Health Professional Manual

Session: Long-Term Oxygen Therapy

➤ Effect of COPD on oxygen levels
➤ Oxygen and oxygen equipment
➤ Learning to live with long-term oxygen therapy

Adapted from the “Living Well with COPD” program (2nd edition), Montreal Chest Institute, Canada for Pulmonary Rehabilitation Programmes in Northern Ireland – 2011.
LONG-TERM OXYGEN THERAPY
SESSION SUMMARY

Education Plan and Methods
Session Length: 15 minutes

• Working Phase
  1. Effect of COPD on oxygen levels. Interactive lecturing.
  5. Summary of the session and assessment of participants’ understanding and self-efficacy. Group discussion.

• Closing of the session

Human Resources

1. One health professional (recommended facilitator: physiotherapist or nurse)

Living Well with COPD™ for Pulmonary Rehabilitation Resources

1. Patient Information Booklet (Pages 25)
2. Key messages: Long-Term Oxygen Therapy
3. Educational Posters:
   • Normal Lung
   • Long-term Oxygen Therapy
   • Energy Conservation

Additional Resources

1. Board / Flipchart

Environment

1. Use a quiet and comfortable room for 10 to 15 people. Ensure proper ventilation.
2. Place the chairs in a semi-circle around the board.
LONG-TERM OXYGEN THERAPY
GROUP INTERVENTIONS FOR EACH PHASE OF THE SESSION

Introduction

- Presentation of the Facilitator.
- Outline the goals of this session.
- Review the key messages from the last session and link them to this session.

Working Phase – Educational Interventions

1. Effect of COPD on oxygen levels

1.1 EXPLANATION OF THE EFFECT OF COPD ON OXYGEN LEVELS

Present this section in an Interactive Way

Use the poster “Normal Lung” to support your teaching.

1.1 Explain the effect of COPD on oxygen levels in the body to the participants.

Suggested script for the Facilitator:

- Oxygen is a gas found in the air that we breathe.
- When air fills your lungs, oxygen passes through the walls of your alveoli, and is carried by your blood vessels to your heart.
- Then your heart pumps the blood carrying oxygen through your arteries to your body where it is used to make energy.
- When COPD progresses, it can lead to an ongoing lack of oxygen in the blood.
- An ongoing lack of oxygen in the blood means that your lungs cannot provide enough oxygen to meet the needs of your body. This can develop gradually and go unnoticed.
- Oxygen therapy is used to increase the amount of oxygen in your body.

Note to the facilitator: Inform participants that severe breathlessness does not always indicate the need for oxygen; some people may be extremely short of breath but may have good oxygen levels.
1.2 Explain the goal and benefits of supplementary oxygen in COPD to the participants.

Suggested script for the Facilitator:

Goal:
- To keep the oxygen levels in your blood high enough to meet the body’s needs.

Benefits:
Oxygen may help you to:
- Improves survival. You may live longer.
- Improves heart function. Your heart may work more efficiently.
- Reduce the difficulty you experience while breathing. You may feel less short of breath.
- Decrease your feelings of fatigue. You may feel less tired.
- Improve your ability to sleep. You may feel more rested.
- Improve your exercise tolerance. You may be able to do more exercise.
- Improve your quality of life. You may be able to do more, live better and longer.
- Improve your well-being and comfort. You may feel better.
2. Assessment process for supplementary Oxygen

2.1 SUPPLEMENTARY OXYGEN ASSESSMENT PROCESS

*Present this section in an Interactive Way*

2.1.1 Explain the oxygen assessment process to the participants.

**Suggested script for the Facilitator:**

- Not everyone who has COPD needs to use oxygen. Your doctor will measure the amount of oxygen in your blood using one of two tests:
  1. Arterial blood gas: a needle is inserted into an artery in your wrist to take some blood.
  2. A pulse oximeter: a small clip is placed onto the tip of your finger or earlobe.

- Your doctor will review the results and only people who meet specific criteria will need long-term oxygen therapy. In other words, those who do not have enough oxygen in their blood need long-term oxygen therapy. ($PaO_2 < 7.3kPa$ or $SaO_2 < 88\%$)

- There may be other situations where you may need to use oxygen; for example, if your body needs oxygen because you are diagnosed with a specific medical condition, if you need oxygen for sleep or during an exacerbation (a significant worsening of your usual symptoms). In these situations, oxygen is only given for a short length of time.

