. All abilities welcome.
- Dementia Café / Memory Café lots of options available for face to face meet-ups or online chats.
- Online activities computer tuition, activity packs, groups to join from the comfort of your own home.

Other more generic Age UK services include:

- Information and advice covering a wide range of topics affecting people in later life.
- **Befriending** if you are lonely or isolated visitors can come to your home or keep in contact over the phone.
- **Getting Out and About** accompany you on your first visit to somewhere new, for example a new exercise class you want to try.
- **Easy Shop** assistance with shopping online weekly, fortnightly or monthly.
- **Homehelp Plus** a home-helper can assist with general household cleaning, deep cleans, changing bedding, ironing, attending appointments, shopping etc.

For more information, visit the Age UK website listed in the resources section at the end of this chapter.

Better Health is a national campaign to support everyone to find simple ways to be fitter and feel better. There are multiple Better Health venues in the local area.

Location	Facilities
Palmer Park Leisure Centre Wokingham Road, RG6 1LF	Gym, Swimming pool, Astro pitches
Rivermead Leisure Complex Richfield Avenue, RG1 8EQ	Gym, Swimming pool, Racquet sports
South Reading Leisure Centre Northumberland Avenue, RG2 8DH	Gym, Swimming pool, 3G pitches, tennis courts
Meadway Sports Centre Conway Close, RG30 4BZ	Gym, Swimming pool, Squash courts
Henley Leisure Centre Gillotts Lane, RG9 1PA	Gym, Swimming pool, Racquet sports

Monthly memberships are available with subsidised rates for seniors, juniors, concessions and students.

There is also a referral programme in the Wokingham area to support people with one or more health conditions who are newer to exercise. This is available at: Arborfield Leisure Centre, Bulmershe Leisure Centre, Carnival Pool Leisure Centre, Loddon Valley leisure Centre, Ryeish Green Leisure Centre and St Crispin's Leisure Centre.

Before attending your final assessment with a member of the Pulmonary Rehabilitation Team, have a think about what your plan is going forward to continue making progress with your activity levels.

Useful resources:

https://www.asthmaandlung.org.uk/help/support-network/support-in-your-area

https://www.ageuk.org.uk/berkshire/activities-and-events/

https://www.better.org.uk/healthy-communities/better-health-for-

me?utm source=phe&utm medium+affiliate&utm campaign=betterhealth

https://www.wokingham.gov.uk/health/health-services-and-advice/activities-for-adults-with-health-conditions/

Patient involvement

Feedback on your experience or using our services is important to help us improve our service. We also value patients and carers contributing to improving services.

How can I get involved?

Patients and carers can get involved in improving and developing services by:

- Becoming a Patient Leader. Visit to find out more https://www.royalberkshire.nhs.uk/patients-and-visitors/patient-involvement/
- Joining the Register of Teaders to review patient information leaflets: please email the Patient Information Manager jane.burnett@royalberkshire.nhs.uk
- Volunteering your time to support the Trust or Pulmonary Rehabilitation Service. If you are interested in volunteering, please contact your physiotherapist running the PR programme or contact the Voluntary Services Department on 0118 322 7061 or email: voluntary.services@royalberkshire.nhs.uk

If you wish to give feedback on any of the content in this booklet or on the Pulmonary Rehabilitation Programme itself, please do not hesitate to contact us on.

Email: <u>pulmonary.rehabilitation@royalberkshire.nhs.uk</u>

Call: 0118 322 6676

With thanks to:

Association Charted Physiotherapist in Respiratory Care

Asthma and Lung UK

Age UK

Pulmonary Rehabilitation multi-disciplinary team at Royal Berkshire Hospital

Pulmonary Rehabilitation (Respiratory Medicine)
Royal Berkshire Hospital
Royal Berkshire NHS Foundation Trust
Craven Road
Reading RG1 5AN
0118 322 5111 (Switchboard)
www.royalberkshire.nhs.uk

Reviewed: March 2023.

Next review due: March 2025