INFORMATION FOR PARTICIPANTS AND FACILITATORS AS PART OF PULMONARY REHABILITATION PROGRAMME
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HOW TO USE THIS DOCUMENT

*1st page of each subject is* for Rehabilitation Coordinator.

This is followed by handout for participant.

In turn, where relevant, this is followed by appendix/additional resources on that subject.

Note: not all subjects can be delivered over the course of a pulmonary rehabilitation programme, some may be combined, others just given as a hand out, others omitted – adapt for both participants and facilitators.
This manual is provided for use both during and after the Pulmonary Rehabilitation Programme.

It contains the information and advice which will be useful for participants both during the programme and after completing the programme.

This manual is based on a National Template which in turn was adapted from national and international materials.

We are indebted to all who contributed to these, and to their work and dedication to Pulmonary Rehabilitation.

SUBJECT - WHAT IS PULMONARY REHABILITATION?
INTRODUCTION TO PULMONARY REHABILITATION

GOAL, AIMS AND OBJECTIVES

GOAL OF PULMONARY REHABILITATION

To provide participants and their families with the skills and knowledge to manage their COPD.

AIMS & OBJECTIVES

The aims of the education component of a pulmonary rehabilitation programme are to:

- Improve and support self-health behaviours.
- Encourage physical fitness.
- Provide information to help enhance physical fitness.
- Improve quality of life.
- Increase ability to cope with the acute and chronic phases of chronic obstructive pulmonary disease (COPD).
- Reduce the length of stay in hospital.
- Reduce hospital admissions.
- Optimise nutritional status.
LEARNING OBJECTIVES

The education component of a pulmonary rehabilitation programme will assist participants to acquire:

- Self-management skills.
- Knowledge of respiratory illnesses, risk factors, symptom recognition and management.
- An understanding of the role of exercise and knowledge of appropriate modes of exercise.
- Knowledge regarding the correct and appropriate use of medications including oxygen therapy.
- Emotional management skills.
- Breathing control skills.
- A means of improving quality of life.
- The ability to be an active participant in the development action plans for their health in consultation with a health professional.
- Knowledge of care options, including community support services.
- Understanding of importance of nutrition and maintaining good nutritional status.

The subjects for inclusion in such programmes are listed on the contents page and below and are included in this manual. As all the subjects may not be relevant for all the participants, programmes should be targeted for the individual needs (e.g.) not all will be on home oxygen. Other subjects may be combined (e.g.) exercise and continence.
This handout will help understanding:

- What pulmonary rehabilitation is
- How pulmonary rehabilitation helps.
- What pulmonary rehabilitation involves.
- What happens after a pulmonary rehabilitation programme.

WHAT IS PULMONARY REHABILITATION?

Pulmonary rehabilitation is a programme of education and exercise classes. These education and exercise classes teach about lungs, how to exercise, how to do activities with less shortness of breath and how to live better with chronic lung conditions.

Pulmonary rehabilitation programmes involve among other things patient assessment, exercise training, education, nutritional intervention and psychosocial support.

Pulmonary rehabilitation involves a team approach with the participants working closely with their doctors, respiratory nurses, physiotherapists and other allied health team members.

HOW PULMONARY REHABILITATION HELPS?

Being short of breath means that a person may find it difficult or may have become slower, performing even the most basic everyday tasks - going to the shops, dressing or even making a cup of tea. In turn this results in a decrease in fitness level, and a further lowering of exercise tolerance.

The exercise sessions will help a person become more active and with less shortness of breath. This in turn will help a person to feel better and become stronger and get into better shape.
At the education talks participants will learn about their lungs, their medications, how to keep healthier, all of which will help to reduce the risk of hospital admissions and long hospital stays. By helping participants to maximise the quality of their lives, they will be more in control of their lives with COPD instead of their lives being controlled by it. As part of the education component participants will get handouts with information from all the Professions involved in the running of these sessions. This information will be presented in greater detail at each talk. Participants will have the opportunity, if they wish, to ask questions and make comments.

Participation in this programme improves quality of life by maximising ability to:

- **Manage** the normal activities of daily living.
- **Cope** with the problems associated with this condition.
- **Build** confidence to go out and socialise and
- **Feel** good about oneself!

While COPD cannot be cured, participation in this programme by improving understanding of COPD will help participants to cope and live with it better.

**WHAT DOES PULMONARY REHABILITATION INVOLVE?**

Pulmonary Rehabilitation is an eight week course comprising exercise and education, twice a week. The rehabilitation coordinator will discuss this with each participant. It will be fun, interesting and challenging.

Everybody there will be in the same boat with similar fears and apprehension. The classes are very informal, mixed gender, and there will always be time to ask questions after the education sessions.

If space allows a spouse / partner may be invited to the education talks.
TREATMENT PLAN AND PROGRAMME EVALUATION

Prior to commencing a pulmonary rehabilitation programme, each participant’s medical history will be obtained as well as fitness levels and safety to exercise. During the course of the programme each person’s treatment will be reviewed and discussed with each individual. Both before and after the programme the rehabilitation coordinator will check each participant’s lung function, exercise tolerance and quality of life.

As participants generally have the best ideas and suggestions as to how to change the programme for the better, participants will be invited to complete a feedback form towards the end of the programme.

WHAT HAPPENS AFTER THE PULMONARY REHABILITATION PROGRAMME?

What is learned and practised during the programme should carry over into daily life. If a person stops exercising, he/she will start to lose the improvements. Before the programme ends the rehabilitation coordinator will suggest ways of building the various techniques into daily life and also encourage participants to join a COPD support group so that participants can continue to encourage each other and to share challenges and solutions.
SUBJECT - WHAT IS CHRONIC OBSTRUCTIVE PULMONARY (LUNG) DISEASE (COPD)
**FACILITATOR**

**WHAT IS COPD?**

**OBJECTIVES OF SUBJECT:**

At the end of the session, the participant will have:

- Increased knowledge of the lungs and the disease process.
- An understanding of the management of chronic obstructive pulmonary disease (COPD).

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WHAT IS CHRONIC OBSTRUCTIVE PULMONARY (LUNG) DISEASE (COPD)?

This handout will help understanding of:

- What is the structure of the lungs
- What is the respiratory system
- What the lungs do
- What is the role of the nose and nasal cavity
- How the lungs protect against irritants or foreign particles
- What is COPD
- What are the risk factors for COPD
- How COPD is diagnosed – what are lung function tests
- How COPD is managed

WHAT IS THE STRUCTURE OF THE LUNGS?

Both lungs and the heart are located within the chest. There are two lungs - the left lung and the right lung. Each lung is divided into segments called lobes. The lungs are soft structures protected by the ribcage.
WHAT IS THE RESPIRATORY SYSTEM?

The respiratory system includes the upper and lower respiratory tract. The upper respiratory tract consists of:

- The nose and nasal cavity.
- The throat (*pharynx*).
- The voice box (*larynx*).

The lower respiratory tract consists of:

- The windpipe (*trachea*).
- Breathing tubes (*bronchi* and *bronchioles*).
- Air sacs (*alveoli*).

Within the lungs is a transport system for oxygen and carbon dioxide. Each time a person breathes, air is drawn via the mouth and nose (upper respiratory tract) into the windpipe (*trachea*). This in turn splits into two breathing tubes (*bronchi*): one to the left lung and one to the right lung. The breathing tubes continue to divide into smaller and smaller tubes (*bronchioles*), which take air down into each lung.
WHAT DO THE LUNGS DO?

To survive, the body needs oxygen (O₂) which it gets from the air. The lungs help take the oxygen from the air, through the air sacs (alveoli), into the body. The air sacs are surrounded by tiny blood vessels (capillaries). The air sacs are where oxygen, which is a gas, is absorbed into capillaries which are part of the bloodstream. Oxygen is then carried along the bloodstream, through the heart, to the rest of the body.

Carbon dioxide (CO₂) is a waste product produced by the body. As a gas, carbon dioxide moves from the bloodstream back into the air sacs and through the airways, where it is breathed out.
BREATHING

The lungs, as they are not a muscle, do not move on their own. The diaphragm is the main breathing muscle, acting like a pump. When a person breathes in, the diaphragm contracts and moves down. The muscles between the ribs also contract. The lungs expand, and air is drawn into the lungs.

When a person breathes out, the diaphragm relaxes and moves back up. The muscles between the ribs relax. The lungs reduce to normal size and air is pushed out of the lungs.

WHAT IS THE ROLE OF THE NOSE AND NASAL CAVITY?

The nose and nasal cavity perform a number of functions, including:

- Providing a sense of smell.
- Warming and moistening the air that is breathed in.
- Filtering the air breathed in of irritants, such as dust and foreign matter.
- Assisting in the production of sound.
The nose is the best route to deliver oxygen to the body as it is a better filter than the mouth. The nose decreases the amount of irritants delivered to the lung, while also heating and adding moisture (humidity) to the air breathed in.

When large amounts of air are needed, for example when exercising, the nose is not the most efficient way of getting air into the lungs. In these situations, mouth breathing may be used.

Infection or irritation of the nasal cavities can result in swelling, a runny nose or blocked sinuses, which can interfere with breathing.

**HOW DO THE LUNGS PROTECT AGAINST IRRITANTS OR FOREIGN PARTICLES?**

The lungs provide protection against irritants or foreign particles entering the body. The lungs have several protection mechanisms. Firstly, the nose filters the air when breathing in, preventing irritants, such as dust and foreign matter from entering the lungs.

Secondly, if an irritant enters the lungs, mucus lines the airways and traps unwanted particles. Tiny hairs (cilia) line the air passages. They move in a sweeping motion to help move the mucus and unwanted particles up to the mouth where they can be cleared. The function of the tiny hairs can be affected by smoke, alcohol and dehydration.

The third protective mechanism for the lungs is cough. A cough is the result of irritation to the breathing tubes (bronchi and bronchioles). A cough can clear mucus from the lungs.

Lastly, the lungs also have a built-in immune system that acts against germs.
WHAT IS COPD? CHRONIC OBSTRUCTIVE PULMONARY (LUNG) DISEASE

COPD is a progressive lung disease that affects many people each year.

COPD is a general term to describe airflow obstruction to lungs due to either chronic bronchitis or emphysema. A person with COPD may have either emphysema or chronic bronchitis, but most have both. COPD is, in the majority of cases, caused by cigarette smoking.

Chronic bronchitis is marked by a chronic cough and chronic mucous (sputum/phlegm) production. Airway obstruction occurs in chronic bronchitis because the swelling and excess mucous production causes the air tubes to narrow. Frequent infections occur due to the increased mucous. As airways become narrower, it is harder for air to get in and out so the person becomes breathless.

Emphysema is where the air sac (alveoli) becomes distended and the walls between them break down causing larger air spaces. The breathing tubes (bronchi and bronchioles) become narrower and as lung tissue loses elasticity, air gets trapped in lungs. The combination results in shortness of breath.

Alpha 1 antitrypsin (AAT) deficiency is a genetic disorder. AAT is a substance which protects the lungs from damage from pollutants. Those with the deficiency are at greater risk of developing COPD especially if they have any other risk factor eg smoking.

Other lung conditions that may co-exist with COPD are asthma, bronchiectasis and interstitial lung disease. These are explained briefly below.

Asthma: The airflow obstruction in asthma is reversible with medications, whereas in COPD it is only partially reversible. Some people with COPD may have a prominent
asthma-like wheezy component to their lung disease. Rarely asthma, particularly if untreated can give rise to COPD.

Bronchiectasis: This involves the destruction of the lining of the airways and widening of the bronchi and bronchioles. It is usually caused by previous severe lung infection and not by cigarettes. It is characterised by repeated episodes of acute infection with marked coughing and mucous production alternating with periods of chronic infection with milder coughing.

Interstitial lung disease: This is a group of lung conditions in which the lungs harden (become fibrosed). The walls of the air sacs (alveoli) thicken. This reduces the transfer of gases including oxygen to and from the blood. This group of diseases may be caused by a variety of factors such as immune conditions, asbestosis, exposure to chemicals etc. In some cases there maybe no known cause.

WHAT ARE THE RISK FACTORS FOR COPD?

SMOKING - accounts for 80-90% of cases of COPD.

The rest of the list below usually does not cause problems except in smokers:

- Pollution/Occupational exposure.
- Childhood pneumonia (recurrent).
- Asthma.
- Specific Enzyme deficiencies (e.g.) alpha-1.
WHAT ARE THE SYMPTOMS OF COPD?

COPD symptoms include

- Shortness of breath (also called dyspnoea)
- Wheeze
- Cough with or without phlegm

Early symptoms include mild shortness of breath and a slight morning cough. The sputum or phlegm is usually clear. Usually the symptoms, which come on slowly, are both persistent and progressive but their progress can be slowed by the use of correct medications.

During an acute respiratory tract infection symptoms change – coughing may become more obvious, sputum changes colour and/or wheezing may occur.

With time the shortness of breath may increase with severe breathlessness occurring after only modest exertion. Minor respiratory tract infections may become more incapacitating and recovery can be slower. Some people may sleep in a semi-sitting position as it makes breathing easier.

Overall, there is some permanent and also some temporary lung damage. The temporary damage is helped by medications, while the permanent damage can be improved with lifestyle changes.

The Pulmonary Rehabilitation programme will assist lifestyle changes which will improve quality of life, and avoid hospital admissions as much as possible.
DIAGNOSIS OF COPD

LUNG FUNCTION TESTS

Lung function tests assist in the diagnosis and management of chronic obstructive pulmonary disease (COPD). The tests measure how well, and how much air, is breathed in and out of the lungs and how well oxygen enters the body. The most common tests are spirometry, gas transfer measurements and lung volume measurements (see appendix for greater detail).

To get the most accurate results from breathing tests, do not:

- Smoke for at least four hours before the test.
- Drink alcohol for at least four hours before the test.
- Exercise 30 minutes before the test.
- Wear tight clothing that may make it difficult to take in a deep breath.
- Eat a large meal two hours before the test.
- Take medication four hours before the test.

WHAT IS SPIROMETRY?

Spirometry is the most commonly used test. This painless test measures the amount of air breathed in and breathe out, and how quickly this is done. Typically, people with COPD take longer to breathe air out.

Spirometry is done by breathing in a machine called a spirometer and can take up to 20 minutes to do. To get the best results the test will be repeated several times. Breathing test results vary with age, whether they are male or female, or short or tall, and ethnic background.
Spirometry may be repeated after taking some breathing medications (for example, Ventolin® or Bricanyl®). This is done to find out if the lung function improves with these medications.

The breathing test results can be used to classify the severity of the lung condition. Different measurements are taken to assess the lung function (see appendix/additional resources).

**HOW COPD IS MANAGED?**

The aim of treatment for COPD is to help people lead active full lives. Diagnosing the diseases as early as possible, treating symptoms, reducing the risk of complication, participating in Pulmonary Rehabilitation education and exercise sessions will improve quality of life.

Treatment is both pharmacological (medications) and non-pharmacological. It will be discussed in greater detail in separate sessions.
1. **Forced Expiratory Volume in one second (FEV1).** This is the maximum amount of air that can be expelled from the lungs during the first second of breathing out following a maximal breath in.

2. **Vital Capacity (VC).** This is the maximum amount of air that can be expelled from the lungs while breathing out following a maximal breath in.

3. **Forced Vital Capacity (FVC).** This is the maximum amount of air that can be expelled from the lungs while breathing out forcefully. VC and FVC are equal in a normal lung but can differ in patients who have a chronic lung condition.

4. **FEV1/FVC.** This measures what proportion of FVC can be blown out in a second, that is, how quickly the lungs can be emptied. In people who have normal lungs, the result is 70% to 90% of the total forced capacity.

**WHAT IS A GAS TRANSFER MEASUREMENT?**

The gas transfer measurement is a test that measures how well oxygen in the air moves from the lungs across the air sacs (alveoli) and into the blood.

This test is done by breathing into a mouthpiece connected to a machine. It takes about 15 minutes to complete. Usually people with COPD will have low results.

**WHAT IS A LUNG VOLUME MEASUREMENT?**

The lung volume measurement is a test that measures the amount of air in the lungs. There are three measurements, which are taken:

- At the end of a normal breath.
- After taking in a deep breath.
- After blowing out all the air: There is always some air left in the lungs after breathing out. The amount of air that is left is what is measured.
Lung volumes are measured in a machine called a body plethysmograph, which is like a box with glass walls. The test will take approximately 10 minutes to complete.

Typically, in people with COPD, the lungs are bigger than normal because of the amount of air trapped in the lungs (*hyperinflation*).
SUBJECT - SMOKING AND HEALTH / QUITTING SMOKING
Given the importance of quitting smoking, people with COPD need every help and support to quit smoking, and to try and try again even if they relapse.

While usually not part of the programme the notes attached here may help those who are finding it difficult to stay off cigarettes.

It would be useful for you to be able to share the details of the local supports in your area for quitting smoking.

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QUITTING SMOKING IS THE MOST IMPORTANT THING A PERSON CAN DO TO IMPROVE HEALTH. IF YOU HAVE COPD It IS VERY IMPORTANT THAT YOU STOP SMOKING TO AVOID ADDITIONAL DAMAGE TO YOUR Lungs. NO MATTER HOW LONG YOU HAVE BEEN SMOKING, THERE ARE STILL GREAT HEALTH BENEFITS IN GIVING UP. IT IS ALSO IMPORTANT THAT YOU ARE NOT AFFECTED BY 'PASSIVE SMOKING' AS THIS IS ALSO A HEALTH RISK TO YOU.

STOPPING SMOKING IS THE SINGLE MOST IMPORTANT THING YOU CAN DO IF YOU HAVE COPD. IN ADDITION TO PSYCHOLOGICAL SUPPORT AND QUIT SMOKING TECHNIQUES, MANY PEOPLE FIND HELP FROM PHARMACOLOGICAL AIDS OF WHICH THERE ARE A VARIETY. EXAMPLES OF SOME OF THESE ARE OUTLINED IN APPENDIX/ADDITIONAL RESOURCES. DISCUSS THE OPTIONS WITH YOUR DOCTOR OR OTHER HEALTH CARE PROFESSIONAL.

10 TIPS FOR QUITTING SMOKING

1. MOTIVATION

There is no 'magic cure'. The first step is to Really WANT to stop smoking. To help you to get motivated you could write a list of why you want to quit smoking – here are a few suggestions;

Health Reasons: Ask a professional to explain exactly how the cigarettes are affecting your health you may be surprised how much of the body is affected by smoking. Try and remember times when you have been unwell, maybe in hospital.

Other Reasons may include the cost of smoking etc.

When you quit smoking, keep the list of reasons at hand to help you stay motivated.
2. PREPARE TO QUIT

Set a date to quit smoking and stick to it. Pick a time when you are not under any extra stress. Allow time to prepare to quit.

3. ASK YOUR GP/ PHARMACIST ABOUT QUIT SMOKING MEDICATION

If you are a regular dependent smoker it has been proven that medication may assist you in quitting smoking. Always seek advice from a health professional before using any of these products.

If you have a medical card you can avail of these for free, if prescribed, NICOTINE REPLACEMENT THERAPY (patches, gum, lozenge, inhaler) are available from the Chemist.

Medication – CHAMPIX or ZYBAN are also available but MUST be prescribed from your GP.

4. CHANGE YOUR ROUTINE AND PLAN AHEAD

Think about the TIMES and SITUATIONS when you smoke and write them down.

Examples could be that you smoke first thing in the morning, when on the phone, watching TV, with tea/ coffee, alcohol, with friends, when bored or stressed.

PLAN AHEAD, the easiest way to deal with these situations or to avoid them.

5. SEEK SUPPORT

Seek help from family and friends. Know who is supportive, and will encourage you to stay quit. The NATIONAL SMOKERS QUITLINE is open 7 days per Week from 8am – 10pm, Call 1850 201 203.
6. **LEARN TO DEAL WITH CRAVINGS**

A strong craving lasts for approx 3-5 MINUTES. Learn the 4 D's.

**Delay** for a few minutes and the urge will go away.

**Distract Yourself** Keep busy and Move away from the situation that you are in.

**Drink** water, juice, have fruit, gum or a boiled sweet to replace the 'hand to mouth' habit of smoking.

**Deep Breathe** Take a few deep breaths, slowly breathing out to help you relax.

7. **EXERCISE REGULARLY AND WATCH WHAT YOU EAT**

You may feel hungrier when you stop smoking. Avoid substituting cigarettes with high calorie foods. Opt for low calorie snacks that will fill you.

Always have breakfast which will help to kick-start your metabolism.

Keep to your exercise plan recommended by your physiotherapist.

8. **THINK POSITIVE**

You Can and Will Quit. Don’t focus on missing cigarettes; instead look at all the positives of becoming a non-smoker.

9. **SAVE MONEY**

Smoking 20 cigarettes per day will cost over €50 per week or over €200 per month. Treat yourself to something as a reward for every week you quit.

10. **TAKE ONE DAY AT A TIME.**

.......And you will succeed
PASSIVE SMOKING

Passive Smoking is a Major Health Risk for everyone and in particular for those with COPD.

Passive smoking is the breathing in of second hand smoke from other peoples’ cigarettes. The passive smoker will inhale some of the chemicals and carbon monoxide as a result of passive smoking. Even in a large room if you can’t see the smoke, it is still being inhaled causing health problems.

MAKE YOUR HOUSE COMPLETELY SMOKE FREE

If this is not possible it is very important that AT LEAST ONE ROOM in the house is kept COMPLETELY SMOKE FREE AT ALL TIMES for your use.

Ask people to smoke outside whenever possible. If it is raining ask them to smoke at an open window or shelter.

When driving ask people not to smoke in the car. Instead they can have a smoke break.

REMEMBER you are not trying to be awkward. People who smoke in front of you are affecting your health and so they must move away.
NICOTINE ADDICTION

Nicotine addiction is a medical condition, rather than a bad habit. As such, people who were once heavily addicted to nicotine have the potential to relapse and become a smoker again.

People who stop smoking still have the receptors in their brains that were once ‘hooked on’ nicotine. These receptors lie dormant, waiting to be turned on again by just one cigarette. If these receptors are turned on again, the addiction cycle can start again.

As a result, people who relapse and make another attempt to stop smoking can, once again, experience the unpleasant symptoms of nicotine withdrawal. These symptoms include strong cravings or urges to smoke, anxiety, agitation and depression.

The important message for many ex-smokers is that stopping smoking is a lifelong process, rather than an isolated event. For the majority of smokers who were once heavily nicotine-dependent, the potential for relapse continues to be a lifelong possibility. No scientifically proven method to prevent relapse currently exists. A significant number of ex-smokers relapse even after they have not smoked for more than one year.

Don’t be tempted to try ‘just one cigarette’ to see if you still like smoking. Most ex-smokers will still like smoking if they try it. There is a high risk that ‘just one’ cigarette could cause you to start smoking again.
BENEFITS OF STOPPING SMOKING

IMMEDIATE BENEFITS

- Blood Carbon monoxide levels – returns to normal within 36 hours.
- Improved Breathing.
- Fewer Respiratory Ailments.
- Reduced Vasoconstriction in those with already diseased heart.

ADDITIONAL BENEFITS

- Reduced risk of developing lung cancer and smoking related illnesses such as heart disease and lung disease.
- After 24 hours of stopping smoking, risk of heart attack starts to drop.
- After 1 year the increased risk of heart disease drops by 50%.
- Healthier and wealthier.
- Clothes smell fresher.
- Food and drink tastes better.
- Nearby non-smokers less irritable.
- Household members healthier.
- After 10 years or more of not smoking an ex-smoker has nearly the same risk of ill health as a non-smoker.
- Sense of self achievement.
DID YOU KNOW

In 1604 the world’s first health warning came about smoking. James the 1st described the habit as “loathsome to the eye, hateful to the nose, harmful to the brain and dangerous to the lungs”. Awareness of tobacco smokes various health hazards received increasing attention since the 1940s and 1950s. Only some of the adverse effects of smoking are listed below.

In Ireland about 6,000 people die each year from smoking related – diseases. About a quarter of all regular smokers die prematurely due to their smoking. Those killed lose on average 10-15 years of their expected lifespan.

Smoking causes many diseases. The three major diseases ones are COPD, lung cancer and heart disease.

Smoking is a major cause of 90% of lung cancer deaths, 25% of deaths from heart disease and about 75% of deaths from COPD.

A pregnant woman who smokes has an increased risk of miscarriage, or having a stillborn baby or having a low birth-weight baby.

Smokers are more likely to get peptic ulcers and their ulcers respond less well to treatment.

Smoking causes peripheral vascular disease which can result in gangrene and amputation.

Smokers cough more get more chest infections and shortness of breath.

As well as being the main cause of lung cancer, cigarette smoking is also a significant factor in causing cancer of the throat, mouth, urinary bladder and the oesophagus.

Non-smokers exposed over a long period to passive smoking (i.e. smoke other people’s cigarettes) have an increased risk of lung cancer and also increased risk of cardio-respiratory symptoms.

Infants living with smokers suffer from increased frequency of respiratory problems – colds etc and also ear infections compared to those in non-smoking households.

Among women who use oral contraceptives, those who also smoke are more likely to get a heart attack or stroke.

Smoking can also have adverse effects on dogs which are household pets.
Smoking is the single most preventable cause of ill health

You have achieved lots of other things in your life, you can stop smoking

It’s never too late to quit
Nicotine replacement therapy (NRT) – is available on GMS (medical card) (recommended for maximum of 3 months).

Nicotine is the addictive drug in tobacco.

Shallow inhalation stimulates low levels of nicotine in the blood, increases alertness and concentration.

Deep inhalation calms – high levels of nicotine produce a sedative and stress-relieving effect.

Nicotine replacement therapy maintains a lower level of nicotine in the body. It doesn’t elevate mood but prevents the craving for a cigarette. It is available as:

- Patches
- Chewing gum
- Inhaler
- Sublingual tablet
- Nasal spray
- Lozenges

NRT Patches: are applied to clean dry, non hairy skin. The site of application should be changed daily. The Strength required depends on number of cigarettes smoked, and is then reduced gradually.

Nicorette- apply for 16 hours

Niconil- apply for 24 hours

Nicotinell- apply for 24 hours

Duration: 12 weeks

This is available without prescription.
**NRT gum**: Various flavours available. Nicorette gum should be chewed slowly, and rested between gum and cheek. There is a maximum of 15 pieces daily.

- 20 cigs or more use 4 mg gum
- Less than 20 cigs use 2 mg gum.
- Duration: 12 weeks. Withdraw gradually after that.
- This is available without prescription.

**NRT Inhaler**: Nicorette inhaler: suitable for those who smoked 20 cigs or less per day.
- It’s a 3 month course.
- Use 6-12 cartridges daily for 2 months
- Gradually reduce to zero by end of third month.
- Duration: 12 weeks wean off as above
- This is available without prescription.

**NRT Sublingual** (under tongue) tablets: Nicorette microtabs
- Suit both high and low dependency smokers
- Place 1-2 tabs under the tongue per hour
- Maximum 40 tabs daily
- Continue for at least 3 months
- Wean off gradually reduce. Stop when taking 1-2 tabs per day
- This is available without prescription.

**NRT Nasal spray**: Nicorette nasal spray
- Useful for highly dependent smokers with strong cravings
- 3 month course: use one spray into each nostril as required
- Maximum 1 spray in each nostril twice in 1 hour (max 64 sprays daily)
After 2 months reduce dose by half over 2 weeks

**NRT Lozenge:** Lozenge dissolves in the mouth, normally taking about 30 minutes. Two strengths 2 mgs and 4 mgs – dose needed depends on number of cigarettes smoked daily.

Recommended:  
- Week 1 – 6, one lozenge every 1 to 2 hrs
  - Week 1 – 6 use 9 lozenges a day
  - Weeks 7 – 9 one lozenge every 2 to four hours
  - Weeks 10-12 one lozenge every four to eight hours

Duration; 12 weeks

This is available without prescription.

**Zyban tablets (buproion):** Is a medication given in tablet form. It is not a nicotine replacement therapy. Its’ action changes the brain chemistry so that the smoker does not have the same desire to smoke. It is not suitable for everybody.

Reduces cravings

Smoker chooses a “target quit day” in the 2nd week of treatment.

Dose is one tablet daily for 6 days, then one tablet twice daily thereafter.

Duration; 7 weeks

This is available on prescription.