**Note to the facilitator:** Inform participants that only their doctor can decide if they need long-term oxygen therapy.

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2.1.2 Establish the oxygen use of the participants.

Suggested questions:

- How many hours per day has your oxygen been prescribed for?
- What flow rate of oxygen do you use?
- What type of oxygen equipment do you use?

Suggested script for the Facilitator:

- Long-term oxygen therapy is not addictive.
- Long-term oxygen therapy is a medication. Your doctor will prescribe the amount (flow rate and the length of time) of oxygen that you need to use.
- Home oxygen is usually a long-term treatment. Your oxygen prescription will depend on the severity of your COPD.
- Long-term oxygen therapy is effective only when you use it continuously for at least 15 hours/day because the human body cannot store oxygen. Greater benefits are seen in patients who receive long-term oxygen therapy for 20 hours per day.
- Other people only need oxygen for short periods of time when their oxygen levels are low, for example when they are in hospital with an exacerbation.
- Your doctor will tell you if you need to increase the amount of oxygen you take when doing physical activities, such as walking. This is because your body may need more oxygen to cope with the effort.

Note to the facilitator: Remind participants that they should use their oxygen exactly as it has been prescribed because too much or too little oxygen may not be helpful or can be harmful. Discuss individual oxygen prescriptions with each participant and ensure they have clear instructions with regards to:

- Oxygen flow rate (in litres per minute): If participants have different flow rates (for example: resting, with activities that require effort and sleeping) ensure they are aware of this.
- Duration of administration: At least 15 hours per day are necessary for the therapy to be effective.
- Type of equipment (supply) that will provide the oxygen.

Check that participants have had their oxygen prescription reviewed within the last year. This review should include pulse oximetry.
3. Oxygen and Oxygen Equipment

3.1 OXYGEN DELIVERY DEVICES

Present this section in an interactive way

3.1.2 Discuss with participants the different devices for delivering oxygen.

Use the poster “Long-term Oxygen Therapy” to support your teaching

Suggested script for the Facilitator:

- There are two types of oxygen equipment: oxygen concentrator and oxygen cylinder. These may be fixed or portable. Fixed equipment is used to deliver your oxygen at home while portable equipment is used to deliver your oxygen when you leave home.
- Each type of oxygen equipment is used with nasal cannula prongs or a mask.
- The best type of oxygen equipment for you depends on what you need the oxygen for, and how long you need to use it.

Oxygen Concentrators

Suggested questions:

- Does anyone use a fixed oxygen concentrator at home?
- Does anyone use a portable oxygen concentrator?

Suggested script for the Facilitator:

A fixed oxygen concentrator:

- Works by concentrating room air. This means it does not have to be refilled.
- Provides about the same concentration of oxygen as an oxygen cylinder.
- Can be used with up to 50 feet or 16 meters of oxygen tubing.
- Should be put in a central location in the home so that you can walk around the house. Some tubing connections can be used to give you more freedom around the home, but you should avoid multiple connections due to less effect and a higher risk for leaks.
- Has a flow meter. A flow meter sets the rate at which the oxygen will flow from the concentrator.
- Needs electricity to work, which means it will stop working if there is a power failure. (An alarm will notify you that the concentrator is not working.) In the mean time, use your back-up oxygen cylinder and call the oxygen supply company, agency or contact person.
- Makes a constant rumbling sound.
An oxygen concentrator is better for people who need oxygen for a large part of the day and night. It may be used when a person uses a lot of small cylinders. People who need oxygen when out and about or doing exercise or physical activity will need a portable oxygen cylinder or concentrator.

A portable oxygen concentrator:
- Is very similar to a fixed oxygen concentrator, but it’s smaller in size and more mobile.
- It also works by concentrating room air, meaning that it doesn’t need to be refilled.
- It is portable.
- It runs on battery power but must be charged at an electrical socket or in a car.
- It is approved for use on flights.
- Suitable for using on holiday.

Oxygen cylinder

Suggested questions:
- Does anyone use a portable oxygen cylinder?
- Does anyone use a fixed oxygen cylinder?

Suggested script for the Facilitator:

Oxygen cylinders:
- Carry a limited amount of oxygen.
- Do not need electricity to work.
- Have a flow meter. A flow meter sets the rate at which the oxygen will flow from the oxygen cylinder.

