

Oxygen is a treatment for hypoxaemia not breathlessness. Provision of home oxygen can cause an emotional, physical and financial burden to patients it requires careful consideration, assessment and repeated patient education.

### **Long Term Oxygen Therapy (LTOT) is required when..**

1. Patient has stable disease i.e. no exacerbation in last 8 weeks
2. Patient has stable COPD and resting PaO<sub>2</sub> ≤ 7.3 kPa
3. Patient has evidence of peripheral oedema, polycythaemia or pulmonary hypertension and resting PaO<sub>2</sub> ≤ 8.0 kPa
4. Practical considerations should be given to install home oxygen concentrators in patients with high requirement for ambulatory oxygen e.g: patients with ILD

The BTS 2015 and ATS 2020 guidelines provide additional details on LTOT and AOT.

### **Ambulatory Oxygen Therapy(AOT) is required..**

1. When a patient is commencing LTOT and are active outdoors
2. When a patients SpO<sub>2</sub> drops ≥ 4% to <90% during chosen walk test
3. Whereby on repeat walk test endurance, distance or dyspnoea improves with AOT
4. Should be offered to patients who desaturate ≥ 4% to <90% and are participating in cardiac or pulmonary rehabilitation. If good adherence and benefit seen, patient can continue post programme
5. Caution: AOT is not an absolute requirement in patients who desaturate on exertion There is little evidence to suggest survival benefit. It should only be provided if use will improve QOL or exercise tolerance

For supportive clinical scenarios to understand when home oxygen should be requested you can ask your local Respiratory Nurse or Physiotherapist for support. Home oxygen suppliers offer technical supports via their phone lines

### **What equipment do I order?**

#### LTOT i.e. >16 hours/day

Requires a stationary concentrator. This machine contains sieve beds that remove all other gases from the air and provides oxygen directly to the patient. Typical purity 88-92%, powered by electricity – Large back up cylinder (8 hours) provided in event of power cut also supplied.

#### AOT i.e. – Oxygen used during ambulation

Multiple modalities/choices that depend on patients mobility/dexterity/cognition/O<sub>2</sub> requirement and lifestyle. No one size fits all, requires individual assessment.

*Basic package* – provides cylinders with back pack or trolley. Plus conserving devices for suitable patients.

#### *POCs – Portable Oxygen Concentrators*

Require titration and nasal breaths to trigger. Not suitable for patients requiring higher doses or those mouth breathing

#### *LOX – Liquid Oxygen*

Requires LOX specific risk assess as not suitable for all homesteads. Requires detailed education and further risk assess from suppliers

### **Re- Assessment of need**

- New patients should receive a repeat review within 3 months of first commencing LTOT
- However, frequency of re-assessment will depend on speed of disease progression or severity e.g.: ILD, Type2RF, those on NIV
- ATS expert opinion suggests follow up every 6 months to ensure adequate titration, to confirm requirement and usage
- Assessment should include an ABG and 6MWT to assess for hypercapnoea or acidosis



Figure 1. Examples of stationary and portable oxygen devices in the United States. Illustration by Patricia Ferrer Beals.

### **Additional considerations**

\*GOLD recommends patients provided with LTOT post discharge should be re-assessed after 1-4 weeks and at 12-16 weeks to assess if still required. (Should be counselled prior to discharge that removal may occur)

\*Home visits for patients deemed high risk for injury, in Nursing homes or at end of life may need to be considered where available.

\*Those experiencing burn injury were twice as likely to have been prescribed oxygen within the preceding 90 days

\*GOLD advises: resting oxygenation at sea level does not exclude severe hypoxaemia with air travel. Patients must arrange oxygen privately for travel outside of ROI. The [BTS](#) statement on air travel provides further informaton