COPD & Me

An essential guide to living with COPD

NATIONAL CLINICAL PROGRAMME RESPIRATORY

Proudly Celebrating Our 10th Anniversary

COPD Support Ireland

2014 - 2024

www.copd.ie

info@copd.ie

@COPDSupportGroupsIreland

@COPDSupportIre

COPD Support

Ireland Office 086 041 5128

Contents

Glossary of terms 2

Foreword 3

1. What is COPD? 4

2. Diagnosing COPD 6

3. Self-Management of COPD 12

4. Stopping Smoking 22

5. Exercise, COPD & Me 28

6. Management & Treatment of COPD 46

7. Food & Nutrition: COPD, Food & Me 68

8. Speech and Language Therapy 84

9. Mental Health & Wellbeing 92

10. Social Work 100

11. Travelling with COPD 102

12. Supporting a loved one living with COPD 105

13. Planning for the future with COPD 107

14. COPD Support Ireland - Local groups & more 110

15. References 113

Appendix 116

Acknowledgements 118

ACBT	Active Cycle of Breathing Technique. A series of breathing exercises used for airway clearance.
Airway clearance	Techniques used to help you get phlegm off your lungs
Alpha-1	Antitrypsin Deficiency (or simply Alpha-1) is a genetic (inherited) condition which can lead to lung diseases such as asthma and COPD. It is sometimes called “genetic COPD.”
BiPAP	Bilevel Positive Airway Pressure - A type of NIV device used commonly in COPD. It helps increase oxygen levels and reduces carbon dioxide levels in your blood.
Breathing control	A relaxed breathing technique to help relieve breathlessness and also, part of the ACBT
Care Plan	A written plan of your individual needs
Cardiac disease	Diseases that involve the heart and blood vessels
Chronic	Happening for a long time or keeps occurring
COPD	Chronic Obstructive Pulmonary Disease
Diabetes	Condition affecting insulin levels in the body that results in high blood sugar levels
Exacerbation	Flare up or temporary worsening of your symptoms
Inflamed / Inflammation	This is the body’s response to injury and infection, it includes pain and swelling
NIV	Non-invasive ventilation
Osteoporosis	A disease of the bones where the body loses or makes too little bone
Self Management	Techniques and strategies you use to monitor and manage your COPD on a day to day basis. Self management helps you to live well with your COPD.
Self-management plan	A plan to help you monitor and manage your COPD
Spacer	This is a device that attaches to meter dose and spray inhalers and helps to deliver inhaled medication better into our airways
Spirometry test	A test used to measure how well your lungs work by measuring the air you inhale and exhale

Foreword

November 2024

On behalf of COPD Support Ireland I am very pleased to release this fourth edition of “COPD and Me” a comprehensive information booklet for people living with COPD and their carers. It represents the most significant update of the booklet since the second edition of April 2020.

With proper treatment and self-management support we can do much to improve the quality of life of people living with COPD. Although smoking is a major factor in causing COPD, there is a significant proportion of people living with the disease where other factors such as occupational exposures, family history, genetics and even air pollution have played a predominant role.

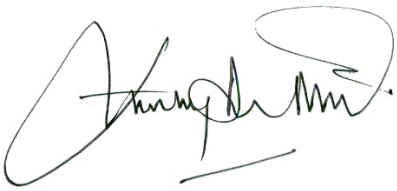
It is important that we empower people to live well with COPD. Learning and understanding more about your chronic condition, staying active, eating healthily, stopping smoking and keeping up to date with vaccinations are all very important in achieving this.

The Chronic Disease Management Programme delivered by our GP practices along with the development of Integrated Care Hubs around the country have been very important recent developments in how our health system now supports people with COPD. The huge majority of our GP practices are now employed to see all people over the age of 45, who have a medical card or a GP visit card, routinely twice per year to review their COPD. In many areas around the country, if GPs require a further Respiratory specialist input, they can now also refer patients to the local Integrated Care Hub. The hub rather than the acute hospital is now the entry point to the health service for all people with COPD in these areas. Pulmonary Rehabilitation, which has an important role in reducing shortness of breath and improving quality of life for people living with COPD, is also taking place within some of the Integrated Care Hubs.

Physical activity is crucial to maintenance of wellbeing for people with COPD. A key aim of COPD Support Ireland is to see Pulmonary Rehabilitation available in a timely fashion to all who are suitable and would benefit from it. This should be supplemented with follow on exercise programmes in a community setting. Our national network of local COPD Support Groups provide these exercise and education programmes with the additional benefits of peer support and social interaction.

People living with COPD may experience exacerbations or “flare-ups" of their underlying condition. Through education and support these can be self-managed in a home or community setting thereby reducing hospitalisations. It is therefore important that patients have self-management plans so that they know what to do when feeling unwell. Much of the modern treatment of COPD is focused on reducing these exacerbations.

Many people have contributed to the production of this document and I wish to thank them sincerely. I warmly commend this booklet to you and expect it will enhance the care and self-management of COPD.



Associate Professor Stanley DW Miller, MD, FRCPI
Chair COPD Support Ireland

1 What is COPD?

Chronic Obstructive Pulmonary Disease (COPD) is a common, treatable lung condition.

A person living with COPD will have persistent (ongoing) symptoms (for example cough and phlegm) and difficulty in breathing. COPD is a chronic (long lasting) disease, it is not curable, but there are actions you can take to manage your COPD that will give you the best possible quality of life.

COPD is a term for a group of lung diseases that cause breathing difficulties.

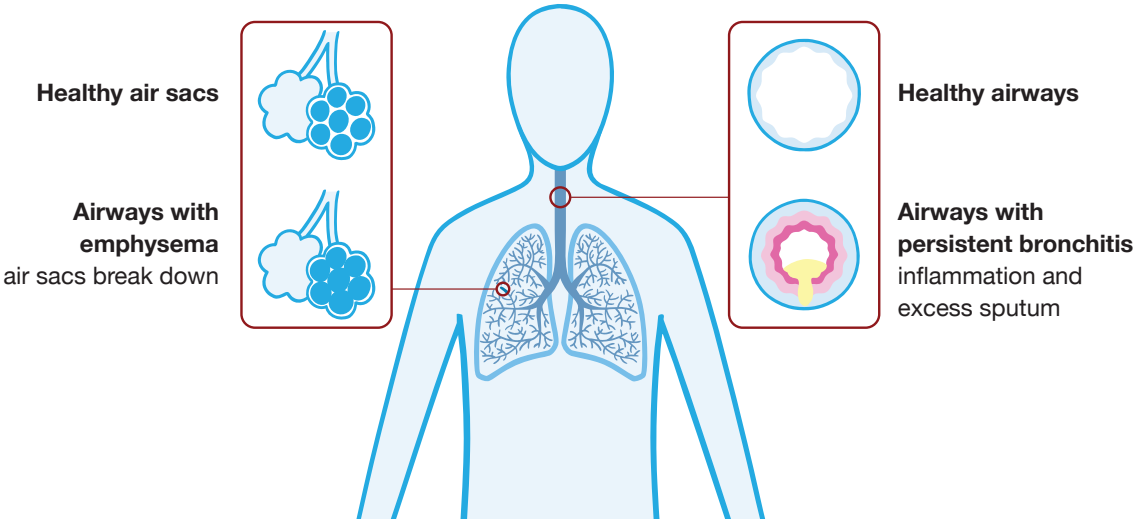
Emphysema causes damage to the air sacs in the lungs and chronic bronchitis is long-term inflammation of the airways (breathing tubes). COPD mainly affects middle-aged or older adults who smoke or who used to smoke. Many people do not realise that they have it.

COPD is mainly due to exposure to harmful particles or gases that are inhaled, causing abnormalities to the airways and within the lungs. While there are a number of causes, tobacco smoking is the greatest cause of COPD. This means that the disease could be prevented by never smoking and/or by avoiding long term exposure to harmful fumes, dust or gases in the environment or work place. The likelihood of developing COPD increases the more you smoke and the longer you have smoked.

People with COPD can have periods of worsening symptoms that are called flare ups (or exacerbations).

If you are diagnosed with COPD, your healthcare team will give you a care plan to help prevent flare ups of your symptoms. They will also develop a Self-Management Plan with you to help you handle the early stages of a flare up.

The information in this book will assist you in looking after yourself if you have COPD, or if you are caring for someone living with COPD. It contains information on strategies to manage the symptoms of COPD as well as tips on living well with COPD.



2 Diagnosing COPD

The diagnosis of COPD is based on a combination of

- Your medical history
- A physical examination
- An assessment of your symptoms
- Symptoms such as breathlessness and chronic cough, with or without phlegm
- Exposure to risk factors for the disease
- Results of a spirometry test that looks at how well your lungs are working

Risk Factors

Tobacco smoking is the main cause of COPD. Breathing in tobacco smoke irritates the lungs. The lungs become inflamed and you may develop a cough.

Other risks that can lead to the development of COPD include:

- **Contact with (exposure to) indoor and outdoor air pollution, inhaling dusts, chemicals or fumes in the workplace over many years.**
- **Exposure to second hand tobacco smoke over many years**
- **Some people who have never smoked develop COPD.**
- **An existing illness, such as chronic asthma**
- **Family history including hereditary conditions such as Alpha-1 antitrypsin deficiency.**

Symptoms

- **Chronic breathlessness that is getting worse, especially when you are active, is the most common symptom of COPD.**
- **You may find you have to slow down when doing normal daily activities such as shopping, showering, dressing or walking. For example, you may find that you need to stop and catch your breath half way up a flight of stairs or that you need to rest during a walk.**
- **Chronic cough with or without phlegm.**

These symptoms can worsen over time, and they can vary slightly from day to day. A flare up happens when these symptoms worsen suddenly. This may or may not be as a result of an infection.

If you are over the age of 35 and you suspect you have the symptoms of COPD, with or without the risk factors, and/or there is a family history of COPD, go to your GP for an initial assessment and to arrange a spirometry test. Do not ignore these symptoms. If they are caused by COPD it's best to start treatment as soon as possible before your lungs become significantly damaged.

Investigations

Detailed Medical History

Your Health Care Professional may talk through the following with you:

- Past medical history and relevant family medical history.
- Smoking history or other risk factors.
- Onset of symptoms, history of flare ups and/or previous hospital admissions for breathing problems.
- Other diseases including cardiac disease, osteoporosis and diabetes.
- Quality of life (QoL). You may be asked questions about how you are feeling and how you cope with certain activities. Your healthcare professional may use a questionnaire. This can be repeated when you are on treatment to check how you are getting on. An example of this is the COPD Assessment Test or CAT score which is included in the Appendices section.
- An examination may also be done at this time, for example, blood pressure check, weight, height and listening to your breathing and lungs. These are important for general health and wellbeing.

SYMPTOMS

Breathlessness
Chronic cough with or without phlegm

RISK FACTORS

Tobacco smoke exposure
Occupational exposure
Family history
Other chronic lung diseases

Spirometry Test

Spirometry measures how much and how fast you blow the air out of your lungs. You do it after you have taken in a full deep breath. You will be asked to blow out a few times to get a consistent reading.

Spirometry will be repeated after inhaling a medicine called a bronchodilator, which can help to open up your breathing tubes. This test confirms the diagnosis of COPD as well as how severe it is.

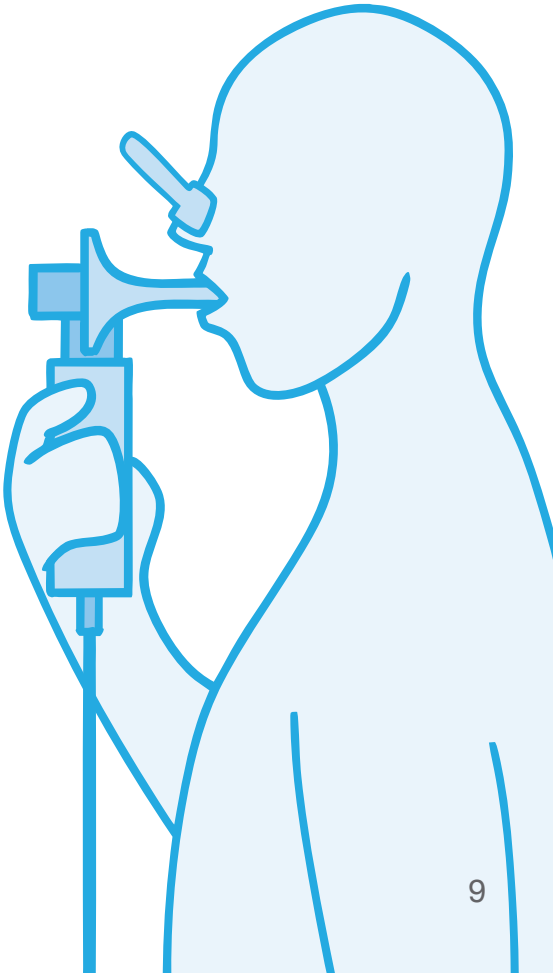
It may be repeated at follow up visits to check how you are getting on. This breathing test takes about 20-30 minutes to complete

Other investigations

Other tests may be necessary in some situations:

- **Chest X-Ray and CT of the chest. A CT scan (Computed Tomography) scan allows the doctor to see images of the inside of your body.**
- **More detailed lung function tests in a Pulmonary Laboratory in the hospital.**
- **Pulse Oximetry is a simple, painless way to check the amount of oxygen circulating in your blood. This is done using a sensor on your finger.**
- **Arterial blood gas, which is a special blood test, is used to make decisions on treatment. This is usually done at your wrist.**
- **6 minute walk test – this shows how far you can walk in 6 minutes and how walking for that time affects your oxygen levels, heart rate and breathlessness.**

Please be aware that not all these tests will be available in your GP practice, many of them are carried out in the hospital or community healthcare setting only.



Alpha-1 Antitrypsin Deficiency – An Introduction

Alpha-1 antitrypsin is an important protein found in our blood. It is produced by the liver and travels to the lungs. It protects the lungs from some of the harmful effects of flare-ups, cigarette smoke and other harmful substances that we breathe in.

Alpha-1 antitrypsin deficiency (or Alpha-1 for short) is a genetic condition where the body does not produce enough of this important protein. People born with Alpha-1 can develop lung or liver disease, or in rare cases a skin problem called panniculitis. The most common health problem that occurs is COPD. However, there are positive steps people with Alpha-1 can take to reduce the risk of any health problems. For example stopping smoking and avoiding any gases, fumes, or dusts while at work can reduce the risk of lung disease. Reducing alcohol and regular exercise can reduce the risk of liver disease.

How is Alpha-1 caused?

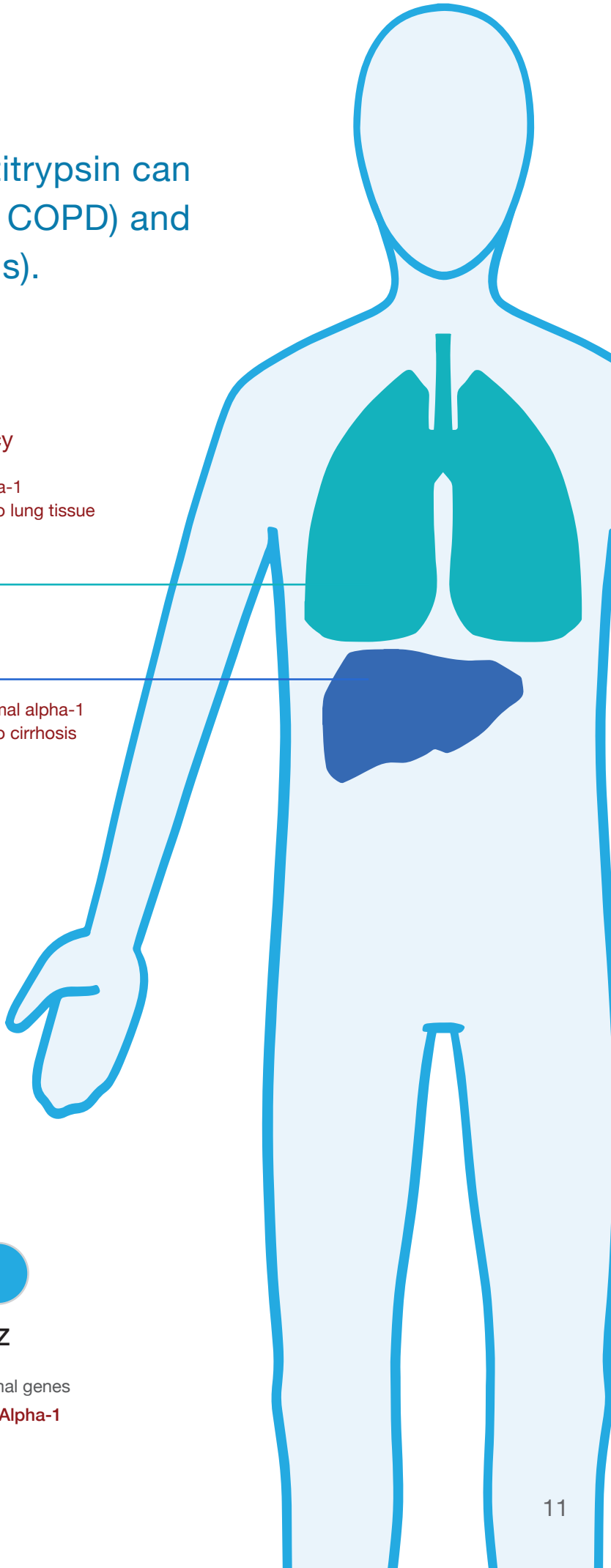
Everyone inherits two copies of the Alpha-1 gene – one from your mother and one from your father. Together these genes control what type of alpha-1 antitrypsin protein is produced by the body and found in the blood. The normal gene is called "M". The most common abnormal gene is called "Z" and this causes the vast majority of cases of Alpha-1.

There are different forms of Alpha-1. **Severe Alpha-1** is caused by having 2 abnormal Alpha-1 genes (usually ZZ type). **Moderate (MZ or SZ)** is causing by having 1 abnormal Alpha-1 gene. **Severe Alpha-**1 is linked with a higher risk of COPD, even in never-smokers, but is rarer. Moderate Alpha-1 antitryppsin deficiency is only linked with risk of COPD in smokers, but it is much more common. Ireland has one of the highest rates of Alpha-1 in the world. 1 in 25 Irish people carry the gene that causes Alpha-1.

The test for Alpha-1 is relatively simple. Levels of AAT can be measured through a simple blood test and this can give an indication of deficiency. Further testing is then needed to confirm which type of Alpha-1 a person has – usually through a test called phenotyping.

For more information on Alpha-1 and how to get tested visit www.alpha1.ie or call 01-809 3871.

How a lack of alpha-1 antitrypsin can lead to lung disease (e.g. COPD) and liver disease (e.g. cirrhosis).



Healthy

Alpha-1 antitrypsin protects lung from proteases

AAT Deficiency

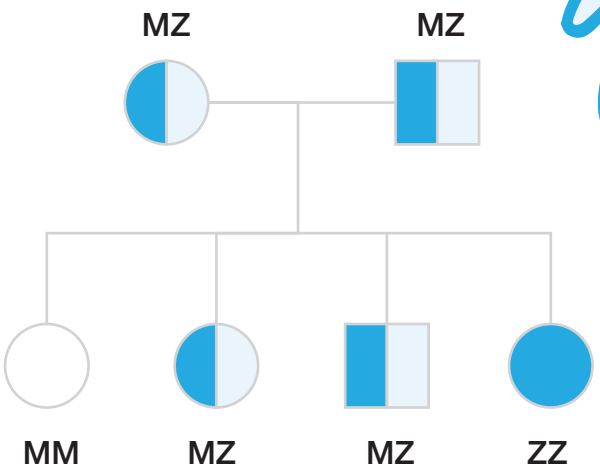
Deficiency of alpha-1 antitrypsin leads to lung tissue damage

LUNGS

LIVER

The liver releases alpha 1 antytripsin into the blood

Build up of abnormal alpha-1 antitrypsin leads to cirrhosis of the liver



Unaffected

1 abnormal gene
Moderate Alpha-1

2 abnormal genes
Severe Alpha-1

3 Self-Management of COPD

If you have a chronic condition like COPD, it can affect every part of your life and you may find that things you used to do can become more difficult.