Portable cylinders are used when you go outside your home and are available in several sizes. A small portable cylinder can be carried. A medium-sized portable cylinder can be pulled in a cart. If you carry your cylinder on your shoulder or pull it in a cart you will be able to do more activities outside your home. If your oxygen cylinder does not provide enough oxygen for you to go out, it can be made to last longer using an oxygen saving device which is attached to the top of the cylinder.

A large fixed oxygen cylinder can be used in your home. Fixed cylinders are used in your home in case of an emergency, for example, when there is a power failure and your concentrator doesn’t work.
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Nasal cannula and facemask

Suggested question:
• Does anyone use nasal cannula or a facemask with their oxygen?

Suggested script for the Facilitator:
Nasal cannula:
• The oxygen will be delivered from the supply to your nose by means of the “cannula.”
• Blow your nose regularly to prevent secretions from building up in your nose.
• Breathe through your nose. Breathing through your mouth dries out the mucous membranes.
• If your nose is dry, use a water-based lubricant. Never use petroleum jelly (Vaseline®) or an oil-based lubricant.
• Clean your nasal cannula every day and change them on a regular basis (around every 3-4 weeks).
• Before attaching your nasal cannula, make sure the oxygen is flowing correctly out of the tips by immersing them in a glass of water (bubbles appear) or touching the ends of the cannula with a wet finger (cold sensation).
• You may need some time to adapt to the use of nasal cannula. There are different types of cannula and comfort adapters.
• If, for some reason, you cannot use nasal cannula you could consider using a simple facemask.

Connector tube:
• This is an extension tube that lets you move around the home while remaining connected to the oxygen supply.
• Make sure this tube is not twisted or caught, which would prevent the normal flow of oxygen.
• As with the cannula, you can immerse the tip of the tube in a glass of water to make sure the oxygen is flowing correctly.
• Avoid multiple connections: an excessive length of tubing (more than 30 metres) and multiple connections increase the chance of leaks and reduce the amount of oxygen you are inhaling.

Note to the facilitator: Advise participants that they should clean their oxygen equipment on a regular basis. Advise them to speak to a member of the pulmonary rehabilitation team, their doctor or their oxygen provider for information on how to care for their oxygen equipment.
4. Learning to live with home oxygen therapy

4.1 EMOTIONAL AND SOCIAL IMPACT OF USING SUPPLEMENTARY OXYGEN

Present this section using Group Discussion

4.1.1 Discuss with participants their feelings and worries about using oxygen.

Use the poster “Oxygen equipment” to support your teaching.

Suggested questions:

- Are you afraid of using oxygen?
- Are you anxious about your need to use oxygen?

Suggested script for the Facilitator:

- Using oxygen can make you feel different about the way you look and feel about yourself. You may feel anxious and burdened.

- Don’t worry, these feelings are normal. Most people who use oxygen experience these feelings. They often worry about:
  - Emotional feelings, for example perception of the disease progression, feeling of dependency, loss of self-esteem
  - Family-related and social consequences, for example limited recreational activities and mobility, isolation
  - Equipment-related constraints, for example noise, tubing, deliveries

4.1.2 Discuss with participants strategies they can use to help them cope better with using oxygen.

Use the poster “Energy Conservation” and page 37 of the patient information booklet “How to manage reactions to stress” to support your teaching.

Suggested question:

- What strategies could you use to help you cope better with using oxygen?

Suggested script for the Facilitator:

- There are a number of strategies you can use to help you cope better with using oxygen:
  - Don’t keep your fears to yourself
  - Discuss your feelings with a member of the pulmonary rehabilitation team, your doctor or a member of the community respiratory team
  - Discuss your feelings with your family and friends
  - Make sure your oxygen equipment is suitable for your needs, for example a portable device may increase your mobility
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- Share with your family and friends the benefits of oxygen
- Use energy conservation principles to help you perform daily activities better, for example pace yourself and prioritise your activities
- Use strategies to manage reactions to stress, for example maintain a positive attitude and keep doing the things you enjoy
- Support groups are a great opportunity for patients with lung conditions to get together and receive support and advice
- Accept that you have to make some changes. Respect your limitations.

4.1.3 Discuss with participants the positive effects of using oxygen.

Suggested question:
• Can anyone suggest positive effects of using oxygen?

Suggested script for the Facilitator:
• Using oxygen can help you do more things:
  - You may be able to do more activities like making your bed, getting dressed, taking a bath or shower, etc.
  - You may be able to do more physical activity and exercise.
• Oxygen taken when sleeping may help improve the quality of sleep for some people.