**Champix (varenicline):** Is an oral prescription pill which works primarily in two ways. Firstly, it reduces the smoker’s craving for nicotine by binding to nicotine receptors in the brain and reduces the symptoms of withdrawal. Secondly, it reduces the satisfaction a smoker receives when smoking a cigarette.
• For the first three days, the dosage is 0.5mg once daily (the 0.5mg tablet is white)

• For days four to seven, the dosage is 0.5mg twice a day

• For day eight until the end of treatment, the dose is 1mg twice a day (the 1mg tablet is blue)

The European Commission approved Champix on September 29th 2006 as a “stop smoking” aid for adults, based on the results from clinical trials. It should be noted that continue abstinence from cigarettes is higher (70% compared with 50%) when patients take the drug for 24 weeks as opposed to 12, so it may be appropriate for patients who have succeeded in quitting smoking at the 12 week point to take the drug for a further 12 weeks.

You should set a date to quit smoking, and start taking the drug one week before this date.
SUBJECT
MANAGING BREATHLESSNESS
### OBJECTIVES: AT THE END OF THE SESSION, THE PARTICIPANT WILL HAVE:

- Increased understanding of the causes of breathlessness.
- Increased ability to evaluate their own level of breathlessness.
- Increased skills in managing breathlessness.
- Reduced sense of anxiety or fear when experiencing breathlessness.
- Increased ability to safely exercise when breathless.

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<thead>
<tr>
<th>Topic</th>
<th>Content</th>
<th>Resources</th>
</tr>
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<td>Introduction to normal breathing. (see previous section)</td>
<td>Anatomy of the respiratory muscles.</td>
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<td>Inspiration and expiration. (see previous section)</td>
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</tr>
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<td>Summary and discussion</td>
<td>Methods to control dyspnoea.</td>
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<tr>
<td>Slow down/pacing techniques.</td>
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<td></td>
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<tr>
<td>Relaxed positions.</td>
<td>Tips for managing panic attacks.</td>
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</tbody>
</table>

Not correlated with oxygen levels.

Participant handout
BREATHLESSNESS, BREATHING CONTROL, BREATHING TECHNIQUES

This handout will help you understand:

- What causes breathlessness.
- How to better control or reduce your breathlessness.
- Why energy conservation is important.
- How you can conserve your energy.

WHAT ARE THE CAUSES OF BREATHLESSNESS?

WHO BECOMES BREATHLESS?

Breathlessness (or dyspnoea) is common in people with lung or heart conditions. It is also common in people who are overweight or unfit.

HOW DO PEOPLE FEEL ABOUT THEIR BREATHLESSNESS?

In mild forms of lung conditions, breathlessness may occur when walking up hills or stairs, but in severe forms, breathlessness can occur when walking slowly along flat ground or even at rest.

In an effort to prevent becoming short of breath, people may avoid doing some activities of daily living (such as shopping, washing, cleaning) with the result that they become less active and therefore even less fit. In turn this means that it becomes even more difficult to do daily activities, and again in an effort to conserve breath people avoid these activities further. As a result of this vicious cycle people gradually become weaker, may socialise less, and can become anxious and depressed. By learning to cope with breathlessness this downward spiral is stopped.
The body’s oxygen requirements depend upon many factors, such as:

1. The **severity** of a lung condition and the ability of air to pass through lungs.

2. The **level of activity** a person currently does will affect the amount of oxygen needed eg when sleeping or resting quietly, the oxygen demand is less than when performing strenuous activities, such as walking up-stairs or hills.

3. **Fitness** or **conditioning** will also affect oxygen requirements during an activity. A person with a better fitness level will generally be more efficient in moving oxygen around their body, and their muscles will require less oxygen to do the same activity, than a person who is unfit.

4. **Stress** or **anxiety** or a **low mood**, can affect breathing rate and oxygen requirements. These mood states can mean a person focuses on their breathlessness and makes them more aware of breathing.

5. If a person is **unwell** or has an exacerbation or flare up of their condition, more effort is required to breathe.

---

**HOW TO BETTER CONTROL OR REDUCE BREATHLESSNESS**

There are many treatment options and management strategies that can help control or reduce your breathlessness.

---

**1. POSITIONS AND POSTURE:**

Good posture is important. The more a person slumps, the more squashed the lungs and abdomen, and the harder it is to breathe.

Try taking a deep breath while slumped. Now try again while standing or sitting fully upright with a tall spine. Notice the difference.
**Positions of ease** – choose a comfortable position, relax and support arms e.g. forward lean sitting (see below - picture). If breathlessness is severe and likely to continue for some time, a person may need to lie down or sit with head supported on pillows.

Lean forward, in sitting or standing, onto a solid supporting surface, resting on elbow or hands. This helps to free up the bottom of the lungs by allowing the abdominal contents to fall forward, making it easier to take deeper breaths.

This is a good position to practice pursed lip breathing or diaphragmatic breathing (see below).

Forward Lean Sitting/ Standing

---

**2. RELAXED BREATHING AND BREATHING CONTROL:**

People who have COPD have more difficulty breathing out fully. The body’s normal reaction when breathlessness occurs is to breathe faster and shallower. Breathing faster and shallower, however, is not an effective way to get control of breathing. Practice relaxed breathing any time you are trying to catch your breath. For example, relaxed breathing may be useful after coughing or exercising.

**Breathing Control** – Concentrate on **breathing out**. Try to make the out-breath last longer than the in-breath. Purse your lips and listen to the noise as you breathe out. **Avoid taking deep breaths in**. Rest in the position of ease - the work of breathing will get less.
3. PURSED LIP BREATHING

When short of breath follow the steps below to control the feeling of breathlessness.

The problem is that the lungs are full of trapped stale air. Before any fresh air can get in the lungs must be cleared of the old air.

Relax and let your shoulders drop

Breathe in slowly

Put the lips together, as if you were whistling, blowing a kiss or blowing out the candles on your birthday cake!

Breathe out through these pursed lips. Try to take at least twice as long breathing out as you did breathing in.

Concentrate on the breath out. Continue this technique until you no longer feel breathless.

We never forget to breathe in! Make sure you also remember to let the used air out!

*Practice pursed-lip breathing several times a day.*

Do it whenever you do anything that makes you short of breath, such as climbing stairs, bathing, or doing housework. Make it a habit.

4. DIAPHRAGMATIC BREATHING

- Helps to relieve breathlessness.
- Helps to improve lung mechanics.
- Can be done in lying or sitting.
Place one hand on upper abdomen (stomach) and the other hand on the front of chest.

Breathe in very slowly and very deeply, inhaling through the nose, and exhaling through pursed lips, feeling the stomach rise on the in breath and fall on the out breath.

A good time to practice diaphragmatic breathing is after the use of bronchodilators.

5. OTHER TREATMENT OPTIONS

A. Inspiratory Muscle Training (IMT) (may not be included in all programmes):

IMT is a method of increasing the strength of the inspiratory muscles. This may reduce the actual work of breathing which in turn will reduce shortness of breath.

IMT is home exercise using a device specially designed to target inspiratory muscles.

The resistance on the device is calculated from lung tests (PFTs) and is individual to each person.

See appendix/additional resources.

Benefits of Inspiratory Muscle Training include:

<table>
<thead>
<tr>
<th>Decreased Work of Breathing</th>
<th>Prevents or reverses areas of lung collapse</th>
<th>Prevents accumulation of secretions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased Shortness Of Breath</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved inspiratory muscle function</td>
<td>Optimises respiratory medication delivery to all parts of the lung</td>
<td>Improves mobilisation of secretion shifting phlegm upwards</td>
</tr>
<tr>
<td>Improved ability to exercise and perform tasks of daily living</td>
<td>Allows for optimal oxygen to enter the blood</td>
<td>Easier for you to clear secretions Less risk of Infection</td>
</tr>
</tbody>
</table>
B. Medication

Using reliever and preventer medication can assist in controlling breathlessness. It is important that medications are used correctly to ensure their effectiveness. For more details on medications and inhalation devices, refer to Medications and Inhalation devices section.

C. Pace

Being able to pace oneself is an important skill which is often overlooked. If you have breathing problems and notice that you are more short of breath than previously, then slow down to get tasks done.

If you rush and try to beat the shortness of breath, you will spend longer trying to catch your breath. If you go slowly and pace yourself, you will go a lot further before needing a rest. For example:

- While walking, try to establish a pattern of breathing that matches your steps and that you can maintain easily. For example, you may breathe with every step or over a number of steps depending on your level of breathlessness and fitness. If you change your pace of walking, you will need to adjust your breathing pattern.

- Before you begin climbing stairs or walking up hills, gain breathing control. Do not hold your breath and rush through the task to 'get it over with' as this will only make you more short of breath. Aim to find a rate of breathing that matches your effort. If you find an activity too hard to do, simply stop and recover before restarting the activity at a slower pace.

- While bending and stooping, aim to breathe out as you bend over.

D. Improve fitness
Better fitness levels or improved tolerance to exercise will enable a decrease in the effort required to perform everyday activities.

E. Manage anxiety

Learning how to manage or control anxiety, or situations that cause anxiety, can assist your breathing control (see Positive Mental Health section).

APPENDIX/ADDITIONAL RESOURCES

INSTRUCTIONS FOR INSPIRTAORY MUSCLE TRAINING (IMT)

Inspiratory muscle training must be practiced every day.

Start with two sessions per day.

Aim to build up each session to 15 minutes of continuous training.

When this is achieved, try to gradually extend the first session from 15 minutes to 30 minutes of continuous training, whilst keeping the second session at 15 minutes.

When at 30 minutes of continuous training, stop doing the second session and concentrate on 1 session of 30 minutes per day.

When the 30 minutes is easy to do, request an increase on the setting on the training device. If the exercise becomes too easy, muscles will not gain the benefits.

When exercising emphasise the breathing-in part of the respiratory cycle. Breathe in very strongly and quickly. Then breath out very gently and for about twice as long as you breath in. The benefit to respiratory muscles will be achieved only if the breath is strong and quick.

Fill in IMT diary daily (provided at class), and bring it along to the class.

Read the booklet and take care of the device as instructed.
SUBJECT
EXERCISE AND PHYSICAL ACTIVITY
FACILITATOR

EXERCISE AND PHYSICAL ACTIVITY

OBJECTIVES:

At the end of the session, the participant will have:

- Increased knowledge of physical fitness.
- Awareness of the need to increase their level of physical activity and exercise to optimise lung health.
- Knowledge of how to safely achieve an increased level of physical activity and exercise.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Content</th>
<th>Resources</th>
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<tr>
<td>Applications.</td>
<td>Barriers and how to overcome them. Variety of exercise options</td>
<td>Diagram of cycle of increased activity and reduced dyspnoea.</td>
</tr>
<tr>
<td>available in local area.</td>
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</table>
The Exercise Programme
AN ANCIENT CHINESE PROVERB –

“He who does not make time for bodily exercise must soon make time for bodily illness”

OBJECTIVES OF SUBJECT

This handout will help understanding of:

• Why it is important to maintain or improve fitness.
• How to benefit from exercise and physical activity.
• What the recommended guidelines for exercise are.
• What to do if unwell.
• How to maintain fitness.

INTRODUCTION

WHY IS IT IMPORTANT TO MAINTAIN OR IMPROVE FITNESS?

The first symptom of chronic lung disease may be shortness of breath. This leads to a decrease in activity and then level of fitness as a person becomes more immobile, all in an attempt to prevent the feeling of being short of breath. By avoiding going out a person may become socially isolated which in turn may lead to depression, which in turn can feel that any activity is a huge effort. The end result can be a feeling of helplessness and COPD controlling life and lifestyle rather than vice versa.
Cycle of Debilitation from respiratory disease

Feel short of breath from moderate exertion.

Then avoid such activities to control shortness of breath. But lack of activity causes muscles to weaken and weak muscles use more oxygen than strong ones.

Feel short of breath from mild exercise such as walking. May make the mistake of further avoiding exercise

Body further weakens, become short of breath when bathing, dressing and even at rest.

Break this downward cycle !!!

Exercise and stay active !!!

By exercising regularly, a person’s fitness and muscle strength can be maintained or improved. People who have chronic lung conditions and who exercise regularly, such as walking or cycling for more than two hours per week, can improve their health. As a result, they will feel better and stay well.
HOW TO BENEFIT FROM EXERCISE AND PHYSICAL ACTIVITY?

Exercise will help to:

- Make the heart stronger and healthier.
- Improve arm, body and leg muscle strength.
- Improve breathing.
- Clear mucus (or sputum) from the chest.
- Reduce breathlessness during daily activities.
- Increase the number of activities that can be done each day or each week.
- Improve balance.
- Improve mood and make feeling of being more in control.
- More independence.
- Help weight control.
- Improve bone density.

The benefits from pulmonary rehabilitation, such as improvements in exercise performance or quality of life, have been shown to decline gradually over 12 to 18 months after stopping. Therefore, to maintain the health benefits of pulmonary rehabilitation, it is very important to keep exercising. If the exercise programme stops, fitness and muscle strength is lost very quickly. Talk to your doctor, physiotherapist about local programmes available to you to help maintain your exercise program.

People who exercise regularly can reduce their need for hospital admission.
WHAT ARE THE RECOMMENDED GUIDELINES FOR EXERCISE?

The exercise that is prescribed during the pulmonary rehabilitation programme is safe and is tailored to meet each person’s needs. Each class commences with a warm-up, to increase the heart rate gradually and prepare the body for exercise.

WHAT IS INVOLVED IN AN EXERCISE PROGRAMME?

An exercise program should include:

1. **An aerobic programme.** Ideally, the aerobic programme should involve a walking programme as this is the most relevant exercise for daily living. Other types of aerobic exercise can include cycling, riding an exercise bike or even using a rowing machine. These exercises can be used to add variety to a programme or for those with difficulties walking.

2. **A strength training programme**, which will keep muscles strong and prevent some of the effects of having a chronic lung condition. Strength training should include exercises for your arms, torso and legs.

3. **A stretching programme**, which can help to maintain your flexibility.

4. **Balance re-training:** As a person gets older, balance may be affected. As a result, balance retraining exercises maybe of use. Discuss balance retraining with the physiotherapist - he/she can recommend appropriate exercises to strengthen balance.

EXERCISE GUIDELINES

- Exercise regularly – aim for a minimum of three sessions per week.
- Aim to exercise for at least 20 to 30 minutes per session.
- Aim for moderate intensity.
- Wear comfortable clothing and footwear.
- Ensure to drink enough fluids while exercising.
IF ON OXYGEN?

For those on prescribed oxygen therapy and who have low oxygen levels in the blood when you exert yourself, using oxygen can help you tolerate the exercise more easily.

Never turn the oxygen up higher than prescribed for exercising unless first discussed with your doctor or physiotherapist. When exercising, be careful to avoid tripping and falling on your oxygen tubing.

GENERAL PRECAUTIONS

- Avoid strenuous exercise if you have a fever, an infection or the common cold.
- Restart the programme at a lower intensity if the exercise routine is interrupted.
- Do not exercise immediately after a big meal.
- Do not exercise in extreme heat or cold.
- Take bronchodilators (inhaled reliever medications that open the airways) before exercising.
- Use recovery positions to reduce breathlessness

GETTING STARTED WITH THE EXERCISE PROGRAMME

It maybe better to exercise using an interval programme rather than trying to exercise continuously. An interval programme might be (e.g.) walk for one to two minutes, rest for one minute and then walk again. This may need to be repeated 10 or 20 times to achieve at least 20 minutes of total walking time.

Interval exercise programmes have many advantages. These include helping to tolerate an exercise routine better as well as enabling exercise at a higher intensity, which in turn will give you a greater improvement in fitness.
HOW OFTEN TO EXERCISE?

Exercise should be part of everybody’s weekly routine and should be planned for each week. Exercise for a minimum of three days per week. Anything less will not help to improve fitness.

HOW INTENSE SHOULD BE THE EXERCISE?

When attending the pulmonary rehabilitation programme, the physiotherapist assesses each person’s exercise tolerance. Based on this each person will have a programme prescribed at the correct level for them.

There are many ways to prescribe a training intensity for an exercise programme:

1. **Each person’s level of breathlessness** can be measured during an activity and rated against the Borg or modified Borg scale (see the following diagram).

2. The physiotherapist can set an exercise programme at 60% to 80% of an exercise test. The exercise test, such as a six minute walking test or shuttle walking test, may have been done at the start of the programme.

3. Exercising at a percentage, such as 60% to 80%, of a person’s **maximum heart rate**. This method is generally not the best way to measure training intensity for people who have lung conditions as usually they are limited by their breathlessness.

These scales can be used to guide training intensity and to set personal goals for exercise.
THE MODIFIED BORG SCALE

Rating Your Breathlessness: The BORG scale is a self-assessment scale used to determine how short of breath you are when you are exercising.

This scale helps to determine how hard you are exercising without the need for any complicated equipment but by rating your symptoms of fatigue and breathlessness during exercise. By using this scale every participant can work at their own, specific, intensity level. Your goal is to attain a rating of 3 while exercising.

<table>
<thead>
<tr>
<th>SCALE</th>
<th>SEVERITY</th>
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<tr>
<td>0</td>
<td>No Breathlessness* At All</td>
</tr>
<tr>
<td>0.5</td>
<td>Very Very Slight (Just Noticeable)</td>
</tr>
<tr>
<td>1</td>
<td>Very Slight</td>
</tr>
<tr>
<td>2</td>
<td>Slight Breathlessness</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
</tr>
<tr>
<td>4</td>
<td>Some What Severe</td>
</tr>
<tr>
<td>5</td>
<td>Severe Breathlessness</td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Very Severe Breathlessness</td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Very Very Severe (Almost Maximum)</td>
</tr>
<tr>
<td>10</td>
<td>Maximum</td>
</tr>
</tbody>
</table>
WHAT OTHER ACTIVITIES ARE THERE?

If bored with walking or just looking for variety, consider other alternatives - gardening, dancing, golf, water-based exercises etc.

DANGER SIGNS

If any of the following symptoms occur when exercising, stop and rest immediately:

- Chest pain.
- Dizziness or feeling faint.
- Extreme shortness of breath.
- Excessive wheezing.
- Coughing up blood.

WHAT TO DO IF YOU ARE UNWELL?

If you find it hard to do your usual exercise programme, this can be an early warning sign that you are becoming ill. When you are unwell, the body is working harder to fight off infection, and breathing may become more difficult. Therefore, do not exercise as hard during this time.

WHY IS FITNESS LOST WHEN UNWELL?

People who have chronic obstructive pulmonary disease (COPD) and who are unwell or have an exacerbation or flare up of their symptoms:

- Are less active during the day, spend more time sitting or lying down, and less time standing and walking than they would normally do.
- They then lose muscle strength and conditioning as a result of this forced inactivity.
After an illness, it can take several months to regain fitness level and muscle strength. This is true of all people who experience an illness and subsequent loss of fitness but it is particularly true for those with COPD.

**HOW TO PREVENT LOSING FITNESS?**

The severity of an illness or exacerbation of an illness (or flare up) will affect the exercise level you are able to do.

Generally, the aim is to not exercise as hard while ill but:

- Walk at a slower speed and use more rest breaks.
- Use an exercise bike rather than going for a walk. While riding an exercise bike less body weight is moved and therefore, it should be easier to do.
- Do a strength training programme for arm and leg muscles.

**HOW TO MAINTAIN FITNESS?**

Maintaining physical fitness improves health. By the end of the pulmonary rehabilitation programme, each person should have established an exercise routine suitable for them. After the pulmonary rehabilitation, it is important to continue this exercise routine. There are a variety of options available that can assist you in maintaining your fitness, including:

1. Enroll in a **maintenance exercise programme** following the completion of the pulmonary rehabilitation programme.
2. Joining a community-based walking group.
3. Joining a local gym or community group.
4. **Exercising regularly with someone else.** This option can work quite well, providing the individuals have similar exercise goals.
5. Participating in a **home exercise programme.** Some people may prefer to exercise on their own. A **home exercise programme** can be effective if the
person makes this part of their daily routine. Using an exercise recording sheet or an exercise diary can help to make this a regular commitment.

See appendix/additional resources for record sheets and sample exercises for aerobic, strength and stretching.

**HOME EXERCISE PROGRAMME**

The home exercise programme is an important aspect of Pulmonary Rehabilitation. This exercise is completed in addition to the twice weekly exercise classes in the supervised sessions during the programme. Establishing an exercise routine at home during the programme now will help to continue to exercise after finishing the programme.

Each person should work at 3 on the BORG scale

Frequency: Try to perform at least 2 additional days per week

Duration: Anything from 5 to 40 minutes of continuous exercise

Reduce intensity if needed for tough breathing days.

Choose to do anything you like!

It doesn’t matter what so long as moving muscles and working at own pace at **3 on the BORG scale**!

Walk!  Bike!  Swim!
**Walking** is a very important part of the exercise programme.

Walk every day if possible. The speed and the distance to aim for will be decided at the initial assessment. It is necessary to walk/exercise at the maximum level possible to achieve greater levels of fitness. It’s recommended to cope with your activity until you reach the level 3 on Borg Scale. Fill out your exercise diary after each walk - and bring it along to the exercise sessions.

**WHY IS WALKING HELPFUL?**

By daily progressive walking many of the muscles in the body are used, including the heart - which is also a muscle. With this gradual exercise, the muscle fibres grow shorter, becoming more efficient and needing less oxygen.

Walking increases circulation and helps blood return to the heart and lungs, to pick up more oxygen. Walking uses the whole body and helps to improve overall conditioning and endurance level. This improves tolerance of other daily and recreational activities.

Important considerations while walking:

- Walk as often as possible, while maintaining a controlled breathing pattern and using proper posture.
- Allow arms to swing freely at sides.
- Start small (5-10 minutes) and increase time and distance gradually.
- Walk at pace that keeps a perceived exertion/breathing level of 3.
- Walk outside daily, preferably in the early morning when the air is less polluted and crisp.
- If the weather is bad, walk indoors, around the home, or the supermarket or shopping centre for example!
- Start walking on level ground and as you become stronger walk up hill.

**Do’s and Don’ts of Walking**

<table>
<thead>
<tr>
<th>Do</th>
<th>Don’t</th>
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<tbody>
<tr>
<td>Walk on the flat</td>
<td>Walk directly after a large meal</td>
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<tr>
<td>Bring your bronchodilator</td>
<td>Walk uphill</td>
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<td>Walk continuously without stopping</td>
<td>Walk too quickly</td>
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<tr>
<td>Walk until you reach a minimum of Borg score 3</td>
<td>Walk if you feel unwell</td>
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<tr>
<td>Gradually increase your walking time</td>
<td>Record non-continuous walking</td>
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<tr>
<td>Record walk/time in diary</td>
<td>Overdo the exercise</td>
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See appendix/additional resources for walking diary
### AEROBIC EXERCISE RECORDING SHEET

To use your exercise recording sheet, write your prescribed exercise programme in the columns as follows: the type of aerobic exercise (for example, walking or riding an exercise bike) in the Mode column, the distance or speed of the exercise (for example, 500 metres) in the Distance column and the total exercise time or the intervals (for example, two sets of 10 minutes) in the Time column. Once you have completed the exercise, tick the box corresponding to the day of the week that you completed the exercise.

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### STRENGTH TRAINING SHEET

To use your strength training sheet, write your prescribed exercise programme in the columns as follows: the exercise to be performed (for example, squat) in the Mode column, the load (for example, no added weight) in the Load column, the number of sets and repetitions of each exercise (for example, 2 sets of 10 repetitions) in the Number column. Once you have completed the exercise, tick the box corresponding to the day that you completed the exercise.

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EXAMPLES OF A STRETCHING PROGRAMME

These stretches should be performed a few times each week. A stretching programme should be performed before and after the aerobic and strength programme.

1. Side neck stretch
   - Slowly tilt head towards one shoulder
   - Hold for 10 seconds
   - Repeat two to three times
   - Repeat toward other shoulder

2. Shoulder rotation
   - Place hands on your shoulders as shown
   - Slowly make forwards and backwards circles with elbows
   - Repeat five times each way

3. Thoracic stretch
   - Hold hands behind your back as shown
   - Move your hands away from your back
   - Hold for 20 seconds
   - Repeat two to three times
4. **Shoulder stretch**
   - Gently pull on your elbow with your other hand until a stretch is felt in the shoulder
   - Hold for 20 seconds
   - Repeat two to three times

5. **Triceps stretch**
   - Gently pull on raised elbow until a stretch is felt in the arm
   - Hold for 20 seconds
   - Repeat two to three times

6. **Side stretch**
   - Reach one arm straight over your head
   - Lean to that side as far as is comfortable
   - Hold for 20 seconds
   - Repeat two to three times

7. **Quadriceps stretch**
   - Pull your foot towards your buttock until a stretch is felt in the front of your thigh
   - Hold for 20 seconds
   - Repeat two to three times

8. **Hamstring stretch**
   - Place your foot on a block
   - Slowly lean forwards until you feel a stretch in the back of your thigh
   - Hold for 20 seconds
   - Repeat two to three times
9. Calf stretch

- Place hands on a wall or a bench
- Slowly lean forwards until you feel a stretch in the back of your thigh
- Hold for 20 seconds
- Repeat two to three times

BALANCE RETRAINING

As you get older, your balance may be affected. As a result, you may find it useful to do some balance retraining exercises.

Please discuss balance retraining with your physiotherapist as they can give you exercises that are appropriate to strengthen your balance.

STRENGTH TRAINING PROGRAMME

There are many different types of exercise programmes available. Below is an example of a strengthening programme. Please discuss with your physiotherapist about a suitable programme for you to do.

- Aim to do three sessions per week of the following strengthening exercises.

- Aim to achieve muscle fatigue between 6 and 10 repetitions. If you have not achieved muscle fatigue after 10 repetitions, then you may need to either add arm or leg weights to the exercise or increase the weight of the arm or leg weights.

- If you find doing all the exercises at each session is too much, you can split the exercises in half and do them on alternate days. For example:

  - Day 1: You may choose to do the bicep curl, wall push up or bench press, lateral pull down, leg press or squat, and step ups.
Day 2: You may choose to do the shoulder press, sit to stand, standing row or seated row and lunge.

**EXAMPLES OF STRENGTH TRAINING**

Skeletal muscle weakness is present in people with COPD and this weakness can affect lower and upper limb strength. Strengthening these muscles is important as these muscles are used on an everyday basis.

1. **Biceps curl**
   - Hold the arm weight at your side
   - Curl arm towards your shoulder
   - Do 6 to 10 repetitions for each arm
   - Do one to three sets

2. **Shoulder press**
   - From the start position (sitting or standing), press the arm weight upwards to straight arms
   - Do 6 to 10 repetitions
   - Do one to three sets

3. **Wall push up**
   - From the start position, lean into wall then push up away from wall
   - Do 6 to 10 repetitions
   - Do one to three sets
   - To progress move feet away from the wall

Or
4. Bench press
   - From the start position, press the arm weight upwards to straight arms
   - Do 6 to 10 repetitions
   - Do one to three sets

5. Standing row
   - Lean forward onto a chair or bench
   - From the start position, lift the arm weight up to chest
   - Do 6 to 10 repetitions
   - Do one to three sets
   - or

6. Seated row
   - From the start position and while keeping your back upright, pull your arms to your chest
   - Do 6 to 10 repetitions
   - Do one to three sets

7. Lateral pull down
   - Lean back slightly
   - Pull bar down towards the front of your chest
   - Do 6 to 10 repetitions
   - Do one to three sets
8. Sit to stand - picture

- Sit on the edge of your chair
- Stand upright
- Do 6 to 10 repetitions
- Do one to three sets
- Progress to not using your arms start

9. Squat

- Stand with your legs shoulder width apart
- Lower your body as if you are sitting on a seat
- Do not bend your knees beyond 90 degrees
- Do 6 to 10 repetitions
- Do one to three sets
- To progress hold hand weights and repeat exercise

10. Leg press

- From the start position, press legs forward until knees are straight
- Do 6 to 10 repetitions
- Do one to three sets

11. Step ups

- This activity can be either a strengthening or an aerobic exercise.
- For strength:
  - Do 6 to 10 repetitions
  - Do one to three sets
- To progress hold hand weights and repeat exercise
- For aerobic:
  - Do a one minute set of step ups, then rest for one minute
  - Repeat 5 to 20 times depending upon your fitness

12. Lunge

- Stand with a wide stride
- Bend both legs until forward thigh is parallel with the ground
- Do 6 to 10 repetitions
- Do one to three sets
- To progress hold hand weights and repeat exercise
SUBJECT
CONTINENCE AND PELVIC FLOOR EXERCISES
OBJECTIVES:

At the end of the session, the participant will have:

- Knowledge about factors contributing to continence and incontinence.
- Knowledge of the anatomy of the pelvic floor.
- Experienced a contraction of the pelvic floor muscles.
- Knowledge of how to perform pelvic floor exercises.
- An increased knowledge of good bladder and bowel habits.