Self-management is about

- **helping you to learn more about COPD,**
- **learning new skills to manage your COPD,**
- **helping you feel more in control of your COPD.**

Learning how to self-manage your COPD can help you feel better, stay active and live well.

Your healthcare team will help you by providing you with information and support. They will also help you to develop a COPD Self-management Plan. This plan will help you to manage your condition when you are well. It will help you to recognise the symptoms that show you might need treatment. It will help you to know what to do if you have a flare-up of your COPD.

What can I do?

There is a lot you can do to manage your symptoms, prevent flare ups and improve your fitness including:

Learn about your COPD

It is important to understand as much as you can about your COPD:

- what it is.
- how to manage it.
- how it may affect the way you live your life.

Learn about the medicines and inhalers you are taking

It is important to know about your medicines, how they work and how to take them.

- make sure you are using your inhalers correctly. Check your inhaler technique with your healthcare team.
- bring an up to date list of your medicines to all appointments.
- always make sure you have enough of your medicines and that you never run out.

More information can be found in section 6.

Stop Smoking

If you smoke,

- it is never too late to stop smoking.
- stopping smoking is the most important thing you can do to improve your health.
- stopping smoking will improve your cough and phlegm production.

There are supports available to help you to stop.

More information can be found in section 4.

Find out how to avoid and manage flare-ups

Learning how to avoid flare-ups is an important part of managing your COPD.

Recognise your symptoms; know what is usual for you. Monitor your symptoms and make sure you know when you may need to change your medication or start treatment early for flare ups. You should know when and how to seek help. You can discuss this with your healthcare professional using a COPD Self-Management Plan to guide you

It will help you to:

- manage your condition when you are well.
- know what to do to prevent flare-ups.
- recognise the early warning signs of a flare-up.
- know when to seek medical treatment.

More information can be found in section 6.

Keep up-to-date with your vaccines

People with COPD are at higher risk of complications from certain infections. Vaccines are one of the safest ways for you to protect your health. It is important to get the flu vaccine every year. It is also important to get the pneumococcal vaccine. Your healthcare team will advise you about this. They may also recommend other vaccines for you such as the COVID-19 vaccine.

More information can be found in section 6.

Know your triggers

Triggers are things that can make your COPD worse. As you learn what your triggers are, you can learn how to avoid them.

- for some people smoke, smog or dust makes it harder to breathe. Keep an eye on air quality alerts.
- for others, changes in weather can be an issue. Cold spells, hot weather and humidity can cause breathing problems. Keep an eye on the weather forecast.

Be as active as you can be, even a small amount can help.

Regular physical activity or exercise is very important.

- it can help you feel better and breathe easier.
- it strengthens the breathing muscles in your chest. This helps to ease shortness of breath.
- it can help improve your general feeling of wellbeing.
- it is very good in strengthening or maintaining strength in the big muscle groups.
- it can also help you sleep better at night.

More information can be found in section 5.

Learn good breathing exercises

Breathing exercises can help you:

- strengthen your breathing muscles.
- take in more oxygen.
- breathe with less effort.
- get rid of phlegm.
- relax.

Talk to your healthcare team about the breathing exercises recommended for you.

More information can be found in section 6.

Learn relaxation techniques

Relaxation techniques can help with breathlessness, feelings of anxiety or during times of a flare up.

When you are relaxed

- your breathing and heart rate slows down.
- your muscles relax.
- you feel calmer and more in control.

Ask your healthcare team about these techniques.

Mind your mental health

The emotional effects of living with COPD can be difficult. Managing COPD can increase the stress of everyday life. You may find that things you used to do easily can become harder.

It is important to talk about your feelings and to know there are supports available.

More information can be found in section 9.

Eat a healthy balanced diet

When you have COPD, eating a healthy balanced diet can:

- help you maintain a healthy weight.
- provide your body with the energy and nutrition it needs.
- supply you with enough energy to keep your breathing muscles strong.

Make sure you drink plenty of fluids, especially during a flare-up.

Eat little and often rather than big meals.

More information can be found in section 7.

Look after your bone health

As we get older we are at risk of osteoporosis which is a weakening of the bone. A number of factors contribute to osteoporosis in people with COPD. These can be monitored with you doctor and there are many things you can do to improve and maintain bone health. Having COPD may increase your risk of developing osteoporosis (weakening of the bones). Talk to your healthcare team about your bone health.

Ask about things you can do to lower your risk of osteoporosis such as

- maintaining a healthy body weight.
- keeping active.
- eating well for your bones.
- giving up smoking.
- dietary supplements for bone health.

Get rest and take breaks

Take breaks as needed during the day. Pace yourself. Plan your tasks so you save energy wherever you can. Ensure you get good quality sleep. Get plenty of rest during times of a flare up.

More information can be found in section 5.

Join a COPD support and exercise group

COPD peer support and exercise groups provide a space for you to meet other people living with COPD. These groups can be a great help for those who may not have family or friends to talk with. These groups offer exercise classes, education sessions and other supportive activities.

More information can be found in section 14.

Look after your equipment

If you are using any medical equipment, for example nebulisers or home oxygen, please make ensure they are serviced regularly. Make sure that masks, mouthpieces and filters are cleaned and changed regularly.

More information can be found in section 6.

Plan ahead for Holidays or Travel

Having COPD does not mean you have to give up travelling.

It just takes some extra planning.

- make an appointment with your GP for any necessary health checks.
- get a copy of your prescription and a letter from your GP with details of your medical history and the name of your condition(s).
- make sure you have enough medicine for your whole trip, including extra to cover any delays.
- if you are travelling in Europe, make sure you get your free European Health Insurance Card (EHIC) before you travel.
- when taking out travel insurance, make sure to tell your travel insurer about all your medical conditions.

More useful information can be found in section 11.

Many of these areas are discussed further in this booklet additionally, more self-management information and resources can be found on **www.hse.ie/selfmanagementsupport.**

Please ask your healthcare professional if you require further information.

COPD Self-management Plan

Your healthcare team will help you to develop a COPD Self-management plan.

It will help you to:

- manage your COPD.
- be aware of the symptoms that show you might need treatment.
- know what to do if you have a flare-up of your COPD.

This plan is a colour coded system for managing your COPD and flare-ups.

Green is a Feeling Well

Yellow is a Bad Day

Orange is Feeling Unwell

Red is Feeling Very Unwell

There is advice on steps to take based on your symptoms.

For more advice speak to your healthcare professional.

COPD Support Ireland
www.copd.ie

NATIONAL CLINICAL PROGRAMME RESPIRATORY

Self-Management Plan

Chronic Obstructive Pulmonary Disease (COPD)

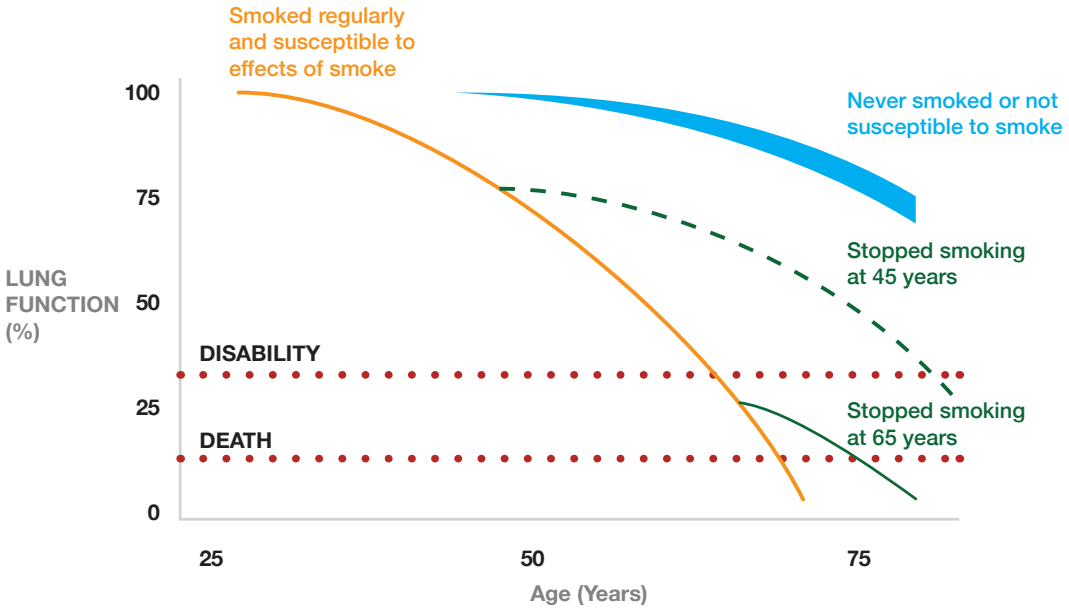
A guide to managing your symptoms. It's important to look after your own health and wellbeing, with support from your team of health professionals. To learn more about using this self management plan, speak with a member of your healthcare team or a Respiratory Nurse Specialist.

	SYMPTOMS	ADVICE
Feeling Well	• I am able to carry out my usual activities • My phlegm is a normal colour and amount for me	• Continue with my medication as prescribed and continue my day as normal • Keep as active as possible
Bad Day	• My COPD may be bothering me. For example, I am more breathless than usual	• Use chest clearance techniques • Use my reliever inhaler • Use breathing control exercises • If no relief I may be unwell. Move onto "feeling unwell" section for guidance
Feeling Unwell	• I am more wheezy, breathless • I have more phlegm which is yellow or green in colour	• Take my normal medications and inhalers • Take my reliever medication every 4 to 6 hours • **Start rescue antibiotics and steroids** • Call GP or GP out of hours service for advice • Call my COPD Outreach team
Very Unwell	• My reliever and rescue prescription are not helpful or I feel worse	• I should urgently contact my GP or Out-of-Hours GP service. • Go to the Hospital Emergency Department if GP is not available. • If I am short of breath at rest, have chest pain or confusion this is an emergency. CALL 112 or 999 and ask for an ambulance

4 Stopping Smoking

If you smoke, stopping is the most important thing you can do to help your lungs and it's never too late to quit.

The Long Prodrome of COPD



Fletcher CM, Peto R. BMJ. 1977;1;1645-1648

This diagram shows the lung function of a person living with COPD over their lifetime. As we age, our lung function naturally declines (blue line). Smoking accelerates this decline as you see with the orange line, but quitting smoking halts it and allows lung function to decline naturally from that point onwards, as seen with the green lines.

So it's never too late to quit, and if you have tried unsuccessfully in the past, remember it's a process and don't quit on quitting.

3 Steps to Quitting Smoking

Get help to quit smoking

There are a number of options available to you for support to quit smoking.

You can get free support from a stop smoking advisor in one of our community-based clinics, which could be either face-to-face or a combination of face-to-face and over the phone or you can get support over the phone through the QUIT Line (Freephone 1800 201 203).

There is also online support where you can sign up for a QUIT plan on www.quit.ie and you will get weekly emails or text messages to help you on your journey.

Whichever option you chose, you will be supported and motivated to quit smoking and to stay quit.

Whether it is the face-to-face or the phone support that you chose, a weekly session or call will be arranged with you for the first 6 or 7 weeks. This usually involves a pre-quit session where we will plan for the quit date, a quit date session and then 4 or 5 weekly calls from there. However, if you require more contacts than this, we can arrange that too. It is all about what works for you.

Stop Smoking Medications

Nicotine Replacement Therapy (NRT) is recommended by the HSE to help you to stop smoking. Nicotine is the ingredient in cigarettes that makes them addictive. This is why it can be hard to give up smoking.

NRT are licensed medicines that give you a low level of nicotine to help you to manage withdrawal and cravings. They do not contain the other poisonous chemicals present in tobacco smoke.

There are different types of NRT:

- Patches
- Gum
- Lozenges
- Inhalers
- Mouth sprays

You can get nicotine replacement therapy for free through:

- A HSE stop smoking advisor
- The HSE QUIT line 1800 201 203
- Your GP if you have a medical card

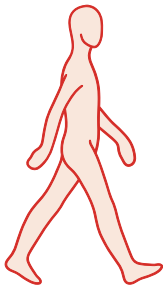
While quitting smoking isn't easy, the good news is that if you quit smoking for 28 days, you are 5 times more likely to be quit for good.

Getting the right support gives you the best possible chance of quitting for 28 days and beyond.

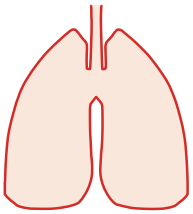
Learn to deal with cravings: the 4 Ds

Delay at least 3-5 minutes and the urge will pass

Drink a glass of water or fruit juice



Distract yourself - move away from the situation



Deep breaths - breathe slowly and deeply

QUIT **National Smokers' Quit line**

Freephone 1800 201 203 **Freetext QUIT to 50100**

Find local HSE QUIT support groups on QUIT.ie or by calling the QUIT team.

Tweet the QUIT team **@hseQUITteam** | Join the Facebook page **www.facebook.com/HSEquit**

Share your QUIT Story on the **QUIT Heroes App**

WWW.QUIT.IE

Tips to help you stop smoking

Prepare to stop

Write down reasons for quitting and keep them close at hand.

Support

Ask your family and friends for support.

Get help

You are twice as likely to quit with help. Check out HSE quit resources (listed below). Choose the method that suits you best. Ask your healthcare professional (GP/Nurse) for support: you may be given medication to help symptoms of nicotine withdrawal. This will increase your chances of quitting smoking.

Make a date to stop

Stick to it.

Be active

Regular activity is good for your health and helps you to manage stress.

Save money

Treat yourself with the money that you would normally spend on tobacco.

Change your routine and plan ahead

Replace or change activities that you usually associate with smoking.

Think positively

You may have withdrawal symptoms once you quit smoking. These are positive signs that your body is recovering from the harmful effects of smoking and will disappear once your body gets used to the change.

Watch what you eat

If you are worried about putting on weight - be aware of substituting other things for cigarettes for example, food or alcohol.

Take one day at a time

Remember every day without smoking is good news for your health, your family and your pocket. If you slip up, all is not lost. Set a new date and start again.

Talk to your GP or Pharmacist

Who may advise on using nicotine replacement therapy or other medications to help you make that quit attempt successful.

5 Exercise, COPD and Me

Exercise can ease symptoms like breathlessness and anxiety. It can improve your overall health.

Exercise can make you feel breathless but that's ok, it's a very normal feeling if you have COPD.

The less you do, the less you are able to do.

Many people with COPD find that being breathless is the hardest part of their condition to deal with. It's very normal to feel this way if you're short of breath with COPD. Exercise, done in a safe way, is one of the best things you can do to improve your breathlessness. Breathlessness can cause people to do less and less activities.

This can lead to your muscles becoming weaker and eventually it can become difficult to do much at all.

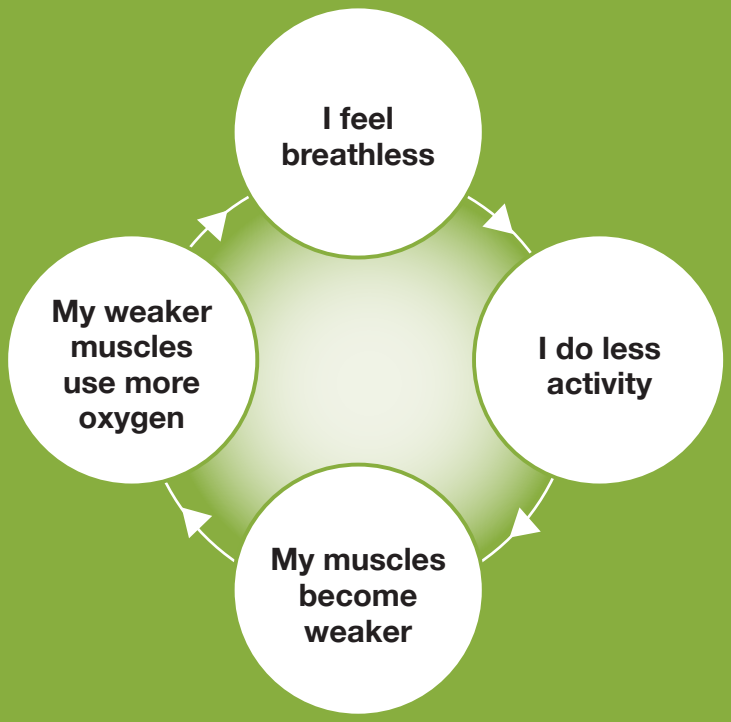
"I wouldn't be able to exercise. It makes me too breathless. Wouldn't exercise make me worse?"

"It may come as a surprise but some breathlessness when you exercise is good for you"

Breathlessness is a normal response to activity. It may occur more easily and more often when you have COPD but that does not mean that activity should be avoided.

Exercising regularly can make your muscles stronger and everyday activities easier. If you avoid an activity because it makes you breathless, then your muscles may weaken and this can cause more breathlessness.

What happens if I don't exercise?



Exercise cannot cure COPD, but it can change how you manage your breathlessness, improve fitness levels and improve your quality of life. It has a positive effect on both your physical and mental wellbeing.

What happens when I do exercise?

What type of exercise should I do?

It's good to do a mixture of strengthening and aerobic exercise.

Strengthening exercises help to build up muscle strength and can improve or maintain your balance

Aerobic exercises, for example walking, get your heart and lungs working. You should feel some breathlessness when you are doing these exercises.

It's also very important to do a warm up and a cool down when you exercise.

A warm up is 5-10 minutes of gentle exercises that get your body ready to exercise safely

A cool down is 5-10 minutes of gentle exercises that help you recover from exercising

How hard should I exercise?

During exercise, it's good to feel moderately breathless. This means you are working at a good level that you will benefit from. You can use the modified borg scale of breathlessness included in the appendices section as a guide.

Some people like to use the "talk test" this means that during exercise, you should be able to have a conversation with some breathlessness, but you should not be able to sing while exercising. This is particularly handy while out and about, if you aren't familiar with the Modified Borg Scale of Breathlessness or don't have it to hand. It is important that you pace yourself, but the more you do the more that you will be able to do.

It is important that you pace yourself, but the more you do the more that you will be able to do.

