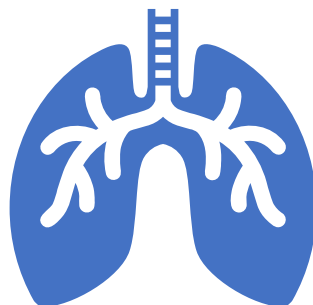




Your guide to...

# Managing Breathlessness

How do we breathe?



## How to use this guide:

This guide forms part of a series. Each guide provides information, tips and strategies for coping with physical health symptoms that are impacting on daily life. Physical health symptoms can be personally challenging on both a practical and emotional level; with this in mind, these guides have been edited and co-developed by specialists from both physical and mental healthcare teams, with guidance from experts with lived experiences.

All information in these guides are intended to advise and benefit the individuals who intend to use them. The information described can be used as a supplement but does not replace any advice provided by your healthcare specialist(s). The authors do not accept responsibility for use of the information contained in the guides for any other purpose than has been described. If you are concerned about your physical health symptoms or condition(s) then you should seek qualified medical advice from your GP or your healthcare specialist(s).

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## How our airways and lungs work

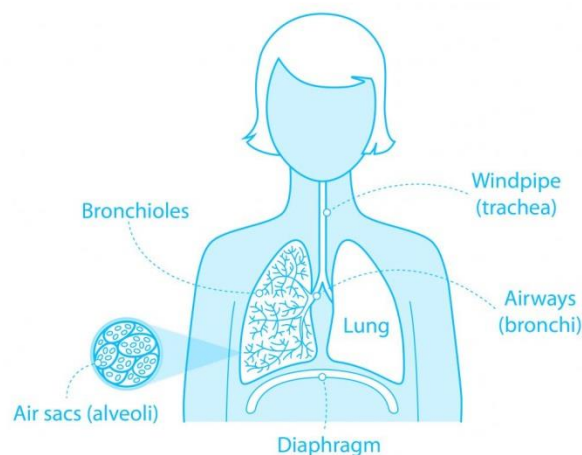
We breathe air in through the mouth and nose.

Air travels down our windpipe (trachea) and into our airways (bronchi and bronchioles). These airways become smaller as the air moves further down much like tree roots. This is called the bronchial tree.

At the end of the smallest airways the air enters our lungs. Our lungs are made up of millions of tiny air sacs (alveoli) which look like bunches of grapes.

Each air sac is surrounded by blood vessels (capillaries) which have very thin walls. This allows the oxygen in the air to move through the walls into the blood vessels.

Carbon dioxide (a waste product) moves back through the walls of the capillaries to the alveoli and is breathed back out up the bronchial tree and out through the nose or mouth.



**Picture from British Lung Foundation booklet – How your lungs work. You can find more information in this booklet at <https://www.blf.org.uk/support-for-you/how-your-lungs-work>**

## How do our heart and blood vessels work?

Oxygen dissolves through the lung walls into the blood vessels.

The oxygen is carried in our blood vessels from our lungs to our heart. The heart is a very strong muscle and it pumps the blood around our body to our organs and muscles.

The oxygen is used by our organs and muscles and replaced with the waste gas (carbon dioxide). The carbon dioxide returns to the lungs in the blood in the same way that oxygen moves to the body.

## How our muscles and bones help our breathing

For air to move into our lungs, our lungs need to be able to expand and fill up with this air.

Our lungs are surrounded by bones – our ribs, breastbone (sternum) and backbone (spine). These bones form our ribcage, and this protects our lungs and heart.

Our main breathing muscles are the large dome-shaped muscle underneath our ribcage (diaphragm) and the muscles around our ribcage. When these muscles tighten (contract) our ribcage to moves upwards and outwards. This allows more space for our lungs to fill out and air to enter the lungs. When these muscles relax, our ribcage moves back down and the air moves out of our lungs.

Our brain controls our breathing by sending messages to our breathing to tell them when to tighten and relax. Our brain sets a regular breathing pattern without us thinking about it.

## Other resources that you might find helpful

There are several websites that describe techniques about how to cope with breathlessness if you have a health condition. You can access these using the links below:

Association of Chartered Physiotherapists in Respiratory Care website:

<https://www.acprc.org.uk/publications/patient-information-leaflets/>

British Lung Foundation: <https://www.blf.org.uk/support-for-you/breathlessness/how-to-manage-breathlessness>

British Heart Foundation: <https://www.bhf.org.uk/information-support/heart-matters-magazine/wellbeing/meditation-and-mindfulness>

Your COVID recovery NHS website: <https://www.yourcovidrecovery.nhs.uk/managing-the-effects/effects-on-your-body/breathlessness/>

Macmillan's managing breathlessness booklet for people with breathlessness as a result of cancer or cancer treatments: <https://www.macmillan.org.uk/cancer-information-and-support/stories-and-media/booklets/managing-breathlessness>

Diaphragmatic breathing exercise practice: <https://youtu.be/F0jvwQ9vURg>

Helpful breathing positions as outlined in  **Guide C1 'Your guide to relaxation and breathing techniques: supporting wellbeing and health management'**

## Top tips for controlling breathing:

- Stop and rest
- Get into a relaxed breathing position (see our guide on this). Relax the shoulders, unclench fists
- Use relaxed breathing and use it regularly (see our guide on this). Blow out using pursed lips
- Learn how to relax and practice this regularly as part of your daily routine
- Distract yourself so you are not focusing on your breathing. Count backwards from 200 to 1.
- Focus on an object - describe it to yourself.
- Imagine yourself somewhere you find relaxing. Think about the scenery and the colours, smells and sounds.
- Listen to music, TV or radio.
- Plan and pace yourself so you don't take on too much or get bored