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<td>Weak pelvic floor muscles:</td>
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| techniques. | - Fibre.  
|            | - Fluids.  
|            | - Exercise.  
|            | - Evacuation routine.  
|            | - Reduced waiting time.  
|            | - Squatting position.     |
| Services and support groups. | |
| Summary and questions. | |
INTRODUCTION:
This section will help understanding of:

- What people need to know about incontinence
- What the pelvic floor is
- The symptoms of a weak pelvic floor
- What are good bladder and bowel habits
- How to do pelvic floor exercises

WHAT PEOPLE NEED TO KNOW ABOUT INCONTINENCE?
Incontinence and other complaints of a weak pelvic floor are common for many people who have chronic obstructive pulmonary disease (COPD) and other chronic lung conditions.

WHAT ARE THE PELVIC FLOOR AND PELVIC FLOOR MUSCLES?
The pelvic floor is made up of layers of muscle and other tissues. The pelvic floor holds up and supports the organs in the pelvis including the bladder, the bowel, the uterus (or womb) in women and the prostate in men.

The pelvic floor muscles are the muscles which are situated between the legs, like a sling attached between the tail bone and the pubic bone.
The pelvic floor helps to control bladder and bowel function. When the pelvic floor muscles contract, they protect the bladder, the bowel and the uterus during daily activities and from the pressures of coughing and sneezing. Contraction of the pelvic floor muscles is important in preventing urgency (the urgent need to go to the toilet), constipation and incontinence (the leakage of urine or faeces). The pelvic floor muscles also contribute to good posture.

The pelvic floor muscles can be weakened from:

- Chronic coughing.
- Pregnancy and childbirth.
- Continual straining to empty bowels (constipation).
- Heavy lifting.
- Being overweight.
- Being unfit.
- Changes in hormone levels at menopause
- Increasing age
For example when a person coughs extra pressure pushes down on the pelvic floor. In such a situation weakness of the pelvic muscles can cause urine to leak or can make it difficult to hold on to get to the toilet. Leaking urine or passing wind when a person coughs can be embarrassing.

So the pelvic muscles have three jobs:

1. They hold the contents of the abdomen in. If the pelvic floor wasn’t there the intestines, bladder and other organs would simply fall out when people stand up.
2. They support the bones of the pelvis and lower back.
3. They control the ‘openings’ between the legs, that is the back passage, bladder and in women also the birth canal/vagina. The job of the Pelvic Floor is to keep those openings closed until a person ready to open them!

**WHAT ARE THE SYMPTOMS OF A WEAK PELVIC FLOOR?**

A person with any of the following complaints may have a weak pelvic floor:

- **Urgency**: a sudden and urgent need to go to the toilet and an inability to ‘hold on’.
- **Incontinence**: a leakage of urine or faeces from the bladder or bowel.
- **Stress incontinence**: a small leakage of the urine from the bladder when the pelvic floor is stressed by activity, such as coughing, laughing, sneezing, straining or lifting, jumping, running or doing exercise.
- **Constipation or straining**: the inability to defaecate without great effort.
- **Frequency**: a need to go to the toilet frequently - this indicates an inability to ‘hold on’.
- **Other symptoms**: such as vaginal flatus (wind) or inability to keep tampons in.
WHAT CAN BE DONE TO STRENGTHEN THE PELVIC FLOOR?

A weak pelvic floor cannot do its job properly. The pelvic floor responds to regular exercise - the sooner pelvic floor exercises are started, the better the chance of preventing or overcoming many of the problems associated with a weak pelvic floor. Just like any muscle those of the Pelvic floor can be strengthened by performing exercises every day - simply by making the muscles act as if trying to hold in wind, or stop passing urine.

WHAT ARE GOOD BLADDER AND BOWEL HABITS?

Going to the toilet between four and six times a day and no more than twice at night is normal.

SOME SIMPLE STEPS TO KEEP BLADDER AND BOWEL HABITS HEALTHY

- Try to drink at least six to eight cups (one and a half litres) of fluid a day (unless advised otherwise by the doctor).
- Limit the amount of caffeine (for example, coffee, cola and tea) and alcohol as these drinks irritate the bladder.
- Try to go to the toilet only when the bladder is full. However, emptying the bladder before going to bed is fine.
- Take time when urinating so that the bladder can empty completely.
- Keep bowels regular and avoid constipation.
- Keep the pelvic floor muscles in good condition.

HOW TO DO PELVIC FLOOR EXERCISES

If a person experiences stress incontinence, to help to protect against leakage, simply contract the pelvic floor muscles before any activity (for example, coughing, sneezing, lifting or jumping) that will increase pressure on the pelvic floor and the likelihood of leakage. Practise this technique regularly to ensure that it becomes a lifelong habit.
To train the muscles to work quickly, in an emergency, for example when a person wants to cough, laugh or sneeze;

Practice squeezing the muscles hard and fast then letting go. Repeat 5-10 times

To make the muscles strong so that a person is better able to hold on until he/she can get to the toilet;

Squeeze the muscles between the legs, hold for 5 seconds then let go. Repeat 5-10 times.

**HOW TO DO PELVIC FLOOR ROUTINE**

- **For men:** tighten and draw in strongly the muscles around anus and urethra all at once, trying to hold them up inside. Hold this contraction - count to five and then relax. Rest for at least 10 seconds and repeat. Aim to do 10 contractions.

- **For women:** tighten and draw in gently the muscles around anus, vagina and urethra all at once, trying to hold them up inside. Hold this contraction - count to five and then relax. Rest for at least 10 seconds and repeat. Aim to do 10 contractions.

- When doing these exercises:
  - Don’t hold breath.
  - Don’t push down; squeeze and lift up.
  - Don’t tighten buttocks or thighs.
**HOW TO TIGHTEN PELVIC FLOOR MUSCLES**

- Sit or lie comfortably with the muscles of thighs, buttocks and abdomen relaxed.
- Tighten (and then relax) the ring of muscles around the back passage (anus) as if trying to control diarrhoea or wind. Practise this movement until able to exercise the correct muscles.
- When passing urine, try to stop the flow midstream and then re-start it. This should only be performed occasionally (less than once a week), as this action may interfere with normal bladder emptying.

**REMEMBER**

- Strengthening the pelvic floor muscles takes time. If muscles are already weak they will fatigue easily. With time these exercises will work if done regularly.
- These exercises should be done regularly and added to daily routine, such as after going to the toilet, when having a drink or when lying in bed.
- For those people who regularly perform airway clearance techniques a position that enhances pelvic floor function should be chosen. When sitting, this is achieved with feet flat on the floor, hips at 90 degrees and lumbar spine in neutral or straight (not slumped).
- Nobody can do too many of these exercises. They can be performed as many times a day as possible – when sitting, lying, standing, talking or walking.
- Some people find this an embarrassing issue. However many others also have this problem. If experiencing particular difficulties with leaking urine, or other bladder and bowel functions talk to a health care worker. There are specialist health care professionals and products that can help deal with the problem of incontinence.
SUBJECT
ENERGY CONSERVATION
FACILITATOR:

ENERGY CONSERVATION

OBJECTIVES:

At the end of the session, the participant will:

- Have a better understanding of the physiological response to daily activities.
- Be able to set realistic goals while undertaking self care activities.
- Be able to adopt and utilise energy conservation techniques.

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<td>Summary and discussion.</td>
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This handout will help understanding of:

- The body’s physiological response to daily activities,
- Setting realistic goals while undertaking self-care activities
- Adopting and utilising energy conservation techniques.

Why is energy conservation important?

If someone has a chronic lung condition, the lungs are less efficient in meeting the body’s demand for oxygen. As a result, the body’s energy supplies become more limited. With limitations in energy supplies, a person with a chronic lung condition can become more fatigued or short of breath with normal activity, and may possibly experience anxiety or panic with these activities.

By learning to conserve energy with everyday tasks, many activities can be performed with less effort and shortness of breath.
With a little extra thought and planning, energy can be saved both for the activities a person most enjoys and the important activities.

**QUALITY OF LIFE: PHYSICAL AND PSYCHOLOGICAL ASPECTS**

**PHYSICAL ASPECTS:**

- Save energy - use wisely and efficiently.
- Plan for choice.
- Avoid rushing. Pace. Use slow and flowing movements. Take frequent rests.
- Plan and prioritise. Pre-plan activities. Manage time by planning ahead - the day/week/month/year.
- Alternate heavy tasks with light ones, and divide them evenly over the day.
- Consider the best time for each activity.
- Consider the weather.

**PSYCHOLOGICAL ASPECTS:**

- Positive thinking will help look after the mind.
- Try to keep calm.
- Use relaxation techniques.
- Use social support.
- Use self help groups.

**GENERAL ADVICE**

Control and co-ordinate breathing with daily activities to ensure that breathing rate is controlled when working on daily tasks.

Going slowly means will go a lot further before needing a rest.
Don’t hold breath, as this reduces the amount of oxygen available.

When feeling short of breath, use recovery positions to help regain control of breathing.

**PLAN TASKS AND PLAN AHEAD**

Set realistic goals: high expectations can cause frustration.

Set priorities – for every task ask “is it essential – why is it essential?”

Challenge old habits – can something be done simpler or not done at all.

Allow time for interruptions or the unexpected.

**ORGANISE ACTIVITIES**

Evaluate each task. Break each task into smaller tasks. Take breaks during tasks.

Try and always do tasks in the same manner.

Sit for as many activities as possible.

Plan the work space to minimise unnecessary travel.

Use any equipment/ adaptations available.

Stop before exhaustion sets in.

**EVALUATE ALL JOBS/TASKS**

- Identify what is important/ meaningful.
- Identify what needs to be accomplished and prioritise it.
- Identify what needs to be done by **YOU**.
- Remember your age!
- BE WISE AND DELEGATE where possible.
Learn to ask for help – it's not a sign of dependency but of using energy to best advantage.

Use time efficiently to carry out things which are really important.

WORK WITH HOW THE BODY IS DESIGNED

Reduce bending and reaching: eg Work at benches that are at waist high, Store commonly used items on middle shelves, Bring feet to you (for example, rest feet on knees to put on socks, towel dry and tie laces).

Work close to the load: Carry objects close to the body, Organise equipment or food to be within easy reach, Use a trolley to carry heavier items.

Let bigger muscles do the work: Squat with legs to avoid bending back, push rather than pull objects, use hips to close drawers or doors.

Avoid long term muscle strain: Rest arms frequently if working overhead, move or lift lighter loads eg divide the load of groceries, half fill the kettle etc.

Sit to perform activities: this will reduce energy use compared with standing during the same task.

When possible sit while ironing, washing dishes, showering, chopping vegetables, gardening, making a phone call etc.

Keep a high stool or chair for use in kitchen or at work bench.

When sitting, the work surface should be at the level of bent elbow. Make sure there is a space below work area for knees. Keep the feet firmly on the floor.
For some tasks/jobs, the advice of an Occupational therapist can assist, such as in areas listed below:

**Activities Of Daily Living**

- Promoting independence in self care.
- Work and leisure activities.
- Teaching compensatory techniques to enable everyday tasks to be carried out more easily.

**Recommendation of Suitable Equipment**

Advice on special equipment to assist in activities of daily living (e.g. bath and toilet equipment and fittings, chairs, etc).

**Home Assessment**

- Assessing independence and safety at home.
- Recommending alterations/home adaptations to make the living environment safer.

**Assessment for Mobility Aids**

- Mobility and training.
- Ensuring correct fit and design of mobility aid.
SUMMARY ENERGY CONSERVATION - DON’T FORGET - A QUICK REMINDER!

Incorporate **Stress Management** (See separate section) techniques into everyday activities.

Do **Relaxation** exercises (See separate section) – set aside the time **NOW**!

- Basic breathing, shoulder rolls, focus on an object.

Remember **Energy Conservation** guidelines:

1. Always walk and move slowly. Rushing will increase discomfort.
2. Sit for as many activities as possible.
3. Take frequent rests to prevent over-fatigue/tiredness.
4. Organise activities and try to do them the same way each time. Repeating the process will improve efficiency, which will save energy.
5. Breath out/Exhale through pursed lips during the strenuous part of the activity.
6. Determine the best time to do certain activities. If the morning is the most difficult time, do as much as possible the evening before.
7. Difficult tasks are best done if spread throughout the week.
8. Store frequently used items close to hand to minimise bending or reaching.
9. Arrange work areas close together. Re-arrange tools or equipment so work moves in one direction.
10. Consider options such as bulk buying and planning ahead.
11. Use larger body joints to save energy and to protect smaller more vulnerable joints, for example use leg muscles when lifting larger items by bending knees and hips and not the back.
12. Decide which tasks are essential and eliminate unnecessary details.
13. Delegate.
SUBJECT
CHEST, SPUTUM CLEARANCE
OBJECTIVES:

At the end of the session, the participant will have:

- Increased knowledge of the role and function of sputum and the mucociliary pathway in chronic obstructive pulmonary disease (COPD).
- Increased ability to recognise the signs and symptoms of a chest infection.
- Increased understanding of airway clearance techniques with an emphasis on independent techniques.

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WHAT IS THE ROLE AND FUNCTION OF SPITUM IN LUNG CONDITIONS?

The lungs provide protection against foreign particles entering the body by trapping unwanted particles in the mucous lining of the airways.

Secretions can be cleared from the lungs by coughing, expiratory airflow and the movement of tiny hairs called cilia. These tiny hairs line the breathing tubes (bronchi and bronchioles) and move like a wave to help propel the mucus and unwanted particles up to the mouth where they can be cleared. The function of the tiny hairs (cilia) can be affected by smoke, alcohol and dehydration.

The breathing tubes can become swollen and inflamed for those with lung conditions or chest infections. As a result, the airways can produce thicker and stickier mucous secretions called sputum or phlegm.

WHY IS IT IMPORTANT TO KEEP THE LUNGS CLEAR?

One of the characteristics of COPD is the production of excessive amounts of sputum. Repeated chest infections contribute to a deterioration in lung function. If sputum is not cleared from the lungs, it can cause ongoing inflammation, which can lead to further lung damage. In some lung conditions, the ability to clear these secretions can be more difficult, resulting in:

- More coughing, which increases tiredness and can make a person more breathless.
Narrowing of the airways, which can make breathing harder.

It is important therefore to be able to clear these secretions without too much effort.

**CHEST CLEARANCE TECHNIQUES**

Airway Clearance Techniques (ACTs) allow excess mucus to be cleared from the chest, helping make breathing easier and reducing the risk of developing a chest infection.

ACTs should be done when a person is well and when sick, should be done even more often!

ACTs are linked together to create the **Active Cycle of Breathing Techniques (ACBT)** [see later].

Follow steps 1 to 4

Repeat the cycle until there is no phlegm/sputum coughed out on two consecutive cycles

1. **Deep Breathing exercises (DBEs) – Place hand on tummy**

   Feel tummy rise up as breathe in

   Feel tummy fall as you breathe out

   REPEAT FOR 5 BREATHS

   Always start and finish the cycle with this exercise
2. Thoracic Expansion Exercises (TEEs)

Take a big deep breath in through the nose for the count of 4.

Fill lungs up with air!

Hold for the count of 4.

Breathe out for the count of 4.

REPEAT FOR 3-4 BREATHS.

3. Forced Expiratory Technique (FET)

Take a medium breath in - open the mouth wide in an ‘O’ shape.

Breathe out for as long as possible, as if steaming up a mirror to polish it, or......

Breathe out quickly and **forcefully**. HUFF!

REPEAT FOR 3-4 BREATHS.

This technique will bring mucus up to the back of the throat.

Try to resist the urge to cough for as long as possible!

4. Cough

After performing **DBEs**, **TEEs** and **FETs** mucus should have moved up from the lower airways to a place from where it can be coughed out. At this stage one or two strong coughs should clear out some mucus.
When mucus is coughed up, it is important to try and **spit it out**

Have a look at the **colour** and **quantity** of the mucus.

Monitoring this will help check if any infection is present.

**ACTIVE CYCLE OF BREATHING TECHNIQUES (ACBT)**

Start at DBEs and follow the circle clockwise.

![Diagram of ACBT cycle]

Repeat the cycle until there is no phlegm coughed out on two consecutive cycles.

*Always Finish with Deep Breathing Exercises (DBEs)*

**INFECTION**

When there is a chest infection there will be **more** mucous and it may be **thicker** and **stickier** than normal and may be yellow, green, grey or brown in colour.
REMEMBER

Strenuous coughing is exhausting, as well as harmful to the airways and can be ineffective in clearing phlegm. Learning huffing (above) will help.

Prepare the airways prior to a session of airway clearance. *When possible, arrange to do chest clearance after bronchodilator inhaler / nebuliser.

Avoid dehydration, as this can make phlegm thick and sticky, and therefore difficult to clear - take regular fluids.

Choose a suitable time - not when tired or in a hurry, and not if very wheezy - *preferably when you are most productive (mind find that they are most productive first in the morning).
SUBJECT
SWALLOWING
OBJECTIVES:

At the end of the session, the participant will have:

- An understanding of the relationship between breathing and swallowing.
- An understanding of the mechanism of aspiration and swallowing difficulties in chronic obstructive pulmonary disease (COPD).
- The ability to understand and follow safe swallowing guidelines.
- Improved knowledge of oral care.

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COPD AND SWALLOWING

This handout will help understanding of:

- How swallowing and breathing are related.
- How breathing and swallowing are affected by COPD.
- What the consequences of swallowing difficulties are.
- How to tell if you are experiencing swallowing difficulties.
- How a speech and language therapist can help.
- What strategies to use to help manage swallowing difficulties.

HOW ARE SWALLOWING AND BREATHING RELATED?

The normal swallow involves a well-timed, coordinated pattern of breathing and swallowing, and is necessary for the safe transfer of food and drinks from the mouth into the stomach. In healthy adults, the swallowing process usually interrupts the expiratory phase of breathing, and the resumption of expiration occurs after completion of the swallow (i.e. expiration – swallow – expiration).

HOW IS SWALLOWING AFFECTED BY COPD?

Swallowing difficulties can co-exist with COPD. People with COPD are prone to swallowing difficulties during exacerbations and during stable periods. The causes of swallowing difficulties in people with COPD are: disrupted respiratory breath-swallow patterns, physical changes (such as increased fatigue, dry mouth, gastro-oesophageal reflux disease), and the side effects of certain medications.
WHAT ARE THE CONSEQUENCES OF A SWALLOWING DIFFICULTY?

SWALLOWING PROBLEMS AND ASPIRATION

If normal protective mechanisms during swallowing are compromised, food or fluid may enter the lungs. This is called aspiration and may lead to chest infections or pneumonia. Normally, when food or fluid ‘goes down the wrong way’ (known as ‘aspiration’), the food or drink is automatically coughed up. As people who have COPD often have a weakened cough reflex, they may not be able to eject this food and/or fluid from their airways. Difficulty swallowing can lead to malnutrition and dehydration, and a loss of pleasure while eating and drinking.

HOW TO TELL IF YOU ARE EXPERIENCING SWALLOWING DIFFICULTIES?

The following two lists are common clinical signs of swallowing difficulties that can be experienced whilst eating or drinking:

LIST 1 (DIRECT SIGNS)

- Coughing or choking whilst eating and drinking
- Increased shortness of breath during meals
- Wet or ‘gurgly’ voice after swallowing
- Sensation of food is getting stuck in the throat
- Difficulty chewing food

LIST 2 (INDIRECT SIGNS)

- Reflux or regurgitation
- Taking much longer to finish meals
- Getting fatigued after eating and drinking
- Unexplained weight loss
- Unexplained temperatures or changes in sputum colour
If a person is concerned about his/her swallowing, this should be brought to the attention of the GP. The person may benefit from a referral to a Speech and Language Therapist for assessment of swallowing.

**HOW A SPEECH AND LANGUAGE THERAPIST CAN HELP WITH SWALLOWING DIFFICULTY?**

A Speech and Language Therapist can:

- Assess current swallowing function and help determine the cause of a swallowing difficulty.
- Recommend appropriate foods and fluids, as well as strategies to improve swallowing safety.
- Start swallowing therapy, if appropriate.
- Identify the need for further investigations.
- Liaise with other health care professionals.

**STRATEGIES TO HELP MANAGE SWALLOWING DIFFICULTIES**

If experiencing swallowing difficulties, a Speech and Language Therapist can give specific advice to help safe eating and drinking. People with COPD should be aware of strategies which can be used to protect the lungs when eating and drinking.

Swallowing safely strategies include:

**Energy and Eating**: *Managing mealtimes and energy levels can help.*

1. Eat meals **earlier** in the day.
2. Try not to eat when breathless.
3. **Rest before eating** meals to reduce breathlessness when swallowing.
4. **Have small, frequent, high-calorie meals.** Take a break during a meal if becoming short of breath.

5. **Take time when eating.** Sip fluids slowly. Eat slowly. Take small mouthfuls. Alternate between sips of fluids and solids.

**Eating Environment:**

1. Sit in an **upright supported chair** when eating and drinking.

2. Don’t lie down directly after meals. Remain upright for **30 minutes after eating or drinking** to prevent food coming back up into the throat.

3. **Try not to speak during meals.** This can cause breathlessness and adversely affect swallowing.

**Oxygen**

If on home oxygen, **wear the nasal cannulae when eating and drinking.** This will steady oxygen levels, and reduce shortness of breath.

**Avoid chewy/dry crumbly foods**

These foods take more time and physical energy to break down and swallow. Chose foods that are soft and easy to chew, or add sauce or gravy to moisten food.

**Drinking**

Drinks can be tricky as they go down very fast, sometimes before you have time to coordinate the swallow. Avoid continuous multiple swallows. Take **one sip at a time.**

**Tablets**

For those who experience difficulty swallowing tablets, try taking them with yoghurt or a pureed food instead of water. Some tablets may be crushed before swallowing them. However, not all medications can be crushed and it is important to check with GP or pharmacist first **before making any changes to the way you take tablets.**
**The Mouth**

A dry mouth (xerostomia) can impact on swallowing. The mouth may feel dry due to mouth breathing, smoking, medications and/or oxygen masks. If this is a problem, discuss with your doctor or Speech and Language Therapist. A moistening gel or spray may help.

Maintaining good oral hygiene including regular tooth brushing/denture cleaning can help by reducing bacteria and risk of infection. Have regular dental check-ups.

To reduce dry mouth symptoms:

- Sip fluids frequently throughout the day.
- Always rinse and gargle after taking medication or inhalers.
- Use artificial saliva products
- Suck sugar free lollies or chew gum.
- Avoid medicated lozenges or alcohol-based mouthwashes.
- Reduce intake of caffeine, alcohol and spicy foods, and avoid smoking.
- Talk with GP about reviewing the medications.
FACILITATOR:

COPD AND VOICE

OBJECTIVES:

At the end of the session, the participant will have:

- An understanding of the relationship between COPD and voice disorders.
- An understanding of the cause of voice disorders in COPD.
- Learned strategies to maintain good vocal hygiene.

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COPD AND VOICE

HOW IS VOICE AFFECTED BY COPD?

COPD can affect vocal quality and production, both directly (associated with respiratory decline) and indirectly (as a side effect of medication or associated with concurrent symptoms). These voice problems (dysphonia) can vary between individuals depending on co-morbidities, prescribed medications, and severity of COPD.

CAUSES OF VOICE DIFFICULTIES IN COPD

The two main characteristics of voice difficulties in COPD are hoarseness and reduced volume of speech (not being able to make your voice loud enough).

Hoarseness:

Possible contributing factors:

1. Gastroesophageal reflux disease (GORD): The acidic content of the refluxed material can cause changes to the mucosal layer of the laryngeal tissue, including the true vocal folds, resulting in a change in vocal quality.

2. Dry mouth and oral infection can contribute to hoarse vocal quality and may be attributed to inhaled corticosteroids or mouth breathing.

Decreased volume of speech:

Possible contributing factors:

Decreased lung volume associated with COPD, and the common breathlessness, contributes to decreased volume and shorter message length.
STRATEGIES TO HELP MANAGE VOICE DIFFICULTIES

- Maintain good oral hygiene.
- Drink water frequently throughout the day.
- Attempt to consciously breathe through the nose.
- Use a spacer for inhaled corticosteroids, and rinse mouth and gargle immediately after each dose.
- Control reflux symptoms.
- Minimize caffeine and alcohol intake.
- Avoid medicated throat lozenges.
- Avoid smoking and smoky atmospheres.
- Avoid very hot, very cold and spicy foods.
- Avoid speaking in loud, competing environments.
- Avoid speaking for long periods: try to rest your voice regularly.
SUBJECT
POSITIVE MENTAL HEALTH
FACILITATOR:

POSITIVE MENTAL HEALTH

OBJECTIVES:

At the end of the session, the participant will have:

- An understanding of the psychological factors of chronic obstructive pulmonary disease (COPD).
- Recognition of what stress is and how it affects the body, particularly in the context of breathlessness.
- Increased understanding of, and ability to use cognitive techniques to manage stress and physical symptoms (other than chest pain).
- Increased skills in managing stress, anxiety and depression.

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POSITIVE MENTAL HEALTH

This handout will help understanding of:

- What are the signs of stress.
- What is avoidance.
- Feelings of helplessness.
- What to do if feeling depressed.
- How to reduce stress.
- What relaxed breathing is.
- Why relaxation practice is important.
- How to reduce the number of crisis events and how to manage them.

Some people with COPD experience depression - speak to a doctor about support available to help

WHAT ARE THE SIGNS OF STRESS?

The people who enjoy the best quality of life and have fewest complications are those that understand their condition and are actively involved in managing their condition.

Stressors, such as illness cause:

- The heart to beat faster.
- The muscles of arms and legs to tremble or shake.
- Breathing to change.
- Sweating.

**WHAT IS AVOIDANCE?**

In response to stress, some people begin to avoid certain situations or activities. Avoidance can be a problem. Continuing to avoid situations or activities that make a person feel anxious can reduce activity level and social contacts.

If this is the case, speak with the rehabilitation co-ordinator or doctor about how to gradually re-start these situations or activities.

**FEELINGS OF HELPLESSNESS**

The diagnosis of chronic obstructive pulmonary disease (COPD) has a significant impact. Everyone with COPD feels helpless to some degree, particularly if experiencing recurring flare-ups. This is normal. However, it is important to avoid giving into the feelings of helplessness. Remember that everything the person affected can do to manage the condition helps. Below are some tips to help.

**WHAT TO DO IF DEPRESSED?**

Not surprisingly, severe or ongoing stress can often lead to depression. If feeling depressed, speak with a doctor about how to access local helpful resources.

**HOW TO REDUCE STRESS?**

1. **Establish a routine.** Having a regular routine helps maintain balance and increases a sense of control. The routine should include activities that need to be done as well as fun activities.
2. **Eat well and drink plenty of water.** The body performs best when a person eats well and drinks plenty of water – unless fluid restriction has been advised.

3. **Exercise regularly.** The rehabilitation co-ordinator will advise about the correct type, frequency and intensity of exercise, when and how to upgrade this exercise programme and how to plan routine regular exercise. If possible, exercise earlier in the day so as not to disturb sleep.

4. **Get plenty of sleep.** Establish a regular bedtime. Often, the urge to sleep is ignored in favour of watching television or doing other activities. A warm bath, shower or milk drink before bed may improve sleep. If getting to sleep is difficult, after twenty minutes of being in bed, get out of bed and do a quiet activity until tired.

5. **Limit use of alcohol and other drugs.** Many people use drugs and alcohol to help manage stress. For example, some people use alcohol and cigarettes to **calm down** and other people may use coffee, cola or energy drinks to **get themselves going.** However, drugs and alcohol can have harmful effects on people and can result in dependence.

6. **Maintain social network.** People with chronic conditions who have few friends and don’t get out much may have worse health outcomes. Getting out and catching up with friends is important and should be planned for regularly.

7. **Join a local patient support group.** If a patient support group has not been established in your area why not start one?

8. **Maintain interests and hobbies.** Often people who have chronic conditions let go of interests and hobbies because they believe the effort outweighs the benefits. Participating in enjoyable activities can give life meaning and can help maintain and enhance skills and abilities.
9. **Be aware of automatic or distorted thinking.** When life is busy or stressful, before responding, stop and take some deep breaths, count to 10, or go for a short walk and consider both whether there is a need to respond and how to respond.

10. **Planning and time management.** People who plan how they will apply the skills they have learnt in pulmonary rehabilitation to their home or work life are more likely to use these skills in their daily lives. Effective time management is essential for maintaining health, work, social and home life. Spread tasks, or parts of tasks, across several days, and build time into schedule for unexpected events.