Modified Borg Scale of Breathlessness

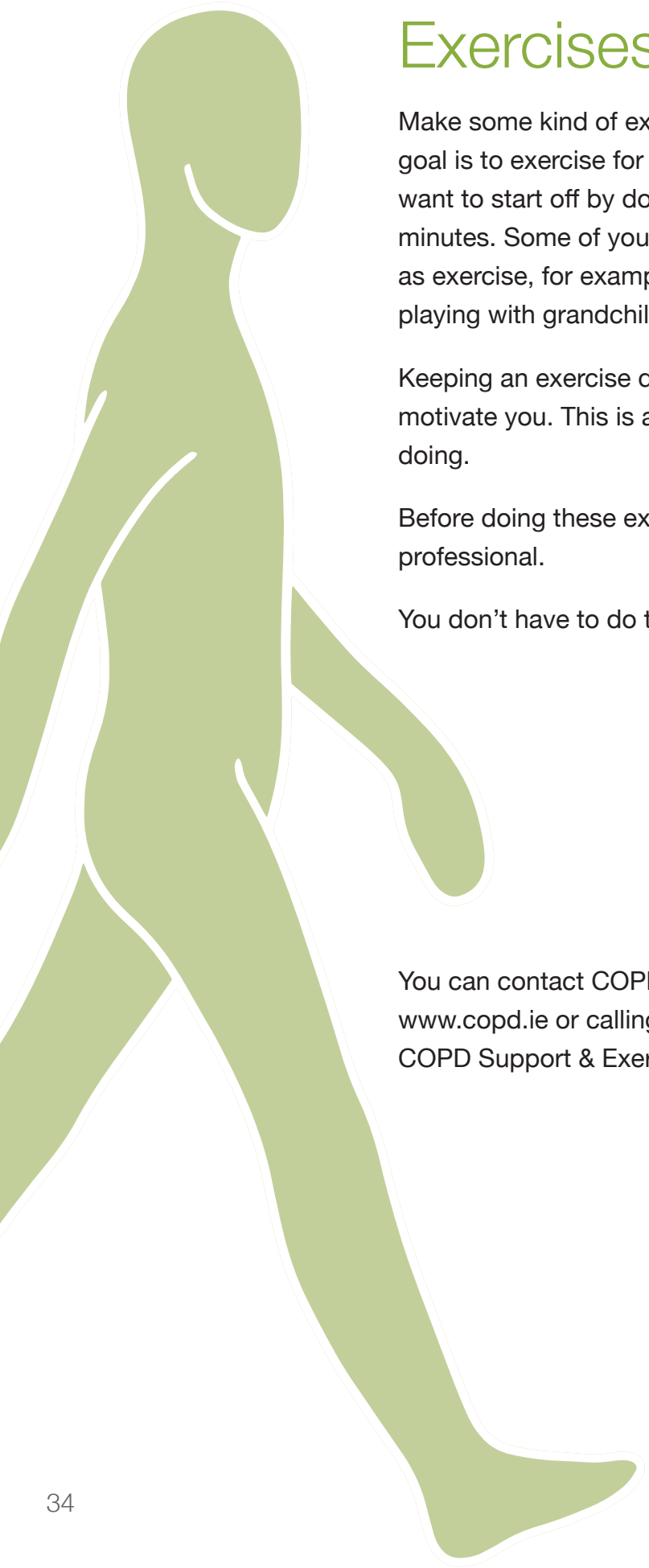
0	Nothing at all
.5	Very, very slight (just noticeable)
1	Very slight
2	Slight
3	
4	Somewhat severe
5	Severe
6	
7	Very Severe
8	
9	Very, very severe (almost maximum)
10	Maximal (breathing difficulty is maximal)

Should I exercise if I am in the middle of a flare up?

Even when you are feeling a little unwell it is important to stay as active as you can. Even doing a small amount of exercise will help you to maintain your fitness level. You should start to increase your exercise again gradually as you start to feel better.

Tips for Safe Exercise

- Please consult your health care professional before starting any new exercise regime
- Don't exercise immediately after a heavy meal
- Wear comfortable shoes and clothing
- Make sure that you do your warm up and your cool down
- You may need to lessen your exercise if you feel unwell
- Make sure that you stay hydrated throughout the day
- You should be able to talk but not sing whilst exercising
- Have your reliever (blue) inhaler close by in case you need it
- Stop the exercise if you become too breathless



Exercises to do at Home

Make some kind of exercise part of your daily routine. A good goal is to exercise for 30 minutes 5 days a week. You may want to start off by doing much less and building up to 30 minutes. Some of your routine daily activities can be counted as exercise, for example, some housework, gardening or playing with grandchildren.

Keeping an exercise diary can be a good idea and help to motivate you. This is a record of how much exercise you are doing.

Before doing these exercises, chat to your health care professional.

You don't have to do these exercises in this order.

You can contact COPD Support Ireland by visiting the website www.copd.ie or calling 01-539 2181 to find out if there is a COPD Support & Exercise group in your area.

Examples of warm up exercises

Shoulder Circles

3 times forwards & backwards

Keep your arms down by your side, if standing, or on your lap if you're sitting. Slowly move your shoulders round in a circle backwards two to four times, then forwards two to four times.

Head Turns

3 times each side

Slowly turn your head to the right. Bring your head back to the centre, then slowly turn to the left.

Ankle Bends

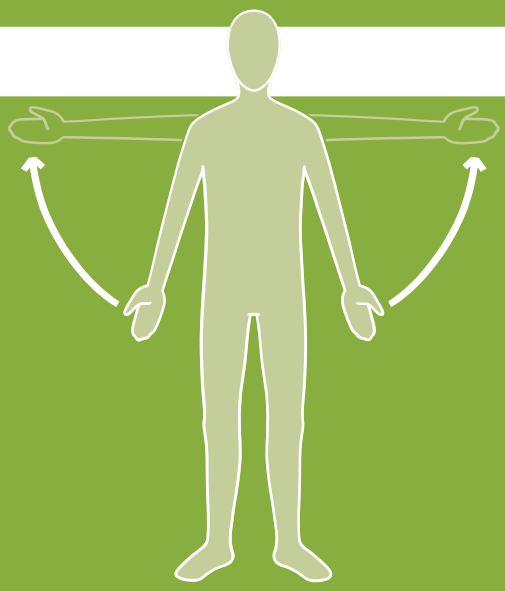
3 times each leg

Either standing or sitting and using one foot at a time, alternatively tap your toes and then your heel on the ground in front of you. Repeat with the other foot.

Main Exercises

Walking

- Start by walking a few minutes every day.
- Increase your time by 1 minute every day until you find the length of walk that suits you best as an exercise.



Arm Wings

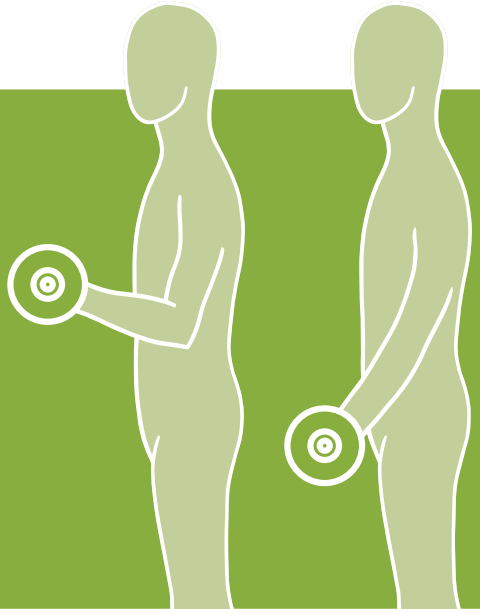
- Stand or sit with hand weights or water bottles.
- Raise your arms out to each side to shoulder height and then lower.
- Repeat as often as you are comfortable.

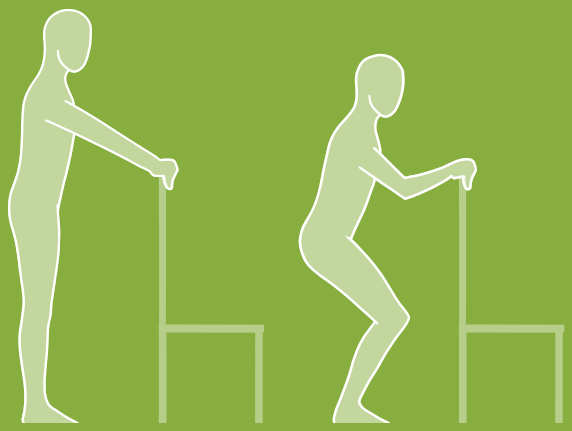
Step Ups

- Hold onto the rail and keep legs shoulder width apart.
- Step up onto the bottom step of the stairs.
- Step down again.
- Repeat as often as you are comfortable.

Bicep Curls

- Stand holding hand weights.
- Slowly bend and straighten alternate elbows.





Squats

- Bend your knees slightly, keeping your back straight.
- Straighten back up. You can do this holding onto a chair if you have decreased strength or balance. As you progress you may not need to hold onto a chair.

Knee Extensions

- Sit on a chair with your feet on the floor.
- Straighten one leg, keeping your thigh on the chair.
- Hold for a few seconds, then bend back down.
- Repeat 10 times per leg.

Knee Lifts

- You can hold onto the back of a chair while doing this exercise if you need to.
- Lift one leg so you knee does not go beyond your hip level.
- Rest your leg back down.
- Repeat with the other leg.

Wall Press

- Stand facing a wall.
- Place your palms against the wall at shoulder height with your hands slightly wider than your shoulders.
- Lean your body forward towards the wall but keep your back straight.
- Push back off the wall until your arms are nearly fully straight.
- Repeat as often as you are comfortable.

Sit to Stand Exercise

- Stand from a seated position.
- Sit back down and try not to use your hands if you can.
- Keep your feet shoulder width apart.
- Repeat as often as you feel comfortable.

Examples of cool down exercises

You can repeat the gentle neck and shoulder exercises from the warm up.

Walking

- Gentle walking around or marching on the spot for 2-3 minutes to slow down your heart rate gradually.

Tricep or shoulder stretch

- Put your right arm out in front of you then, keeping your arm straight, bring it across your body at shoulder height.
- Use your left hand to squeeze your right arm towards you until you feel a slight stretch around your right shoulder and the back of your upper arm.
- Repeat with your left arm.

Calf stretch

- Stand with your feet apart, holding on to soemthing sturdy, such as a wall.
- Keep your body upright. Step one leg out behind you keeping both feet pointing forwards.
- Bend your front knee, keeping your back knee straight and your heel firmly on the ground. You should feel a slight stretch in the calf of your back leg. if you don't, move your back foot further away.
- Bring your feet back together again and repeat with the other leg.

Pulmonary Rehabilitation

"It has provided me with the tools to help me live better with my condition"

Pulmonary rehabilitation (PR) is one of the most important things you can do to better manage your COPD and keep you healthier. It is usually a 6 to 8 week group programme with two group exercise sessions and one educational session a week. You will work with a team of healthcare professionals who will teach and help you to exercise safely and to manage your COPD better. The knowledge and skills you gain during these classes will help you to stay healthy and active long after you complete the programme.

The PR programme will cover different areas of managing your COPD:

- how to clear phlegm
- medications
- nutrition
- coping with breathlessness and relaxation techniques
- oxygen treatment if needed
- pacing yourself, learn how to do everyday tasks with breathlessness
- how to stay healthy and avoid COPD flare ups

You will also meet people with COPD, who have many of the same experiences, questions and feelings that you do.

When you start the class you may only be able to begin exercising at a slow pace. **This is okay.** The amount that you exercise will build up gradually as you progress through the programme. If you require oxygen in the class, that is not a problem, you can use it. Your oxygen level, heart rate and blood pressure will be monitored so you can exercise safely and effectively. You will be amazed at how much you can achieve through the classes.

What can I do?

You should speak to your healthcare professional to see if you are suitable for this class. Your GP, Respiratory Consultant, Respiratory Physiotherapist or Respiratory Nurse will be able to advise you on access to local pulmonary rehabilitation programmes. They can also refer you to a programme. The team will do an assessment with you before starting on a programme and after finishing the programme. These assessments help to see the positive effects the programme had on you.

Pulmonary Rehabilitation teaches you how to manage your COPD. To continue to get the benefits of regular exercise, it is important to keep doing with what you learned. You can do this by either exercising at home or at an exercise class in your area such as the local COPD Support Ireland group exercise classes.

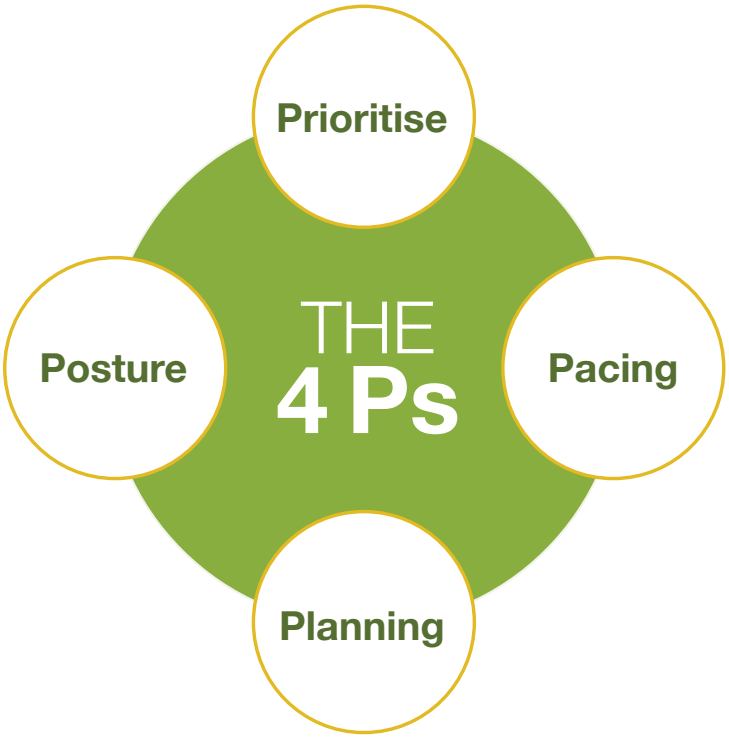
Saving your Energy

Saving your energy is changing the way you do activities to reduce the amount of energy needed. To be able to do this you will need to plan your day by keeping a balance of work, rest and play. This is called conserving energy.

Energy Conservation & Fatigue Management

Energy Conservation is changing the way you do activities to reduce the amount of energy needed. To do this you will need to plan your day by keeping a balance of work, rest and activity. This can help to manage feelings of fatigue and reduce exacerbations of breathlessness.

To conserve energy, manage fatigue and breathlessness, follow the 4 P's:



To conserve energy, follow the 4 P's:

Prioritise

- Make a list of what you have to do
- Place the task in order of importance, into what you need to do, want to do and should do.
- Get rid of any unnecessary tasks
- Decide if someone else can do some tasks for you
- Change between light and heavy tasks.
- Don't forget to prioritise tasks that you enjoy and have meaning for you.

Pacing

- Work at a slow steady pace
- It is better to take a little extra time to complete a task and be able to continue rather than finishing too quickly or feeling too tired to continue.
- Allow plenty of time for rest and relaxation, at least 5 – 10 minutes every hour
- Use your breathlessness as a guide
- Space difficult and heavy tasks evenly throughout the week.

Planning

- Avoid unnecessary exertion (e.g. going up/ down stairs numerous times in the day).
- Plan your week in advance, try to space out activities during the week and not concentrate all activities into one day.
- Consider breaking the task down into different stages.
- Consider what you require for each task before starting it
- Organise your day, consider which times of the day are best for you and plan activities accordingly.

Posture

- Push or pull objects, rather than lifting
- Change the activities to keep the energy you use low to do the job
- Sit rather than stand when possible, use a perching or high stool when possible
- Organise yourself, your home and your working environment
- Put items you frequently use in an easy to reach place
- Consider using a bag or basket to carry things
- Plan tasks around when help is available and when your energy levels are high.
- Keep your arm movements at a low rate
- Avoid bending, reaching or twisting.

Consider availing of an occupational therapy home assessment. An occupational therapist will assess your home environment as well as provide advice around environmental adaptations that could be made to support with managing breathlessness and fatigue, as well as conserving energy.

6 Management & Treatment of COPD

COPD Medications

You may be prescribed several types of medicines to improve your symptoms of breathlessness and to help to prevent flare ups.

Your healthcare professional will decide with you which medications to use depending on how severe your COPD is, and what your everyday symptoms are.

There are different types of inhaled medication and sometimes you may be prescribed more than one type.

Inhalers

Inhalers deliver medicines to your lungs when you breathe in (inhale).

Long Acting Inhaler (Preventer)

This is your daily “maintenance” treatment to reduce the risk of you developing symptoms day-to-day. There are different types of inhaler devices, and they can contain one or more medicines depending on your needs. The medicines contained are called “bronchodilators” as they open up your airway, making it easier for air to get in and out of your lungs.

Short Acting Inhaler (Reliever)

These can be used if you become breathless from time to time or during activity. They can be used alone or with a spacer device and can be used more often during flare-ups. These are for immediate relief from breathlessness and should not be used in place of your maintenance or preventer inhaler.

Inhaled Steroids

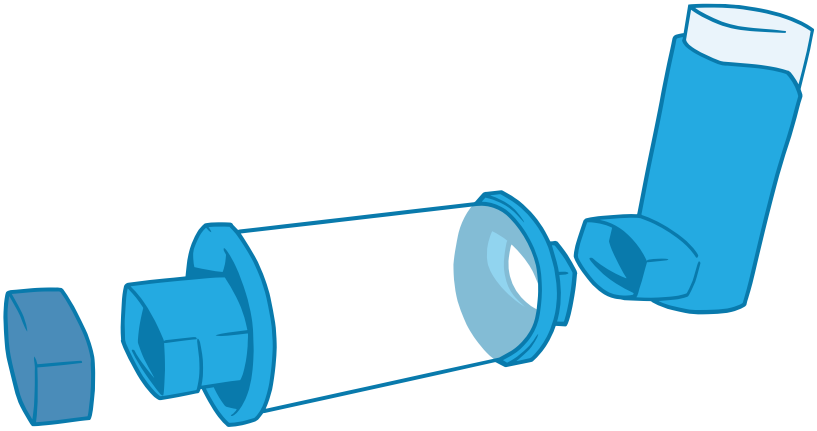
Steroid inhalers may be prescribed if you have more severe COPD or if you get a lot of flare-ups. For COPD, they should always be combined with other medicines in your long-acting inhaler. They help to reduce swelling in the lungs. It is important to rinse your mouth out with water after using a steroid-containing inhaler to reduce the risk of oral thrush developing.

Inhaler devices

There are many different types of inhaler devices available. Your healthcare professional will help you decide which one(s) are best for you and your COPD.

- It is important to discuss how to use the inhaler correctly with your healthcare professional.
- Spacers attach to some inhalers and help to better deliver inhaled medicine into our airways. Discuss this with your healthcare team if you think it might help.
- If you do not like your inhaler, have problems taking it or do not take it routinely, discuss this with your healthcare professional.

For anyone who finds inhalers hard to use, a nebuliser can be prescribed by your healthcare professional. However, using a spacer device can be just as effective.



Short Acting Inhalers

These can be used if you become breathless occasionally or during activity. Often called a reliever they can be used to relieve ease shortness of breath. They can be more effective if they are used with a spacer device. and more often during flare ups.

Long Acting Inhalers

These can will be prescribed if you get breathless symptoms daily. Some may take longer to work but the effects of these inhalers last longer - between 12-24 hours. They can contain one drug or a combination of drugs depending on your symptoms.

Inhaled Steroids

Steroid inhalers may be prescribed if you have more severe COPD or if you get a lot of flare-ups. They may help to reduce inflammation and swelling in the lungs. They can be used with a long acting inhaler as well and are often combined with a long acting medicine in one inhaler device.

Use this QR code with your phone (open the camera app, view the QR code through the camera app and when a text box appears below the highlighted QR code, tap the box for it to bring you to the Asthma Society of Ireland websiet to view Inhaler technique videos. Alternatively you can visit the website https://www.asthma.ie/about-asthma/resources/inhaler-technique-videos

Even if you think you know how to take your inhalers correctly it is a good idea to watch the videos and have your technique reviewed regularly. Research tells us that patients often make small mistakes or pick up bad habits over time that can affect the medication delivery to the lungs.