Note to the facilitator: Advise participants that if they wish to speak to someone about their feelings and concerns they should let a member of the pulmonary rehabilitation team know.

4.1.4 Discuss with participants some strategies they can use to ensure that they use their oxygen safely.

Suggested script for the Facilitator:
• Some people are afraid of using oxygen because they think it is dangerous.

Suggested question:
• What strategies can you use to ensure that you use your oxygen safely?

Suggested script for the Facilitator:
• If you feel drowsy, fatigued, confused or have morning headaches then you should contact your GP immediately. This could indicate a worsening of your condition and your oxygen prescription may need to be adjusted.
• Store your oxygen in a dry, cool, well ventilated room.
• Make sure that your oxygen tubing does not get trapped, for example in door frames, as this can reduce oxygen flow. Also be aware that tubing can cause trips.
• Oxygen does not burn or explode, but it does fuel fire. To reduce the risk of a fire you should:
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GROUP INTERVENTIONS FOR EACH PHASE OF THE SESSION

- Never smoke while using your oxygen. If you smoke, the treatment may be less effective and you risk burns or causing a fire.
- Never let people smoke near your oxygen equipment. Clearly display a “No smoking – I’m on oxygen” sign.
- Always keep your oxygen equipment away from naked flames, such as candles and gas stoves. Oxygen supports combustion. If you have a gas stove, turn off your oxygen before you begin to use the stove. Electrical stoves do not cause problems.
- Do not oil or lubricate your oxygen equipment.
- Do not use your oxygen equipment when you are applying an oil-based product to your body (e.g. cream, make-up) or when you are using an aerosol container (e.g. deodorant, air freshener)
- Do not try to repair your equipment yourself.

- Always use your oxygen as prescribed by your doctor. Never change the flow rate. Only your doctor can change the flow rate prescription. Breathing in too much or too little oxygen can be harmful.

Note to the facilitator:

1. Advise participants that there are no or minor (dry nose and eyes) side-effects of long-term oxygen therapy if it is used properly. Oxygen prescription may need to be changed during a worsening of the underlying respiratory condition. Symptoms may include e.g. headaches (especially after sleeping), feeling drowsy, confused, or agitated or swelling (oedema) of the legs or ankles. Advise participants to contact their doctor immediately or go to Accident and Emergency if they notice the onset or increase of these symptoms.

2. Advise participants who have been prescribed long-term oxygen therapy and/or have been given an oxygen alert card and Venturi Mask (as per the BTS guidelines) to record this on their Action Plan in the usual medication section. Remind them that if they have an oxygen alert card they should show this to the ambulance and also take it with them to the hospital in an emergency.

3. Patients should be warned about the risks of fire and explosion if they continue to smoke when prescribed oxygen.
4.1.5 Discuss with participants some strategies they can use when wishing to travel.

Suggested questions:

- Has anyone had experience of travelling with oxygen?
- What issues do you need to consider before you travel with oxygen?

Suggested script for the Facilitator:

- Being on oxygen does not stop you from travelling but it does require some planning in advance.
- Make sure you take enough oxygen and medication with you for your travels. If you are travelling by plane and you bring medical supplies (e.g. medications, nebulisers), you should take a letter from your doctor describing your respiratory condition and listing all medical supplies and the amount you need. Keep your inhalers with you on the plane in your carry-on luggage in case you need them during the flight.
- If you plan to travel by train, bus or plane contact the travel company:
  - Some companies may provide you with oxygen during your journey. There are differences in the cost and availability of oxygen and the regulations of different train, bus and airline companies so contact the company before you book your ticket.
  - Also, if you get short of breath while walking inform the company so that you have help if you need it, for example, when getting to the departures gate at airports.
- If you plan to travel by plane inform your doctor. Your doctor may suggest you have a fitness-to-fly test to make sure your oxygen levels will be stable during a flight. If you need oxygen when you are flying it is important that you use it because the concentration of oxygen in the plane will decrease with the increase in altitude.
- Always buy travel insurance and inform the insurance company that you have a medical condition. Travel insurance for people with medical conditions is more expensive and difficult to obtain. However, if you do not inform the company you have a medical condition your insurance will not be valid. You should also check that the insurance covers any equipment you will be taking, for example oxygen equipment and nebulisers.
- If you are traveling within the UK your health professional can help you get oxygen free of charge. You must tell your health professional that you need oxygen as soon as possible and at least four weeks before your holiday. The oxygen supplies (concentrator, cylinder, nasal cannulae, masks, etc.) will be delivered to your destination and will then be collected at the end of the holiday.
- If you are travelling outside of the UK you will need to rent oxygen equipment once you reach your destination. Plan in advance so that the oxygen company has your equipment ready when you arrive.
- If you plan to travel by car, always make sure your oxygen equipment is secured in the back seat. Inform your insurance company that you carry oxygen in the car.
5. Summary of the session and assessment of participants’ understanding and self-efficacy