11. **Communicate effectively.** Effective communication includes both speaking and listening. Often when feeling under pressure, people can spend all their time speaking or thinking about what to say rather than listening. Take the time to listen to what is being said before responding. Assertive communication requires honest and direct discussion that describes the problem, the effect and the solution.

12. **Practice relaxed breathing.** When stressed, most people tend to breathe faster and shallower; this type of breathing can lead to a feeling of breathlessness. People who have COPD can minimise the risk of becoming breathless during times of stress by using the relaxed breathing techniques.

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**WHY IS RELAXATION PRACTICE IMPORTANT?**

Scheduling time to relax as part of daily or weekly routine is important. Relaxation can be formal, such as guided relaxation practice, or informal, such as watching football or listening to music. Formal relaxation practice helps to:

- Increase metabolism.
- Slow heart beat.
- Relax muscles.
- Slow breathing.
- Lower blood pressure.

## RELAXATION

Relaxation can help to relieve the symptoms of stress, reduce the effects of anxiety and help to control response to frustrations caused by breathing problems, all by teaching how to control shortness of breath. Relaxation is a skill, and learning it demands practice and patience. The appendix/additional resources has details of types of relaxation.

## RELAXATION TECHNIQUES

There are many techniques for relaxation, and no one method is better than another. These can be used on their own or in conjunction with other techniques. In fact, it may be more effective to combine pieces of several different methods. The most basic is deep breathing. See appendix/additional resources for techniques.

Before starting, it is important to be comfortable, to use as many pillows as necessary, to loosen tight clothing, remove footwear and be comfortably warm.

## GENERAL GUIDELINES

For maximum benefit, the technique should be performed twice a day for 20 minutes. Even 5 minutes twice a day is beneficial.

It should not be practiced until at least two hours after a meal.

It should be performed in a quiet, comfortable spot, free from interruptions or outside stimulation.

Ensure that the room is warm as the body actually loosens heat as it relaxes.

If the mind wanders, turn attention back to breathing, or listen to the music or audio tape playing in the background.
Don’t worry whether relaxing deeply enough or getting the right response. If practicing deep breathing exercises and clearing the mind, the response will occur and the physiological changes will take place.

Check the time with a watch or clock - do not use an alarm.

When time is up, sit quietly a little longer, first with eyes closed, then with eyes open. Stretch or yawn, gently come around.

Afterwards person should feel relaxed and calm. This effect should continue for several hours.

**HOW TO REDUCE THE NUMBER OF CRISIS EVENTS**

Reducing the number of crisis events:

- The chance of crisis events occurring due to ill health should be reduced if using medication and inhalers appropriately, and eating well and exercising regularly.
- The number of crisis events occurring due to physical exhaustion will be reduced if increase exercise tolerance and practise energy conservation skills.
- The number of crisis events occurring due to stress will be reduced if practise relaxation techniques and improve communication and problem solving skills.

**MANAGING CRISIS EVENTS**

When a crisis event does occur, a person needs to decide whether to let the event get worse or whether to do something about the event. The following strategies may help manage crisis events:

- Become aware of own expectations - in the past, if a similar crisis event went from bad to worse, it doesn’t mean that the current event will also go from bad to worse.
- Become aware of the language being used and replace negative thoughts with positive thoughts. For example, rather than thinking the weekend was a disaster, recognise that it rained on the weekend and, as a result, you were unable to do what you wanted to do.
- Protect yourself against becoming too stressed by mentally rehearsing a potentially challenging event before it occurs.
- Don’t forget to use relaxed breathing.
**RELAXATION TECHNIQUES**

Good starting positions include:

- Lying on your back with a pillow under your head and knees.
- Sitting in a chair with your back and knees supported.
- Sitting at a table with your arms and head supported on pillows.
- Close your eyes through the whole session and concentrate on your breathing.

**DEEP BREATHING**

Sit, stand or lie down in a comfortable position. Place your hands on your lap or by your side. You may also place your hands on your tummy and feel the expansion and contraction of your lungs and diaphragm as you breathe in and out.

**Inhale** slowly and deeply through the nose. **Feel** your tummy rise up as you breathe in. **Feel** your rib cage spread out, like wings on a bird.

**Exhale** slowly through pursed lips (this allows you to control how fast you exhale and keeps your airways open for longer). **Feel** your body *relax* as you breathe out.

**Feel** the rhythm of your breathing.......in and out....emptying out ......clearing........cleaning breaths.

**Feel** your body relax more with each breath out.

**CLEARING THE MIND**

Allow yourself to mentally focus on a single, peaceful word, thought or image. Reduce distractions. Focus only on that thought. Repeat it over and over to yourself. Listen to the rhythm of it.
VISUALISATION

This is like a ‘mental holiday!’ Allow your imagination to run free! Think of your most favourite place and put yourself there in your mind. Try to imagine all the details. **Involve all your senses**... feel the sun on your skin, smell the air around you, listen to the sounds of your favourite place....... 

**Head circling**

Sitting or lying down.

- Close your eyes.
- Imagine the tip of your nose is a pencil.
- You are drawing a full stop with the pencil.
- Now start to draw a small circle coming out from the full stop.
- Make the circle bigger and bigger with each rotation.
- When the circle is as big as you can make it, change direction.
- Bring the circle back in towards the full stop.

Feel the muscles in your neck and shoulders more relaxed afterward.

**Progressive Muscle relaxation**

In a comfortable position (as outlined above), **tense** a muscle group, hold for a few seconds and notice how it feels. Now **release the tension**, let it flow right out. Pay attention to that feeling. Focus on the difference between the two sensations.

You may try following the sequence on the following page, or make up your own. If you like you can ask a friend to read the sequence to you in a quiet voice.

You may repeat parts of the sequence more than once, or focus more on some muscle groups than others.
Remember.....*There are no rules to relaxation. Whatever you find works for you, is best for you!*

Move  Stop  Feel!

Move into the opposite position of tension.

Stop the movement.

Feel or register in your mind the position of comfort.

Relax your shoulders down, stop and feel that new position.

Slide your elbows away from your body and check that your elbows are open, stop and feel the new position.

Stretch out your fingers, stop and feel new position and the weight of your arms on the support.

Turn your hips outward, feel the new position.

Push your feet away from your head, stop and feel the weight of your legs with your feet hanging loosely.

Push your back into the support, feel the weight of your head supported.

Pull your chin downward, feel the new position.

Close your eyes and lift your eyebrows to make frown lines on your forehead, stop and feel a smooth brow.

Breathe gently and naturally through your nose with the upper chest relaxed. Each time you breath out, allow your body to let go a little more, until your muscles feel heavy.

Enjoy the relaxation, you have made it possible.

Focus your mind on something pleasant; take time to relax in this position.
Relaxation Sequence using ‘Progressive Muscle relaxation’

- Sit, stand or lie down in a comfortable position.
- Concentrate on your breathing for approximately ten breaths, in and out.
- Feel your tummy rise up as you breathe in, and fall as you breathe out.
- Starting with the shoulders, pull your shoulders down towards your toes. Now stop. Feel that your shoulders are lower than they were before and your neck feels longer than it did before.
- Lift your elbows away from your side. Now stop. Feel your arms hang loosely by your side.
- Spread and stretch out your fingers as far as possible. Now stop. Feel your hands resting on the floor or on your lap. Fully supported. Feel the material below your finger tips.
- Lift one leg away from the other. Now stop. Allow your leg to fall back in. Feel it resting heavy and comfortable.
- Bend or straighten your knees, if you desire.
- Gently point the toes away from your body. Now stop. Feel your feet heavy and dangling at the end of your legs.
- Push your body in to the floor, or chair. Now stop. Feel your body is completely supported.
- Push your head into the pillow. Now stop. Allow your head to rest in the groove you have made in the pillow.
- Pull your jaw down. Now stop. Feel your jaw hanging loosely. Your teeth are gently separated and your lips slightly parted. Your tongue is hanging in the middle of your mouth not pushed up into the roof of your mouth.
- Close your eyes and enjoy the darkness.
- Imagine someone starting at your eyebrows and gently smoothing upwards, over your forehead, across your hairline. Smoothing backwards across your head and away down the back of your neck. Smoothing all your tension away.
- Concentrate again on your breathing for approximately ten breaths, in and out.
- Feel your tummy rise up as you breathe in, and fall as you breathe out.

Sit quietly, enjoy your relaxed state. Take your time to come around again. Gently open your eyes, stretch out, and wiggle your fingers and toes. Never jump up and resume your normal activities straight away!
SUBJECT
MEDICATIONS
**OBJECTIVES:**

At the end of the session, the participant will be able to:

- Identify the use, effects and side effects of common medications.
- Understand the use of medications in the management and treatment of chronic obstructive pulmonary disease.

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This handout will allow understanding of:

- Why medications are used in the management and treatment of chronic obstructive pulmonary disease.
- What the use, effects and side effects of the medications are.

**WHY ARE MEDICATIONS USED IN THE MANAGEMENT AND TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE?**

To improve or manage each person’s chronic obstructive pulmonary disease (COPD) symptoms, a doctor will prescribe various medications. As each person’s health is different, each person may be prescribed different medications at different doses – a medication programme is tailored for each individual.

For each of the different medications prescribed, it is important to understand:

- What the medication is for.
- How the medication works.
- How long the effects of the medication last.
- What the possible side effects of the medication are and how to avoid them.
- If the medication may cause problems with other medications.

If anybody is confused or unsure about any of the information provided in relation to any of these points, ask the doctor or pharmacist to explain and clarify. Each person should be confident and knowledgeable about their disease including their medications. Although each medication may cause side effects, it is important to
remember that only a small number of people using that medication will develop side effects.

As respiratory medications target the lungs, the typical method for delivery of these medications is by inhalation. Correct inhalation technique is important in delivering these effectively. To ensure each person receives the full benefits from the inhaler, their inhaler technique should be checked regularly by a health care professional.

**WHAT ARE THE USE, EFFECTS AND SIDE EFFECTS OF THE MEDICATIONS?**

Knowing what medication NOT TO TAKE is often as important as knowing which TO TAKE when you have chronic lung disease. The medications mentioned in this section will help understanding as to why a medication is prescribed, how it works and possible side effects.

Always tell the doctor if taking other medications including those bought over the counter (OTC) such as cough bottles, pain killers etc.

**GENERAL MEDICATION GUIDELINES**

Take medications as prescribed.

Take ‘PRN’ medications **only when needed**.

Missed doses – never double dose.

Storage of Medicines: keep away from light, heat, liquid, children.

Keep a record of all medicines taken, including herbal, vitamins and over the counter.
Never take medication prescribed for someone else.

Notify the Doctor if medicines don’t seem to be working or if develop questionable side effects.

Always ask questions if something seems wrong.

**SAFE USE OF MEDICINES: THE GOLDEN RULES**

Take medicine at the correct time.

Four times daily means every 6 hours.

Three times daily means every 8 hours.

Twice daily means every 12 hours.

Once daily means every 24 hours.

Keep medicines away from children.

Wash down tablets with water.

Avoid taking tablets lying down.

Always check with pharmacist if buying OTC (over the counter) medicines.
PULMONARY/RESPIRATORY MEDICATIONS

Medication for people with COPD can take the form of Tablets, Inhalers or Nebulisers. Outlined below are the reasons why each of these are prescribed and what effects might be expected. Another way of describing medication for people with COPD are:

Relievers: These work quickly, are short-term and relax airways (bronchodilators): 2 types.

Preventers: These work more slowly, are long term and are anti-inflammatory.

Combinations of the above.

INHALERS (ALSO SEE SEPARATE SECTION)

Inhalers can be divided into either relievers, or preventers. Most people will be on a combination of the two types, either in separate inhalers, or mixed together in one inhaler for ease of use.

There are vast arrays of inhalers. Below are just some of the most commonly prescribed.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Medication</th>
<th>Duration Of effect</th>
<th>Type</th>
<th>Side Effects</th>
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<tbody>
<tr>
<td>Ventolin</td>
<td>Salbutamol</td>
<td>Short</td>
<td>Beta agonist</td>
<td>Palpitations / Tremors</td>
</tr>
<tr>
<td>Bricanyl</td>
<td>Terbutaline</td>
<td>Short</td>
<td>Beta agonist</td>
<td>Palpitations / Tremors</td>
</tr>
<tr>
<td>Atrovent</td>
<td>Ipratropium</td>
<td>Short</td>
<td>Anticholinergic</td>
<td>Dry mouth / Urine hesitancy</td>
</tr>
</tbody>
</table>
**RELIEVERS:** THESE DILATE THE AIRWAYS AND MAYBE OF TWO TYPES:

**Group A: Beta2 Agonists**

Ventolin/ Salamol (salbutamol), Bricanyl (terbutaline), Serevent (salmeterol), Oxis (formeterol), Foraldil (formoterol)

Bricanyl and Ventolin give immediate relief, effect lasts from 30 minutes up to 4 hours.

Serevent and Oxis take longer to work, effect lasts for about 12 hours.

Side effects: generally minor:

- Shakes, usually of the hands
- Nervous tension
- Headache
- Palpitations
- Muscle cramps

**Group B: Anti-cholinergics**

Atrovent (ipratropium), Oxivent (oxitropium), Spiriva (tiotropium)

Take approximately 30 minutes to work. Effect lasts 6-8 hours (except Spiriva, which lasts 24 hours).

Side- effects are rare: dry mouth, constipation, urinary retention.

**Relievers:** Relievers from Group A and Group B can be used in combination
Combivent (salbutamol & ipratropium)

Duovent (fenoterol & ipratropium)

Side-effects as above.

## PREVENTERS

<table>
<thead>
<tr>
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<th>Medication</th>
<th>Duration Of effect</th>
<th>Type</th>
<th>Side Effects</th>
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<tr>
<td>Spiriva</td>
<td>Tiotropium</td>
<td>Long (24hrs)</td>
<td>Long acting Anticholinergic</td>
<td>As Atrovent</td>
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<tr>
<td>(maintenance long acting bronchodilators)</td>
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<tr>
<td>Serevent</td>
<td>Salmeterol</td>
<td>Long (12hrs)</td>
<td>Long acting Beta agonist</td>
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<tr>
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<td></td>
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<tr>
<td>Oxis</td>
<td>Formoterol</td>
<td>Long (12hrs)</td>
<td>Long acting Beta agonist</td>
<td>Palpitations / Tremors</td>
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<tr>
<td>(maintenance long acting bronchodilators)</td>
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<tr>
<td>Becotide</td>
<td>Beclomethasone</td>
<td>Long (12hrs)</td>
<td>Steroid</td>
<td>Thrush</td>
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<tr>
<td>Qvar</td>
<td>Beclomethasone</td>
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<td>Long (12hrs)</td>
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<td>Flixotide</td>
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<tr>
<td><strong>Seretide</strong></td>
<td><strong>Flixotide +</strong> Long (12hrs) <strong>Steroid +</strong> Beta agonist</td>
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<tr>
<th><strong>Symbicort</strong></th>
<th><strong>Budesonide +</strong> Long (12hrs) <strong>Steroid +</strong> Beta agonist</th>
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**PREVENTERS**

**Preventers (steroid)**

Reduce airway inflammation: steroid inhalers

Use regularly and long-term: not good for acute attacks.

Examples as per table: Becotide/ Beclazone (beclomethasone), Pulmicort (budesonide), Flixotide (fluticasone)

Examples of Combination preparations: Seretide (fluticasone & salmeterol), Symbicort (budesonide & formoterol)

**Remember**

If using a bronchodilator (e.g. Ventolin/ Combivent) and a steroid (e.g. Becotide), use the bronchodilator first. Rinse mouth with water and spit out. DO NOT SWALLOW, INCREASES RISK OF OESOPHAGIAL CANDIDA, after inhaling a steroid, to avoid hoarseness and mouth infection
TABLETS

Some of the most commonly prescribed tablet forms of medications to help breathing are mentioned below, including why they are prescribed and what side effects may be experienced.

**Theophylline**

**Why:** These medications are essentially to try to prevent wheezing.

**Side effects:** Palpitations, Tummy upset, Sleep problems, headache/malaise.

**Names:** Uniphyllin / Zepholin / Phyllocontin / Slo-phyllin / Nuelin.

**How do they work?**

- Open airways.
- Mild anti-inflammatory action.
- Relieve spasm.
- Balance between effective dose and overdose.
- Brands are NOT interchangeable.

NB need theophylline levels checked regularly as can become toxic.

**Leukotriene antagonists**

**Why:** These medications are essentially to try to prevent wheezing. They tend not to be used for COPD alone, but instead are used where there is a combination of COPD and Asthma,

**NOT used for acute attacks**

**Side effects:** Stomach upset, dry mouth, headache, disturbed sleep, Churg Strauss syndrome

**Names:** Singulair

Usually taken at night time to prevent morning dips in respiratory status and reduce morning wheeze.
**Steroids**

**Why:** Potent anti-inflammatories and open up airways.

**Side effects:** Depend on dose and duration of treatment. If > 3 weeks use, a person should carry a STEROID TREATMENT CARD.

Osteoporosis / Weight gain / Tummy upset/inflammation. Peptic ulceration, Muscle weakness, Thinning of skin, Impaired wound healing, Water retention, High blood pressure, Susceptibility to Diabetes mellitus/ raised blood sugar. Liver and Kidney problems may occur with long term use, reduce bone density by leaching calcium from bones, Mood swings, irritability, insomnia (always take in am ) and in rare cases psychosis. Addison's disease if suddenly stopped, important to complete dose.

**Names:** Deltacortril / Prednisolone / Hydrocortisone

**Anti hypoxic**

**Why:** To increase the level of oxygen in the bloodstream

**Side effects:** Wheeze (occasional)

**Names:** Vectarion

**Diuretics (Fluid tablets)**

**Why:** Due to lung damage, causing slower blood flow in the lungs there may be some extra pressure on the heart which can lead to heart failure, causing fluid to lie in the lungs. Fluid tablets may help to reduce this pressure.

**Side effects:** Dehydration, Dizziness, Kidney problems.

**Names:** Frusemide / Frumil / Buram / Burinex

**Antibiotics**
**Why:** Antibiotics are used to treat exacerbations or flare ups when sputum colour, volume and texture change. The antibiotics chosen will depend on the germ’s sensitivity and patient’s allergy status. Usually start on broad spectrum which may be changed if sputum sensitivities are obtained. To help avoid resistance the full course must be taken.

**Mucolytics**

**Why:** Reduces the stickiness of sputum making it easier to clear chest. Drinking enough water is essential before starting treatment.

Side effects: Nausea, diarrhoea, bronchospasm (tightening of airways).

Names: Bromhexine (Bisolvin®), Acetylcysteine (Mucomyst®)

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**Vaccinations**

Apart from ceasing to smoke, vaccinations especially the annual flu vaccine is one of the most important things a person with COPD can do to keep themselves healthy.

**Influenza Vaccine:** As people with COPD are less able to fight off infection and are more likely to develop complications from infections, it is vital that they get the influenza (flu) vaccine every Autumn. As influenza viruses vary, the composition of the vaccine changes slightly every year to reflect the particular flu viruses circulating that year. This means the vaccine is more effective against the most common strain of influenza that particular year. The vaccine reduces risk of death and hospital admissions.

**Pneumococcal vaccine:** Vaccination with PneumoVac is recommended. It protects against the most common form of bacterial pneumonia. If aged >65 years only one dose is needed, if younger two doses – at five year intervals – is required. This vaccination reduces some types of pneumonia and hospital admissions.
Information on these are available in the appendix/additional resources in the Section on Smoking and Health.
**APPENDIX/ADDITIONAL RESOURCES**

What are the use, effects and side effects of the medications?

**RELIEVERS OR BRONCHODILATORS**

1. Beta²-agonists (short-acting)

Terbutaline (Bricanyl®), Salbutamol (Asmol®, Airomir®, Epaq®, Ventolin®)

Use

- Given effectively by a spacer and metered dose inhaler.
- Sometimes given by a nebuliser.
- A person should always carry a short-acting reliever for acute situations.
- If using more than prescribed dose, tell the GP.

Effects

- Lasts for up to four hours.
- Works within minutes to relieve symptoms.
- Relaxes smooth muscles in your lungs and opens up airways.
- Can improve exercise capacity.

Side effects

- Tremor and a rapid heartbeat

2. Beta²-agonists (long-acting)

Eformoterol (Oxis®, Foradile®), Salmeterol (Serevent®)

Use

- Not used to treat an acute situation **(use a short-acting reliever instead)**.
Effects
• Relaxes smooth muscles in lungs for up to 12 hours.
• Use twice a day.
• Serevent® takes 10 to 20 minutes to take effect.
• Oxis® is fast-acting and long-lasting, that is up to 12 hours

Side effects
• Tremor and a rapid heartbeat

3. Anticholinergic (short acting)
Ipratropium (Atrovent®)
Use
• Has a slower onset.
• Do not use to treat an acute situation.

Effects
• Relaxes smooth muscles in your lungs and opens up airways in a different way compared with beta²-agonists.
• Lasts for up to six hours.

Side effects
• Dry mouth, urinary retention and blurred vision are common.
• Should NOT be used in conjunction with Spiriva®.

Also can cause acute angle-closure glaucoma if nebulised Ipratropium gets into eyes.

4. Anticholinergic (long acting)
Tiotropium (Spiriva®)

Use
• Is similar to and replaces Atrovent®.

• Inhale once daily only.

• Use with the HandiHaler®; the capsule should not be swallowed or respimat device, two puffs once a day.

Effects
• Lasts for up to 24 hours.

Side effects
• Dry mouth, urinary retention and blurred vision.
• Use with caution if prostate problems.

5. Theophylline (Nuelin®, Theo-Dur®, Uniphyllin)

Use
• Is rarely used because of the potential for significant side effects.
• Regular blood tests are required.

Effects
• Available in controlled release tablets and syrup.
• Take with food.

Side effects
• Tremor, nervousness, light-headedness, nausea and vomiting.

PREVENTERS (INHALED CORTICOSTEROID)

Beclomethasone (QVAR®), Budesonide (Pulmicort®), Fluticasone (Flixotide®)

Use
• Inhale twice a day.
• Must be used regularly to be effective.
Effects

• Reduces swelling and the amount of mucus (or sputum) in the air passages.

• May take up to a few weeks for effects to be noticed.

Side effects

• Thrush infection in the mouth or hoarseness (to avoid these effects, use a spacer when using a metered dose aerosol, and rinse mouth and gargle after each dose and spit).

COMBINATION THERAPY

Budesonide and eformoterol (Symbicort®)

Fluticasone and salmeterol (Seretide®)

Salbutamol and ipratropium (Combivent®)

Use

• Designed to improve patient’s compliance or adherence.

Effects and side effects

• Refer to individual medications.

ANTIBIOTICS

• Antibiotics are used to treat exacerbations or flare ups when sputum colour, volume and texture change. The antibiotics chosen will depend on the patient’s allergy status and sensitivity. Full course must be completed to avoid resistance.

ORAL CORTICOSTEROIDS

Prednisone (Sone®, Panafcort®), Prednisolone (Solone®, Panafcortelone®)

Use

Short-term:
• To manage an exacerbation or flare up of symptoms.
• Use minimal doses for the shortest duration, if possible.
• Taken in the morning with food.
• Do not stop treatment unless advised by doctor.

Long-term: NEED BONE COVER
• Use when inhaled steroid is not enough to prevent an exacerbation or flare up.

Effects
• Reduces inflammation of airways.

Side effects
• Difficulty in sleeping, weight gain, bruising easily, osteoporosis, muscle wasting and glaucoma, Bones, mood swings, swelling, raised blood sugars

Do not stop treatment unless advised by doctor – may need to gradually reduce doses ie wean off.

If oral steroids are part of a person’s action plan, do not delay starting prednisone at the onset of an exacerbation or flare up because of concern about the side effects. Short term use of the oral steroids should only have minimal side effects, unless very frequent courses are required.

MUCOLYTICS

Bromhexine (Bisolvin®), Acetylcysteine (Mucomyst®) Erdosteine (Erdotin®)

Use
• Drinking enough water is essential before starting treatment.

Effects
• Reduces the stickiness of sputum.

Side effects
• Nausea, diarrhoea and bronchospasm (tightening of airways).
SUBJECT

INHALATIONAL DEVICES
**OBJECTIVES:**

At the end of the session, the participant will be able to:

- Demonstrate the most efficacious use of respiratory medication devices.
- Understand the use of medications in the management and treatment of chronic obstructive pulmonary disease.
- Understand the care of respiratory medication devices.

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<td>Summary and discussion.</td>
<td>Problem solving for compliance and side effects. Discussion of specific medication concerns.</td>
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This handout will help understanding of:

- Why using inhalation devices is an important skill.
- How the inhalation devices work.
- How to correctly use the inhalation devices.
- How to clean and care for the inhalation devices.

It provides information on inhalers and some other devices/equipment which many people with Chronic Obstructive Pulmonary Disease (COPD) use on a daily basis.

**TYPES OF INHALATION DEVICES**

**Aerosol/ Metered Dose Inhaler (MDI)**

- Large volume spacers (e.g. Volumatic)
  - Increase the amount of drug reaching lungs
  - Prevent mouth infections
  - Reduce cough due to the “cold” effect of inhalers

**Diskus inhalers e.g. Seretide discus**

- Dose counter
- Pleasant taste
- More expensive

**Turbohalers e.g. Pulmicort turbohaler**

- Easier to use than metered dose inhalers (MDIs)
- More expensive
Easi- breathe inhalers or Autohalers

- Easy to use e.g. Beclazone easi- breathe
- More expensive than MDI’s

Nebulisers

Not all inhalers are available in each different type of device.

**HOW DOES THE INHALATION DEVICE WORK?**

The medication is stored under pressure in the metal canister. When the inhaler is fired, a fine mist of the medication is inhaled into the lungs. By inhaling the medicine directly into the lungs, the side effects on the rest of the body are reduced. Also anything inhaled into the lungs ‘gets to work’ faster than if taken in ‘pill’ form.

**WHY USING INHALATION IS AN IMPORTANT SKILL**

Using an inhalation device is a skill. Having the inhalation device technique assessed is essential. To make the most of using an inhalation device, it is important to be positioned so as to take a slow deep breath - usually sitting upright or standing.

**HOW TO KEEP TRACK OF HOW MUCH MEDICATION HAS BEEN USED?**

It is important to keep track of how much medication has been used so as to plan ahead and obtain a replacement in advance of it running out. One way to doing this is to write a refill date on the canister itself;

- Start with a brand new inhaler. Divide the number of puffs in the canister (it will have this number printed on it) by the number of puffs taken each day.
• The answer to this will be the number of days the canister should last.

Example – if take 4 puffs each day from a 200 puff canister, a new canister is needed every 50 days

• Using a calendar, count forward that many days (50 in the example) and choose a day 1 or 2 days before this date to have prescription refilled.
• Using a permanent marker, write the refill date on the canister, and on a calendar.

USING AN INHALATION DEVICE CORRECTLY, SEVEN EASY STAGES

Fit the two halves of the device together as shown, line up the notch on one half with the slot on the other and press together. The use of a spacer device eg volumatic attached to an inhaler is the best way to use inhaled medication.

Remove the mouthpiece cover from the inhaler. Shake the inhaler well.

Fit it into the shaped hole in the flat end of the Volumatic (if using spacer/volumatic).

Breathe out as far as is comfortable, then close lips around the mouthpiece - do not bite it.

Press the inhaler to release a dose.

Breathe in steadily and deeply through mouth.
Hold breath, take the Volumatic device out of your mouth (if using one) and take your finger off the top of the inhaler. Keep holding your breath for as long as is comfortable.

If you are to take a second dose, keep the inhaler upright and wait about half a minute before repeating steps 4-7.

If you find it difficult to press down on the inhaler when the volumatic mouthpiece is in your mouth, release a dose first then straightaway put the Volumatic in mouth and breathe in.

Always replace dust cover on MDI.

The cleaning instructions for Spacers are as for nebuliser (see below).

**POINTS TO REMEMBER IN ORDER TO USE INHALER CORRECTLY**

As mentioned above the use of a spacer device attached to an inhaler is the best way to use inhaled medication. A spacer or holding chamber is a device that attaches to the inhaler. It holds the medication in chamber for approximately 10-15 seconds; long enough to inhale it in one or two slow, deep breaths.

The **spacer increases the amount of medication that goes directly into lungs**. Even with correct technique and inhalation, you CANNOT get as much medication into your lungs without the spacer! One spacer commonly used is the Volumatic device pictured below.