Other Medicines for COPD

Though inhalers are the first choice of treatment for COPD, other medicines may be helpful in managing your symptoms:

- Theophylline: is a medicine that can open the airways (for example Uniphyllin®). The levels of this medicine in your blood will need to be checked regularly to be sure you're on the best dose.
- Steroid tablets: these may be prescribed if you have a flare-up. They help to reduce swelling in the airways, which can help to reduce breathlessness. Steroids should be taken in the morning as they can affect sleep. Steroid tablets are NOT a long term solution as they can have a lot of side effects.
- Antibiotics: these can be prescribed if you have a chest infection or changes in your usual symptoms. Sometimes, your healthcare professional may take a sample of your phlegm to send to the laboratory to see what is causing your infection. This helps to choose the right antibiotic for you. Always finish the course of antibiotics that you have been prescribed, unless you are told to stop by a healthcare professional. Infections caused by viruses should not be treated with antibiotics.
- Long-term antibiotic: occasionally long-term antibiotics are prescribed for more severe COPD or if you continue to get frequent flare-ups despite taking all your treatment correctly and self-managing your symptoms.
- Oxygen: this is considered a medicine and will only be prescribed if the oxygen in your blood is low. A special assessment must take place before it is prescribed. If you are still smoking, you will need to stop before being assessed for home oxygen.
- Morphine-based drugs: are sometimes prescribed in very severe COPD to help manage the symptoms of breathlessness. This needs careful consideration and assessment by your healthcare professional.
- Bone tablets: use of steroids frequently over a long period of time can effect on your bones. Calcium and Vitamin D supplements, or medicines called "bisphosphonates", can sometimes be prescribed to support your bones. This is particularly important for post-menopausal women

What can I do?

- **Take your medicines as prescribed to reduce the risk of flare-ups.**
- There are several different types of inhalers and they come in different devices therefore it is important to get to know your inhalers and make sure you can use them properly. Ask your healthcare professional or pharmacist to show you the correct way to use your inhalers.
- Most inhalers have a dose counter to tell you when your inhaler will run out – ensure to keep an eye on this so you know when to re-order your inhaler. If there are changes made to your inhalers, make sure you know how to use the new ones and ask if you should stop or continue the old ones.
- If you use a spacer device, it is important to wash as instructed and allow it to air dry.
- Use a Spacer device if you have a Meter Dose Inhaler (MDI) as it is much more effective than using the inhaler on its own - ask for one if you don't have one.
- Be aware of the side effects of your medicines and tell your healthcare professional immediately if you develop any of these, rather than stopping medications yourself.
- There are very few side effects with inhalers but occasionally they can make you cough, have a dry mouth or develop thrush in your mouth. Rinsing your mouth after using an inhaler containing a steroid is advised.
- When you are finished with your inhaler, it is important to **dispose of it safely**. Ideally it should be returned to your pharmacy for disposal and not placed in your rubbish bin at home. Discuss this with your community pharmacist.
- **Always bring a list of your medications** with you to your appointments.
- **When using a nebuliser, use the mouthpiece attachment instead of the mask as the vapor from the mask on some medications can affect your eyes**.

What can I do? (continued)

- When using a nebuliser, wash out the chamber and mouthpiece of your nebuliser at the end of each use with warm water and washing up liquid, rinse well and leave to air dry.
- Change the chamber as per manufacturer's advice, keep your machine clean and change the filters as per manufacturer's instructions.
- **Ensure your nebuliser machine is serviced annually. If you acquired it through the HSE, your local Primary Care Centre will advise.**

Coping with Breathlessness

A common symptom of COPD is breathlessness. Breathlessness can be described as feeling short of breath or having trouble breathing. Many daily tasks can make you breathless such as walking, getting dressed, climbing stairs or doing jobs around the house. It can feel uncomfortable and can make you panic or feel frightened.

Taking control - What can I do?

- **Do not hold your breath** this will make you feel more breathless.
- **Do not avoid** doing the things that make you breathless. When you learn how to control your breathing these feelings will not worry you as much and you will be able to do more.
- **Do not panic** when you get breathless, your breathing will settle.

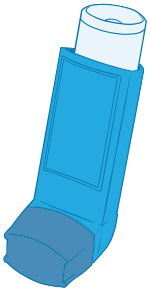
Use the following steps to control your breathing:

Breathing control/Relaxed breathing

- Place one hand on your chest and the other hand on your tummy.
- Relax your shoulders.
- Breath in nice and slowly through your nose.
- Feel your tummy rise and fall as you breath in and out.
- Try to breath out for longer than you breath in. You can use rectangle breathing to help you do this.
- Continue this until your breathing feels more relaxed.

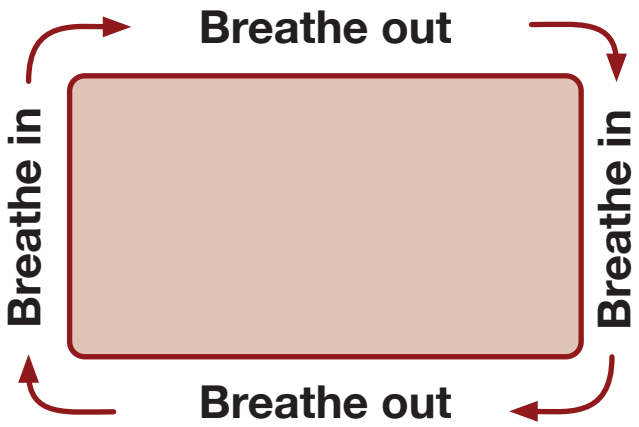
Reliever Inhaler

You can use your reliever inhaler if you have been prescribed one e.g. Ventolin/Salbutamol.



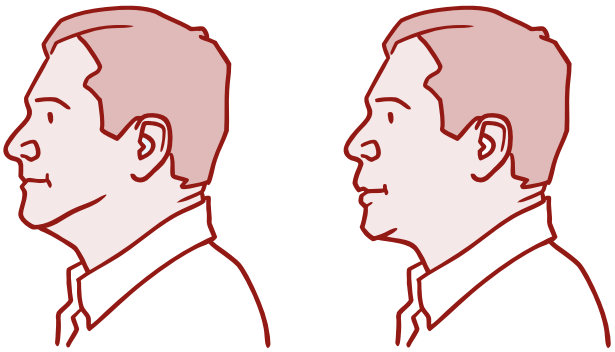
Rectangle breathing

- Visualise a rectangle. You can use a doorframe or a window frame to help you visualise.
- Breathe in along the short edge of the rectangle. Breathe out along the long edge of the rectangle.
- This technique helps you to keep your breath out longer than your breath in.



Pursed Lip Breathing

- Breathe in slowly, for a count of two. It may help to silently count to yourself: "inhale for one, two"
- Pucker or purse your lips, as if you are going to blow out a candle.
- Breathe out slowly and gently through your pursed lips while counting to four. It may help to silently count to yourself: "exhale for one, two, three, four"



Calming Hand

Another tool that you can use to help manage breathlessness is the Calming Hand.

Step 1: Recognition. Squeeze your thumb as a sign that you recognise that you are breathless and/or starting to panic. Hold your thumb as you think about how to regain control of your breathing.

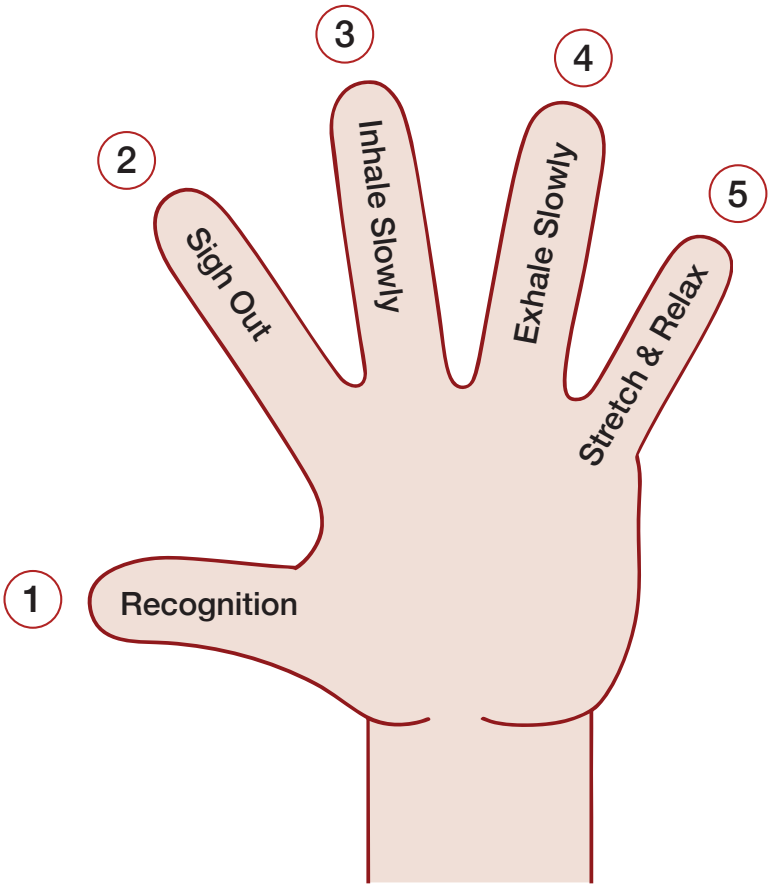
Step 2: Sigh out as you try to relax your shoulders.

Step 3: Inhale slowly, try to take a long deep breath breath in through yor nose.

Step 4: Exhale slowly, breathe out in a gentle relaxed way as you regain control of your breathing.

Step 5: Stretch and Relax your hand as you remind yourself that you will regain control of your breathing.

You may need to repeat steps 1-5 until your breathing feels more relaxed or your sense of panic is decreased.



Sleep Hygiene

When we talk about sleep hygiene, this refers to giving yourself the best opportunity to sleep well that night by establishing an effective routine and habits.

- Go to bed when you feel tired, but try to get up at the same time each morning.
- If you need to have a daytime nap, try to keep it a short nap (around 30 minutes). If necessary, use an alarm clock to wake you up. Any longer may affect how you sleep at night.
- Establish a pre-sleep routine that offers calm and encourages relaxing, ultimately influencing your body to 'wind down'.
- Do not eat or drink too much before going to bed. Smoking cigarettes or drinking tea, coffee or alcohol will act as stimulants and can keep you awake.
- Limit screen time for 30 to 60 minutes before bed so that your ability to sleep is not impacted by over-exposure to blue light. This type of light can reduce the production of melatonin thus effecting our ability to fall asleep.
- Aim to have daily exposure to daylight, specifically sunlight and for at least thirty minutes. Our Circadian rhythm is an internal cycle that controls our 'Sleep-Wake Cycle', and has a significant impact on how lethargic or energetic we feel. Daylight exposure, particularly earlier in the day, influences our Circadian rhythm and how well we sleep.
- Exercise, within your own limits, during the day to tire yourself physically to help you sleep.
- Sleep in a more upright position using more pillows to keep the chest lifted.
- Discuss with your partner the option of having twin beds or a separate room that can be used if one person cannot sleep, so the other person is not disturbed.
- If you cannot get to sleep after twenty minutes, do not persist. Try to do another activity or get up for a time. Return to trying to sleep later so that you do not become frustrated or anxious.
- Arrange your sleeping environment to ensure the appropriate furnishings, temperature, supplies are available to you, therefore optimizing your chances at sleeping well.

Sleep Foundation.org OLH Breathlessness Management in Palliative Care Booklet.

Clearing Your Phlegm/Airway Clearance

A common symptom of COPD can be a lot of mucous/phlegm in the lungs, which can often be hard to clear. If there is a big build-up of phlegm in the lungs this can lead to chest infections.

What can I do?

It is important to try to clear any phlegm that you may have in your lungs.

There are a number of techniques that can be of use. Please ask your Physiotherapist for further advice on a technique which best suits you. There are devices available that may help with airway clearance. You can discuss this with your health care professional.

The Active Cycle of Breathing Technique (ACBT) is a set of breathing exercises, which is used to help loosen and clear any phlegm you may have. (See diagram on page 58)

The techniques that are used in the ACBT are:

1. **Relaxed Breathing or Breathing Control**
   This involves normal relaxed breathing in and out through your nose if possible.
2. **Deep Breaths**
   This involves breathing more deeply, filling your lungs, but keeping your shoulders nice and relaxed. If you can, try to hold your breath for 3 seconds before you breathe out.
3. **Huff**
   This involves a strong/forceful breath out though a wide open mouth and throat, like you would do if you were fogging a mirror. You can start by doing this after taking a small breath in. Then progress to doing a huff after taking a bigger breath in.

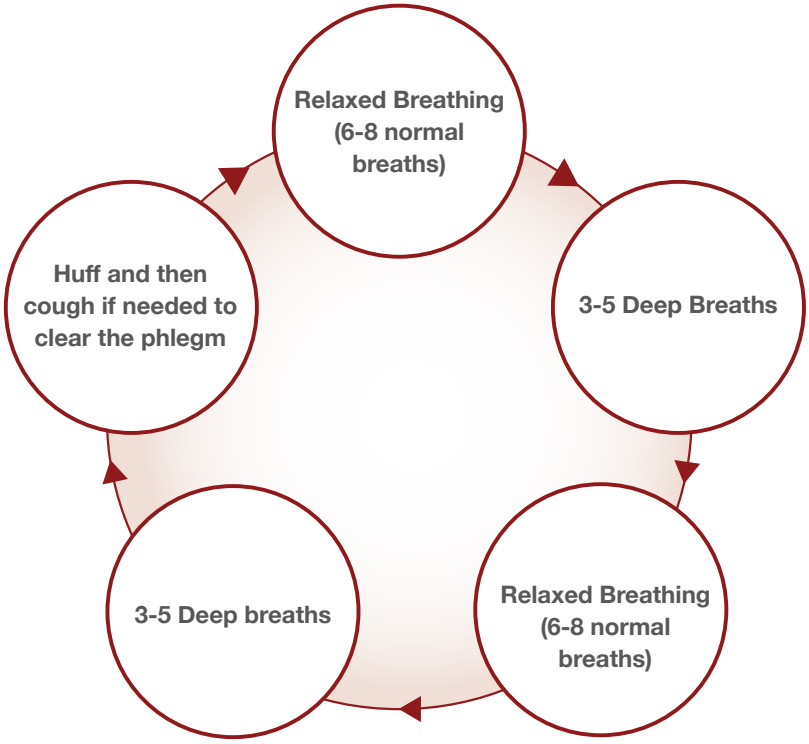
It is good practice to clear your chest with these exercises every morning and evening if you suffer from a build-up of phlegm. This might need to be increased to every 1-2 hours when you are feeling unwell or have lots of phlegm.

Repeat these breathing exercises until your phlegm is gone or you need to take a break.

Stop if you become tired or your chest feels wheezy or tight. Return to the exercises later when you are feeling better.

Active Cycle of Breathing (ACBT)

Sit comfortably and relax your shoulders.



What are flare ups?

Sometimes with COPD your usual symptoms might become worse or you may develop new symptoms. This can happen quite quickly or over the course of a few days. These episodes are called **exacerbations** or **flare ups**. They are usually triggered by inflammation in the lungs, infection (bacterial, flu or viruses) or irritants including: air pollution, smoke or seasonal allergens.

Often, there is a pattern to how a flare up starts. This is usually individual to you so it is good to know what that looks and feels like for you.

During a flare up:

- You may be more **breathless** or as if you are not getting enough air in.
- Your cough is getting worse or you have developed a new **cough**
- You have more **phlegm** or your phlegm might change colour or become stickier.
- You may become wheezy or hear different noises when you breathe.
- You find it **difficult to move around** without becoming breathless or having to take a break.
- You might find it more difficult to **sleep** because you are breathless or coughing more.
- You might feel sleepier during the day.
- Your **ankles** may become swollen or more swollen.
- You might develop a **temperature**.

More severe symptoms of flare ups include:

- Chest pain.
- Blue lips or finger nails.
- Feeling confused or disorientated.
- Too breathless to talk.

If you notice a flare up starting it is important that you follow your COPD Self-Management Plan on page 21, which includes contacting your GP or medical team. Do this promptly. The longer a flare up goes untreated, the longer it may last.

Treatment for a flare up involves adding extra medicines temporarily to your usual treatment. For mild flare ups, where you feel breathless but you have no temperature and your phlegm is normal for you, then you should increase your use of your reliever inhaler. Take this as prescribed. If the flare up is more severe then you will also need steroid tablets with or without antibiotics. Usual treatment with these medicines is for 5 days but your medical team will decide if you need longer or shorter treatment.

What to do after a flare up:

- It can take a while to fully recover following an exacerbation or flare up and this can vary for each individual.
- For some people this recovery can be slow or can take up to six weeks.
- It is important that you continue to take all your medication as prescribed and follow your COPD Self-Management Plan.

What can I do to keep myself well?

- Get your Flu vaccine yearly and the Pneumonia vaccine as well as any other vaccines recommended by your healthcare professional.
- Stop smoking if you are a smoker and make your house a smoke free zone (Section 4).
- Take all your medication including your inhalers as prescribed and check your inhaler technique regularly with your healthcare professional.
- Clear your phlegm as advised by your healthcare professional.
- Avoid crowded places during the cold and flu season.
- Avoid exposure to lung irritants such as smoke or sprays, aerosols and fumes.
- Wash your hands regularly and use hand sanitisers when you can’t wash them.

- Drink enough water to stay hydrated and keep your phlegm from becoming thick or sticky.
- Take regular exercise, eat well and get a good night's sleep.
- Attend your clinic appointments.

Oxygen (0_2)

Sometimes people with COPD will need extra oxygen because they have low levels of oxygen in their blood. Tests for low blood oxygen levels include a fingertip probe, known as pulse oximetry, or a blood test taken from the artery in your wrist, called an ABG (Arterial Blood Gas). If you have continually low levels of oxygen in your blood this can cause damage to organs such as the lungs, heart and brain.

To prevent this you may be prescribed oxygen by your doctor.

There are different types of home oxygen equipment and your healthcare professional will help you decide which type will be best for you.

Oxygen for use at home is called long term oxygen therapy or LTOT for short. When it is prescribed you will be told how often you need to use the oxygen every day, but it is generally prescribed for a minimum 16 hours a day. This does not have to be done all in one go, you can break it up throughout the day and most of the hours can be done at night while you are sleeping.

Make sure you understand how many hours a day you will need to use your oxygen for before you leave the hospital or clinic.

Oxygen equipment is designed to allow you to move freely around your home. Oxygen can also be prescribed to assist you when you are out and about. This is called ambulatory oxygen therapy or AOT and should be used as advised by your healthcare professional.

Oxygen may be prescribed when you are discharged from hospital and then discontinued once you have recovered from your current flare up. It is important to have a follow up appointment with your doctor, specialist physiotherapist or specialist nurse to check.

Oxygen (0_2) continued

Home **oxygen is a drug** so it is important to use it as prescribed. Not using your oxygen can make you more unwell but so can using it incorrectly. It is especially important **NOT** to increase the oxygen dials on the equipment as this can cause **serious side effects** and will not help your COPD.

Being dependent on oxygen does not mean life stops. Today's equipment means you can get out and about more easily.

Oxygen can also be arranged when you want to go on holiday. It just takes a little more forward planning to make sure everything is well organised before you go.

Contact your oxygen supplier as soon as you can and they will advise and help you plan your trip with oxygen.

For more information on travelling with COPD, see Section 11.

If you are prescribed home oxygen by your healthcare professional it is important to remember the following safety tips:

- Look after your equipment and follow the instructions provided by your oxygen supplier.
- Do not expose your oxygen to naked flames or other heat sources.
- Do not smoke near oxygen equipment.
- Store oxygen equipment safely, your oxygen supplier will provide advice.
- If you are not using your oxygen, turn it off. Be especially careful not to leave oxygen tubing, with oxygen flowing through it, on beds, soft furnishings or even your lap.
- Ensure you have working smoke alarms and a fire extinguisher in your home.
- Remember to register as a Vulnerable/Priority customer with your electricity supplier. This will ensure you are prioritised when planned outages are needed.

Contact Phone Numbers for Home Oxygen Suppliers can be found on your equipment.

Non-Invasive Ventilation (NIV)

Normally when we breathe, we take in oxygen and we breathe out carbon dioxide (a waste product). Some people with COPD may find breathing extremely difficult. The breathing muscles can get tired and not work very well. This can lead to too much carbon dioxide and not enough oxygen in the blood.

Signs of this include feeling tired and sleepy and sometimes a bit confused. To help with your breathing and to give your lungs some rest, your healthcare team may prescribe a non-invasive ventilation machine.