5.1 SUMMARY OF THE SESSION AND ASSESSMENT OF PARTICIPANTS’ UNDERSTANDING AND SELF-EFFICACY

Present this section using Group Discussion

Evaluate participants’ understanding and self-efficacy to use home oxygen therapy appropriately.

Use this opportunity to cover the key messages of the session.

Use Attachment 1 (Key messages: Long-Term Oxygen Therapy) to support your teaching.

Suggested questions:

• How well do you understand the benefits of oxygen for patients with COPD with low oxygen levels?
• How confident are you that you are able to use your oxygen therapy correctly?

Suggested script for the Facilitator:

• Some patients with COPD have a chronic lack of oxygen in the blood. If you are prescribed long-term oxygen therapy it aims to increase the amount of oxygen in your body.
• Your doctor will tell you how much oxygen you need to use, how long you should use it for and what equipment to use. They may tell you to use different flow rates or different equipment at rest, with activities that require effort or when sleeping. Use your oxygen exactly as it has been prescribed. If you feel drowsy, fatigued or breathless or have morning headaches then you should contact your GP immediately.
• Using oxygen is not dangerous as long as you use it with care and as prescribed.
• It is important to stay physically active when you are on oxygen. Also, if you are planning to travel or go on holiday speak to your health professional who can help organise your oxygen needs.
• Using oxygen can make you feel different about the way you look and feel about yourself. These feelings are normal and there are a number of strategies you can use to overcome these feelings:
  - Don’t keep your fears to yourself.
  - Discuss your feelings with a member of the pulmonary rehabilitation team, your doctor or a member of the community respiratory team.
  - Discuss your feelings with your family and friends.
• If you wish to speak someone about your feelings and concerns about using oxygen speak to a member of the pulmonary rehabilitation team or to your GP.
Note to the facilitator: Inform participants that the key messages from this session are summarised on their key messages sheet and additional information can be found in their information booklets (Page 25).

If participants feel confident to use home oxygen therapy appropriately, ask them to continue applying the strategies taught in this session.

If some participants do not feel confident to use home oxygen therapy appropriately, make sure to refer these participants to their resource person to see them in an individual basis to investigate the reasons.

Closing the session

- Answer the questions of the participants.
- Learning contract: Ask participants to reflect whether they are using their oxygen appropriately and as prescribed by their doctor. Advise them if they have any queries or concerns regarding their oxygen then they should speak to their doctor.
- Evaluate the satisfaction of the participants with regards to the present session.
Attachment 1:

Long-Term Oxygen Therapy

Key Messages

• Some patients with COPD have a chronic lack of oxygen in the blood. The aim of the long-term oxygen therapy that your doctor has prescribed for you is to increase the amount of oxygen in your body.

• Your doctor will tell you how much oxygen you need to use, how long you should use it for, and what equipment to use. Use your oxygen exactly as it has been prescribed.

• Using oxygen is not dangerous as long as you use it with care and as prescribed.

• Your oxygen prescription may need to be changed during a worsening of your COPD. Contact your doctor immediately or go to Accident and Emergency if you notice the onset or increase of the following symptoms: e.g. headaches (especially after sleeping), feeling drowsy, confused, or agitated.

• It is important to stay physically active when you are on oxygen. Also, if you are planning to travel or go on holiday speak to your health professional who can help organise your oxygen needs.

• Using oxygen can make you feel different about the way you look and feel about yourself. These feelings are normal and there are a number of strategies you can use to overcome these feelings:
  – Don’t keep your fears to yourself.
  – Discuss your feelings with a member of the pulmonary rehabilitation team, your doctor or a member of the community respiratory team.
  – Discuss your feelings with your family and friends.

• If you wish to speak someone about your feelings and concerns about using oxygen speak to a member of the pulmonary rehabilitation team or to your GP.
LONG-TERM OXYGEN THERAPY
NOTES
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Living Well with COPD™
Chronic Obstructive Pulmonary Disease

A plan of action for life
For Pulmonary Rehabilitation
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