When using a spacer with your MDI, you will probably not taste or feel the medicine going into your throat and lungs.
NEBULISERS

The purpose of a nebuliser is for the quick delivery of inhaled drugs and better deposition of medicines. Nebulisers allow a higher dose of the drug to be given and are most used for acute exacerbations (flare-ups).

In a nebuliser, pressurised air is pumped through liquid to form a fine mist that is inhaled through a face mask or mouthpiece. The pump is usually driven by electricity.

ADVANTAGES OF USING A NEBULISER

- It can deliver high doses of bronchodilators.
- It can deliver steroid therapy.
- It can be used easily - no problems with co-ordination.
- It is suitable for all age groups.

DISADVANTAGES AND SIDE EFFECTS:

Nebulisers may be abused by overuse. As the drugs are in much higher doses via the nebuliser, it could be dangerous. Side effects which are easily remedied include giddiness, tremor, palpitations, wheeziness and irritable coughing.

It is advisable to wash face following inhalation/nebulised of steroids as steroid therapy can be severe on the skin. Also remember to rinse mouth and gargle with water after inhaling steroids and spit as they can cause thrush in the mouth.
HOW TO USE A NEBULISER:

A nebuliser consists of a number of parts:

- an air compressor
- a nebulising chamber (for the medicine),
- a face mask or mouth piece
- tubing connecting the mask with the machine and
- electrical lead.

Unscrew nebulising chamber. Make sure baffle in the centre is sitting firmly.

Shake the nebule (drug vial) before putting into the chamber as the liquid separates out. Check expiry date to make sure it's still in date.

Replace the top half of the nebulising chamber by screwing on firmly.

Connect tubing to the nebulising chamber and to the other end of the compressor.

Place mask/ mouthpiece onto the nebulising chamber.

Turn on the compressor, and place mask over face, mouthpiece in mouth, and breathe normally. An occasional deep breath will help deliver the drug well into the lungs. The noise of the machine changes when the drug is finished. There is always a little liquid left in the nebulising chamber.

Switch the machine off when finished.

CLEANING THE NEBULISER: CORRECT CLEANING REDUCES RISK OF INFECTION

After each use, rinse the nebuliser bowl, and facemask or mouthpiece

Each day wash facemask or mouthpiece in warm soapy water and then rinse thoroughly with running water.

Reconnect the nebulising chamber to the tubing and turn on the machine. This will blow air through the jets and keep them unclogged and assist drying.
Ensure that the nebuliser parts are completely dry before storage (liquid left in the bottom of the nebuliser bowl is an ideal site for germs to grow).

Do not wash the tubing, replace it if it is black or mouldy.

Once a week the nebulising chamber should be boiled, provided it is durable. (Check manufacturer’s instructions). Alternatively a sterilizing solution eg Milton can be used. The mouthpiece/facemask should also be soaked in this solution, rinsed and allowed to air dry.

Allow items to drip dry, never dry with towels or paper towels.

When given the nebuliser you should have been given written instructions about infection control and your nebuliser – if you didn’t or have lost them or found them difficult to understand talk with the rehabilitation coordinator.

**MAINTENANCE**

Compressors should be serviced regularly, at least annually. This helps keep the machine in good working order.

Filters should be changed when discoloured or as stated in manufacturer’s manual.

Nebulising drug chambers come in disposable versions and need to be changed every month. Durable nebulisers will last one year.

Inspect the nebuliser drug chamber and tubing for cracks, and if cracks are found, replace.

If a new nebuliser chamber is not working, check for an extra piece of plastic in the chamber called a baffle (sometimes the baffle is missing and if so the chamber will need to be returned).

When given the nebuliser you should have been given written instructions about maintenance of your nebuliser – if you didn’t or have lost them or found them difficult to understand talk with the rehabilitation coordinator.
INHALATIONAL DEVICES

The inhalation devices covered in this section include:

1. Metered dose inhaler
2. Metered dose inhaler and spacer
3. Turbuhaler®
4. Accuhaler™
5. HandiHaler®
6. Autohaler™
7. Nebuliser

HOW TO USE THE METERED DOSE INHALER

1. Remove the cap.
2. Hold the Metered dose inhaler upright and shake vigorously.
3. Raise your chin and look straight ahead.
4. Breathe out gently and fully.
5. Place the Metered dose inhaler mouthpiece between your teeth and form a seal with your lips.
6. As you slowly start to breathe in, fire the canister by pressing firmly and continue to breathe in deeply.
7. Hold your breath for 10 seconds. Remove device from mouth.
8. Breathe out gently through nose if possible to deliver medication to membranes here as well.
9. If you need to deliver two doses of medication, wait 30 to 60 seconds between doses and repeat steps 2 to 9.

10. Replace cap.

**HOW TO CLEAN THE METERED DOSE INHALER**

- Remove the metal canister (do not wash the metal canister).
- Wash the plastic holder and cap with running warm water through the top and bottom for at least 30 seconds.
- Shake off excess water and allow to air dry.

**COMMON ERRORS IN USE OF METERED DOSE INHALER**

- Cap is not removed.
- MDI is not held in upright position.
- Cannister is not shaken to dispense drug propellant.
- Firing of MDI is not coordinated with start of inspiration.
- Inspiration is too fast.
- Inspire through the nose instead of the mouth.
- MDI is pressed during expiration.
- Multiple pressing of MDI.
- Breath not held following inspiration.
- Aerosol released onto tongue, teeth.
- Canister empty.
HOW TO CARE FOR THE METERED DOSE INHALER

• When reassembling, ensure that the metal canister fits securely into the plastic casing.

• Always keep the cap on the inhaler when not in use to prevent foreign objects lodging in the mouthpiece.

Store away from sunlight.

METERED DOSE INHALER AND SPACER/SPACER DEVICE

Metered dose inhaler or an aerosol may be used with a spacer, which is a small- or large-volume holding chamber – as discussed in main section.

HOW DOES THE METERED DOSE INHALER AND SPACER WORK?

A spacer holds the spray before the spray is breathed in. Using a spacer with a Metered dose inhaler allows more medication to get to where it is needed in the airways. Using a Metered dose inhaler and spacer can provide up to 27% of the medication to the lungs compared with only 9% when using a Metered dose inhaler on its own.

A Metered dose inhaler and spacer prevent throat irritation by reducing the amount of medication sitting in the mouth or throat. Spacers have a one-way valve that stops air being breathed into the spacer while the spacer is in the mouth.

If used correctly, a Metered dose inhaler used with a spacer is at least as effective as a nebuliser in delivering a similar dose of medication, that is, 4 to 10 puffs equals one nebuliser dose.
1. Sit upright or stand.

2. Assemble the spacer and shake device to ensure that the one-way valve is not stuck and rattles.

3. Hold the Metered dose inhaler upright, remove the cap and shake well.

4. Place the Metered dose inhaler mouthpiece into the end of the spacer opposite to the valve.

5. Place the mouthpiece between the teeth and close lips around it making sure your neck is slightly tilted back.

6. Breathe out gently and slowly.

7. Press/activate the Metered dose inhaler into the spacer once only.

8. Either:
   - Breathe in slowly and deeply for 10 seconds through your mouth, and hold your breath for 10 seconds, if possible.
   
   Or

   - Breathe in and out through your mouth normally for four breathes.

   - Wait 30 seconds between doses and repeat steps 2 to 9.

**HOW TO CLEAN THE METERED DOSE INHALER AND SPACER**

- To clean the Metered dose inhaler, refer to the previous section

- To clean the spacer:

  - After each use, wipe the Volumatic mouth piece with a damp cloth

  - Every week, separate the two pieces of the spacer and wash in warm soapy water.

  - Do not rinse as the soap helps to reduce the static charge in the spacer (static causes the medication to stick to the sides of the spacer reducing the amount of medication that can be inhaled). You can use a mild detergent or sterilising solution, provided you rinse this off thoroughly. Do not rub the inside of the chamber with a cloth as this causes static electricity which will effect the inhaler deposition ability.
- Allow to drip dry (do not dry with a tea towel – as this can break the valve).
- Do not wash in dishwasher.

**HOW TO CARE FOR THE SPACER**

- Do not store the Metered dose inhaler inside the spacer.
- If the spacer valve does not rattle, the spacer may need cleaning or it may need to be replaced.

**HOW DOES THE TURBUHALER® WORK?**

A Turbuhaler® is a device that is activated by breathing in. When loaded a precise dose of powdered medication is measured and deposited into a reservoir by gravity. It is important to hold the Turbuhaler® upright. When placed in the mouth and a person breathes in, air is drawn through vents on the side of the Turbuhaler®. This causes the air in the Turbuhaler® to become turbulent. This in turn breaks up the powdered medication into very fine particles. These very fine particles are able to go further down the airways.

**HOW TO USE THE TURBUHALER®**

1. Hold the Turbuhaler® upright, and unscrew and remove the cap.

2. Hold the white body and turn the colour base to the right as far as it will go and the back again – you should hear a click.

3. Breathe out gently away from the Turbuhaler®.

4. Place the mouthpiece between the lips and form a seal (do not put lips over the air vents on the side of the Turbulaher®).
5. Hold the coloured part of the Turbulaher® (to make sure the air vents are not covered).

6. Breathe in forcefully and deeply through the mouth.

7. Remove the Turbulaher® from mouth before breathing out.

8. If another dose is required, repeat steps 2 to 7.

9. Replace the cap.

**HOW TO PRIME A NEW TURBUHALER®**

- Each new Turbuhaler® should only be primed once.
- Take off the cap and turn the base left and right until three clicks are heard. The Turbuhaler® is now primed and ready for use.

**HOW TO CLEAN THE TURBUHALER®**

- Wipe the mouthpiece with a dry tissue from time to time.
- Do not wash any part of the Turbuhaler®.

**HOW TO CARE FOR THE TURBUHALER®**

- Do not breathe into the device as the medication is a dry powder.
- Do not expose to water (keep the cap on to prevent moisture entering the device).
- The powder heard if you shake the device is NOT medication, it is a drying agent.
- The medication is inhaled directly into the lungs; (i. e.) won’t feel or taste anything.
ACCUHALER™

HOW DOES THE ACCUHALER™ WORK?

The Accuhaler™ is a breath-activated device that contains a foil strip that has 60 regularly spaced doses of medication. To load the Accuhaler™, move the foil strip to deposit a dose into the reservoir of the device. The Accuhaler™ is now ready to deliver the medication dose.

HOW TO USE THE ACCUHALER™

1. Check the window that indicates the number of doses left.

2. To open, hold the base of the Accuhaler™ in one hand, place the thumb of the other hand in the thumb grip and push the thumb grip around as far as possible.

3. With the mouthpiece facing up, push the lever around until it clicks.

4. Breathe out gently away from the Accuhaler™.

5. Put the mouthpiece between your teeth and lips to form a seal.

6. Breathe in deeply and fully through your mouth.

7. Hold your breath for about 10 seconds, if possible.

8. Remove the Accuhaler™ from your mouth.

9. Breathe out away from the Accuhaler™.

10. If another dose is required, repeat steps 5 to 11.

11. To close the Accuhaler™, put your thumb in the thumb grip and slide it until the cover clicks in place.
HOW TO CLEAN THE ACCUHALER™

• Wipe the mouthpiece with a dry tissue from time to time.
• Do not wash any part of the Accuhaler™.

HOW TO CARE FOR THE ACCUHALER™

• Keep your Accuhaler™ dry.
• Keep your Accuhaler™ closed at all times.
• Store your Accuhaler™ below 30°C and do not keep it in the car on hot days.

HOW DOES THE HANDIHALER® WORK?

The Handihaler® is activated by breathing in through the mouthpiece. When activated, a capsule (containing the medication) inside the Handihaler® is pierced, allowing the medication to be inhaled.

HOW TO USE THE HANDIHALER®

1. Open the dust cap by pulling upwards.
2. Open the mouthpiece by pulling upwards.
3. Remove the capsule from the foil and drop the capsule into the centre chamber.
4. Firmly close the mouthpiece, leaving the dust cap open.
5. Press the green button once to pierce the capsule, then release the green button.
6. Breathe out gently away from the HandiHaler®.
7. Put the mouthpiece between your lips to form a seal.

8. Breathe in deeply (enough to hear or feel the capsule vibrate) and fully through your mouth, keeping your head in an upright position.

9. Hold your breath for about 10 seconds, if possible.

10. Remove the HandiHaler® from mouth.

11. Breathe out away from the HandiHaler®.

12. Repeat steps 2 to 11 once to completely empty the capsule.

HOW TO CLEAN THE HANDIHALER®

• Once a month, if not replaced, you should:
  - Open the dust cap.
  - Open the mouthpiece.
  - Open the bottom part by pressing the green lever in and up.
  - Rinse under warm water to remove dry powder.
  - Tip out excess water.
  - Leave to air dry for 24 hours with the HandiHaler® open.
  - Dry the outside with a clean cloth, if needed.
  - As the HandiHaler® takes 24 hours to dry, it should be washed immediately after a dose to ensure that it is completely dry before the next dose.
HOW DOES THE AUTOHALER™ WORK?

The Autohaler™ is activated by breathing in through the mouthpiece, which triggers the device to expel the medication. The Autohaler™ is primed before use by lifting the pressure lever (the grey lever), which expels the medicine into a staging chamber.

HOW TO USE THE AUTOHALER™

1. Unclip the mouthpiece cover from the back and shake.

2. Hold the Autohaler™ upright and click the grey lever upwards so that it stays up (as shown in the accompanying diagram).

3. Breathe out gently.

4. Place the Autohaler™ between your lips to form a seal (do not block the air vents with your hands).

5. Tilt head back and breathe in with a slow, deep steady breath – don’t stop when you hear the click.

6. Hold breath for 10 seconds, if possible.

7. Take the device away from your mouth, then breathe out gently.

8. Push the grey lever down.

9. Wait 30 to 60 seconds between doses.

10. Replace mouthpiece cap.

Please note: The lever must be pushed up (on) before, and pushed down (off) after, each dose, otherwise the Autohaler™ will not operate.

Remember a b c
a. Remove the cap and hold the Autohaler™ upright.

b. Push the lever up until it clicks and stays up.

c. Place the mouthpiece between teeth and lips, Breathe in slowly and deeply.

HOW TO CLEAN THE AUTOHALER™

• Wipe with a clean dry cloth.
SUBJECT
HOME OXYGEN THERAPY
### OBJECTIVES:

At the end of the session, the participant will have an understanding of:

- The role of oxygen in managing COPD and indications for the prescription of oxygen.
- The benefits of using oxygen, not a cure for breathlessness.
- Different oxygen delivery systems, travel and safety guidelines.

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PARTICIPANT:

HOME OXYGEN THERAPY

This handout will help understanding of:

• When home oxygen therapy is needed.
• What are the benefits of using home oxygen.
• What equipment is needed to use home oxygen.
• Help available towards the cost of home oxygen.

WHEN IS HOME OXYGEN NEEDED?

Oxygen therapy is prescribed for many people with chronic lung disease who have a low blood oxygen level. Oxygen therapy is prescribed to prolong and improve quality of life.

Most people with lung conditions feel breathless at times. While the use of oxygen may relieve shortness of breath, in many cases it does not. Feeling short of breath is caused mainly by the extra work of breathing.

• Not everyone with a chronic lung condition needs oxygen at home.
• The need for home oxygen therapy is based on the results of tests by a hospital consultant.
• Home oxygen is prescribed at a specified flow rate and for a minimum number of hours per day.
• To get the full benefit of home oxygen it must be used as prescribed.
• Using oxygen when it isn’t prescribed can be harmful.
BREATHLESSNESS

Long term lung conditions, such as chronic pulmonary obstructive disease (COPD), bronchiectasis and pulmonary fibrosis, may cause breathlessness. People often think that when they feel breathless, it is because they are not getting enough oxygen into their body. People can feel breathless even with normal oxygen levels in the blood.

For most people who have chronic lung conditions, breathlessness mainly occurs because it is harder to breathe the air in and out - the ‘work of breathing’. Breathing air in and out requires more work if the lungs are ‘too full’ (hyperinflated) or are stiff, or if the airways are narrow. The different breathing techniques help control this breathlessness.

LOW OXYGEN LEVELS IN THE BLOOD

Some people with severe lung conditions have lower levels of oxygen in their blood, either all the time or only when they are sleeping or exercising. Home oxygen is only prescribed when the blood oxygen level is low. If a person’s blood oxygen level is very low, there are benefits of using oxygen at home in the long term.

WHEN IS HOME OXYGEN THERAPY NEEDED?

To decide if home oxygen therapy is needed, a blood sample is taken from an artery (eg at wrist) while the person is resting. In addition an oxygen level may be tested by placing a probe on the finger while the person is sleeping or walking.

The common home oxygen prescription is to use oxygen, set at a flow rate of two litres per minute, for at least 16 hours each day.

WHEN TO USE HOME OXYGEN

Once prescribed it is important that each person work outs when to use the oxygen so as to ensure that at least the minimum hours (usually 16) each day (e.g.) wearing
oxygen from late afternoon (5 pm), through the evening and overnight while sleeping until the morning (7 am) takes care of 14 hours - in this schedule, an additional 2 hours during the day is needed. Fitting the oxygen in around daily and weekly routine is important to ensure that the benefits are got, that it adds to quality if life and that it becomes part of routine rather than a disruptor of routine.

**WHAT ARE THE BENEFITS OF USING HOME OXYGEN?**

Most people when they start using oxygen at home notice some improvements (e.g.)

- Feel more refreshed on waking.
- Feel less breathless performing activities, such as showering and walking.
- Able to think more clearly.
- Have more energy.

Other benefits include a reduction in heart strain, a reduction in excessive blood formation, improved exercise tolerance, improved physical functioning and increased activities of daily living.

People who have COPD and very low oxygen levels have been found to live longer if they use oxygen for at least 16 hours a day.

**WHAT EQUIPMENT IS NEEDED TO USE HOME OXYGEN?**

An oxygen concentrator is the most common method of delivering oxygen. The concentrator is an electronic pump that filters out nitrogen from the room air (which is a mixture of oxygen and nitrogen). The oxygen is then concentrated into a reservoir. The concentrator supplies oxygen through long tubing connected to nasal prongs.
Another method of delivering oxygen is via small cylinders. Small oxygen cylinders weigh about five kilograms, come with trolleys or carry bags and can be used when away from home. Portable oxygen concentrators are also available.

INSTRUCTIONS FOR USE OF OXYGEN CONCENTRATOR/OXYGEN CYLINDERS IN THE HOME

1. Never smoke when oxygen is in use.
2. Stay at least 6 feet away from any fire or any naked flame when using oxygen.
3. Never place anything on top of a concentrator or cylinder.
4. Never store oxygen cylinders close to flammable liquid or gas cylinders or near a source of heat.
5. Never use oil or grease on the cylinder valve or any oxygen equipment.
6. Never use a concentrator in a room heated by paraffin or portable heaters.
7. Use a concentrator in a well-ventilated room.
8. Do not let children or any person tamper with the oxygen equipment at any time.
9. Do not nebulise drugs or use a nebuliser off the oxygen concentrator.

If concerned about a concentrator/cylinder:

Do not tamper with it in any way.
Call the emergency phone number provided when oxygen device was delivered.

**QUESTIONS FREQUENTLY ASKED ABOUT HOME OXYGEN USE**

*Will I Become Addicted To Oxygen?* No. Oxygen is needed for daily life.

*Will fires or explosions occur?* Oxygen does not explode by itself, it only supports combustion.

*Will Oxygen Harm My Lungs Or Other Parts Of My Body?* The goal of home oxygen therapy is to correct the deficit of oxygen in the blood. At the flow rate prescribed the oxygen blood level will reach near to normal but not above normal. After decades of use as a therapy, there is no evidence of damage at prescribed rates.

*What Effect Will Oxygen Have On My Lifestyle?* Oxygen will improve lifestyle and help expand horizons by producing the energy for increased exercise. Portable oxygen systems for outside the home means people can travel to work, drive cars and go on holidays while still receiving oxygen.

What If I Meet Someone Smoking A Cigarette Or Using A Cigarette Lighter when I Am Wearing Oxygen? There is no reason for concern. Remember Oxygen will not explode, it only supports combustion.

*What If The Oxygen Tubing Comes Off During Sleep?* No harm but this accident will often awaken you so you should simply replace the oxygen tubing.
SUBJECT
HEALTHY EATING AND NUTRITION
OBJECTIVES:

At the end of the session, the participant will be able to:

- Define a healthy diet.
- Identify why healthy eating is important for people who have lung conditions.
- State how to improve nutritional intake.
- Identify energy boosting foods.
- Identify potential nutritional issues common in lung disease and how to manage these.
- Identify associated link to quantity and quality of foods that increase breathlessness.

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HEALTHY EATING & NUTRITION

This handout will help understanding of:

- Why healthy eating is important for people who have lung conditions.
- How to improve your dietary intake to aid weight gain if you are underweight.
- What healthy eating is for those who are overweight.
- How to identify and manage potential nutritional issues common in lung conditions

INTRODUCTION

Good nutrition is essential for everyone but is especially important for people with lung disease. Eating a healthy, balanced diet and ensuring you are well nourished is important to help:

- Improve muscle strength and help make breathing easier
- Fight and prevent infection
- Maintain a healthy weight and prevent unwanted weight gain/loss

Good eating habits throughout life are important for health. By choosing a wide variety of nourishing foods you are getting all the building blocks or nutrients needed for health and well being. There are no good or bad foods, but how you combine them together each day and each week is important.
WHY IS HEALTHY EATING IMPORTANT FOR PEOPLE WHO HAVE LUNG CONDITIONS?

Lung conditions increase the risk of poor nutrition, weight loss and reduced muscle strength because of:

- Increased energy needs. People who have chronic lung conditions expend 25% to 50% more energy than healthy people due to the increased work of breathing and fighting chest infections.
- Poor appetite, or for some people on steroids, a bigger appetite.
- Increased need for certain vitamins, minerals and antioxidants.
- A lack of energy to shop, cook and eat meals.

Malnutrition adversely affects lung structure, respiratory muscle strength and endurance.

If a person is overweight, he/she is likely to become more short of breath during activities, such as walking up stairs. Carrying additional body weight increases the risk of other cardiovascular diseases, such as high blood pressure and high cholesterol.

WHAT IS HEALTHY EATING?

The food pyramid should be used as a guide to healthy eating. Choosing foods from each shelf in the food pyramid in the correct amounts will provide you with the balance of energy, protein, vitamins and minerals you need each day.
Eating a well balanced diet is important for people with COPD. This means choosing foods from the five different food groups:

- **Bread, cereals and potatoes** – these foods provided energy and B vitamins. Aim to include 6 portions at each meal.
- **Fruit and vegetables** – provide a variety of vitamins and minerals and fibre. Aim to have 5 portions per day.
- **Milk, cheese, and yogurt** – provide calcium and protein. Include 3 servings each day.
- **Meat, fish, eggs and alternatives** – provide protein and iron – aim to include twice a day.
- **Fats, high fat/sugar snacks, food and drinks** – limit these if overweight. If you are underweight these foods provide a source of additional energy (kcalories).
As well as eating a varied and balanced diet, it is important to drink adequate amounts of water and/or other fluids (eight or more cups per day), unless you have been advised to limit your fluid intake.

**WHAT ARE THE COMMON POTENTIAL NUTRITIONAL ISSUES IN LUNG CONDITIONS AND HOW CAN THEY BE MANAGED?**

**WHAT IS A HEALTHY BODY WEIGHT?**

Using a graph it is possible to work out each person’s Body Mass Index (BMI). This indicates whether a person is underweight, overweight or within a healthy weight range. To work out the BMI, each person’s weight (in kilograms) is marked along the side of the graph and their height (in metres) along the bottom. The BMI is where the two lines join.

![BMI Graph](image)

Normal BMI = 20 – 25kg/m². (range can be 18.5 – 25 but 20-25 would be a better goal for COPD)
WHAT IF UNDERWEIGHT?

If underweight, the body has less energy and nutrient stores to help it do its work. Being underweight can cause the muscles to become weak. Respiratory muscles that are needed for breathing can also be affected.

Being underweight can have a negative impact on lung function, impair exercise tolerance and increase risk of infection.

WHAT TO DO IF UNDERWEIGHT?

Eating foods that are high in protein and energy will help improve nutrition and regain lost weight and muscle:

- Eat a healthy, balanced diet. Ensure to have a good intake of protein-rich foods, such as eggs, dairy products, beans, meat, fish and poultry.
- Fortify milk by adding 3 -4 tablespoons of milk powder to one pint of full cream milk. Use the fortified milk on breakfast cereals and in milkshakes, porridge, soups, casseroles, milk desserts and mashed potato.
- If short of breath, it may be easier to drink more nutritious milk-based drinks. The dietician can talk to you about specific nutritional supplement drinks if necessary.
- Nourishing snacks between meals can be a good way of increasing intake. Try milk desserts and drinks, yoghurt, dried fruit and nuts, raisin toast, muffins, biscuits and cheese, sandwiches or even breakfast cereal with milk.
- Soups can be easy to eat and can be made more nourishing by adding cereal (for example, rice, barley or pasta) plus some meat, chicken or pulses (for example, lentils, canned bean mix or canned chickpeas).
- Add some extra calories by adding extra fat, preferably poly- or monounsaturated sources of fat, to meals:
  - Fry meat, fish, chicken and vegetables in vegetable oils eg olive oil or rapeseed oil.
  - Spread margarine, peanut butter or hummus on breads, crackers or baked foods.
Add margarine or oils to cooked rice, pasta, potatoes, vegetables and salads.

RECENT WEIGHT LOST

The ideas below will help gain/maintain weight:

- Eat small frequent meals and snacks e.g. 3 small meals plus 2-3 snacks a day
- Take liquids separately from meals – aim to drink 6-8 glasses of fluids per day
- Fortify milk by adding 3-4 tablespoons of dried milk powder to a pint of milk. Use this throughout the day for drinks, cereal, custard etc. – try to have at least a pint a day
- Add grated cheese to sauces, soups, vegetables and potatoes.
- Add butter or margarine to potatoes and vegetables.
- Add cream to soups, desserts and fruit.
- Use mayonnaise or salad cream on salads and in sandwiches
- Add sugar to drinks, puddings, breakfast cereals and fruit.
- Include the following snacks throughout the day:
  - Thick and creamy yoghurts, fromage frais, mousses
  - Breakfast cereals and milk, sugar, honey, golden syrup
  - Scones with butter and jam
  - Crackers with butter and cheese
  - Soups with grated cheese/cream/croutons

Nutritional supplements may help you gain/maintain weight. They may be available with/without prescription. Discuss with the Dietician/Doctor.

WHAT IF OVERWEIGHT?

Carrying too much weight can make it hard to do normal activities and make breathing even more difficult. Additional weight can interfere with breathing and increase oxygen requirements, causing lungs to work even harder.
Weight gain can be related to an increased appetite and/or fluid retention as a side effect of the steroid tablets (e.g.) prednisolone.

Being overweight also increases the risk of high blood pressure, diabetes and high cholesterol.

**WHAT TO DO IF OVERWEIGHT?**

A gradual weight gain, which may be due to reduction in activity, can become a frustrating problem. In such cases the dietary regime should not be “crash diet” but sensible healthy eating. During acute respiratory distress or an infection, there should be no dietary restrictions. At these times the dietary intake is likely to be poor and the most important objective should be to achieve nutritional requirements with foods a person is able to eat. A weight reducing diet should only resume when appetite has improved. It is important to follow healthy eating recommendations. The following hints will help weight loss:

Eat three well balanced meals each day. Choose foods from each of the **five** food groups every day.

- Plan your meals around starchy foods such as wholemeal bread, breakfast cereals, potatoes, rice, noodles, oats, pasta etc. Aim to include one food from this group at each meal. These foods should provide the bulk of your meal.

- Have at least 5 portions of fruit and vegetables each day. Include fresh, frozen, tinned or fresh juices. Eat a variety of different types and colours to ensure adequate vitamins and minerals are obtained.

- Choose moderate amounts of lean meat, fish, eggs and pulses such as beans and lentils. Remove the skin from chicken, excess fat from meat and avoiding frying. Try to include two portions of fish each week, one of which should be an oily fish (e.g. mackerel, trout, sardines, kippers and fresh tuna).

- Aim to include 3 portions of dairy products per day e.g. a small pot of yogurt or a small (matchbox size) piece of cheese contains about the same amount of calcium as 1/3 pint milk. Try to choose reduced fat versions where you can, e.g. semi skimmed milk, low fat yogurts, Edam, cottage cheese and half fat Cheddar.