Using a non-invasive ventilation machine can provide relief to your overworked lungs and breathing muscles. It gives you help with each breath that you take. It helps to keep the airways open and reduce the amount of energy it takes for you to breathe. It helps to get rid of the carbon dioxide and ensures a steady supply of oxygen to your body. This machine will be prescribed by your doctor to suit your own personal needs and adjusted if required. If you use oxygen, this can be delivered through your non-invasive ventilation machine.

Non-invasive ventilation is often used at nighttime only but it can also be used during the day if needed. Non-invasive ventilation can be a little uncomfortable to start with, and it can take some time to get used to it. Your team of healthcare professionals will work with you and your non-invasive ventilation machine provider to make your non-invasive ventilation treatment as comfortable as possible for you.

You may experience some of the following side effects:

- Dry, blocked, irritated nose
- Discomfort
- Claustrophobia

It is important to discuss these problems with your healthcare professional. They will help you manage these problems, allowing you to continue your treatment.

Vaccines

People with COPD are more at risk of catching the flu and pneumonia, both of which can be very serious and affect your breathing. You can protect yourself from both of these diseases by getting vaccinated. This is when small quantities of inactivated organisms which cause the flu or pneumonia are injected into the body. This does not cause the flu or pneumonia but encourages your body's immune system to produce antibodies, helping it to fight off infection.

The Influenza (Flu) vaccine

The flu is a highly infectious disease, so you need to have your flu vaccine every year - September or October time is best. Remember it will take 10-14 days for the vaccine to start protecting you against the flu.

You might experience some side effects such as soreness and redness at the injection site. These usually go away in a day or so.

The Pneumococcal (Pneumovax) vaccine

This protects against infections such as pneumonia, caused by a group of bacteria called Pneumococcal bacteria. Like the flu vaccine, this vaccine encourages your immune system to make antibodies. Unlike the flu vaccine you do not need to get it every year. Adults under 65 will need to get a second dose of the vaccine when they turn 65, but there needs to be 5 years between the vaccinations. You can talk to your healthcare professional about this.

COVID-19 vaccine

People with COPD are at high risk of severe complications from COVID-19 infection. Vaccination against COVID-19 is strongly recommended for all people living with COPD, in accordance with HSE guidelines.

Surgical Management of COPD

Lung volume reduction (LVR) is a treatment for emphysema type COPD. LVR is a procedure that removes the most damaged parts of your lungs so that the healthier parts can work better. The treatment should make it easier for you to breathe.

LVR may be done using:

- Lung volume reduction surgery (LVRS). A surgeon will operate and remove the most damaged parts of your lung.
- Endobronchial valves (EBV), or bronchoscopic lung volume reduction (BLVR). Valves are placed into your airways to stop air from getting to the most damaged parts of your lung. This causes these parts to shrink and make more space for the healthier parts of your lung to work.

What are the benefits of LVR?

LVR can improve:

- how well your lungs work
- breathlessness
- your ability to do daily activities
- your quality of life
- your life expectancy

Who can have lung volume reduction (LVR)?

Lung volume reduction (LVR) can be very effective, but only around 1 to 2 in 100 people with emphysema are likely to be suitable.

Pulmonary rehabilitation (PR) is an effective treatment for breathlessness. You have to complete a course of PR before you can have LVR.

Your lung specialist will review whether LVR may be right for you if:

- you have severe emphysema.
- you are limited by breathlessness, meaning you get breathless after walking for a few minutes on flat ground.
- you have not smoked in at least four months.
- you have completed pulmonary rehabilitation (PR) within the last 12 months or are taking part in a post-PR exercise programme.
- you are not too underweight or frail.
- you do not have other long-term conditions that mean that LVR might not be safe or effective for you, like pulmonary fibrosis or heart failure.
- your lung function tests show that you are someone who is likely to benefit. This usually means that the amount of air you can blow out in one second is less than half of what it should be. The amount of air that stays trapped in your lungs when you breathe out also needs to be higher than normal for you to have LVR.

If these apply to you, your specialist may refer you to a multidisciplinary team (MDT) to be assessed.

Why would lung volume reduction (LVR) not be right for me?

Lung volume reduction might not work for you if:

- you have other long-term conditions as well as emphysema, like pulmonary fibrosis, severe pulmonary hypertension, or heart failure.
- your emphysema is evenly spread across your lungs. This makes finding suitable parts of your lung to target harder.

If LVR is not right for you, your specialist can speak to you about other treatment options.

Lung volume reduction surgery

Lung volume reduction surgery is usually a keyhole surgery. Your surgeon will use small cuts and a camera put inside your chest with a special tool to remove the damaged parts of your lung.

The procedure is done using general anaesthetic, so you are asleep when it happens. It takes around 1 to 2 hours. It takes less time to recover from keyhole surgery than other types of surgery where larger cuts are made.

Endobronchial valves (EBV)

Endobronchial valves (EBV) are another form of lung volume reduction. They are small, one-way valves placed in your lungs to block off the most damaged part of the lung. This is done using a small flexible camera (a bronchoscope).

The valves allow air to leave the damaged area of the lung, but no air can get in so this area shrinks down to almost nothing. Like lung volume reduction surgery, this means the lungs do not inflate more than they should and makes room for healthier parts of the lung to move.

EBVs are usually put in under general anaesthetic so that you are asleep during the procedure. Putting the valves in takes less than an hour.

This procedure is sometimes called bronchoscopic lung volume reduction (BLVR).

Are valves or surgery better?

In patients who are eligible, both lung volume reduction surgery (LVRS) and endobronchial valves (EBV) can improve your lung function, ability to exercise, quality of life and life expectancy. Recent studies have shown that both procedures are equally safe and effective.

The right approach depends on the pattern of emphysema, which your MDT will be able to see in your CT scan. Sometimes only EBV or only lung volume reduction surgery is an option. Sometimes either treatment might be effective. Your MDT will discuss with you which procedure is right for you.

7 Food & Nutrition: COPD, Food & Me

Why does nutrition matter when I have COPD?

Good nutrition is important for everyone, but it is particularly important for individuals with COPD, because good nutrition can:

- **Improve lung function**
- **Increase muscle strength**
- **Reduce shortness of breath and fatigue**
- **Improve exercise ability**
- **Reduce your risk of infections**
- **Reduce your risk of hospital admissions**
- **Improve quality of life**

In other words, good nutrition can help keep people with COPD fitter and stronger.

How can I follow a healthy diet?

A healthy diet includes a variety of foods to provide your body with all the nutrients it needs.The food pyramid is an evidenced-based resource that provides recommendations on how to follow a healthy, balanced diet. Each shelf of the pyramid represents a different food group, which will provide you with different nutrients.

The left-hand side of the pyramid details the name of each of the 5 different food groups, while the right-hand side provides information on how many servings (or portions) from each food group are recommended each day (for example, it is recommended that you have a total of 5-7 portions of vegetables, salad, and fruit).

The Food Pyramid

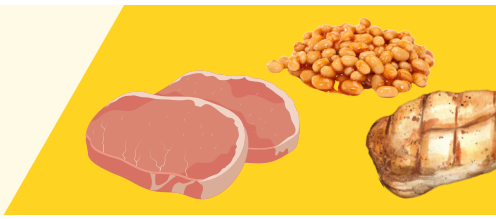
Not needed for good health

Food & drinks high in fat, sugar and salt

Needed for good health. Enjoy a variety every day.

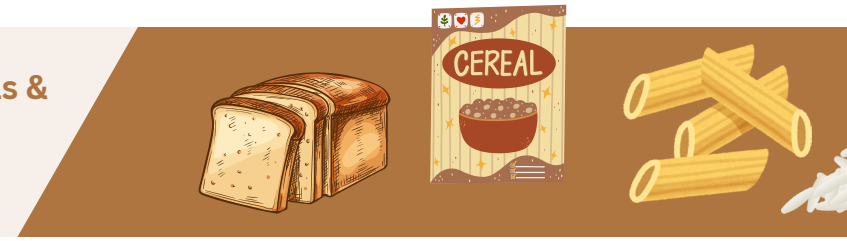
Fats, spreads & oils

Meat, poultry, fish, eggs, beans & nuts



Milk, yoghurt & cheese

Wholemeal cereals & breads, potatoes, pasta & rice



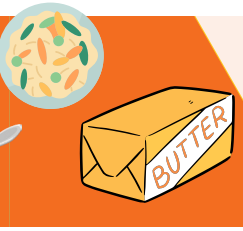
Vegetables, salad & fruit

For adults, teenagers, and children aged five and over

Not every day

Most people consume foods high in fat, sugar and salt and sugar sweetened drinks up to 6 times a day (Healthy Ireland survey 2016). There are no recommended servings for Top Shelf food and drinks because they are not needed for good health.

in very smal amounts

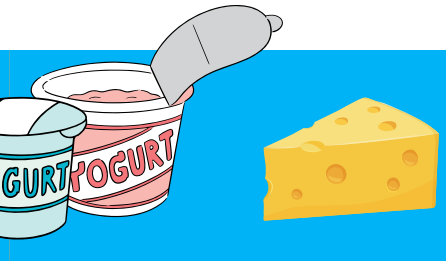


Use as little as possible. Choose mono or polyunsaturated reduced-fat or light spreads. Choose rapeseed, olive, canola, sunflower or corn oils. Limit mayonnaise, coleslaw and salad dressings as they also contain oil. Always cook with as little fat or oil as possible - grilling, oven-baking, steaming, boiling or stir-frying.

2 servings a day

Choose lean meat, poultry (without skin) and fish. Eat oily fish up to twice a week. Choose eggs, beans and nuts. Limit processed salty meats such as sausages, bacon and ham.

3 servings a day *

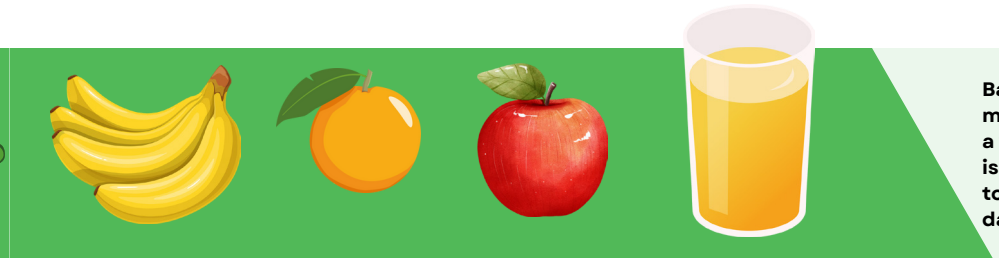


Choose reduced-fat or low-fat varieties. Choose low-fat milk and yogurt more often than cheese in small amounts. Women who are pregnant or breastfeeding need 3 servings a day.

3-5 servings a day *

Wholemeal and wholegrain cereals are best. Enjoy at each meal. The number of servings depends on age, size. If you are a man or a woman and on activity levels. Watch your serving size and use the daily servings guide on the next page*.

5-7 servings a day



Base your meals on these and enjoy a variety of colours. More is better. Limit fruit juice to unsweetened, once a day.

* 5 for children age 9-12 and teenagers age 13-18

* Up to 7* for teenage boys and men age 19-50

The food groups:

Vegetables, salad and fruit

These foods are high in antioxidants and anti-inflammatories, which can reduce inflammation in the lungs. Research has found that a diet rich in fruit and vegetables is associated with better lung function and a reduced risk of exacerbations (flare-ups) in individuals with COPD.

Cereals, breads, potatoes, pasta, rice

These foods provide your body with valuable energy (called 'calories'). Your body uses food as the fuel for everything it does, including breathing. Choosing brown or wholegrain options will provide your body with extra fibre. High fibre foods are associated with beneficial effects on lung function and heart health.

Milk, yogurt, cheese

These foods are high in calcium. Calcium plays an important role in keeping your bones strong. Calcium intake is particularly important in COPD, as commonly used medications (such as steroids) can draw calcium out of your bones. This causes bone to become weaker, increasing fracture risk. Many people believe that consuming dairy products will cause their body to produce extra mucus, but research has shown that this isn't the case. It is important not to avoid these foods, as they are rich in nutrients. In order to help absorb calcium, your body needs vitamin D (see section on Vitamin D for recommendations).

Meat, poultry, fish, eggs, beans, nuts

These foods are high in protein. Adequate protein intake is needed to help build and maintain muscle mass and strength. Low muscle mass is common in COPD, and it is associated with worsening lung function, increased shortness of breath, and reduced physical fitness. Maintaining a healthy muscle mass is associated with better outcomes.

Fats, spreads, and oils

These foods are high in energy (calories) and provide us with vitamins (such as Vitamin D).

For further information and resources on the food pyramid, you can visit the HSE's website: https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/heal/healthy-eating-guidelines/

Vitamin D

Vitamin D deficiency is common in COPD. It is associated with poorer lung function and reduced bone health. Research has shown that Vitamin D supplementation reduces the risk of COPD flare-ups in individuals who are deficient (have low vitamin D levels). Vitamin D is naturally present in a limited number of foods (e.g. oily fish, egg yolks), and as a result, it is difficult to get the recommended amount from food alone. Our main source of vitamin D comes from direct sunlight on our skin. Unfortunately, the sun in Ireland is not strong enough for your body to make enough Vitamin D all year round. The Food Safety Authority of Ireland (FSAI) recommends that adults living in Ireland take a vitamin D supplement (tablet). Their recommendations are summarised in the table below.

Recommendations

For adults under 65 years

For healthy adults who get sunlight exposure during the summer months:

A daily vitamin D supplement providing 15 micrograms (600 IU) should be taken from the end of October to March for those with fair skin.

For those with darker skin, a daily vitamin D supplement providing 15 micrograms (600 IU) should be taken all year round.

For adults over 65 years

For healthy older adults who get sunlight exposure during the summer months:

A daily vitamin D supplement providing 10 micrograms (400 IU) should be taken from the end of October to March for those with fair skin.

For those with darker skin, a daily vitamin D supplement providing 10 micrograms (400 IU) should be taken all year round.

For housebound older adults with minimal sunlight exposure:

A daily vitamin D supplement providing 15 micrograms (600 IU) should be taken all year round

The importance of hydration

Adequate hydration is important to help keep mucus thin. If you are dehydrated, mucus can become thick and sticky, making it difficult to clear. This increases your risk of developing a chest infection. Irish guidelines recommend that, in general, women should drink 8 x 200mls glasses of fluid per day, while men should drink 10. Water, milk, sugar-free drinks, tea and coffee all count towards your daily total. Alcoholic drinks do not count towards your fluid intake due to their dehydrating effects. Research has found heavy alcohol intake to have a negative effect on lung function. Information on alcohol intake and low-risk guidelines can be found on **https://www2.hse.ie/living-well/alcohol/**

What is a healthy body weight for you?

Body Mass Index or BMI is a way of checking to see if you are a healthy weight. BMI uses your height and weight to calculate if you are a healthy weight, overweight or underweight.

What does your BMI mean?

If your BMI is less than 18.5 then you are probably underweight

If your BMI is between 18.5 and 25, then you probably have a healthy weight

If your BMI is between 25 and 30 then you are probably overweight

If your BMI is over 30 then you are probably obese

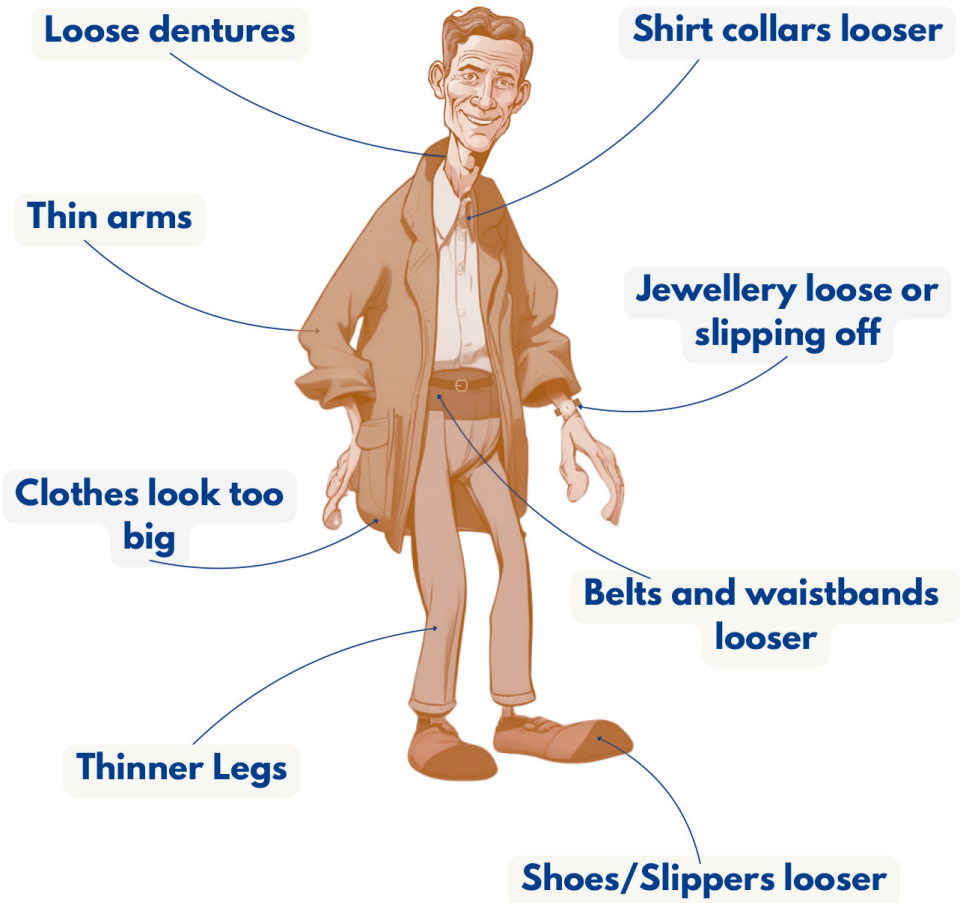
A BMI calculator can be found on the following website:
www.safefood.net/bmi-calculator

For individuals with COPD, it is important to achieve and maintain a healthy weight, as health complications can result from being underweight or overweight. Being underweight is associated with an increased risk of infections, reduced muscle mass and strength (including the muscles involved in breathing), and an increased number of hospital admissions. Being overweight can increase strain on the lungs, making breathing more difficult. It also increases your risk of developing other medical conditions such as sleep apnoea, high blood pressure, and type 2 diabetes.

It is important to note that losing a significant amount of weight unintentionally is a risk factor for becoming malnourished (even if you are in the healthy, overweight, or obese BMI categories). Weighing yourself once a month can help you to identify any unintentional weight loss, which should be discussed with your healthcare provider.

Look out for signs of weight loss, such as:

- Clothes feeling looser
- Needing to tighten notches on belt
- Jewellery feeling looser or slipping off
- Dentures feeling looser
- Shoes and slippers feeling looser



I've lost weight without trying, what can I do?

Weight loss is common in people with COPD for a number of reasons, with many people experiencing a poor appetite. Feeling short of breath at mealtimes can cause difficulty eating. Gasping for breath can cause you to swallow large amounts of air, which leads to a false feeling of fullness. When you have COPD, your body needs extra energy (or calories) just to do the work of breathing, with even more calories needed to help fight infections. Weight loss can occur when your body is not getting in the calories that it needs. Therefore, to help you maintain or increase your weight, you will need to increase the number of calories that you are eating each day. Research has found that a weight increase of over 2kg is associated with an increase in muscle strength (including the muscles involved in breathing) and an increase in quality of life.

