Home Oxygen
And what about when your patient wants to take it home with them...........
Oxygen

Why do people need oxygen?

When should people be referred for oxygen assessment?

How do you give oxygen?

Special circumstances
Steps in the Development of Cor Pulmonale

Abnormal blood gases

Responsive respiratory centre
- Increased respiration
- Normalisation of blood gases
- Dyspnoea

Unresponsive respiratory centre
- Chronic hypoxia
- Pulmonary hypertension
- Cor pulmonale

Reproduced with permission from Education for Health
Disease progression

Abnormal blood gases (Respiratory failure)

- Renal hypoxia
- Pulmonary capillary constriction
  - Right heart strain
  - Right heart failure
- Peripheral oedema

Reproduced with permission from Education for Health
MRC Long-Term Oxygen Therapy (LTOT) Trial

Mortality in male patients

Mortality in female patients

NOTT and MRC trials
BTS Guidelines for Home Oxygen Use in Adults

British Thoracic Society
BTS Home Oxygen Guideline Group

Oxygen treatment
Words words words............

LTOT
AOT
POT
NOT
SBOT
LTOT ......Who?

- COPD/ILD/Cystic Fibrosis/ Heart Failure with a PaO2 < 7.3 kPa
- COPD/ILD/Cystic Fibrosis/ Heart Failure with a PaO2 <8.0 kPa + peripheral oedema, polycythaemia or PH
No

• On discharge from hospital
  (unless SPO2 <92%, breathless and unable to manage)

“unable to manage?”
Yes

• Don’t exclude COPD with hypercapnia if they fulfill all other criteria
But...........

- Limited benefit in people who smoke
When to refer

- SpO2 < 92%
- SpO2 < 94% with peripheral oedema, polycythaemia, PH
- Minimum of 8 weeks after exacerbation
And........

• Give written info at the time of referral

8% rate in S. Yorks?
The Assessment

- ABG (grade A)
- 2 x ABG 3 weeks apart
- Initial titration ABG in 1L/min increments x 20 mins
- Target PaO2 > 8kPa
ABG sampling, performed twice at least 3 weeks apart, during a stable phase of their condition, identifies patients who may benefit from LTOT. Evidence level 1++

Use of earlobe CBGs alone for LTOT assessment leads to some patients inappropriately receiving LTOT. Evidence level 3
In many community commissioned home oxygen service—assessment and review (HOS-AR) services, it is not practical for patients to undergo ABG sampling during LTOT assessment. Under such circumstances, a combination of CBGs and oximetry (but not capnography) could be used as an alternative tool for initial assessment for LTOT, and after oxygen titration is complete. Some patients may receive LTOT unnecessarily using this approach, but it is unlikely that any patient would be inappropriately denied LTOT. (✓)
The follow up

• ABG after 3 months
• Then 6+12 months later and thereafter?
• Home or hospital
• Specialist home oxygen team
• Home visit at 4 weeks by RSN or other expert
Equipment

- 85-96% Oxygen max.
- > 1.4 hours/day
- Over 8l/min – T piece with equal flow from each
- Filter change weekly
- Noise
- Non-hypercapnic patients initiated on LTOT should increase their flow rate by 1 L/min during sleep in the absence of any contraindications. (Grade B)

- Patients initiated on LTOT who have cognitive, visual or coordination impairments, may not be able to safely manipulate their own flow rates and should be maintained on a single flow rate. (√)
Patients who develop a respiratory acidosis and/or a rise in PaCO₂ of >1 kPa (7.5 mm Hg) during an LTOT assessment may have clinically unstable disease. These patients should undergo further medical optimisation and be reassessed after 4 weeks. (√)

Patients who develop a respiratory acidosis and/or a rise in PaCO₂ of >1 kPa (7.5 mm Hg) during an LTOT assessment on two repeated occasions, while apparently clinically stable, should only have domiciliary oxygen ordered in conjunction with nocturnal ventilatory support. (√)
What do we think........? ???

• In the absence of hypercapnia increase by 1L/min during sleep
• Can use CBG during titration – for pH and PaCO2
• A rise in PaCO2 of > 1kPa on 2 repeated occasions during assessment should have NIV
NOT ..........who?

Heart failure with evidence of sleep disordered breathing (SDB)

BUT

• Rule out OHVS, OSA etc
• Optimise HF treatment
No

- Nocturnal hypoxaemia in COPD (who don’t meet LTOT criteria)
- No benefit in CF or ILD either
POT

• No place with no hypoxaemia
• Only after assessment for opioid therapy and non pharmacological interventions
AOT

• Patients who meet LTOT criteria and mobile outside the house
• LTOT patients where it improves ability to achieve > 15 hours/day
• LTOT patients who need 24 hours/day for hospital appts etc
• For PR after formal assessment to show improvement in endurance
• In ILD/CF with disabling breathlessness as a last resort
Ambulatory

- Fall in SaO₂ of 4% to a value of <90%
- On LTOT and mobile
- Exercise test and response to supplemental O₂
- Ideally after pulmonary rehabilitation
- Review after 2 months to assess real usage: diary card, interview, O₂ usage
- This can now only be prescribed by the Specialist Service

Grading

Grade 1 – LTOT with low activity
Grade 2 – Mobile LTOT
Grade 3 – Patients with exercise desaturation but not on LTOT
NO

• For COPD who don’t meet LTOT criteria
SBOT?

APART from

Cluster headaches at 12L/min via rebreathe mask.
(Should be ordered at the time on 4 hour order)
Evidence statements

- Measurements of oxygenation do not correlate well with the subjective experience of dyspnoea in patients with cancer or end-stage cardiorespiratory disease. Evidence level 2+
- Hypoxaemic patients do not experience a significant difference in symptoms between air and POT despite having improved oxygen saturations when administered oxygen. Evidence level 2+
- Non-hypoxaemic patients or those with mild levels of hypoxaemia who would not normally qualify for LTOT do not experience symptomatic benefit with POT compared with air. Evidence level 1++
- Opioids are significantly better than POT in reducing the intensity of dyspnoea in non-hypoxaemic or hypoxaemic patients. Evidence level 1+
Good practice point

- Patients with ILD who experience severe breathlessness could be considered for palliative oxygen therapy (POT). (√)
Difficult questions?….

• What do I do nurse when……….
  – I want a weekend away, a holiday, or have been admitted from home to a hospice or care home for a period of respite care
  – the patient has a second (holiday) home, where he stays on a regular basis or where a patient stays with family or friends each weekend
  – a patient is able to attend school or work
It’s Easy!

- Patient contacts the oxygen company themselves!
- Don’t need to cancel if specified dates are given
- Patient’s responsibility to check with holiday destination
- Need at least two weeks notice (more at peak times)
And Further Afield?

- Oxygen supplier will give advice
- Will be a charge usually
- May need a flight assessment
- In flight oxygen costs can vary
- http://www.blf.org.uk/
DANGER

OXYGEN, NO SMOKING
NO OPEN FLAMES

No Mobile Phones
Explosion at old people's home

"It was a horrific scene on arrival."

"The council has confirmed to us that no gas was used on the premises, but we know that the victim suffered from breathing problems and had some breathing equipment, including an oxygen cylinder in the flat."