- Limit your intake of foods containing fat and sugar. Choose low fat or reduced sugar foods where possible. When using a spreading fat choose one that is high in monounsaturated fatty acids, e.g. spreads made from olive oil or rapeseed oil.
Remember:

- Eat a range of foods from the five food groups to make sure you have a balanced diet
- Eat the right amount of food for how active you are
- Don’t skip meals
- Watch portion sizes.
- Increasing physical activity is an important way to help lose excess weight. Discuss with the physiotherapist about a specific exercise programme tailored to assist weight loss in conjunction with healthy eating.

(see appendix/additional resources for menu/recipe suggestions)

**WHAT IF TOO TIRED TO SHOP, COOK OR EAT?**

When tired or unwell, it can be difficult to eat enough. However, this is the time when good nutrition is most important. These tips will help:

- Have a rest before meals.
- Eat slowly and chew foods well.
- Breathe evenly while chewing and sit quietly for 30 minutes after eating.
- Stop eating if need be. Relax and take a few deep breaths before continuing to eat.
- Eat meals at times when symptoms are best controlled.
- Try having five or six smaller meals or snacks rather than three large meals per day.
- Make all meals and snacks as nourishing as possible
  - make every mouthful count.
- If nauseated, try little and often snacks if unable to face a large meal
- Softer foods are often better tolerated (e.g.) stews, mashed vegetables, mince or scrambled eggs.
- Never miss a meal. Try a smaller snack or nourishing drink if you can’t face a big meal.
- Prepare extra meals when feeling good and freeze for later use.
- If on prescribed home oxygen, use it while preparing and eating meal.
- Stock up the kitchen with low cost, healthy convenience meals for the times when not feeling great. Frozen and tinned foods can be nutritious - read the labels to see if a healthy food option - and are also easy to prepare.

**Simple to prepare meals**

- Sandwiches, bread rolls or pita bread with meat, cheese, fish or egg and salad filling
- Toast with peanut butter
- Tinned fish or egg with salad and a bread roll
- Scrambled egg on toast
- Canned soup and toast

**Nutritious snacks**

- Yoghurt
- Custard
- Dried fruit
- Nuts
- Cheese and crackers
- Raisin toast or fruit buns
- Milk drinks, Ovaltine, fruit smoothies
- Milkshakes
Dry Mouth and Throat may occur due to breathlessness and oxygen therapy. Dry and hard foods may be difficult to swallow and stick to the roof of the mouth. It is better to take soft moist food rather than filling up on fluids during a meal as these may contribute to feeling of fullness. The following hints will help:

Cold foods may be soothing, e.g. ice cream, jelly. Hot foods may irritate the mouth.

Avoid salty or spicy foods and drinks

Avoid rough foods, e.g. toast or crackers.

Keep foods moist with sauces or gravies.

Make use of high protein drinks (see recipes in appendix/additional resources)

Sucking ice cubes is useful - ice cubes can be made with fruit juice or nutritional supplements

Sharp tasting foods can be refreshing - try fresh fruit, fruit juices, boiled sweets

TASTE ALTERATIONS:

People taking nebulised drugs may experience an unpleasant taste lingering in the mouth. Sputum may not taste good. A mouthwash or chewing some diet-gum before meals can make the food more palatable.

POSITION/POSTURE:

Many people try to eat food when they hunched over or badly perched on the side of a bed. If feeling uncomfortable or bloated, nutritional intake can be lower, so “get comfortable” before eating.

MOBILITY;

A practical consideration which people may face when unwell is the ability to buy and prepare meals. Have a store cupboard (see below) and have information to hand on the arrangements for the local “Meals on Wheels” service (information from your local health centre and GP).
OXYGEN THERAPY (SEE HOME OXYGEN THERAPY)

An oxygen mask can present a physical barrier to eating. However, removing the mask at meal times can compound the problem of breathlessness due to the extra work involved in chewing and swallowing. Using a nasal canula while eating may be helpful.

SHORTNESS OF BREATH: (SEE MANAGEMENT OF BREATHLESSNESS SECTION)

It can be difficult to chew, swallow and breathe at the same time. For many people the effort to breathe is so great that they have little energy left for eating and drinking.

Large meals can lead to feeling bloated and in turn to increased breathlessness.

Drinking can be easier than eating. If so, have a milk shake or other nourishing drinks (see recipes in appendix/additional resources). They are high in protein and energy and can supplements meals.

If more breathless than usual soft meals and desserts or nourishing drinks maybe preferable. It is important to eat portions from the main Food Groups each day. Remember, this diet is only temporary. When breathing has improved again return to a normal, healthy eating pattern. Make the most of good days by eating well. Treat yourself to your favourite foods.

A high protein/high calorie diet maybe needed to help gain weight and improve well-being.

TO MAINTAIN BONE STRENGTH AND PROTECT AGAINST OSTEOPOROSIS:

Dairy foods provide a rich source of calcium. People with COPD are at increased risk for osteoporosis (weak bones) and therefore fractures by virtue of having a chronic inflammatory disease and being less able to exercise due to breathlessness. In addition many people with COPD may require long-term steroid medication which can increase the loss of calcium from the bones which in turn increases the risk of osteoporosis and bone fractures.

Ensure that your diet is adequate in calcium. An ideal intake for adults is 700mg to 1000mg per day.

Aim to include 3 servings of dairy products per day. A serving is equal to

- a glass of milk
- an ounce (25g) of cheese (matchbox size)
- a carton of yogurt

See appendix/additional resources for suggestions.

Vitamin D is also vital for bone health as it helps the body to absorb calcium. The best source of this vitamin is sunlight. The body makes vitamin D by the action of the sunlight on the skin. However wearing sun protection creams reduces vitamin D production so dietary sources are even more important. These are eggs, oily fish, fortified milks and spreads.

Weight bearing activity such as walking puts pressure on the bones and helps to strengthen them. Include this type of activity daily.

**CONSTIPATION:**

It is important to ensure regular bowel function and to try and prevent constipation.

Constipation may cause anxiety and may lead to decreased appetite. Straining with constipation may increase respiratory problems.

An adequate intake of fluid is vital. The average daily intake requirement of fluid for an adult is 2 – 3 pints per day. This may be taken as a mixture of water, tea, coffee, diet minerals or fruit juices.

Make sure that fibre is included regularly in the diet, even if appetite is poor. The following foods are high in fibre:

Breakfast cereals, e.g. All Bran, Bran Flakes, Wheatabix, Shredded Wheat, Muesli, and porridge, with added Bran.

Wholemeal brown bread, brown soda bread or yeast bread.

Fruit, whole fresh fruit. If this is not possible, take fruit juice or tinned fruit. Fruit provides fibre as well as vitamins and minerals.

Vegetables - all types, eat potatoes with their skins on for added fibre.
Baked beans as well as other beans, e.g. red kidney.

Eat dried fruits, e.g. prunes, dried apricots, raisins, sultanas and currents as well as mixed nuts.

(see appendix/additional resources for menu / recipe suggestions)

THE FOOD STORE CUPBOARD

A food store cupboard is invaluable in case of ever being confined to the house due to illness or bad weather. Build it up and keep it stocked and replenished.

**Complete Meal Replacement (e.g.) Build Up/Complan:** As a standby for days when appetite is poor

**Milk:** Evaporated milk, dried milk powder or long life milk, tin of milk pudding, ice cream in the freezer.

**Meat/Fish:** Tinned sardines, mackerel, pilchards, tuna or salmon, tinned corned beef, ham or other tinned meats, frozen meals.

**Fruit and Vegetables:** Tinned fruit, tinned beans, tinned pears, frozen vegetables.

**Cereals:** Porridge or other breakfast cereals, dessert cereal e.g. rice, semolina, custard.

**Soup:** Tinned or packet soup

**Crackers:** Cream crackers, crisps, water biscuits

(see appendix/additional resources for menu / recipe suggestions)
## APPENDIX/ADDITIONAL RESOURCES

### Food groups

<table>
<thead>
<tr>
<th>Food group</th>
<th>No. servings per day</th>
<th>One serving equals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breads and Cereals</td>
<td>4 to 9†</td>
<td>2 slices of bread or 1 cup of cereal or 1/2 cup muesli or 1 cup of cooked rice or pasta or 4 to 6 large crackers or 8 to 12 small crackers</td>
</tr>
<tr>
<td>Vegetables and legumes</td>
<td>5 or more</td>
<td>1/2 cup cooked vegetables or 1 cup salad</td>
</tr>
<tr>
<td>Fruit</td>
<td>2 to 3</td>
<td>1 medium piece of fruit or 1/2 cup of tin fruit or 3 to 4 pieces dried fruit</td>
</tr>
<tr>
<td>Milk and dairy foods</td>
<td>2 to 3</td>
<td>1 cup full cream, reduced fat and low fat milk or 40 grams cheese or 200 grams yoghurt or 1 cup of custard</td>
</tr>
<tr>
<td>Meat, poultry, fish and legumes</td>
<td>1 to 2</td>
<td>85 grams meat or 100 grams fish or 3/4 cup legumes or 2 small eggs</td>
</tr>
</tbody>
</table>

*Number of serves is dependent on age, sex and activity level.

†For weight loss, eat 2 to 4 serves per day.
USE SPARINGLY

Fats and Oils.
About 1 oz. Low fat spread/low fat butter or
½ oz. margarine/butter
Use oils sparingly

Sugars and confectionery/snack foods –
Eat only in small amounts and not too frequently.
Choose low fat sugar free alternatives.

Alcohol: In moderation.

Meat, Fish and Alternatives
2 portions daily
2 ozs cooked lean meat or poultry
3 ozs cooked fish
2 eggs (not more than 7 per week)
6 tablespoons cooked peas/beans
2 ozs Cheddar type cheese (preferably low fat)
3 ozs nuts

Milk, Cheese and Yoghurt
1/3 pint of milk
1 carton of yoghurt
1 oz Cheddar cheese or Blarney/Edam
Choose low Fat choices frequently

**Fruit and Vegetables**

4 + portions daily

1/2 glass unsweetened fruit juice
tablespoons cooked vegetables or salad (trimmings)
Small bowl of homemade vegetable soup
1 medium sized fresh fruit
tablespoons cooked unsweetened fruit

**Cereals, Bread and Potatoes**

6 + portions daily

1 oz unsweetened wholegrain or bran type breakfast cereal
1 oz slice wholemeal bread
2 tablespoons cooked pasta/rice (preferably wholegrain)
1 medium potato – boiled or baked

---

**CEREAL GROUP**

The cereal group provides Carbohydrates, Vitamin B Group, Iron, Vitamin and Fibre. Foods from it should form the main part of your food intake. These starchy goods are low in fat, high in fibre and provide many essential vitamins and minerals.

Include plenty of wholemeal breads and breakfast cereals

Buy different varieties of breads, scones, pitta bread, bagels, muffins and choose different high fibre breakfast cereals.

Don’t forget rice and pasta which are handy convenience foods, quick to prepare. Choose a variety of shapes and colours.
Buy plenty of potatoes. Eat them in their skins for added fibre.

Eat at least six choices from this cereal group and if physical activity is high, up to twelve servings may be necessary. Choose high fibre choices frequently.

Fruit and Vegetable Group:

This group is rich in Vitamin A, C, E and Folic Acid, Minerals and Fibre. It includes:

Fruit of all kinds: fresh, frozen and tinned

Fruit juice – all types, especially orange and grapefruit

Dried fruit, raisins, prunes and apricots

Vegetables of all kinds, fresh, frozen and tinned. Frozen vegetables and fruit are just as nourishing as fresh and are very convenient.

Try to buy fruit and vegetables that are in season. Choose plenty of variety. For handy and quick meals check out the pre-prepared fruit and vegetables as there is no wastage. (e.g.)

- Bags of salad leaves
- Bags of chopped vegetables
- Cartons of salad selection
- Grated raw carrot and cabbage mix for coleslaw

Tinned vegetables are a quick and nutritious food. Tinned tomatoes can be used as a base for sauces and soups, as a topping for pizza and used to stretch ready-made sauces.
Eating a diet high in vegetables and fruit, as well as being good for general health, is associated with reduced risk of developing heart disease and cancer.

Buy little and often is possible as long storage of fruit and vegetables slowly uses up many of the vitamins they contain. Root vegetables can be stored for a longer time than green leafy vegetables.

Most of the Vitamins in fruit and vegetables are just beneath the skin. Leaving the skin on or peel keeps the vitamins in.

Prepare fruit and vegetables just before you eat. Cutting and chopping exposes the vitamins to oxygen, quickly taking away much of the beneficial effect. Do not leave vegetables to soak in water and do not overcook.

Keep cooking time as short as possible, with the least amount of boiling water and keep the lid on the saucepan.

Eat at least four or more choices from the fruit group each day.

**Milk, Cheese and Yoghurt Group**

This group is rich in Protein, Calcium and Vitamin D.

Calcium is an essential ingredient of bones. Bones need continuous repair and maintenance throughout life. Vitamin D is needed for the proper absorption of calcium and for its laying down in the bone tissue. The body can make its own Vitamin D when the skin is exposed to sunlight, so take off your jacket or cardigan whenever temperatures permit. If you have become housebound for any length, it is important to include other sources of Vitamin D, such as oily fish, sardines or herrings. If you don’t eat oily fish you may need a Vitamin D supplement such as Cod Liver Oil.
It is better to include low fat dairy products, such as low fat milks, cheeses and yoghurts. Greek or natural yoghurt or low fat fromage fraise for dessert or in salad dressing are low fat choices.

**The Meat Group:**

The meat group contains all varieties of meat, poultry, fish, eggs and cheese.

These foods are rich in protein, which is important for growth and repair of body tissues. Red meats (such as liver, kidney and beef) are also an important source of iron. Iron is necessary to prevent iron deficiency anaemia. Nuts and pulses, such as peas and beans, are protein foods and are included in this group. These are best eaten as part of a mixed diet to supplement other protein foods.

Buy the leanest cuts of meats that you can and trim off any visible fat before cooking. Choose lower fat mince, lean beef burgers, low fat sausages and grill them. Red meat is especially important for women to replace lost iron during the menstrual cycle. Always put fish on your shopping list. Oily fish has added benefits but try to oven bake instead of deep fat frying. Buy more tinned fish. Chickens and turkey are low fat choices.

**Other Groups:**

Fat, oils, sugars, confectionery/snack foods and alcohol are found in this group.

Firstly, try to buy less from this top shelf of the Food Pyramid ie fewer cakes, biscuits, chocolate, crisps and other high fat snack foods. Choose low fat alternatives such as fruit, low fat yoghurt or popcorn.

Using a light spread and a vegetable oil means that you will eat less saturated fat.
Where possible, grill, boil, casserole, oven bake or microwave foods in preference to frying.

Use frozen yoghurts and sorbets as a treat or topping on fruit. These are lower in fat than ice-cream or cream.

Remember, fats, biscuits, cakes, confectionery and high fat snacks can be enjoyed as part of a healthy eating plan but in limited amounts.

Sugar and sugary foods and drinks are an energy source providing calories for energy but offer few other nutrients.

Buy lots of fruit and have it regularly as treats between meals. Choose healthy snack foods such as popcorn, yoghurt, brown scones, breakfast cereals or peanuts. Choose sugar-free drinks instead of sugary ones.

Alcohol:

Frequent consumption of alcoholic drinks may lead to weight gain. Also if alcohol is taken in instead of meals this may lead to nutritional deficiencies

Salt:

Try not to rely on salt to flavour foods.

Use black pepper more often as an alternative flavouring to salt

Buy garlic, ginger or onion to add flavour to cooked dishes

Use garlic more often to reduce the amount of salt you add to casseroles and curries.

Look out for herbs – fresh and dried
WAYS TO SUPPLEMENT YOUR DIET

Have small regular meals and snacks. Try to have three main meals and two-three snacks daily.

Try to have attractive meals which are simple to prepare and appeal to you. Maybe small helpings would appear more enticing than large helpings.

Use fortified milk (see recipes) e.g. Whisk 2 ozs (4 tablespoons) of powdered milk into 1 pint of full fat milk. Use for drinks, puddings, cereals, cuppa soups and sauces.

Add grated cheese to sauces, soups, vegetables and potatoes.

Add minced or pureed meat or chicken to soups.

Add butter or margarine to potatoes and vegetables.

Add cream to coffee, soups, desserts and fruit.

Use mayonnaise or salad cream on salads and in sandwiches.

Add sugar to drinks, puddings, breakfast cereals, yoghurt and fruit.

“Gone off” tea or coffee? Try lemon tea or ice-cold fizzy drinks, e.g. lemonade, orange juice with soda water.
# Changes in Food Choice Towards Healthier Eating

<table>
<thead>
<tr>
<th>Present choice</th>
<th>Change to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fats: Butter/ margarine</td>
<td>Low-fat spread</td>
</tr>
<tr>
<td></td>
<td>Low-fat spread</td>
</tr>
<tr>
<td>Cream</td>
<td>Yoghurt, fromage frais</td>
</tr>
<tr>
<td>Full fat cheese</td>
<td>Smaller portions of low fat cheeses</td>
</tr>
<tr>
<td>Pies, pasties, sausages</td>
<td>Lean meat, chicken, fish</td>
</tr>
<tr>
<td>Fat meat</td>
<td>Grilled, baked or stir-fried foods.</td>
</tr>
<tr>
<td>Fried foods</td>
<td>Grilled, baked or stir-fried foods.</td>
</tr>
<tr>
<td>Mayonnaise, fatty dressings</td>
<td>Yoghurt, low fat dressings</td>
</tr>
<tr>
<td>Pastry/cakes/biscuits</td>
<td>Fruit breads, scones, fruit</td>
</tr>
<tr>
<td>(&quot;hidden&quot; fat)</td>
<td></td>
</tr>
<tr>
<td>Nuts, crisps</td>
<td>Vegetable “nibbles”</td>
</tr>
<tr>
<td>Sugar: Sugar Stop.</td>
<td>If necessary use a sweetener.</td>
</tr>
<tr>
<td>Puddings</td>
<td>Fresh fruit, low sugar yoghurts</td>
</tr>
<tr>
<td>Cakes, biscuits</td>
<td>As above</td>
</tr>
<tr>
<td>Sweets, chocolates</td>
<td>Fresh fruit, unsweetened popcorn</td>
</tr>
<tr>
<td>Sweetened drinks</td>
<td>“Diet” alternatives</td>
</tr>
<tr>
<td>Sugared breakfast cereals</td>
<td>Unsugared alternative</td>
</tr>
<tr>
<td>Fibre: Refined cereals</td>
<td>Low-sugar muesli, wholegrain</td>
</tr>
<tr>
<td>Cereals</td>
<td>Wholemeal or softgrain bread</td>
</tr>
<tr>
<td>White bread</td>
<td>Wholemeal or softgrain bread</td>
</tr>
<tr>
<td>White rice</td>
<td>Brown rice</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>White pasta</td>
<td>Wholemeal pasta</td>
</tr>
<tr>
<td>Small portions of vegetables</td>
<td>Larger quantities, including peas, corn, beans, more fruit</td>
</tr>
</tbody>
</table>

**MENU AND RECIPE IDEAS**

**CONSTIPATION: IDEAS FOR HIGH FIBRE SNACKS**

- Weetabix/Branflakes and milk
- Wholemeal fruit scones and butter or margarine
- Stewed/tinned prunes and custard
- Mixed dried fruit
- Lentil soup and wholemeal bread
- Baked beans on toast

**FOOD STORE CUPBOARD: QUICK AND EASY MEALS**

- Tuna, tinned tomatoes and cooked pasta
- Baked beans on toast with grated cheese or poached egg
- Tinned spaghetti in tomato sauce with grated cheese or eggs and peas
- Tinned macaroni cheese with tinned or frozen vegetables
- Tinned fish, e.g. pilchards on toast with tinned tomatoes
- Packet or savoury rice, and chopped cooked meat, e.g. ham, chicken
- Tinned soup with grated cheese
- Packet soup made up with milk and eaten with bread
- Bowl of cereal, e.g. Weetabix, porridge, perhaps dried fruit or sliced banana
Puddings, yoghurt, crème caramel, instant whip, custard, tinned sponge puddings

**SNACKS AND NIBBLES:**

If cannot manage a meal, snacks are better than nothing at all, e.g. nuts, dried fruit, crisps, ice-cream, boiled sweets, toffees, chocolate.

**HIGH PROTEIN AND ENERGY MENU**

**Breakfast:**
- Fruit or fruit juice. Add Glucose or sugar to juice
- Cereal + fortified milk + sugar or honey
- Egg and bacon or sausage
- Bread/jam/honey
- Tea/Coffee with milk or sugar if desired
- Use fortified milk

**Mid-morning:**
- Fortified milk drink – see recipe
  - Snack

**Mid-day meal:**
- Soup. Try adding cream or skimmed milk powder
  - Meat, fish, egg or cheese.
  - Veg/salad. Use salad cream or mayonnaise
  - Bread with butter/margarine. Jam/honey
  - Cake, biscuit, yoghurt.
  - Tea/coffee

**Mid-afternoon:**
- Fortified milk drink
  - Snack

**Evening meal:**
- Meat, fish, poultry, egg or cheese
  - Veg/salad
Potatoes, rice, pasta or bread

Dessert as liked. Use cream or condensed or evaporated milk in puddings. Add glucose to stewed fruit.

Tea/coffee/milk.

Add cream to coffee

Could we put some of this into resources? The recipes maybe...alot of info here

<table>
<thead>
<tr>
<th>NOURISHING DRINKS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FORTIFIED MILK</th>
</tr>
</thead>
</table>

**Ingredients:**
- One pint whole milk
- 4 heaped tablespoons of skimmed milk powder

**Method:**
- Place powder in jug
- Slowly add milk, stirring with a fork or blend in a liquidiser.
- Pass through a sieve to avoid lumps

*Use this in tea, coffee, cereals, soups, sauces, puddings, milky drinks such as Horlicks, Ovaltine, Cocoa or Drinking Chocolate*

<table>
<thead>
<tr>
<th>FORTIFIED MILK PUDDING</th>
</tr>
</thead>
</table>

**Ingredients:**
- ½ oz. Cereal, e.g. rice, sago tapioca
- 8 ozs fortified milk
- 1 oz cream
- 1 egg
Sugar to taste

Method: Make as for normal milk pudding but using fortified milk. Beat egg, add egg for last few minutes of cooking. Mix in cream before serving.

### MILKSHAKE

**Ingredients:**
- 1 cup of whole milk
- 1 tablespoon milk powder
- 1 scoop ice-cream
- Soft fruit/tinned fruit e.g. banana, strawberries, peaches.

**Method:** Liquidise until smooth and fluffy.

### NOURISHING DRINKS

### YOGHURT DRINK

**Ingredients:**
- 2 cartons yoghurt
- 2 Scoops ice cream
- 2 Tablespoons dried milk powder
- ¾ glass milk

**Method:** Blend in liquidiser or whisk until smooth and frothy
NOURISHING DRINKS

Supplements: Some supplements can be purchased in your local shop and others are available only from your chemist. Common examples are: Complan, Build-up, Recovery Food

COMPLAN YOGHURT

Ingredients: 2 dessertspoons Complan

1 fruit yoghurt

2 ozs milk

Method: Place complain in bowl

Add milk and stir well

Add yoghurt and stir well

COMPLAN SHAKE

Ingredients: 4 dessertspoons Complan

2 ozs cream

6 ozs milk

Method: Place complain in cup

Add cream, mix

Add milk slowly and mix with fork
COMPLAN SOUP

Ingredients:  
Half pint of soup, packet or tinned  
4 rounded dessertspoons of Natural Complan

Method:  
Prepare the soup as directed on the tin/packet  
Mix the Complan with a little water to a smooth cream. Allow the Soup to cool a little. Add the half pint gradually to the Creamed Complan.

COMPLAN CUSTARD

Ingredients:  
3 rounded dessertspoons of Natural Complan  
4 dessertspoons of custard mix  
Half pint of boiling water

Method:  
Mix the Complan powder and the instant custard together. Add the boiling water, stirring well.

BUILD-UP MILK JELLY

Ingredients:  
1 sachet Build-Up  
1 packet jelly  
½ pint of milk

Method:  
Dissolve jelly in a little boiling water  
And make up to half pint with cold water  
Mix Build-Up and milk together.  
When the jelly is cold and not too set, slowly stir
In Build-Up

Leave to set fully

---

**READY-TO-USE LIQUID MEASUREMENTS**

There is a wide range of commercially prepared supplements available. They have the added advantage of being labour saving, sterile and of accurate nutritional composition. These supplements also come in a variety of flavours including sweet and savoury alternatives. Some of these are available on prescription, others can be bought over the counter. They can be taken on their own or incorporated into recipes.

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**DESERT ISLAND DELIGHT**

**Ingredients:**

1 can of Ensure Vanilla

35 mls of pineapple juice

Half ripe banana

**Method:**

Liquidise and serve immediately

---

**NUTTY YOGHURT SHAKE**

**Ingredients:**

1 can Ensure

1 Hazelnut yoghurt (5 ozs)

1 Banana sliced

1 scoop vanilla ice cream

**Method:**

Blend ingredients together to form a smooth mixture.

Pour into a glass and top with vanilla ice-cream
EASY ORANGE JELLY

Ingredients: One packet of orange jelly
Carton of peach and orange Fortijuice

Method: Cut the jelly into cubes and place in a measuring jug.
Pour in 300 mls (half a pint) of boiling water
Stir in to dissolve the jelly
Add a carton of Fortijuice
Put in fridge to set

DOUBLE PEACH DELIGHT

Ingredients: One packet of Peach Instant Whip
Carton of peach and orange Fortijuice
3.5 fluid ounces (100 mls) of full-fat milk

Method: Pour the contents of the packet into a bowl
Add 100 mls (3.5 fl oz) chilled milk
Whisk briskly
Pour on Fortijuice carefully and stirring to smooth mix
Allow to set in fridge and serve.

LENTIL AND LEMON SOUP

Ingredients: One 450 gm can of lentil soup
One carton Lemon & Lime Fortijuice

Method: Empty contents of can into a saucepan
Heat the soup gradually, stirring continually
When thoroughly heated, remove the pan from the heat.

Briskly stir in the carton of lemon and lime Fortijuice.

Re-heat gently – do not allow to boil.

CITRUS CHICKEN SOUP

Ingredients:  
One 295 gm can of condensed cream of chicken soup.
100 mls (3.5 fl. Oz) of water
One carton of Lemon & Lime Fortijuice

Method:  
As previous recipe, adding 100 ml of water at the first stage

TOMATO SOUP WITH A HINT OF ORANGE AND PEACH

Ingredients:  
One can of condensed cream of tomato soup
100 mls (3.5 fl oz) of water
One carton Peach & Orange Fortijuice

Method:  
As Lentil & Lemon Soup recipe, adding 100 ml of water at first stage

SOFT MEAL IDEAS

Nourishing dishes you may like to try

SAVOURY MAIN COURSES:

Canned or home-made soup with fortified milk added
Minced or pureed roast beef and gravy or casseroles
Shepherd’s pie
Lasagne
Moussaka
Soft or flaked fish in sauce
Salmon mousse
Fisherman’s pie (fish and potato in a creamy sauce)
Omelette or scrambled egg
Savoury baked custard
Creamed chicken or ham
Chicken supreme
Corned beef hash (corned beef chopped in creamed potatoes)
Pate (meat or fish)
Soft macaroni cheese
Spaghetti in tomato sauce with grated cheese
Jacket Potato with butter and pate or grated/cream cheese
Cauliflower cheese
Cold chopped chicken in mayonnaise sauce (mayonnaise and plain yoghurt mixed)

SOFT DESSERT IDEAS:

Mousse
Egg custard/ crème caramel
Milk jelly
Milk puddings
Fruit fools and purees
Soufflés
Ice creams
Sorbet

Yoghurt/fromage frais

Greek strained yoghurt with honey

Sponge pudding

Trifle

Custard made with powder or ready

Queen of puddings

Canned or stewed fruit

Mashed banana and cream

Banana snow (pureed banana, double cream and natural yoghurt

Instant pudding mixes with fortified milk
SUBJECT
SOME QUALITY OF LIFE ISSUES
PARTICIPANT

PALLIATIVE CARE

If diagnosed and treated early many people with COPD will have stable lung function for a number of years, others will have a gradual, progressive decline in lung function punctuated by severe exacerbations while a few may experience a rapid decline in lung function. This uncertainty of the disease trajectory in COPD can make it very difficult for the person affected and their family to broach the subject of planning for the future and making realistic plans. However, advanced planning when well and making sure people know of wishes is an important aspect for reducing stress during an exacerbation. Don’t be afraid to broach the subject with family and health care professionals, make plans, make your wishes known.