If you have lost weight unintentionally, it is recommended that you follow a **high calorie, high protein diet** (calories are needed to help prevent any further weight loss, while protein is needed to keep your muscles strong)

Here are some tips which may help a poor appetite:

- **Eat little and often: you may find it easier to eat 3 x small meals (and 2-3 x snacks in between) rather than eating 3 large meals. Some people find large meals or portions off-putting. Try to eat something, no matter how small, at every meal time. Some intake is always better than none.**
- **Avoid drinking large volumes of fluid for half an hour before mealtimes, as this can fill you up.**
- **Fruit and vegetables can be very filling, but they are low in calories. When your appetite is poor, don't fill up on these foods. Always eat the meat/fish, and the potatoes/rice/pasta on your plate before you eat your veg.**
- **If you smoke, try to avoid doing so before mealtimes as this can reduce your appetite even more.**
- **If the energy it takes to prepare food and drink makes you short of breath, choose items that are quick and easy to prepare such as ready meals, and tinned and frozen foods.**

- **Try to eat a high protein food with every meal e.g. cheese, meat, chicken, fish, eggs, beans, nuts, milk, custard, yogurts. For extra protein, choose options with 'high protein' written on the label**
- **Choose full fat foods (e.g. whole milk), avoid low fat or 'diet' options**
- **Make use of nourishing drinks that are high in calories and protein by aiming to have at least 2 each day (examples include full fat milk, milkshakes, hot chocolate, and smoothies)**
- **Have a dessert every day e.g. ice cream, cake, custard, rice pudding**

Food fortification or 'enrichment'

If you are struggling to eat more, it is important that you make your foods more nutritious by increasing their calorie and protein content without increasing the volume or portion size. This is called food fortification.

Here are some tips on how you can fortify foods:

- **Add butter, cream, oil, cheese, mayonnaise, full fat milk, and milk powder into savoury foods such as soup, scrambled eggs, and mashed potatoes.**
- **Add sugar, honey, cream, jam, full fat milk, milk powder, nuts and nut butters into sweet foods/breakfast foods such as porridge, cereal, custard, rice pudding, and yogurts.**
- **Add cream, sugar, and ice cream to desserts.**
- **Add extra butter to vegetables, potatoes, bread, and scrambled eggs.**
- **Fortify your milk by adding 4 tablespoons of milk powder into 1 pint of full fat milk daily (this can be used as a drink by itself, and added in to cereals, tea/coffee, scrambled eggs, and mash potatoes).**

Examples of high calorie, high protein snacks include:

- **Cheese and crackers**
- **Yogurts**
- **Custard**
- **Rice pudding**
- **A handful of nuts**
- **Peanut butter on toast**
- **Eggs**
- **Ice cream**
- **Beans on toast**

Further information and tips on how to fortify foods and follow a high protein high calorie diet can be found on the following websites:

HSE Making the Most of Every bite: https://www.hse.ie/eng/services/list/2/primarycare/community-funded-schemes/nutrition-supports/making-the-most-of-every-bite.pdf

Malnutrition Pathway- Nutrition Support in COPD: https://www.malnutritionpathway.co.uk/library/red.pdf

If you are unable to get the nutrition that you need through food alone, a nutritional supplement high in protein and calories may be helpful (called oral nutritional supplements or 'ONS'). You can discuss this with your GP, who can refer you to a dietitian for further advice. Your GP or dietitian can prescribe these supplements if they think they are needed

What if I'm trying to lose weight?

You may find it difficult to manage your weight when you have COPD for a number of reasons. You may be less active than you used to be. Some medications (such as steroids) can affect your weight and can cause an increase in appetite. The best way to lose weight, and to keep it off, is by taking things slow and steady. Extreme dieting is not healthy for your body and can be very hard to maintain. Rapid weight loss results in the loss of muscle and should be avoided. Losing weight in a slow and controlled manner helps to ensure that we are losing fat mass, while maintaining muscle. It is really important to make sure that you are getting in enough protein to keep your muscles healthy and strong. High protein foods will also help you feel fuller and more satisfied for longer.

If you are looking to lose weight, you can aim to lose around 0.5kg/week. Here are some tips to help with weight loss:

- **Write down or think about why you want to lose weight, as this can help with motivation.**
- **Start by setting 2-3 specific, realistic healthy eating goals (e.g. swap out packet of biscuits at 11am for a piece of fruit instead). Monitor your progress by keeping track of your goals in a diary.**

- Don't skip meals. You are less likely to overeat if you have a regular meal pattern. Aim to have 3 x main meals each day and 2-3 x healthy snacks in between.
- Try to eat a high protein food with every meal e.g. cheese, meat, chicken, fish, eggs, beans, nuts, milk, yogurts.
- Fill up on fruit and vegetables. These foods are low in calories, but high in vitamins and minerals. Eating fewer calories will help you lose weight. Try to make sure that half of your plate at mealtimes is taken up by fruit and veg.
- Foods on the top shelf of the food pyramid (e.g. biscuits, chocolates, cakes, sweets, crisps and sugary drinks) are high in calories and are not needed for good health. Try to gradually reduce your intake of these foods. Current Irish guidelines recommend that they should not be eaten every day, but rather once or twice a week at most.
- Choose low fat options such as low fat dairy products and lean cuts of meat.
- Base your portion sizes on the guidelines that have been set out in the food pyramid.
- Make a shopping list each week, and only buy foods off this list.
- Adopt healthier methods of cooking, such as grilling or boiling, rather than frying foods.
- Increase your physical activity levels. If you haven't been very active, try to gently increase the amount of activity that you are doing.

Losing weight is complicated and can be difficult to achieve (some people spend their lives losing and regaining weight). This is not good for your physical or mental health. If you have experienced this, focus instead on being healthy at the weight you are. - See HSE link for a guide to developing healthy habits: https://www.hse.ie/eng/about/who/cspd/ncps/obesity/programme-resources/hse-talking-about-weight-guide-final-6.pdf

Issues that may affect food and nutrition

Taste changes:

Taste changes are a common side-effect of medications used to treat COPD. Changes in taste can cause a reduction in appetite and desire to eat. The following tips may help to improve taste:

- **After using a steroid inhaler, rinse your mouth and gargle with water.**
- **Adopt good oral hygiene. Regularly clean your teeth/dentures.**
- **Try stronger tasting foods, such as spicy or sugary foods.**
- **Experiment with different sauces/seasoning such as spices, herbs, and chutneys.**
- **If you go off a particular food, try it again at a later point as your taste may continue to change.**

Shortness of breath:
Feeling short of breath can cause difficulty eating. Many people who are breathless gulp air when eating, which can cause bloating and a feeling of fullness. The following tips may help:

- **Try to have a rest before meal times.**
- **Make the most of your meals by eating at times when your breathing feels more settled.**
- **It may be easier to eat softer, moist foods when short of breath such as milk puddings, ice cream, casseroles, curries, smoothies, and milkshakes. You can make foods more moist by adding sauces and gravy.**
- **Take your time when eating. Try to put your knife and fork down in between every bite.**

Dry Mouth:

You may find that your mouth feels very dry. This is a common side effect of oxygen treatment and steroid inhalers. Having a dry mouth can make food less appealing and make it more difficult to chew and swallow food. The following tips may help to relieve dry mouth:

- **Choose softer, moist foods.**
- **Suck on sugar-free sweets, ice lollies, and ice-cubes.**
- **Chew sugar-free gum.**
- **Rinse your mouth with water after using steroids.**
- **Avoid using alcohol-based mouthwashes.**
- **Ensure adequate hydration (see the section on hydration for further details).**
- **Pastilles or saliva sprays to help relieve dry mouth are available from your pharmacy or on prescription. You can chat to your healthcare professionalt about these products.**

Constipation:

- **Stay hydrated. Aim for 8-10 cups (200mls each) of fluid per day. Water, tea, coffee, milk, juice, and sugar-free drinks all count towards your fluid intake.**
- **Choose brown/wholemeal options wherever possible such as breads, cereals, pasta or rice. You can add seeds and bran to foods (such as porridge and cereals) to increase their fibre content.**

Reflux:

When you have COPD, you are more likely to develop reflux. It is caused by acid from the stomach leaking up into the food pipe (oesophagus), causing you pain. If you are overweight, losing weight has been shown to help reduce symptoms. Avoiding lying down too soon after eating may also help.

Some people, not everyone, find that reducing the following foods and drinks may help. It is extremely important to only exclude food and drink which have an impact on your symptoms

- **Alcohol**
- **Spicy foods**
- **Fatty or greasy foods (such as french fries and burgers)**
- **Fizzy drinks**
- **Caffeinated drinks such as coffee and tea**
- **Acidic foods such as fruit juices, tomatoes, garlic, and onions**

What can I do if I would like more nutrition-related advice?

Ask your healthcare professional to refer you to a dietitian if you are concerned about any of the issues covered in this section.

Daily Servings Guide

***Daily servings guide - wholemeal cereals and breads, potatoes, pasta and rice**

Active	Child (5-12)	Teenager (13-18)	Adult (19-50)	Adult (51+)
	3-4	4	4-5	3-4
	3-5	5-7	5-7	4-5

Inactive	Teenager (13-18)	Adult (19-50)	Adult (51+)
	4	3-4	3
	4-5	4-6	4

There is no guideline for inactive children as it is essential that all children are active.

Average daily calorie needs for all foods and drinks for adults

Active 2000kcal **Inactive** 1800kcal

Active 2500kcal **Inactive** 2000kcal

Source: Department of Health. December 2016

Cereals, cooked rice and pasta, and vegetables, salad and fruit

Use a 200ml disposable plastic cup to guide serving size

Meat, poultry, fish

The palm of the hand, width and depth without fingers and thumbs, shows how much you need a day

Cheese

Use two thumbs, width and depth to guide serving size.

Reduced-fat spread

Portion packs found in cafes can guide the amount you use. One pack should be enough for two slices of bread

Oils

Use one teaspoon of oil per person when cooking or in salads

Get Active!

To maintain a healthy weight adults need at least 30 minutes a day of moderate activity 5 a week (or 250 mins a week); children need to be active at a moderate to vigorous level for at least 60 minutes every day

Drink at least 8 cups of fluid a day - water is best!

8 Speech and Language Therapy

Swallowing difficulties, reflux, changes to voice and speech, chronic cough and oral hygiene issues are very common in COPD.

These issues can be caused by changes in the breathing / swallow pattern, physical changes (increased fatigue, dry mouth, and reflux) and side effects of certain medications.

Speech and Language Therapists (SLTs) can help people with COPD to eat, drink and communicate to the best of their ability.

How are swallowing and breathing related?

Swallowing is a complex process involving coordination of more than 26 muscles and 6 nerves. As seen in the picture below, the opening to the airway (trachea) and the opening into the food pipe (oesophagus) are right beside each other. You close off your airway when you swallow to make sure food or fluid going to the stomach does not go down the wrong way into the lungs.

Consequences of swallowing problems

Swallowing problems (also known as **dysphagia**) can occur because of food or fluid going 'down the wrong way' into the wind pipe, instead of the food pipe. This is called **aspiration**.

Normally, people cough when something goes the wrong way. Because of impaired sensation, people with COPD are at increased risk of 'silent aspiration'. This is where they do not feel food or drink going into the windpipe and as a result, do not try to cough and clear it.

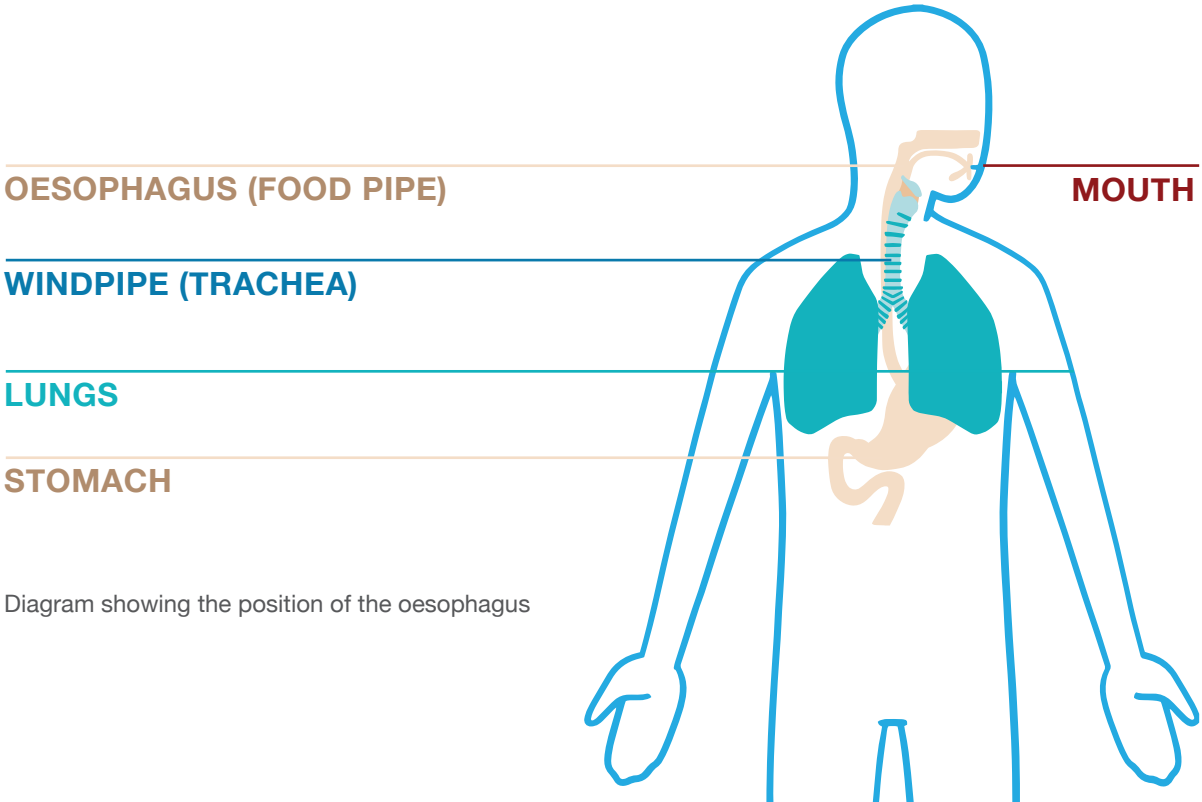


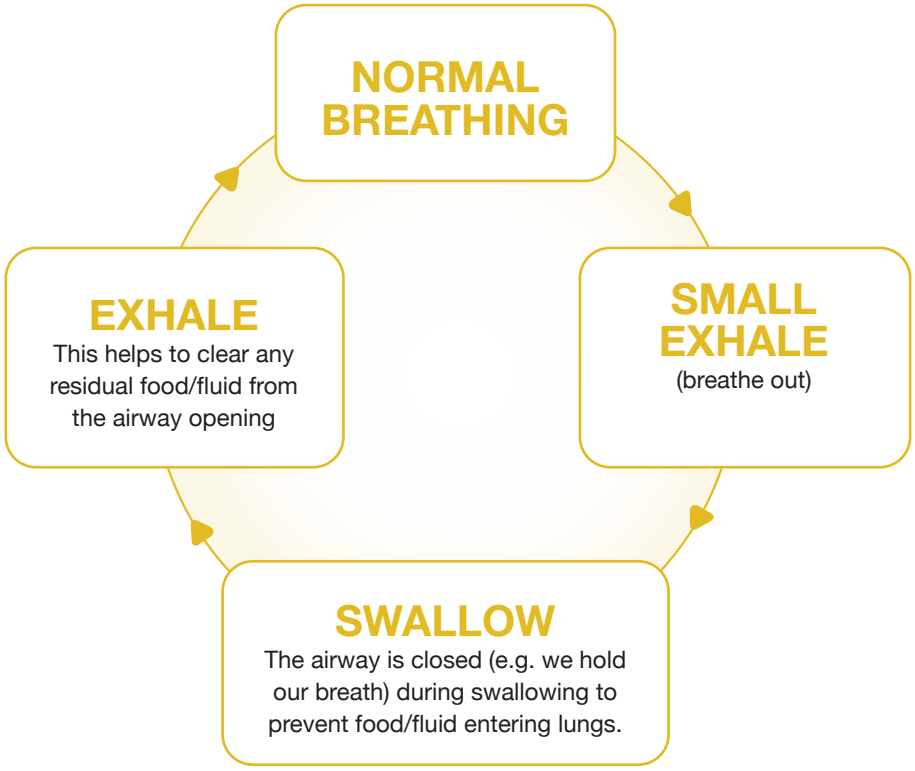
Diagram showing the position of the oesophagus

Consequences of swallowing problems include:

- **Increased occurrence of chest infections**
- **Unintentional weight loss and loss of muscle mass**
- **Increased risk of hospital admission**
- **Increased risk of dehydration e.g. if you are avoiding fluids because they make you cough**
- **Reduced quality of life**

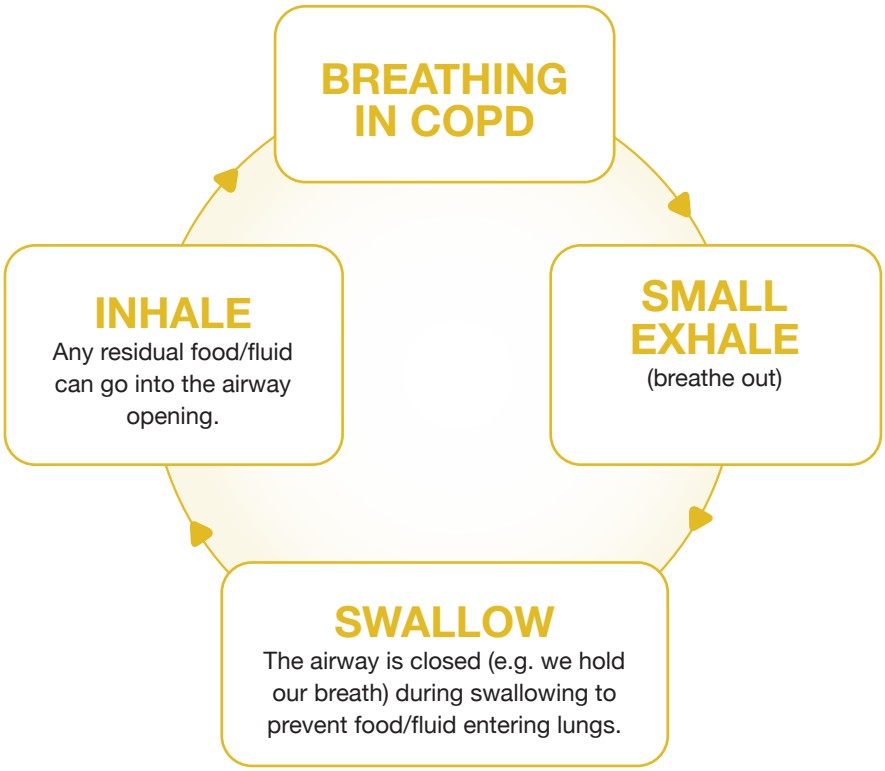
Normal Breathing and Swallowing Cycle

When you swallow, your body must coordinate your breathing and swallowing. When you swallow, you stop breathing for approximately one second, while structures in your throat briefly close off the airway. Closing the airway prevents food or fluid from entering the lungs during swallowing. After you swallow, you typically exhale or breathe out to help clear any residual food or fluid from the top of the windpipe.



Breathing and Swallowing in COPD

For people who have COPD, this breathing / swallowing cycle can be more challenging and is easily disrupted. Sometimes people with COPD will inhale after they swallow, instead of exhaling. This increases the risk of leftover food / fluids going from the throat into the windpipe.



How may COPD affect your swallowing?

Some people with COPD experience difficulty in coordinating breathing and swallowing while eating/drinking.

People who have COPD can become short of breath during meal times because they can have difficulty holding their breath when they swallow. They may also find that the effort of chewing food is tiring and causes them to become short of breath.

The more short of breath you become, the more difficult it can be to coordinate your breathing and swallowing.

Studies have demonstrated that the difficulties associated with swallowing may lead to exacerbations of COPD.

