

2) Palliative/end-of-life care

A careful assessment should be made to determine the cause of breathlessness. Causes of breathlessness e.g. pleural effusion or airflow obstruction should be considered and treated. Patients with cancer at the end of life may have distressing breathlessness. Oxygen cylinder prescription should be provided at short notice in such circumstances without the need for a formal assessment.

Some patients with advanced non-malignant disease have refractory breathlessness despite optimal medical treatment of their underlying condition. Breathlessness in this situation is often multi-factorial, and patients will benefit from a multi-disciplinary service to consider not only the medical but social, psychological and spiritual aspects of care. However, when these patients are at the end of life, the need for home oxygen may reach the same level of urgency as for the cancer patient (above) and may require an oxygen prescription at short notice.

a) Non-pharmacological measures

There is evidence that the flow of cool air over the face can reduce the perception of breathlessness. Simple measures such as improving air circulation by using a fan should be considered.

If the patient is mobile and ambulant, physical training with physiotherapy or pulmonary rehabilitation can also reduce the perception of breathlessness and improve coping mechanisms.

b) Pharmacological treatment

Some patients may benefit from pharmacological treatment aimed primarily at relieving breathlessness. A number of drugs have been used in this situation and the most well known are the opioids and benzodiazepines. The evidence for their efficacy is very limited and safety data is lacking. However, the judicious use of these drugs in selected patients with careful monitoring can be tried.

c) Short-burst oxygen

Short-burst oxygen could be considered for those patients with distressing refractory breathlessness despite the above measures who do not fulfil criteria for LTOT. This should be discussed with the respiratory specialists.

3) Severe chronic heart failure and cluster headaches

A few patients with the above conditions may require home oxygen and this should be at the direction of cardiologists and neurologists respectively.

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Respiratory MCN

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Respiratory Managed
Clinical Network Guideline

Home Oxygen Prescribing in Adults

Respiratory MCN

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Background

Oxygen should only be prescribed for the treatment of hypoxaemia. There is no evidence of benefit for the use of oxygen in normoxaemia.

Oxygen is usually prescribed for long-term use to improve survival. There is little evidence that oxygen significantly improves breathlessness, irrespective of hypoxaemia.

Most patients tolerate mild hypoxaemia well.

Patient identification

The need for oxygen therapy should be assessed in patients with:

- Very severe airflow obstruction ($FEV_1 < 30\%$ predicted)
- Cyanosis
- Polycythaemia
- Peripheral oedema
- Raised jugular venous pressure

Pulse oximetry should be checked in the above circumstances. Patients should be referred to the respiratory department if the oxygen saturation is persistently $\leq 92\%$.

Indications

Long-term oxygen therapy (LTOT) is indicated for patients with chronic hypoxaemia with arterial oxygen tension (P_aO_2) ≤ 7.3 kPa when breathing air during a period of clinical stability.

In patients with COPD, FEV_1 should be $< 1.5L$ or 40% predicted. The presence of hypoxaemia with higher FEV_1 suggests there may be an additional cause and further investigations are required.

It is also indicated for patients with P_aO_2 between 7.3 kPa and 8.0 kPa in the presence of cor pulmonale or secondary polycythaemia.

Current smoking is a **contraindication** for oxygen therapy.

Assessment

Appropriate assessment for LTOT requires:

- A confident clinical diagnosis of the condition associated with chronic hypoxaemia.
- Optimum medical management of the condition.
- Clinical stability for at least 6 weeks prior to assessment.
- Measurement of arterial blood gases (two measurements at least 3 weeks apart).

It usually requires referral to a consultant physician in respiratory medicine for the above assessment.

Organisation of home oxygen therapy

Once a patient has been assessed to be suitable for LTOT, the following should be arranged:

- Oxygen concentrator prescription:
 - Oxygen flow rate
 - Duration of treatment per day
 - Consider need for provision of ambulatory oxygen
- Patient education:
 - Information about underlying condition
 - Principles of oxygen therapy
 - Principles of oxygen concentrator and other equipment
 - Home servicing arrangements
 - Safety issues
 - Contact details in the event of breakdown/problems
 - Offer family members referral to Stop Smoking Service, if applicable
- Patient follow-up:
 - Respiratory specialist outpatient
 - Nurse-led LTOT home follow-up Respiratory patients on concentrators for reasons of hypoxaemia

Modes of oxygen delivery

Oxygen concentrator

This is the most convenient and economical method of providing LTOT for those patients with significant hypoxaemia. To obtain benefit (i.e. improved survival), patients require to use this for at least 15 hours per day. There is evidence of additional benefit for increased use of oxygen.

Ambulatory oxygen

This is the provision of portable oxygen cylinders for use in the circumstances below:

- Patients with significant hypoxaemia with LTOT who are reasonably active and mobile and need to leave the house on a regular basis.
- Patients without chronic hypoxaemia but who show exercise-induced desaturation, improvement in exercise capacity with ambulatory oxygen and motivation to use oxygen outside the house. This should be discussed with respiratory specialists.

Short-burst oxygen therapy

This has traditionally been used for breathlessness in the absence of hypoxaemia. There is no firm evidence of benefit for the use of oxygen in this context and this practice should be discouraged.

Special situations

1) Hospital discharge

Provision of home oxygen should be avoided immediately on hospital discharge, when patients are recovering from an exacerbation. Oxygen levels can continue to improve over a period of 2-3 months. Patients should be reviewed to assess oxygen status when clinically stable.

However, there are some patients who have significant symptomatic hypoxaemia. These patients may require temporary home oxygen to facilitate discharge and should be discussed with respiratory specialists.