BONE HEALTH

People with COPD are at increased risk of osteoporosis (weak bones) and therefore fractures by virtue of having a chronic inflammatory disease and being less able to exercise due to breathlessness. In addition many people with COPD may require long-term steroid medication which can increase the loss of calcium from the bones which in turn increases the risk of osteoporosis and bone fractures.

TO MAINTAIN BONE STRENGTH AND PROTECT AGAINST OSTEOPOROSIS:

• In 1944, the WHO defined Osteoporosis as a disease characterised by low bone mass and a microarchitectural deterioration of bone tissue leading to enhanced bone fragility and consequent increase in fracture risk.

• Bone is a living tissue constantly being re-modelled. A large bone mass early in life protects against osteoporosis. Bone mineral density normally increases steadily from birth and approaches peak value in early adult life.

• The adult skeleton consists of approximately 80% cortical bone and 20% trabecular bone.

• During childhood, more bone is formed than is resorbed.

• 60% of bone growth occurs during adolescence.
• Women and men start to lose slightly less than 1% of BM per year in fourth decade.

• In females, 50% of BM occurs pre-adolescence, in males this is only 10%

**Peak Bone Mass determined by:**

• Heredity / family history
• Race
• Diet
• Exercise
• Hormones
• Gender

Osteoporosis is a condition where there is loss of normal bone density. It is often called the “silent disease” because bone loss occurs without symptoms. This loss leads to:

• Abnormally porous bone.
• Increased risk of fractures
• Spinal deformity
• Height loss
Factors affecting bone density include:

- **Gender:** Fractures from osteoporosis are about twice as common in women as they are in men. They also experience a sudden drop in oestrogen at menopause that accelerates bone loss. Slender, small-framed women are particularly at risk. Men who have low levels of the male hormone testosterone also are at increased risk.

- **Age:** The older you are, the higher your risk of osteoporosis. Your bones become weaker as you age.

- **Race:** You're at greatest risk of osteoporosis if you are Caucasian.

- **Family history:** Osteoporosis runs in families. For that reason, having a parent or sibling with osteoporosis puts you at greater risk, especially if you also have a family history of fractures.

- **Factors affecting bone density - Frame size:** Men and women who are exceptionally thin or have small body frames tend to have higher risk because they may have less bone mass to draw from as they age.

- **Lifetime exposure to oestrogen:** The greater a woman's lifetime exposure to oestrogen, the lower her risk of osteoporosis. For example, you have a lower risk if you have a late menopause or you began menstruating at an earlier than average age. But your risk of osteoporosis is increased if your lifetime exposure to estrogen has been deficient, such as from infrequent menstrual periods or menopause before age 45.
Corticosteroid medications: Long-term use of corticosteroid medications, is damaging to bone. If you need to take a steroid medication for long periods, your doctor should monitor your bone density and recommend other drugs to help prevent bone loss.

Thyroid hormone: Too much thyroid hormone also can cause bone loss. This can occur either because your thyroid is overactive (hyperthyroidism) or because you take excess amounts of thyroid hormone medication to treat an under-active thyroid (hypothyroidism).

Eating disorders: Women and men with anorexia nervosa or bulimia are at higher risk of low bone density.

Low calcium intake: A lifelong lack of calcium plays a major role in the development of osteoporosis. Low calcium intake contributes to poor bone density, early bone loss and an increased risk of fractures.

Medical conditions that decrease calcium absorption: Conditions such as Crohn's disease, celiac disease, vitamin D deficiency, and Cushing's disease (a rare disorder in which your adrenal glands produce excessive corticosteroid hormones).

Sedentary lifestyle: Any weight-bearing exercise is beneficial to creating healthy bones. Exercise throughout life is important, but you can maintain/increase your bone density at any age.

Tobacco use: The exact role tobacco plays in osteoporosis isn't clearly understood, but researchers do know that tobacco use contributes to weak bones.

Chronic alcoholism: One of the leading risk factors for osteoporosis is chronic alcoholism. Excess consumption of alcohol reduces bone formation and interferes with the body’s ability to absorb calcium.

CORTICOSTEROIDS

These are drugs which maybe prescribed to decrease inflammation in conditions such as Asthma, COPD, and Arthritis

They work in COPD by decreasing inflammation in the airways of the lungs (e.g. Prednisolone, Ventolin)

Impair bone formation and increase bone resorption.

Other drugs which are linked with Osteoporosis include:

- Post transplant osteoporosis
- Anticonvulsant therapy
• Chronic heparin therapy
• Long term lithium therapy
• Chemotherapy
• Calciuretic diuretics

**SIGNS AND SYMPTOMS**

• Fractures – wrist, hip, vertebra
• Back pain, dowager’s hump
• Loss of height 2 – 8 inches
• Spinal deformity
• Rib cage resting on pelvic brim
INVESTIGATIONS/ DIAGNOSIS

• DEXA scan – examine individual results of each vertebra, as increased density in a vertebra may be due to collapse, osteophytes or, in rare cases, secondaries in the spine.

• T score 1 to −2.5 = osteopenia

• T score greater than −2.5 = osteoporosis

• ESR

• FBC

• Blood sugar

• LFTs

• Calcium, phosphate, an-alkaline phosphatase to exclude osteomalacia, primary hyperparathyroidism

• PTH

• TFTs

• Serum electrophoresis to exclude multiple myeloma

• Bone markers

ROLE OF EXERCISE

● Maintain/ increase bone density
● Improve muscle strength / balance
● Increase ability to carry out daily tasks
● Maintain/ improve posture
● Falls prevention
● Management of pain
● Rehab post fracture

Physiotherapy Management: Aims of exercise

● Improve bone health
● Reduce risk of falls
● Prevention of fractures
● Improve posture / reduce deformity
• Reduce / control pain
• Optimise function
• Provide education and viable exercise options to facilitate self-management

Other considerations
• Posture / deformity
• Muscle strength / endurance
• Aerobic endurance capacity
• Flexibility
• Pain levels
• Functional status
• General health and wellbeing

Exercise and bone health
• The natural stimulus for bone to maintain functional strength is loading resulting from gravitational forces and tensions exerted by muscle activity.
• On bed rest there is bone loss of approximately 1% per week Weight-bearing exercise describes any activity you do on your feet that works your bones and muscles against gravity
• Bone adapts to the impact of weight and pull of muscle by building more cells and becoming stronger
• Examples:
  • Walking
  • Dancing
  • Jumping/ Skipping
  • Lifting Weights/ Resistance Exercises
• Its proven that making load sessions short and allowing recovery periods between sessions can enhance bone mass
• Surprise the bone!!!

Physiotherapy
• Structured exercise programme
• Incorporate training principles of specificity and overload
• Low impact, weight-bearing exercises, targeting specific sites
• Impact exercises to be intermittent dynamic activities involving unusual or diverse movement patterns for osteogenic effect Progressive high intensity strength training, high load, low repetition
• Progress to 60 – 90% of 1RM, starting from 40 – 50%
• Target back extensors, wrist flexors and extensors, all hip muscles
• Functional activities
• Use body weight, weights, theraband

Avoid

• Undue compressive strain on spine
• High risk movement patterns
• High impact work
• High intensity training at outset

Examples of exercise

• Low impact:
  Stepping – always keeping one foot on the floor i.e., marching on the spot
  Side stepping

Brisk walking
Step ups and downs
Aquaerobics

• High impact activities:
  – Jogging
  – Jumping
  – Skipping
– Sports

N.B. People with osteoporosis should never do high impact activities

- Strengthening exercises:
  - Lunges
  - Half squats
  - Using weight machines

SUMMARY

- Younger people should be taking steps now to prevent the onset of osteoporosis in later life
- In the UK it is estimated that 1 in 3 women and 1 in 12 men will suffer from osteoporosis over the age of 50
- People can delay the onset of postural deformity and fractures and increase bone density by starting early.
- It is important for people with osteoporosis to exercise in order to reduce the risk of falls and fractures
- Continue with low impact activities
- Carry out high intensity training
- Avoid exercises that involve flexion and rotation, such as bending down to touch the toes and twisting activities

Vitamin D and Calcium

- Vitamin D and Calcium are required for healthy bones
- Vitamin D is needed to help the body absorb calcium
- The major source of this Vitamin D is from the action of sunlight on the skin
- About 15-20 minutes of sunlight a day on the face and arms during the summer months is adequate to enable the body to store enough vitamin D during these months
- Be careful not to stay out in the sun too long to avoid burning or increasing your risk of developing skin cancer.
- Foods such as dairy products, margarine and fish oils also contain vitamin D.
- in d and calcium
<table>
<thead>
<tr>
<th>FOOD</th>
<th>QUANTITY</th>
<th>CALCIUM (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Milk</td>
<td>190 mls</td>
<td>224</td>
</tr>
<tr>
<td>Semi skim milk</td>
<td>190 mls</td>
<td>235</td>
</tr>
<tr>
<td>Soya Milk</td>
<td>190 mls</td>
<td>25</td>
</tr>
<tr>
<td>Goats Milk</td>
<td>190 mls</td>
<td>190</td>
</tr>
<tr>
<td>LowFat Yoghurt</td>
<td>150 g</td>
<td>225</td>
</tr>
<tr>
<td>Ice Cream</td>
<td>112 g</td>
<td>134</td>
</tr>
<tr>
<td>CheddarCheese</td>
<td>28 g</td>
<td>202</td>
</tr>
<tr>
<td>Boiled Spinach</td>
<td>112 g</td>
<td>179</td>
</tr>
<tr>
<td>Boiled Broccoli</td>
<td>112 g</td>
<td>45</td>
</tr>
<tr>
<td>Baked Beans</td>
<td>112 g</td>
<td>59</td>
</tr>
<tr>
<td>Dried Apricots</td>
<td>100 g</td>
<td>92</td>
</tr>
<tr>
<td>Brazil Nuts</td>
<td>100 g</td>
<td>170</td>
</tr>
<tr>
<td>Whitebait (fried)</td>
<td>56 g</td>
<td>482</td>
</tr>
<tr>
<td>Salmon (tinned)</td>
<td>56 g</td>
<td>52</td>
</tr>
<tr>
<td>Tofu</td>
<td>100 g</td>
<td>480</td>
</tr>
<tr>
<td>Milk Chocolate</td>
<td>56 g</td>
<td>123</td>
</tr>
</tbody>
</table>

**DRUG THERAPY**

- **BISPHOSPHONATES**: (Fosamax, Fosavance, Bonviva, Actonel) used for both the prevention and treatment of osteoporosis in postmenopausal women
- **CALCIUM AND VITAMIN D SUPPLEMENTS**: Vitamin D helps your body absorb calcium.
- **CALCITONIN**: slows the rate of bone loss and relieves bone pain
- **HORMONE REPLACEMENT THERAPY (HRT)**: Reduced estrogen levels during and after menopause may affect a woman's bone strength
- **PARATHYROID HORMONE**: Teriparatide (Forteo) is approved for the treatment of postmenopausal women who have severe osteoporosis and are considered at high risk of fracture.
- **RALOXIFENE**: (Evista) is used for the prevention and treatment of osteoporosis.
• **STRONTIUM RANELATE**: (Protelos) slows the work of the osteoclasts and stimulates osteoblasts to create new bone
WHO IS MOST AT RISK?

There are many different factors which can contribute to the development of osteoporosis. They can be divided into two groups. The more items that are ticked off in the two lists, the more important it is to decide on a preventative effort. and the prevention should start as early as possible – you are never too young! If you are older, don’t be disheartened, remember the sooner you start the better.

<table>
<thead>
<tr>
<th>Lifestyle factors you can influence</th>
<th>Other factors you cannot influence or would need medical help to influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Poor diet</td>
<td>- Over 40</td>
</tr>
<tr>
<td>- Low calcium intake</td>
<td>- Female</td>
</tr>
<tr>
<td>- Too little weight-bearing exercise</td>
<td>- Had an early menopause / removal of ovaries</td>
</tr>
<tr>
<td>- Excessive intake of coffee (over 6</td>
<td>- Prolonged loss of periods</td>
</tr>
<tr>
<td>cups / day)</td>
<td>- Prolonged corticosteroid treatment</td>
</tr>
<tr>
<td>- Smoking</td>
<td>- Family history of osteoporosis</td>
</tr>
<tr>
<td>- Excessive consumption of alcohol</td>
<td>- Long history of steroids for asthma or rheumatoid arthritis</td>
</tr>
<tr>
<td>(over 14 units / week)</td>
<td></td>
</tr>
<tr>
<td>- Vegan</td>
<td></td>
</tr>
</tbody>
</table>

The more items you have ticked, the greater your chance will be of developing osteoporosis.

If you have ticked more than one item in group two, you should contact your doctor for advice and possible screening.
AIR QUALITY

A wide variety of environmental issues, in addition to cigarette smoking can affect health.

Air pollution affects everybody, but affects people with COPD more. Airborne pollutants are created by the burning of fuels such as petrol, coal and diesel which all release toxic gas and particles into the atmosphere. Increased traffic levels of traffic causes increased exhaust fumes which in turn affect breathing. Air pollutants often combine together to form a toxic cocktail.

Pavement level ozone (or photochemical smog) can be a particular problem in summer months, as bright sunlight reacts with pollutant gases in the air. This can cause inflammation of the airways, thus reducing the ability of the lungs to work properly.

Wear a mask when air pollution is high.

Try to avoid going outdoors on bad days.

TEMPERATURE AND HUMIDITY

Very cold air can cause bronchospasm and associated shortness of breath; high temperatures can also affect breathing and cause dehydration. If affected by hot or cold weather.

Wear a scarf on cold days this to reduce the chances of wheezing.

Avoid exercise on very hot days.

INDUSTRIAL POLLUTION

Workers in a number of dusty industries have an increased prevalence of chronic daily cough. This has been clearly demonstrated in workers exposed to coal, grain and cotton dusts. A similar increased prevalence of productive cough has been reported in workers chronically exposed to a variety of irritant gases.
Wear a mask

Ensure adequate ventilation

Talk with your Health and Safety/Occupational rep.

Consider changing your job.

TRAVEL HINTS FOR THE PERSON WITH COPD

Travel may upset a person’s usual pattern of breathing and oxygenation because it requires more exertion than normally used. Also the person may be travelling into area where there is less oxygen in the air or more air pollution than he/she is accustomed to.

To minimize problems caused by air pollution (also see self management):

Travel before rush hours and after sunset.

Avoid heavily travelled roads.

Call ahead and get quality air information in the cities to be visited.

ALTITUDES

Beware of altitudes higher than accustomed to - either at destination or while travelling. When flying, if necessary, a wheelchair can be arranged for easy travel at and within airports. Special seating on the plane can be arranged when booking tickets.

TEMPERATURES

Cold air can cause bronchospasm and associated shortness of breath. Avoid really cold temperatures. Wear light but warm clothing. Warm climates are generally preferable to cold, except at very high temperatures - in this case stay inside where it is air-conditioned.
ALLERGIES

Dust and mould may be encountered in hotel rooms. If necessary request a room change or bring own portable electronic filter. Beware of feather pillows and duvets.

MEDICATION

Make sure to take a medicine bag as hand luggage on the plane. Bring a recent doctor’s letter outlining details of COPD and all medications. This can be useful at customs, or if needed if become sick abroad. A duplicate set of medications should be brought in case one is lost.

OXYGEN THERAPY (SEE HOME OXYGEN SECTION)

Oxygen therapy should not prevent holidays. Oxygen, if planned ahead can be made available via local services at a destination. Check with the doctor if oxygen is required on the flight. The airlines require at least 72 hours notice if this is the case so it is important to make arrangements early.

NEBULISED THERAPY

Some airlines allow use of a battery operated nebuliser. Bring an international adaptor to ensure access to a supply of electricity at the destination. It is useful to carry nebuliser as hand luggage so it won’t go missing.

INSURANCE: (SEE ALLOWANCES, BENEFITS AND ENTITLEMENTS SECTION)

Make sure to have adequate insurance cover in case of becoming ill on holidays. If travelling in Europe carry European Health Insurance Card.
VACCINATIONS

If travelling to certain countries, like all who travel, some vaccinations may be required. Check early with a travel centre and arrange in plenty of time with GP.

Bon Voyage! Have a good trip!
SEXUALITY ISSUES AND COPD

COPD can cause sexual issues and it is important for people to have an awareness of how to manage what can be common problems. Some people find this an embarrassing issue. However many others also have this problem. If experiencing particular difficulties talk to a health care worker. There is help available.

FACILITATOR

<table>
<thead>
<tr>
<th>Topic</th>
<th>Content</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicate which factors are capable of being addressed.</td>
<td>Patient perceptions.</td>
<td></td>
</tr>
<tr>
<td>Sex versus love.</td>
<td>Multiple aspects that contribute to a relationship.</td>
<td></td>
</tr>
<tr>
<td>Tips and solutions.</td>
<td>Suggestions to address common problems.</td>
<td>Handouts on alternative sexual positions for energy conservation.</td>
</tr>
<tr>
<td>Summary and questions.</td>
<td>Contact details for further / confidential discussion.</td>
<td></td>
</tr>
</tbody>
</table>
ALTERNATIVE SEXUAL POSITIONS FOR ENERGY CONSERVATION.

Talk to your partner, open communication is essential

Plan sex for times when your symptoms are likely to be minimal

Avoid sex when fatigued, have an infection or after a heavy meal

Do not rush

Oxygen devices can be left in place
**FACILITATOR**

**SELF-MANAGEMENT**

**OBJECTIVES:**

At the end of the session, the participant will have:

- An understanding of self-management.
- Knowledge of the benefits of self-management.
- Identified areas for improvement in their self-management.
- Developed a plan to improve self-management of their chronic obstructive pulmonary disease.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Content</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to self-management.</td>
<td>What is self-management? What self-management is not. Whose responsibility is it?</td>
<td>Participant handout</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Summary and discussion.</td>
<td>Self-management plans. Group generation of ideas to improve self-management.</td>
<td></td>
</tr>
</tbody>
</table>
PARTICIPANT

SELF-MANAGEMENT - MANAGING COPD

This handout will help understanding of:

• How each person can help manage their own COPD.
• How to seek and understand their diagnosis COPD.
• How to adhere to treatment plans.
• How to recognise when getting sick and what to do about it.
• How each person can participate in decisions concerning the management of their own condition.

HOW TO MANAGE COPD?

Chronic conditions are becoming one of the greatest health challenges for Ireland. For people living with a chronic condition, life can be a daily struggle.

Effective management of COPD is based on a partnership between the person with the disease, their family and their health care professionals. Each person with COPD needs to take an active role in this partnership by:

• Seeking an accurate diagnosis and understanding the diagnosis.
• Adhering to treatment plans, which will include medications, diet, exercise and fun activities.
• Developing an action plan to help recognise when getting sick, and knowing what to do about it.
• Adjusting lifestyle and behaviours to lessen symptoms and prevent loss of independence.
• Participating in decisions concerning the management of own condition.
Communication is important in the event of a chronic disease as the person affected needs to ask lots of questions. The person affected may find it helpful to write down questions before seeing the doctor or health care professional as some people can get flustered and forget what questions they wish to ask. The person affected may need to ask the doctor or health care professional to write the answers to questions as well as providing additional information.

If the person affected does not understand the doctor’s or health care professional’s explanation or answers, ask for the information to be explained again. Doctors and health care professionals often need to explain information several times, particularly when unfamiliar words or information are discussed.

**HOW TO ADHERE TO TREATMENT PLANS**

With chronic lung conditions, a person may experience difficulty managing all the treatments day after day. Support from both family and support groups can help the person affected to stay motivated and to look after him/herself. Setting goals can also help motivation.

To stay on track with goals:

- Know what goals are – be realistic.
- Do the best you can with what you have.
- Simplify your life.
- Enjoy what you do.
- Take charge of your life.
- Be kind to yourself.
- Seek support from others.
- Start something – the energy will follow.

Some practical suggestions to help with goals are:
• Locate nearest support group (see later).

• Ask a family member or friend to participate in your exercise and walking programme, or join a maintenance group or local walking group.

• Write on the calendar each month when repeat prescriptions are due, so that you don’t run out of medications.

• Ask the pharmacist about the medications.

• Ask the pharmacist, doctor or nurse to check your inhaled medication technique.

• Talk with the dietician/nutritionist about specific dietary needs.

• Reward yourself when you have done well.

HOW TO RECOGNISE WHEN GETTING SICK AND WHAT TO DO ABOUT IT

People who have COPD and other lung conditions should understand the signs and symptoms of getting a chest infection or flare up. By seeking medical treatment early, developing and using a COPD Action Plan, as discussed with the doctor, the person with COPD can help to minimise the severity of chest infection and may prevent being admitted to hospital.

Below are some tips (called trouble shooting) which may help.

TROUBLE SHOOTING

Complications: Why things go wrong!

• Infections
• Medications
• Diet and Nutrition
• External Irritations
• Emotional Factors
• ‘Other’ medical problems
• Progression of disease
WHAT TO DO TO PREVENT FLARE-UPS

- Take good care of yourself by eating healthy foods, exercising and getting enough sleep.
- Take all the medications prescribed by your doctor.
- With your doctor create a written action plan for you to deal with flare-ups.
- Get a flu vaccination every autumn.
- Get the pneumonia vaccination every five years/as indicated.
- Avoid contact with people with colds and infections.
- Avoid triggers that can make COPD worse (for example, air pollution, cigarette smoke and breathing very cold or very humid air).

WARNING SIGNS OF WHEN TO SEEK MEDICAL ATTENTION:

Do you have changes in cough (amount, thickness, colour of phlegm/sputum)?

Do you have a fever?

Do you have increasing shortness of breath and wheezing?

Do you have an unusually rapid or irregular pulse?

Do you have chest pain with breathing?

Do you have abrupt weight loss or gain?

Do you have unusual drowsiness or headache?

Do you have any side effects or complications from your medications?

If you experience any of the above please visit the GP for a check up.

Infections can be easily treated if detected early.
Learning to **recognise the signs of infection** will help you seek medical help **when it is appropriate** and keep you healthy and out of hospital!

Less energy for your usual activities.

Loss of appetite.

Need for an inhaler or nebuliser more often than usual.

Signs of fever or the first sign of a cold.

### WHAT TO DO IF BECOME SICK

- Commence your action plan.
- Contact GP as soon as possible.
- Reduce your activity level.
- Clear sputum with the cough and huff technique.
- Practice controlled breathing and relaxation techniques.
- Eat small amounts of nourishing food.
- Drink extra fluids.
- Use additional medication as planned by your doctor.

### HOW TO PARTICIPATE IN DECISIONS

COPD symptoms may change over time. As different symptoms occur, each person will need to recognise these changes and talk to their doctor about adapting to these changes and work with doctor / health care professional to problem solve and make decision on how to adapt.

Most life problems can be handled adequately in a variety of ways, some of which may be better than others. The following, are some tips for successful problem solving:
• Accept that problems are a normal part of living - you can then put energy into solving the problem.

• Work at coping with problem situations. There may be no ideal solution, but you can often work at improving the situation.

• Learn to recognise when you have a problem. When you do have a problem, then decide if you need to do something about it.

• Resist the urge to act impulsively. Take time to sit down and look at options before acting.

• Tackle the problem in manageable steps. When stressed, the tendency is to look at every problem at once, throw hands in air and say ‘that’s too much to cope with…I give up!’ Break the problem down into smaller steps and take one step at a time.

• Prioritise. Work out what is most important.

• Write down the problems - they will appear clearer when on paper.

• Reward yourself. Even if you don’t solve the problem the first time, at least you have tried.

IN SUMMARY

Learning to live well with COPD is possible. Coping with a chronic condition such as COPD involves skills training, learning to manage a number of symptoms, and consciously assessing and making lifestyle changes.

Regular communication between you, your family and your health care professional is essential.

Take an active role in managing your disease by using the skills you have been taught. As you use these skills to problem solve and make decisions, your confidence in your ability to manage your chronic lung condition will improve. The more your confidence grows, the easier it will be to manage your chronic lung condition.
<table>
<thead>
<tr>
<th>SYMPTOMS</th>
<th>ADVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FEELING WELL</strong></td>
<td></td>
</tr>
<tr>
<td>I can walk</td>
<td>Avoid things that make your symptoms worse.</td>
</tr>
<tr>
<td>becoming short of breath.</td>
<td>If smoking, try to stop.</td>
</tr>
<tr>
<td>I sleep</td>
<td>Plan your day’s activity in advance.</td>
</tr>
<tr>
<td>hours at night</td>
<td></td>
</tr>
<tr>
<td>Appetite</td>
<td></td>
</tr>
<tr>
<td>Colour of phlegm</td>
<td></td>
</tr>
<tr>
<td>Amount of phlegm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FEELING SLIGHTLY UNWELL</strong></td>
<td></td>
</tr>
<tr>
<td>More breathless than usual.</td>
<td>Use breathing control techniques and positions of ease to aid relaxation.</td>
</tr>
<tr>
<td>Coughing up more phlegm or</td>
<td>Use chest clearance techniques as taught by your Physio.</td>
</tr>
<tr>
<td>developing a wheeze.</td>
<td></td>
</tr>
<tr>
<td>This could be due to a change in</td>
<td></td>
</tr>
<tr>
<td>the weather or you may feel</td>
<td></td>
</tr>
<tr>
<td>stressed.</td>
<td></td>
</tr>
<tr>
<td><strong>FEELING POORLY</strong></td>
<td></td>
</tr>
<tr>
<td>If your symptoms persist or</td>
<td>Take</td>
</tr>
<tr>
<td>you have 2 of those listed below:</td>
<td></td>
</tr>
<tr>
<td>Increased shortness of breath</td>
<td></td>
</tr>
<tr>
<td>Increased amount of phlegm</td>
<td></td>
</tr>
<tr>
<td>Yellow or green phlegm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contact your COPD Team, GP, or Practice Nurse for review.</td>
</tr>
<tr>
<td></td>
<td>Take antibiotics and steroids (Prednisolone) as recommended/provided by your GP.</td>
</tr>
<tr>
<td></td>
<td>If your ankles are more swollen than normal, you should contact your GP.</td>
</tr>
<tr>
<td><strong>GETTING MUCH WORSE</strong></td>
<td></td>
</tr>
<tr>
<td>No improvement after starting</td>
<td>Attend/ contact GP urgently.</td>
</tr>
<tr>
<td>above treatment.</td>
<td></td>
</tr>
<tr>
<td>Continued increased amount of</td>
<td>If not able to see GP, visit the A&amp;E Dept.</td>
</tr>
<tr>
<td>phlegm</td>
<td></td>
</tr>
<tr>
<td>Severe increase in shortness of</td>
<td></td>
</tr>
<tr>
<td>breath at rest.</td>
<td></td>
</tr>
<tr>
<td><strong>VERY UNWELL</strong></td>
<td></td>
</tr>
<tr>
<td>Very breathless at rest, chest</td>
<td>This is an emergency, call 999. Use oxygen and nebuliser if available</td>
</tr>
<tr>
<td>pain, or confusion.</td>
<td>until ambulance arrives.</td>
</tr>
</tbody>
</table>

Issued By: ........................................ Date Issued: ........................................
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Example Inhaler</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliever</td>
<td>A reliever (blue) is a short acting inhaler which works quickly to relieve your breathlessness, wheeziness and/or cough by relaxing tightened airways. It can also be called a bronchodilator.</td>
<td>Your reliever inhaler is:</td>
<td></td>
</tr>
<tr>
<td>Protector</td>
<td>A protector (green) is a long acting reliever which reduces symptoms and works by keeping the airways open and relaxed. This should be taken twice a day. This should not be used for immediate relief of breathlessness.</td>
<td>Your protector is:</td>
<td></td>
</tr>
<tr>
<td>Additional</td>
<td>These are usually grey in colour. It is usually taken on a regular basis.</td>
<td>Your additional inhaler is:</td>
<td></td>
</tr>
<tr>
<td>Preventer</td>
<td>A preventer (brown/red/orange) is an inhaler which reduces inflammation in your airways that occurs with your chest condition. These should not be used to relieve sudden attacks of wheeze and breathlessness. As this is a steroid inhaler, it is important to rinse your mouth after using it.</td>
<td>Your preventer inhaler is:</td>
<td></td>
</tr>
<tr>
<td>Combined</td>
<td>Your Doctor may find it appropriate to prescribe a combination inhaler which can include a protector and preventer in one inhaler.</td>
<td>Your combination inhaler is:</td>
<td></td>
</tr>
<tr>
<td>Preventer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on Southern Health & Social Care Trust (N.I.) COPD Team Self Management Plan 2008.
SUBJECT
SUPPORTS/ALLOWANCES/BENEFITS/ENTITLEMENTS
FACILITATOR

SUPPORTS

ALLOWANCES/BENEFITS/ENTITLEMENTS
PARTICIPANT

SUPPORTS/ALLOWANCES/BENEFITS/

This handout will help understanding of:

• How to use community support services.