Symptoms

Signs of swallowing difficulties may include:

- **Coughing after swallowing food/drinks**
- **Shortness of breath during meals**
- **Wet or "gurgly" voice after swallowing**
- **Feeling food or phlegm sticking in the throat**
- **Difficulty chewing food**
- **Taking more time to finish meals**
- **Reflux or heartburn - feeling material come back up the food pipe, burning sensation**
- **Getting tired or more short of breath after eating and drinking**
- **Change in sputum colour**
- **Unexplained temperature or weight loss**
- **Feeling more full earlier**

Swallowing difficulties can vary in severity. Symptoms can sometimes be worse during an exacerbation of COPD.

If you notice any of these symptoms, talk to your healthcare professional about referral to Speech and Language Therapist.

What strategies can you use to help manage swallowing problems?

Even if you are not currently experiencing swallowing problems, there are a number of strategies that can be used to protect the lungs.

This knowledge could be helpful if you begin to experience swallowing problems during an exacerbation of COPD. These strategies include:

- Try not to eat or drink if feeling increased breathlessness.
- Always sit as upright as possible in a sturdy chair when you are eating and drinking.
- Eat slowly and take small mouthfuls one at a time.
- Opt for foods that are soft and easy to chew. Consider adding sauces or gravy to moisten foods.
- If worn at home, wear nasal oxygen prongs during meals.
- Have smaller, more frequent meals. Take a break during your meal if you become short of breath or tired.
- Try to minimize talking during meal times.
- Remain upright for at least 30 minutes after your meal.
- If you experience reflux or heartburn, discuss with your healthcare professional.

Managing swallowing problems due to dry mouth

People who have COPD often experience dry mouth, which is called xerostomia. Dry mouth can be related to oxygen use (via a mask or nasal prongs), mouth breathing or medications.

Having a dry mouth is uncomfortable, can increase the risk of dental problems and may contribute to swallowing problems.

To reduce dry mouth symptoms:

Do:

- Sip fluids frequently throughout the day.
- Always rinse and gargle after taking your medications or inhalers.
- Use artificial saliva products or other oral lubricants (for example: Biotene, BioXtra, Oralieve, etc), available at your local pharmacy.
- Suck sugar-free lollies or chew gum.

- Reduce your intake of caffeine, alcohol and spicy foods.
- Avoid smoking
- Regularly brush your teeth and gums (or clean your dentures) to reduce bacteria build up in your mouth.
- Have regular dental check-ups.
- Talk to your healthcare professional about reviewing the medications you are taking.
- If you are having problems swallowing whole tablets, talk to your Pharmacist about cutting or crushing the tablets or changing to a liquid form.

Don't:

- Suck medicated lozenges.
- Use alcohol-based mouthwash.

Voice

May people with COPD experience voice changes due to COPD symptoms and even certain COPD medications. Voice changes or difficulties are called 'dysphonia'.

The most common voice symptom is hoarseness which can be described as 'raspy', 'breathy', 'croaky' or 'frog like'. Other people may find their voice is weak or quiet.

Dysphonia can be caused by an exacerbation of COPD or a side effect of certain medications including inhaled corticosteroids.

Strategies for healthy voice use:

- Warm up your voice after using nebulisers and first thing in the morning.
- Try to minimise the amount of times you cough or clear your throat.
- Reduce caffeine and alcohol intake: opt for herbal teas and non-alcoholic drink options.
- Avoid very hot/cold/spicy foods.

You should discuss with your healthcare professional if you experience any of the following for more than 2 weeks:

- **Neck changes**
- **Pain when you talk or swallow**
- **Sensation of something stuck in your throat**
- **Persistent hoarseness**

Role of SLT in management of voice and swallowing problems

A Speech and Language Therapist can help in the identification and management of swallowing and voice problems.

They will meet with you and explore the difficulties you are having. They will assess how your voice and swallowing muscles are working. They may observe you eating and drinking to see what difficulties you are having.

The SLT can provide guidance and advice specific to your symptoms. This might include:

- **Changing the consistency of food and drinks so that your swallow may be safer or more efficient.**
- **Strategies to improve how food and drink passes through your throat and into the food pipe.**
- **Exercises to improve the strength of your swallowing muscles.**
- **Voice care strategies or exercises.**

9 Mental Health & Wellbeing

COPD and my mental wellbeing

Many people with COPD enjoy a good life, but living with COPD can bring extra challenges that affect the quality of your life, and this can negatively impact on your mental health and emotional wellbeing.

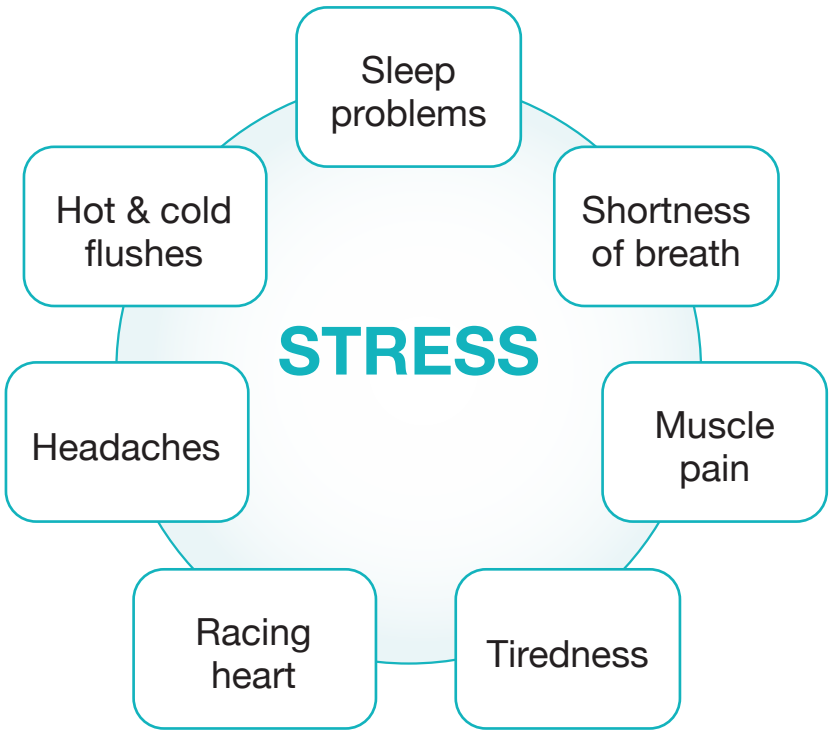
Some of the additional pressures include:

- Increased worry about your health and your future.
- Difficulties doing regular things like going to work or to school.
- Breathlessness or coughing causing worry about socialising or going places.
- Disturbed sleep causing you to feel tired and unable to do the things you enjoy.

These pressures can get in the way of you doing things that you want to do, and can lead you to feel disheartened, angry or low. All of this can make you more likely to develop problems like anxiety and depression. Managing your COPD means that you also need to manage your mental wellbeing as well as your physical health.

Stress

Stress can be present in our lives when we feel that we cannot meet the demands that are placed on us. Living with COPD can place lots of different types of demands on you. Stress can negatively affect our body and some common physical symptoms to watch out for are:

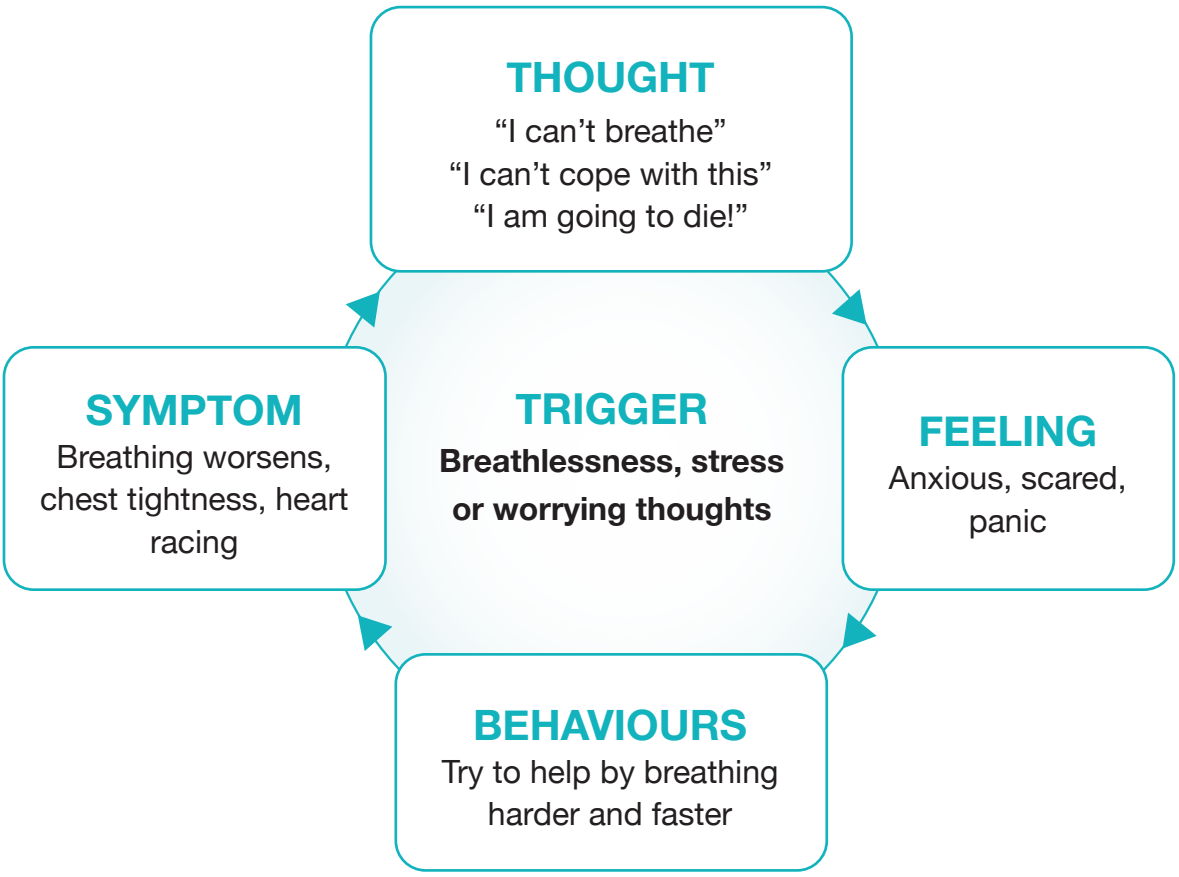


Anxiety

Anxiety is a normal experience when faced with something threatening, which can be experienced as fear, worry or tension. Anxiety can become a problem when the fear or, worry goes on for some time, is overwhelming and gets in the way of you enjoying life. Sometime there is a clear trigger, like breathlessness. and sometimes it seems to come from nowhere. Anxiety causes many emotional and physical symptoms. It can change the way you breathe which can make your lung symptoms worse or sometimes cause a flare up of your COPD.

Anxiety symptoms affect our body, thoughts and feelings. For example, breathlessness and feeling unable to breathe is a frightening experience and can cause people to worry that they are not getting enough air, which can cause anxiety. This can then make the person breathe harder and faster and this worsens the feelings of breathlessness, increasing the anxiety or panic. This causes a negative cycle that worsens our emotional and physical symptoms that can be hard get out of.

Cycle of thoughts, feelings, behaviours and symptoms.



Understanding your anxiety symptoms and the triggers can help break the cycle before anxiety becomes overwhelming.

Anxiety and breathlessness can feel similar, so talk to your healthcare professional about your symptoms so they support you with both.

Depression

COPD has a significant impact on your life and it is normal to feel sad and helpless at times, especially during flare ups. Sometimes the ongoing stresses can make you feel depressed. Although we all feel sad at times in life, depression is where the strong negative emotions last for a couple of weeks and includes:

- Feelings of sadness or hopeless that interferes with your everyday life
- Little interest or pleasure in things that you usually enjoy
- Low energy and motivation

Depression affects how you think and feel about yourself. Our thoughts influence our feelings, which influence our behaviours.

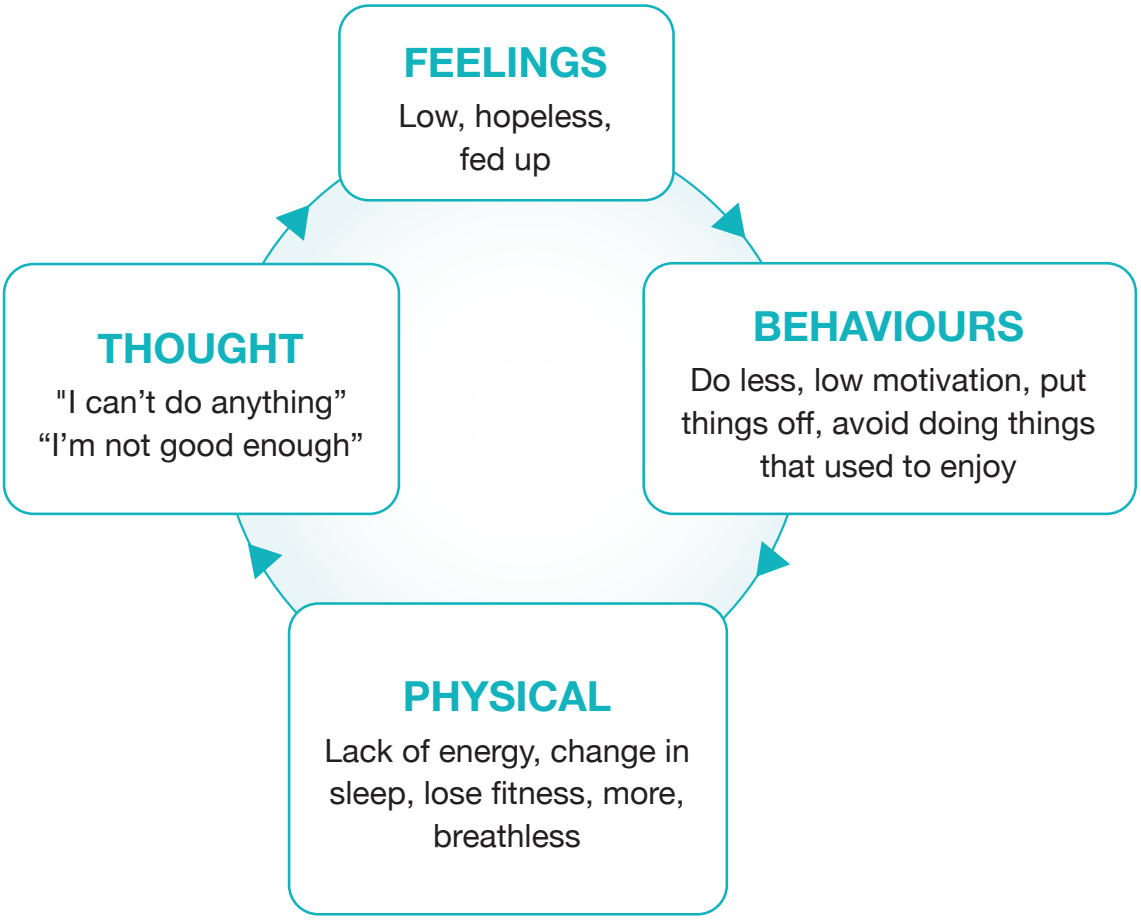
Thinking that you cannot do anything can make you feel hopeless, fed-up and sad. These feelings then make you do less, which means you end up feeling more tired, being more breathless, and having less energy. This increases your feelings of hopelessness and sadness, and knocks your self confidence.

It is helpful to understand the connection between your thoughts, feelings, behaviours and physical sensations, so that you can begin to break the cycle of depression.

When depression is very bad it can occasionally cause suicidal thoughts. If you are having thoughts of harming yourself please call 999 or go to your local A&E, where you can receive specialist support.

The important thing to remember is that your thoughts, feelings and behaviours can be changed.

Cycle of thoughts, feelings, behaviours and symptoms.



Managing your mental health and wellbeing

Managing your mood is as important as managing your physical symptoms of COPD. Untreated depression and anxiety can result in more frequent and longer hospital stays when your symptoms flare up and reduce your quality of life.

Managing your mood helps you keep well, keep active and enjoy life.

There are plenty of effective things we can do to help manage stress, anxiety and depression.

Professional Help

1. Talk to your healthcare professional. Discussing your concerns with a GP is an excellent first step. It can be difficult to discuss your feelings with others, but your GP can help you understand your symptoms discuss available treatments. These might include talking therapies or medication.
2. Talking Therapies. Psychological therapies not only help with recovery, but can also help prevent a recurrence of stress, anxiety or depression These therapies help build skills in coping with stressful life circumstances and managing your emotions. Cognitive behaviour therapy (CBT) is an effective treatment for people with stress, anxiety and depression. It teaches you how to understand your symptoms, and break the cycles of anxiety and depression. Counselling or Psychotherapy can also help with low mood and depression.
3. Medication can help manage symptoms of anxiety and depression, especially when combined with CBT.

Self care

Everybody has good and bad days, and different things help different people. Below is a list of tips and suggestions that can help maintain your mental wellbeing and keep you well.

1. **Routine:** A regular routine helps improve your mood and increases your sense of control. In your routine, have a healthy balance of activities you need to do as well as fun activities that you enjoy and look forward to. Enjoyable activities can give you a sense of meaning and can help you maintain and enhance your skills and abilities. These don't need to be energetic, expensive or adventurous. Examples might be phoning or visiting a friend, going to the cinema, painting, cooking, doing an evening class, taking a walk every day.
2. **Be aware** of the negative cycles of depression and anxiety. Notice your automatic and unhelpful thinking and how this might hold you back and worsen your mood. Take some time and ask yourself if there are other ways in which you can think about a situation.

Notice the things that make you feel better. Make a list activities, people or places that help you feel better and develop a plan of gradually increasing these activities, and reducing avoidance. This can help you can break the harmful cycle of thoughts, feelings and behaviours.

3. **Be active:** Physical activity is helpful for people with COPD, helping both your physical and mental health. Plan regular activity (e.g., walking, cycling) into your routine to keep your fitness level up. Make a plan for how you can build up your activity level gradually and pace yourself to increase your fitness level. Remember that getting out of breath during activity is normal, it helps the heart and lungs become healthier and fitter.
   Talk with your health care professional about the type, frequency and intensity of exercise that is right for you. You may be able to join a Pulmonary Rehabilitation Programme at your local hospital or primary care center or join a COPD Support Ireland exercise class if there is one in your area. See Section 5 for more information on physical activity in COPD.

4. **Guided Relaxation Exercises:** Relaxation is a skill that can be developed. It involves spotting the early signs of tension, and learning ways to slow our breathing, relax our muscle tension and calm our mind. Some people can relax by listening to music, watching tv or reading. Others like to follow guided exercises that are available on the internet or relaxation apps.

Guided Relaxation Exercises you could try:

Visualization

Your thoughts have the power to change how you feel. If you think of something sad, it's likely you'll likely start to feel sad. The opposite is also true; when you think of something calming, you feel relaxed. During visualisation, you build an image in your mind of a happy or comforting scene, it can be something real or imagined such a beach, your bedroom, a mountain top. Close your eyes, take a few slow breathes and then picture the scene in as much detail as you can, using all your senses (what you see, hear, smell, touch and taste). Spend 5 to 10 minutes in scene enjoying the feelings of comfort and peace.

Progressive Muscle Relaxation

This technique involves firstly tensing, and then relaxing muscles in your body. Practicing the exercises enables you to recognise the difference between the feeling of a tensed muscle and a relaxed muscle, helping you notice and relax the tension on your body.

Breathing Techniques

Slowing our breathing, also calms our body and our mind. See section 6 on breathing techniques for breathlessness.

1. **Connect with others:** Social support is vital for our mental health. Try to catch up with friends and family regularly. If you cannot get out, ask them to call round or to phone for a chat. Don't be afraid to ask for help from a family member, friend or professional. Accepting help from others strengthens your ability to cope. Get involved in social activities. Consider joining a patient support group. Visit www.copd.ie or call 01-539 2181 for a list of support groups in Ireland including the singing for lung health programme SingStrong. More information on these in Section 14.
2. **Eat and drink well:** Eat healthily and include a wide variety of nutritious foods. Avoid using too much caffeine, alcohol or cigarettes. More information in Section 7.
3. **Sleep well:** have a regular bedtime and winding down routine before going to sleep. There is more information on sleep hygiene in section 6.
4. **Writing:** Writing in a journal or diary can help to improve your mood. Writing helps you to privately release your thoughts or worries, getting them out of your mind on paper can help you understand and resolve some problems. Also, writing about the positives in your day or things that you are grateful for can help to positively focus your thinking and your mood.
5. **Focus on things you can control:** When you are not doing as well as you would like at a particular behaviour, avoid focusing on the things you cannot control as this can lead to feelings of hopelessness. Instead, focus on what can be changed and make a plan to change them. This can foster positive feelings of hope and motivation.

10 Social Work

Social workers provide support to the people with COPD and their families:

- to understand, empower and advocate for the person living with COPD;
- to adjust and cope better with their situation;
- to bring about positive change in all aspects of their lives.

There are different routes to access a Social Work service.

Service availability will vary from area to area. Access to a Social Work service may be through an outpatient clinic, a Primary Care Social Work service or through an inpatient Medical Social Work service in a hospital. Social Workers can offer support and advice on a range of issues including but not limited to:

- **Medical card applications**
- **Access to home support services**
- **Housing issues**
- **Social Welfare queries**
- **Emotional support and adjustment to illness**
- **Nursing Home Applications through the Nursing Home Support Scheme (Fair Deal)**
- **Referrals to Day Centres**

Central to the work of a social worker is acting as an advocate for our clients and empowering clients.

Access to a medical card may be a source of anxiety to a person with a respiratory illness, particularly if they require supplementary oxygen. A medical social worker can support individuals with applications for a medical card on medical grounds.

Social workers can help a person with COPD apply for and access home support services. These may include home care packages where an individual requires assistance with aspects of their personal care on a daily basis. It is worth noting that access to services for individuals over the age of 65 years can be applied for through older persons services. If an individual is under the age of 65 years, it can be more challenging to access daily supports. Social workers can also liaise with local public health nurses to access community services such as home help and health care attendants to support with personal care tasks on a less frequent basis, possibly once or twice per week. The availability of this service varies from one area to another.

11 Travelling with COPD

Being organised for travel is important if you have any health condition. Travelling abroad can take more planning than travelling in Ireland. You should give yourself enough time.

Before you go:

Talk to your healthcare professional about what you need to consider especially if you are going abroad. Get a copy of your prescription and a letter from your GP. This should include details of your medical history and the name of your condition(s).

Ensure you have a full supply of all your medicines. Bring enough to last your entire trip plus a little extra in case of delays.

Ask your doctor about a rescue prescription. This might be helpful in case you need antibiotics or steroids when you are away from home.

Make sure you get your free European Health Insurance Card (EHIC). This allows you to get healthcare in another EU or European Economic Area (EEA) state for free, or at a reduced cost.

Remember to tell your travel insurer about all your medical conditions.

If you are on oxygen, give yourself plenty time to get organised. If you are taking a flight, check with the airline before you book about their policy on oxygen.

Think about any help you might need at the airport, on the flight, at the train station or on the boat.

Check your destination and accommodation are suitable and accessible for you and your health needs. For example, is there wheelchair access? Are there lifts or accessible bathrooms etc.?

Pack your nebuliser, supplies and medicines in your hand luggage.

Remember that other countries may have different electric sockets and voltages. You may need to bring an adapter or battery-powered equipment.

While you are away:

Keep a list of emergency contact numbers. This should include your GP and your emergency family contact.

Make sure you know the warning signs that mean your COPD is getting worse. More information in section 6.

Keep an eye on the weather forecast. Breathing in hot air can cause the airways to narrow, leading to coughing and shortness of breath.

Winter weather and cold air can also cause a person's airways to become narrower. This can make breathing more difficult for someone with COPD.

Make sure to keep hydrated. Drink fluids such as water regularly.

Keep inhalers in a cool place out of direct sunlight so they continue to work well.

Stay out of the heat at the hottest part of the day, usually between 11am and 3pm.

Plan any outdoor activities for earlier in the day when the air quality tends to be better and when it is cooler.

Have fun!

12 Supporting a loved one living with COPD

If someone you know has COPD it is important to remember that the person hasn't changed. Although COPD is now part of and will change your lives, it doesn't have to define it.

These are some suggestions on how to support someone living with COPD.

Do:

- Know what to do when the person with COPD is unwell.
- Reassure the person with COPD that you are there for them.
- Offer to exercise with the person with COPD.
- Give the person with COPD time to seek help and be clear about when help is needed. It can be useful to agree on a code word that can be used when help is needed; for example, “red” might mean that things are really bad.
- Remember that some tasks may take the person with COPD longer to do but it’s important to let the person do as much as they can.
- When offering help, ask the person what they would like from you.
- If help is initially declined, offer to help again at a later stage.
- Ensure that the person with COPD has easy access to the toilet.
- Engage in conversation about being involved in the person’s care, needs and wishes.

Don't:

- Don’t offer uninvited advice or actions, for example repeatedly offering to make cups of tea.
- Don’t take over decision-making unless you are being asked to.
- If a person is coughing, don’t slap them on the back.

If you are caring for a family member or friend with COPD, it is important that you understand as much as possible about COPD and how it affects the person.

13 Planning for the future with COPD

What does planning for the future mean?

We plan so we can prepare for and influence events that may happen in the future. People plan for the future in different ways; by saving for a rainy day, contributing to a pension, by making a will or by making an advance healthcare directive. Planning for the future also includes talking with your family and doctors about your wishes and preferences should you become very unwell and unable to communicate for yourself. Everyone should plan for the future as anyone's health can change suddenly.

For some people, planning for the future can feel overwhelming. When you are living day-to-day with COPD, it may feel like the last thing you want to do. However, planning for the future can be helpful because it can give you some control over matters that may affect you in the future.

People who have planned ahead report feeling relieved that arrangements are in place. They also report being able to focus on living their life rather than worrying about the future.

Planning for the future can help you to:

- **Create opportunities to do enjoyable things.**
- **Say important things to the people you care about.**
- **Be prepared for various situations that might arise.**
- **Reduce the practical and emotional burden on family and friends.**
- **Address concerns and fears you and your loved ones may have.**
- **Remain in control at a time when this may become limited, for instance during a crisis situation.**
- **Enjoy life knowing that important things have been discussed.**

Planning for the future includes thinking about, talking about, and telling others about one's personal values, wishes, decisions and preferences for their future care. These conversations are an ongoing process, but when decisions, preferences, wishes or values have been identified it is helpful for a person to write them down or record them.

This way, if they are unable to express themselves later, their will and preference is more likely to be followed.

Should you wish to learn more about planning for the future with COPD including:

- **Advance care planning**
- **Advance healthcare directives**
- **Managing your legal affairs**
- **Talking about your wishes**

contact COPD Support Ireland on 01-539 2181 or visit our website www.copd.ie to receive a free copy of the Planning for the Future with COPD booklet that was created in collaboration with the Irish Hospice Foundation and people living with COPD.

14 COPD Support Ireland

COPD Support & Exercise Groups

COPD Support Ireland are funded by the HSE to deliver weekly peer support and exercise groups across Ireland.

COPD & Me Exercise Programme

There are multiple benefits from exercising when living with a chronic health condition, or as an older adult. COPD Support Ireland has developed an exercise programme delivered by a trained professional, who is able to tailor the exercises to your needs and ability. These classes are designed to help improve your physical, and mental health; they take place once a week, either virtually through Zoom or in person at a local support group location, depending on the region. Participation in these classes can lead to an increase in muscle strength, flexibility, a reduction in breathlessness and most importantly an improvement in your quality of life.

Peer Support

Peer-to-peer support offers many benefits for those with COPD. We believe it is a key part of COPD self-management, with a structured but personalised approach. Our peer support groups aim to motivate, engage, and support people with COPD and their caregivers. Sharing lived experiences helps manage challenging feelings and physical symptoms. COPD Support & Exercise groups combine peer support with exercise and self-management education. Meeting others in your community with the same condition provides a positive outlet for both physical and mental health.

SingStrong – Singing for better Lung Health

As part of a COPD self-management programme, many people are encouraged to use breathing techniques such as ACBT to clear phlegm and help control the symptom of breathlessness. These breathing techniques can be quite effective in optimising airway clearance and minimising the experience of breathlessness by people living with COPD. SingStrong is a novel and fun way to learn and implement these breathing techniques through singing.

SingStrong is a choir created by vocal coach Ms. Ciara Meade and lecturer of cardiovascular and respiratory physiotherapy, Dr. Roisin Cahalan. The SingStrong programme has proven exceptionally popular with our members and is delivered either virtually or in person in a small number of locations, over a 12-week period.

For more information on joining a virtual or local COPD Support & Exercise Group or to join our SingStrong group online, please contact us on 01-539 2181 or visit www.copd.ie to sign up as a member and we will reach out to you to discuss what is available in your area.

15. References

BiPAP therapy for COPD: What to expect. Healthline. http://www.healthline.com/health/copd/bipap-forcopd

Body weight, lifestyle, dietary habits and gastroesophageal reflux disease. Davide Festi, Eleonora Scaioli, Fabio Baldi, Amanda Vestito, Francesca Pasqui, Anna Rita Di Biase, and Antonio Colecchia. World J Gastroenterol. 2009 15(14): 1690–1701.

Borg, G. (1998). Borg's perceived exertion and pain scales. Champaign, IL: Human Kinetics.

British Lung Foundation (2018). Lung volume reduction procedures for emphysema. https://www.asthmaandlung.org.uk/sites/default/files/LVRS%20downloadable%20PDF.pdf

British Thoracic Society (2015). BTS Guidelines for Home Oxygen use in Adults. https://www.brit-thoracic.org.uk/document-library/clinical-information/oxygen/home-oxygen-guideline(adults)/bts-guidelines-for-home-oxygen-use-in-adults/

British Thoracic Society (2016). BTS/ICS guideline for the ventilatory management of acute hypercapnic respiratory failure in adults. https://www.britthoracic.org.uk/document-library/clinical-information/acute-hypercapnic-respiratory-failure/btsguidelines-for-ventilatory-management-of-ahrf/

Carroll TP, O'Connor CA, Floyd O, McPartlin J, Kelleher DP, O'Brien G, Dimitrov BD, Morris VB, Taggart CC, McElvaney NG. The prevalence of alpha-1 antitrypsin deficiency in Ireland. Respiratory Research. 2011 Jul 13;12(1):91.

Clinical Nutrition (2006) 25, 311–318. ESPEN Guidelines on Enteral Nutrition: Cardiology and Pulmonology. S.D. Ankera, M. Johnb, P.U. Pedersenc, C. Ragusod, M. Cicoirae, E. Dardaif, A. Lavianog, P. Ponikowskih, A.M.W.J. Scholsi, H.F. Becker, M. Bo¨hm, F.M. Brunkhorst, C. Vogelmeier.

Collins, P., & Weekes, C. E. (2019). Respiratory disease. In J. Gandy (Ed.), Manual of Dietetic Practice (6th ed., pp. 381-391). Wiley-Blackwell.

Collins PF, Stratton RJ, Elia M. Nutritional support in chronic obstructive pulmonary disease: a systematic review and meta-analysis. Am J Clin Nutr. 2012 Jun;95(6):1385-95.

Collins PF, Yang IA, Chang YC, Vaughan A. Nutritional support in chronic obstructive pulmonary disease (COPD): an evidence update. J Thorac Dis. 2019 Oct;11(Suppl 17) . doi: 10.21037/jtd.2019.10.41. PMID: 31737350; PMCID: PMC6831917.

COPD Support Ireland and The Irish Hospice Foundation. Planning for the Future with COPD. Dublin: The Irish Hospice Foundation; 2018.

Dry mouth. https://www.nidcr.nih.gov/oralhealth/topics/drymouth/drymouth.htm

Fletcher C, Peto R. The natural history of chronic airflow obstruction. Br Med J. 1977; 1:1645. doi:10.1136/bmj.1.6077.1645.

Franciosi AN, Carroll TP, McElvaney NG. SZ alpha-1 antitrypsin deficiency and pulmonary disease: more like MZ, not like ZZ. Thorax. 2021 Mar;76(3):298-301.

Global Strategy for the Diagnosis, Management and Prevention of COPD, Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2017. http://goldcopd.org

Gupta, N., Pinto, L. M., Morogan, A., & Bourbeau, J. The COPD assessment test: a systematic review. Eur Respir J. 2014; 44: 873-884. http://erj.ersjournals.com/content/44/4/873.long

HSE (2017). Chronic Obstructive Pulmonary Disease (COPD). https://hse.ie/eng/health/az/C/Chronic_obstructive_pulmonary_disease_COPD/

HSE (2017). Immunisation Guidelines. http://hse.ie/eng/health/immunisation/hcpinfo/guidelines/immunisationguidelines.html

HSE (2017). Living with COPD. Patient Information. http://www.hse.ie/eng/health/hl/living/copd/LIVING_with_COPD_Patient_Information_v_0_5.pdf

Jackson R.M. Pulmonary Oxygen Toxicity. https://www.ncbi.nlm.nih.gov/pubmed/3905287

Lifestyle Intervention in Gastroesophageal Reflux Disease. Ness-Jensen E, Hveem K, El-Serag H, Lagergren J. Clin Gastroenterol Hepatol. 2016 Feb;14(2):175-82.

Long R, Stracy C, Oliver MC. Nutritional care in Chronic Obstructive Pulmonary Disease. Br J Community Nurs. 2018 Jul 1;23(Sup7). doi: 10.12968/bjcn.2018.23.Sup7.S18. PMID: 30011236.

Manual of dietetic practice chapter 2 section 7.1 Respiratory disease. Joan Gandy, 2019.

Miller, M.R., et al. Standardisation of spirometry. ATS/ERS task force: standardisation of lung function testing. ERJ. 2005;26:319-338.

National Institute for Health and Care Excellence (NICE). (2006). Nutrition Support in Adults: Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition. www.nice.org.uk/cg32.

Nan Y, Zhou Y, Dai Z, Yan T, Zhong P, Zhang F, Chen Q, Peng L. Role of nutrition in patients with coexisting chronic obstructive pulmonary disease and sarcopenia. Front Nutr. 2023 Aug 8;10:1214684. doi: 10.3389/fnut.2023.1214684. PMID: 37614743; PMCID: PMC10442553.

NHQRS Report 2023. Published by the Department of Health, January 2024. Copyright: Department of Health 2024. ISSN: 2009-9223.

Scoditti E, Massaro M, Garbarino S, Toraldo DM. Role of Diet in Chronic Obstructive Pulmonary Disease Prevention and Treatment. Nutrients. 2019 Jun 16;11(6):1357. doi: 10.3390/nu11061357. PMID: 31208151; PMCID: PMC6627281.

Sleep Foundation. Healthy Sleep Habits. https://www.sleepfoundation.org/sleep-habits

Strnad P, McElvaney NG, Lomas DA. Alpha-1 Antitrypsin Deficiency. New England Journal of Medicine. 2020 Apr 9;382(15):1443-1455.

van Iersel LEJ, Beijers RJHCG, Gosker HR, Schols AMWJ. Nutrition as a modifiable factor in the onset and progression of pulmonary function impairment in COPD: a systematic review. Nutr Rev. 2022 May 9;80(6):1434-1444. doi: 10.1093/nutrit/nuab077. PMID: 34537848; PMCID: PMC9086787.

Appendix

Modified Borg Dyspnea Scale

*Instructions for Borg Dyspnea Scale. Use this scale to rate the difficulty of your breathing. It starts at number 0 where your breathing is causing you no difficulty at all and progresses through to number 10 where your breathing difficulty is maximal.

How much difficulty is your breathing causing you right now?

0	Nothing at all	
0.5	Very, very slight (just noticeable)	
1	Very slight	
2	Slight	
3		Exercise training zone
4	Somewhat severe	
5		
6		
7		
8		
9		
10	Maximal (breathing difficulty is maximal)	

CAT Score

CAT
COPD Assessment Test

How is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional measure the impact COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers, and test score, can be used by you and your healthcare professional to help improve the management of your COPD and get the greatest benefit from treatment.

If you wish to complete the questionnaire by hand on paper, **please click here** and then print the questionnaire.

For each item below, place a mark (X) in the box that best describes you currently. Be sure to only select one response for each question.

Example: I am very happy 0 X 2 3 4 5 I am very sad

								SCORE
I never cough	0	1	2	3	4	5	I cough all the time	
I have no phlegm (mucus) in my chest at all	0	1	2	3	4	5	My chest is completely full of phlegm (mucus)	
My chest does not feel tight at all	0	1	2	3	4	5	My chest feels very tight	
When I walk up a hill or one flight of stairs I am not breathless	0	1	2	3	4	5	When I walk up a hill or one flight of stairs I am very breathless	
I am not limited doing any activities at home	0	1	2	3	4	5	I am very limited doing activities at home	
I am confident leaving my home despite my lung condition	0	1	2	3	4	5	I am not at all confident leaving my home because of my lung condition	
I sleep soundly	0	1	2	3	4	5	I don't sleep soundly because of my lung condition	
I have lots of energy	0	1	2	3	4	5	I have no energy at all	
							TOTAL SCORE	

Make sure you print your CAT before visiting your healthcare professional!

A COPD assessment test was developed by an interdisciplinary group of international COPD experts with support from GSK. GSK's activities in connection with the COPD assessment test are monitored by a supervisory council that includes external, independent experts, one of which is chair of the council.

Acknowledgements

Ms Niki Byrne	Candidate Advanced Nurse Practitioner
Dr Thomas Carroll	Chief Scientist, Alpha-1 Foundation Ireland
Ms Claire Sheridan	Clinical Nurse specialist
Ms Samantha McCabe	Clinical Nurse Specialist, Asthma Society of Ireland
Ms Lorna Fortune	Clinical Psychologist
Ms. Maeve O'Grady	Clinical Specialist Physiotherapist
Assoc. Prof Stanley Miller	Consultant Respiratory Physician
Ms Anne Duffy	COPD Patient representative
Mr Michael Coakley	COPD Patient representative
Mr Paddy Flavin	COPD Patient representative
Ms Diane O'Donoghue	COPD Patient representative
Ms Nicole Forester	Development Officer in Healthcare - Dying Well at Home, Irish Hospice Foundation
Ms Katie Malone	Dietetic Volunteer
Ms Ciara Walsh	Dietician
Ms Myriam Alhilou	Dietitian
Ms Joan Johnston	General Manager, COPD Support Ireland
Ms Olga Riley	HSCP Lead Respiratory NCP
Dr Shane McKeogh	ICGP HSE Adult Respiratory Clinical Lead NCP Respiratory
Ms Marese Damery	Programme Manager Healthcare – Dying Well at Home, Irish Hospice Foundation
Ms Susan Curtis	Programme Manager NCP Respiratory
Ms Geraldine Nolan	Respiratory Physiologist
Ms Maeve Carmody	Self Management Support Coordinator for Chronic Conditions
Ms Claire Hennigan	Self Management Support Coordinator for Chronic Conditions
Ms Danielle Ryan	Senior Medical Social Worker
Ms. Aoife Bateman	Senior Medical Social Worker
Ms Eva Byrne	Senior Occupational Therapist
Ms Aoife O'Reilly	Senior Pharmacist
Ms Hannah Loughnane	Senior Speech & Language Therapist

Proudly Celebrating Our 10th Anniversary
COPD Support Ireland
2014 - 2024

NATIONAL CLINICAL PROGRAMME RESPIRATORY