• Where to seek or access community support services.

• What a patient support group is.

• What other community support services may be helpful

INTRODUCTION

For a variety of reasons – age, illness, means etc – at some stage a person with COPD may be entitled to certain allowances, or benefits. For the same reasons, at some stage a person may benefit from consulting specific services or supports to help make decisions about what might be best for them at that particular time and into the future e.g. adapting bathroom, altering furniture.

In appendix/additional resources is a directory of relevant information - it is not comprehensive, but set out to help indicate where additional information can be sought.

For specific details about the variety of services available in your own local community discuss with the Rehabilitation co-ordinator and also visit your local citizens information service.

HOW TO USE COMMUNITY SUPPORT SERVICES?

• Be an active participant in own care.
Learn about COPD and learn how to manage and adapt to it.

• Benefit from the knowledge and experience of other people who have COPD.

• Build own support network to help manage health.

• Plan ahead and use available services as needed.

**WHAT IS A COPD PATIENT SUPPORT GROUP?**

A patient support group is a group of people who have common interests and needs – in this case people with COPD.

**WHAT DO COPD PATIENT SUPPORT GROUPS DO?**

Members of a COPD patient support group will benefit:

• Regular meetings.

• Guest speakers and seminars, giving members regular access to expert information on COPD and other relevant issues.

• Member-to-member support if needed (by telephone, and hospital and home visits).

• Sharing lung health education information.

• Sharing and exchanging solutions to problems

• Rehabilitation assistance.

• A newsletter and national newsletter.

• Social enjoyment.

**HOW TO BENEFIT FROM A COPD PATIENT SUPPORT GROUP**

Joining a COPD patient support group allows a person with COPD to:

• Discuss the information learnt from their doctor and other health care professionals, as sometimes the information is difficult to remember or confusing.
• Access new information on COPD.

• Share actual experience of living with COPD experiences in an understanding environment.

• Participate in social activities.

• Change thinking about COPD.

• Help carers cope and understand COPD.

A COPD patient support group is also a way of helping others with COPD – sharing coping solutions you have found useful and learning others. Sometimes, focusing energy on helping others is the best therapy. People need support and friendship.

WHO WILL ATTEND THE COPD PATIENT SUPPORT GROUP?

Ordinary people with COPD, from all different working and ethnic backgrounds. Many will have gone through a local Pulmonary Rehabilitation programme. All have a common personal interest in managing their lung condition. Group members will also have a wide variety of social and lifestyle interests.

WHERE AND WHEN DO COPD PATIENT SUPPORT GROUPS MEET?

Most groups have regular meetings that are locally held at a community or neighbourhood centre, or a meeting room at a local hospital. Venues with reasonable transport access are normally chosen.

WHAT IF THERE IS NO LOCAL COPD PATIENT SUPPORT GROUP?

Support is still available. Ask your Rehabilitation co-ordinator.

Why not help start a group - Ask your Rehabilitation co-ordinator.
Allowances, Benefits and Entitlements
People with Chronic Obstructive Pulmonary Disease (COPD)

[This document summarized the allowances, benefits and entitlements available to people with COPD should they meet the qualification criteria set out by the agencies]

Spring 2011
CHRONIC OBSTRUCTIVE AIRWAYS DISEASE (COPD)

This provides information on a variety of services, benefits and allowances as outlined below. Eligibility does not depend on a particular diagnosis such as COPD but can depend on age, degree of incapacity and financial considerations, so eligibility is always worth checking. There are a number of overlaps between areas. For example a number of the allowances accessed through the Community Welfare Offices appear in the section on Social Welfare, however information on electricity appears both in the Social Welfare Section but also under Oxygen.

This document doesn’t cover all of the allowances, benefits and entitlements available – its purpose is by outlining some of what is available encouraging people to ask questions and seek information. This is an area which can change from time to time, so it is always worth checking if new services have come into place or if eligibility criteria have changed. Most benefits will not be offered automatically – it is up to you to apply for them. Good sources of such information, in addition to your Health Care Staff, are your local Citizens Information Centre (www.citizensinformation.ie, Lo-call 1890 777121), your local Health Centre (www.hse.ie, 1850 241850), local Social Welfare Office (www.welfare.ie, Lo-call 1890 662244) and also Revenue (www.revenue.ie). As web sites are not always up to date, it is always useful to check information by phone or in person.
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SOCIAL WELFARE

SOCIAL WELFARE INFORMATION SERVICES

There are many different welfare schemes and services operated by the Department of Social Protection. Throughout the country there are Social Welfare Offices which have a variety of free information leaflets/booklets with details of services, entitlements and eligibility criteria. Advice is also available though their website (www.welfare.ie), Lo-call number 1890 6622 44, by email (info@welfare.ie) or by post.

If you are refused a service or benefit which you believe you are entitled to, you can appeal the decision (Social Welfare Appeals Office Lo-call 1890 747434). Contact your local Social Welfare Office or Citizens Information Centre for advice and information.

ILLNESS BENEFIT

This is a payment from the Department of Social Protection to insured people who cannot work due to illness. It is aimed at those with a short-term illness. The benefit lasts for two years, for those with more than 260 weeks’ PRSI contributions. Contact your local Social Welfare Office or Citizens Information Centre for advice and information.

INVALIDITY PENSION

This is a long-term payment for insured people who permanently cannot work due to illness or disability. It is usually given after having claimed Illness Benefit for at least 12 months. It also be entitles the applicant to a free travel pass and extra social welfare benefits, such as the household benefits package. This latter includes allowances for gas, electricity, telephone rental and a free television licence. Contact your local Social Welfare Office or Citizens Information Centre for advice and information.

DISABILITY ALLOWANCE

This is a weekly means tested payment paid to a person (aged 16 to 65yrs) with a disability which is expected to last for at least one year. The disability must be such that the person affected is restricted from undertaking work that would otherwise be suitable for a person of similar age, experience and qualifications. People in
receipt of Disability Allowance who go into hospital or residential care, may continue to receive payment. Depending on the disability payment and circumstances, a person may be entitled to other benefits. Contact your local Social Welfare Office or Citizens Information Centre for advice and information.

**CARERS**

**CARER’S ALLOWANCE**

This is a means tested payment to people who are full-time looking after someone, who is in need of full-time care and attention because of age, disability or illness. With it comes a household benefits package (see 1.3 above) as well as annual respite care payment (see 1.5.5). As there are various requirements which must be met in order to qualify contact your local Social Welfare Office or Citizens Information Centre for advice and an application form.

**CARER’S BENEFIT**

Carer’s Benefit is a payment made to insured people who leave employment to care for a person in need of full time care and attention. It should be applied for before leaving employment. With it comes annual respite care payment (see 1.5.5). To qualify for this benefit, which is based on P.R.S.I. contributions, certain requirements must be met. Contact your local Social Welfare Office or Citizens Information Centre for advice and an application form.

**CARER’S PAYMENTS AND WORKING**

People in receipt of Carer’s Allowance or Benefit can work part-time and continue to receive a carer’s payment under certain specified circumstances. Contact your local Social Welfare Office or Citizens Information Centre for advice and information.

**CARER’S LEAVE**

The Carer’s Leave Act provides for employees to take temporary unpaid leave from employment to care for an incapacitated person in need of full time care and attention while preserving employment rights. The minimum period of leave is 13 weeks and the maximum is 104 weeks.
To be eligible for the leave, the applicant must have been in continuous employment for at least one year. Although the leave is unpaid, the applicant may qualify for Carer’s Benefit/Carer’s Allowance. However, a person may be entitled to Carer’s leave even if not entitled either of these payments. For more information on Carer’s Leave contact your Citizens Information Centre or Employment Rights Unit, Department of Enterprise, Trade & Employment (Tel. No. (01) 6313131, www.entemp.ie) for advice.

**RESPITE CARE GRANT**

The Respite Care Grant is an annual payment in June of each year to full-time carers who care for people with certain conditions. It is not means tested but is subject to certain conditions eg the care for a person must be for at least 6 months, the period of care must include the first Thursday in June and the applicant must either live with the person cared for or live such that the applicant (Carer) can be contacted directly by a direct system of communication (for example, a telephone or alarm) between the Carer’s home and home of person cared for.

This Grant is paid automatically to anybody receiving either the Carer’s Allowance or Carer’s Benefit. Contact your local Social Welfare Office or Citizens Information Centre for information.

**SUPPLEMENTARY WELFARE ALLOWANCE**

If a person is sick and does not qualify for any payments above, he/she may be eligible for Supplementary Welfare Allowance. This payment is means tested. Also if a person has little or no income he/she may get a Supplementary Welfare Allowance. This is a basic weekly allowance for eligible people. The payment helps to tide people over emergencies and difficult times. It can also be paid if a person’s main social welfare payment does not cover ongoing needs. It may also be paid to help with certain special needs like rent or mortgage interest payments or for urgent/exceptional needs. If a person has claimed a social welfare benefit or pension but it has not yet been paid, and has no other income, he/she may qualify for the allowance while waiting for the payment. In this case, the money will have to be repaid once the benefit or pension comes through.

There are two different types of Supplementary Welfare Allowance payments:
ENTITLEMENT-BASED PAYMENTS:

These are means tested with other specified conditions. The payments include:

- Basic Supplementary Welfare Allowance
- Weekly supplements or allowances to cover rent, mortgage, heat, diet and other ongoing needs

DISCRETIONARY-TYPE PAYMENTS:

If it is not clear if an applicant is entitled to the payment, the Superintendent Community Welfare Officer and/or Community Welfare Officer can make a decision based on an applicant’s circumstances and using legal guidelines. These payments include:

- Exceptional Needs Payments eg Household goods, Personal costs, such as footwear and clothes, Funerals etc
- Urgent Needs Payments

Contact your local Social Welfare Office, Health Centre or Citizens Information Centre for advice and information.

OTHER SUPPLEMENTS/BENEFITS

RENT SUPPLEMENT

A Rent Supplement may be paid to people living in private rented accommodation who cannot pay the rent. Usually a person will qualify for a Rent Supplement, if the only income is a social welfare or HSE payment and satisfies certain other conditions. Contact your local Social Welfare Office, Health Centre or Citizens Information Centre for advice and information.
MORTGAGE INTEREST SUPPLEMENT

This supplement can help with the interest part of a mortgage. The assessment is similar to that for rent supplement. Contact your local Social Welfare Office, Health Centre or Citizens Information Centre for advice and information.

HEATING NEEDS/SPECIAL DIETARY NEEDS

Payment can be made towards heating needs/special diet needs to people, who otherwise couldn’t afford them, with special heating or diet needs due to their illness. Contact your local Social Welfare Office, Health Centre or Citizens Information Centre for advice and information.

HOUSEHOLD BENEFIT PACKAGE

People in receipt of a number of allowances, in specified living circumstances (eg pensioners living alone) etc are eligible for a household benefit package. This includes a fuel allowance (Sep-May), Electricity allowance, Gas allowance, Telephone Allowance, and Free colour TV Licence. Contact your local Social Welfare Office or Citizens Information Centre for advice and information.

MONEY ADVICE BUDGETING SERVICE (MABS)

MABS is a free and confidential service for people in Ireland with debt problems and money management problems. There are MABS offices throughout Ireland, staffed by trained Money Advisers who can help deal with debts and budgets. Money advisers can examine income, identify entitlements, and assist in contacting creditors and working through payment options. Contact your local Citizens Information Centre or MABS at 1890 283438 for advice and information.
HEALTH SERVICE ENTITLEMENTS

PUBLIC HOSPITAL CHARGES

All Irish citizens in Ireland are entitled to a range of public health services either free of charge or at reduced cost. If a person attends a public hospital or stays overnight, he/she maybe liable for Hospital Charges. Medical card holders and certain other groups do not have to pay these charges.

There are several types of hospital charges including Out-patient charges, Emergency Department charges, Daily in-patient charges and Long-term stay charges.

OUT-PATIENT AND EMERGENCY DEPARTMENT (A&E) CHARGES

If a person attends the out-patients department or emergency department (A+E) of a public hospital without being referred by a GP, he/she may be charged a standard fee.

This charge is not applicable to those referred by a GP, Medical card holders, people admitted to hospital after attending the emergency department (they will be subject to in-patient/day service charges), people receiving treatment for prescribed infectious diseases or people who are entitled to hospital services because of EU Regulations. Return visits in relation to the same illness or accident are not charged.

DAILY IN-PATIENT CHARGES IN PUBLIC HOSPITALS

A person who stays overnight as a public patient in a public hospital is charged a fee per night up to a specified maximum in any one year. If a person is admitted to hospital and under the care of a consultant and not required to stay overnight, a day charge may apply. In-patient or day service charges do not apply to the following groups Medical card holders, people receiving treatment for prescribed infectious diseases, people who are subject to "long stay" charges or people who are entitled to hospital services because of EU Regulations.

LONG-STAY PATIENTS

Copd education feb 2011
Charges may be imposed on long-stay or extended care patients in public hospital care, up to a weekly specified maximum. Regulations provide for different charging arrangements, depending on the level of nursing care being provided.

MEDICAL CARD

A medical card entitles the holder to free GP services, approved prescription medication (you may have to pay a prescription charge up to a specified limit per family), certain dental treatment, Ophthalmic services, Aural (hearing) services and prescribed medical appliances. Medical Cards are means tested. Details of the means test can be obtained from the local Citizens Information Centre or local Health Centre.

Everybody is entitled to Outpatient services at a public hospital, and Inpatient service in a public ward in a public hospital. Medical cards maybe issued on hardship grounds even if a person’s income is above income guidelines. Contact your local HSE Office or Citizens Information Centre for advice, information and application form.

GP VISIT CARD

A GP Visit card entitles the holder to free GP services. It does not cover medications. GP Visit Cards are means tested. The same form is used to apply for a GP visit card as is used for a medical card. Details of the means test can be obtained from the local Citizens Information Centre or local Health Centre.

Everybody is entitled to Outpatient services at a public hospital, and Inpatient service in a public ward in a public hospital. GP visit card maybe issued on hardship grounds even if a person’s income is above income guidelines. Contact your local HSE Office or Citizens Information Centre for advice, information and application form.

DRUGS PAYMENT SCHEME
Individuals and families without Medical Cards, have to pay the first specified amount (as set in Government budget each year) per calendar month of cost incurred on approved prescribed drugs, medicines and medical appliances including medical oxygen concentrators. A dependent with a physical or mental disability/illness living in the household who is unable to fully maintain himself/herself may be included in the family expenditure regardless of age.

Contact your local HSE Office, Pharmacy or Citizens Information Centre for advice, information and application form.

Remember: In addition, keep all you pharmacy receipts so as to claim tax relief under Medical Expenses (see Tax Relief).

**OXYGEN THERAPY (LONG TERM)**

**GENERAL**

Some people with COPD may have long term home oxygen (LTOT) prescribed by a hospital consultant. Home oxygen concentrators, portable oxygen cylinders, back-up oxygen cylinders, oxygen conservers, masks, nasal canulae, humidifiers, filters and tubing will be provided by the company supplying the oxygen. They will also provide an emergency contact number. It is important to remember not to use oxygen near naked flames, to order replacement cylinders a few days in advance and to factor in bank holiday weekends. There is a rental fee, the invoice for which will be sent to your home address. Once paid, the cost can be reclaimed under the Drugs Payment Scheme. The rental cost is covered for those with Medical cards.

**TRAVELLING**

Those who need oxygen can still travel both within Ireland and overseas, however, planning is needed. Contact your local supplier well in advance and they can usually tell you how to arrange supplies at your destination.
If you need oxygen while flying this should be indicated at the time of booking which should be well in advance of the flight.

**ELECTRICITY**

Home oxygen concentrators run off the normal electricity supply. You should notify your electricity supplier that you are dependent on home oxygen via electrical concentrator and register on a priority support form. In the case of loss of electricity, the supplier will prioritise those areas with vulnerable customers. To register as a priority support customer contact your electricity supplier. It is also useful to know the correct number to ring in the case of an unexpected loss of electrical power.

In addition to entitlements which you may have to free electricity units by virtue of age, living circumstances or benefits, as the cost of running an oxygen generator increase electricity costs, some local health offices allow a rebate in lieu of this excess cost. Contact your local HSE Office or Citizens Information Centre for advice and information.

**EUROPEAN HEALTH INSURANCE CARD (EHIC)**

Irish residents are entitled to healthcare through the public system in countries of the European Union, European Economic Area or Switzerland if they become ill or injured while on a temporary stay in any of these countries. The affected person must have a valid EHIC card. Contact your local HSE Office or Citizens Information Centre for advice, information and application form.

**COMMUNITY SERVICES**

It is not possible here to go into a lot of detail on the various types of services available through local Health Centres. Your GP will be able to advise you on these as will your local health centre and Citizens Information Centre.
PUBLIC HEALTH NURSES

Public Health Nurses visits can be arranged through local health centres and via GPs for those eligible. Public Health Nurses can arrange access to a number of other services and community health personnel. These include home help for practical assistance with homemaking duties, home care, including help with dressing, feeding and other personal care, liaison service - for further care which may be needed at home after hospital - home visits, including practical advice on care techniques, referral for carer training - lifting, handling and strategies for coping - referral to day care, respite, meals on wheels and other local services. This list is not intended to be comprehensive.

OTHER COMMUNITY HEALTH PERSONNEL

For reasons of space not all are described or indeed listed but they include:

**Physiotherapy** services: public physiotherapy services can be accessed through local health centre on referral from your GP. The physiotherapist will assess and make recommendations which will help maximise your functional ability. He/she may also advise on use of aids/appliances eg walking frames to assist your mobility and breathing.

**Occupational therapy**: An assessment from an Occupational Therapist is a must before home modifications are undertaken. Find out more about this service from your local health centre.

**Chiropody**: Find out more about this service from your local health centre.

**Speech and language therapy**: Find out more about this service from your local health centre.

**Social workers**: Find out more about this service from your local health centre.

**Community Welfare Officers** (CWOs): a number of the items listed in the section on Social Welfare are accessed via CWOs who work closely with community based health personnel.
**Home Care / Home Help Services:** These can be arranged through your local Health Centre. Depending on need, the service can help with care of the home and/or personal care. Find out more about this service from your local public health nurse or local health office.

**Meals On Wheels:** Find out more about this service from your local health centre.

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**HOME CARE PACKAGES**

A home care package is an individualised package of community based services and supports provided to enable people, assessed as needing such supports, to return home from an acute hospital or to prevent admission to an acute hospital or long term residential care. For further information on Home Care Packages contact your local health centre or public health nurse.
AIDS AND APPLIANCES

Financial assistance towards the cost of the purchase of medical and surgical aids and appliances (such as wheelchairs, walking aids, etc.) may be provided directly by the Health Service Executive (HSE) to Medical Card holders who require them. Non medical card holders may get assistance from the HSE if the aid/appliance is part of the hospital treatment.

Contact your local HSE Office or Citizens Information Centre for advice and information.

The Citizens Information Board also has an on-line web-based resource on Assistive Technology (Assist Ireland) which contains information on aids, devices, technology and suppliers in Ireland. It also has general information on entitlements, grants, funding options etc. A telephone support number is available as an alternative method of accessing the information (www.assistireland.ie, Lo-call 1890 277478, Email: support@assistireland.ie).

HOME MODIFICATIONS

If because of infirmity you are considering making changes to your home so as to make your activities of daily living easier to manage, request a home assessment by an occupational therapist. This will help ensure that the changes you make are correct both for your immediate need and into the future. Such an assessment is also needed to qualify for any grants which maybe available.

This assessment will be based on your functional status and ability to cope with mobility, dressing, feeding, personal hygiene, grooming and independent living. It will
assess immediate and long term needs with regard to ability to function independently. Often times an occupational therapist will also be able to arrange minor adaptations or supply fittings either at no cost (those with medical cards) or nominal costs. An occupational therapist will make recommendations as to appropriate equipment and appliances including wheelchairs, stair-lifts, bathroom and kitchen devices to improve and maintain independence.

A number of quite minor changes such as ramps, hand rails, grab rails in a home can help people with reduced mobility and shortness of breath. Examples of slightly bigger changes are stair-lifts and bathroom modifications including accessible showers.

Discuss this with your GP and/or Public health Nurse. Contact your local Health Centre or Citizens Information Centre for advice and information.

**DISABLED PERSON’S HOUSING GRANT (FOR HOME MODIFICATIONS)**

A Disabled Person’s Housing Grant is available for home modifications which are recommended by an Occupational Therapist. Such home modifications might include installation of a stair-lift, bathroom installation or modification, widening of home entrances/exports, provision of ramps etc. Before an application for this grant will be processed there must be a report from an Occupational Therapist. Both the amount and the percent of the cost covered for particular types of work is specified. Work on the modification should not commence until approval has been received. Although the grant will not cover the total cost of the work, VAT charges can be claimed as tax relief.

Contact your local Health Centre or Citizens Information Centre for advice and information.

**MOBILITY ALLOWANCE**
This is a means tested monthly payment for those aged 16 – 66 yrs who have a disability and are unable to walk or use public transport and who should benefit from a change of surroundings eg by financing an occasional taxi journey. A lower rate is also available to people who maybe availing of the Disabled Drivers and Disabled Passengers Scheme.

The means test is similar to the means test for the Disability Allowance. The decision about eligibility is also based on medical grounds. Contact your local Health Centre or Citizens Information Centre for advice and information.

**MOBILITY AIDS (INCLUDING WHEELCHAIRS)**

A variety of companies can supply a variety of aids. Before making any decision check your need with your local Occupational Therapist. He/she can also provide a list of suppliers. With regard to wheelchairs, the Irish Wheelchair association ([www.iwa.ie](http://www.iwa.ie)) can arrange rentals, repairs and modifications.

**MOTORISED TRANSPORT GRANT**

The Motorised Transport Grant is a means tested grant for those aged 17 – 65 yrs with disabilities, who need to buy or adapt a car. Usually the applicant should be capable of driving and hold a full driving licence. In some circumstances someone else may be approved to drive for the person with the disability where he/she is not physically or medically capable of driving. Those who avail of this grant will not be eligible for Mobility Allowance for 3 years from date of receiving the grant.

Contact your local health centre or Citizens Information Centre for advice and information.

**DISABLED PARKING BAY OUTSIDE YOUR HOME**
People living in built up areas or where there is pay parking can apply to their Local Authority (City Council, County Council or Town Council) for a marked parking bay outside their home, stating the reasons why it's needed. Granting of this is at the discretion of the Local Authority. There are no costs to the applicant.

Contact the Traffic Department of your Local Authority or Citizens Information Centre for advice and information.

**DISABLED PERSON’S PARKING CARD**

This card entitles the holder to park in public car parking spaces without charge and also to park in parking bays marked as disabled. This card is available to drivers or passengers with disabilities which may affect their mobility. This card is for use in any car in which the disabled person travels ie the permit applies to the person with the disability and not the car being driven. The parking card can be used in other E.U. countries.

The application form can be obtained from /and returned to the Irish Wheelchair Association (National Mobility Centre, Ballinagappa Road, Clane, Co. Kildare, Tel. (045) 893094) or Disabled Drivers Association of Ireland, Ballindine, Co. Mayo. Tel. (094) 936 4266/4054 Website: www.ddai.ie

**TRAVEL PASS (AND COMPANION PASS)**

Free Travel Pass allows people on certain social welfare payments e.g. Disability Allowance to access public transport services and a limited number of private transport services for free. It is also available to those aged 66yrs and over. Those people with a Travel pass if unable to travel alone due to health reasons can apply for a companion pass which allows for one adult travelling with them to travel for free. The application form is available from: Department of Social Protection, Social Welfare Services Offices, College Road, Sligo.
Contact your local Social Welfare Office or Citizens Information Centre for advice and information.
TAX RELIEF

REFUNDS OF V.A.T. FOR AIDS/APPLIANCES/ INSTALLATIONS

A refund of V.A.T. can be claimed for a variety of aids and appliances used by a person with a disability to assist them with independent living and working. The application form can be obtained from the local revenue office, local health centre or contractor.

It is always worth enquiring if an aid /appliance is eligible for VAT relief claim. Examples of eligible items include necessary domestic aids (e.g. drinking and eating aids designed solely for the disabled), walk-in baths designed for the disabled, lifting seats and specified chairs designed for the disabled, commode chair, hoists and lifters designed for invalids including stair lifts, communication aids designed for those unable to speak etc.

ALLOWANCES FOR EMPLOYING A CARER

A tax allowance is available if a person is employed to care for another person with a disability. This allowance may be claimed by a family member or divided among a number of family members if they are contributing towards the cost of the carer.  If the employed person is a relative, the taxpayer may not also claim the Dependent relative tax Credits in respect of the relative.  The carer must register as being self employed.

TAX RELIEF ON MEDICAL EXPENSES

A tax refund is available for money spent on certain medical expenses over and above a specified amount (as set down in the budget each year). These expenses can be incurred by the applicant or paid by the applicant with regard to family members of any age or any other people aged 65 or over who are incapacitated.
Examples of expenses for which the relief may be claimed include Doctors visits, Medication (including the initial amount not covered by the drugs payment card), supply and repair of medical or surgical appliances used on medical advice, hospital or nursing home costs (including travel). This list is not comprehensive. Keep receipts (for 6 years) and check with your local Revenue Office or Citizens Information Centre for advice and information.

**TAX CONCESSIONS FOR DISABLED DRIVERS AND DISABLED PASSENGERS**

Claims can be made for:

- Exemption from VAT for new cars
- Exemption for fuel refunds
- Repayment of VRT +/- VAT.

Contact your local Revenue Office or Citizens Information Centre for advice and information.
## SOME USEFUL CONTACTS AND ORGANISATIONS

<table>
<thead>
<tr>
<th>Organisation Name</th>
<th>Telephone</th>
<th>Web Address</th>
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<tbody>
<tr>
<td>Assist Ireland</td>
<td>1890 277 478</td>
<td><a href="http://www.assistireland.ie">www.assistireland.ie</a></td>
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<tr>
<td>Citizen’s Information</td>
<td>1890 777 121</td>
<td><a href="http://www.citizensinformation.ie">www.citizensinformation.ie</a></td>
</tr>
<tr>
<td>Dept of Enterprise Trade &amp; Innovation</td>
<td>1890 220 222</td>
<td><a href="http://www.entemp.ie">www.entemp.ie</a></td>
</tr>
<tr>
<td>Dept of Social Protection</td>
<td>1890 662244</td>
<td><a href="http://www.welfare.ie">www.welfare.ie</a></td>
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<tr>
<td>Dept of Social Protection: appeals</td>
<td>1890 747434</td>
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<tr>
<td>Disability Federation of Ireland</td>
<td>01 – 454 7978</td>
<td><a href="http://www.disability-federation.ie">www.disability-federation.ie</a></td>
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<tr>
<td>Disabled Drivers</td>
<td>094 – 936 4054</td>
<td><a href="http://www.ddai.ie">www.ddai.ie</a></td>
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<tr>
<td>Health Service Executive</td>
<td>1850 241850</td>
<td><a href="http://www.hse.ie">www.hse.ie</a></td>
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<tr>
<td>Irish Cancer Society</td>
<td>1800 200700</td>
<td><a href="http://www.cancer.ie">www.cancer.ie</a></td>
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<tr>
<td>Irish Thoracic Society</td>
<td>01 2835252</td>
<td><a href="http://www.irishthoracicsociety.com">www.irishthoracicsociety.com</a></td>
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<tr>
<td>Irish Wheelchair Association</td>
<td>01 - 8186400</td>
<td><a href="http://www.iwa.ie">www.iwa.ie</a></td>
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<tr>
<td>Money Advice &amp; Budgeting Service (MABS)</td>
<td>1890 283438</td>
<td><a href="http://www.mabs.ie">www.mabs.ie</a></td>
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<tr>
<td>National Carers Association</td>
<td>1800 240 724</td>
<td><a href="http://www.carersireland.com">www.carersireland.com</a></td>
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<tr>
<td>National Disability Authority</td>
<td>01 – 608 0400</td>
<td><a href="http://www.nda.ie">www.nda.ie</a></td>
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<tr>
<td>Revenue Commissioners</td>
<td>Lo call numbers</td>
<td><a href="http://www.revenue.ie">www.revenue.ie</a></td>
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<td>depend on area of residence</td>
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