

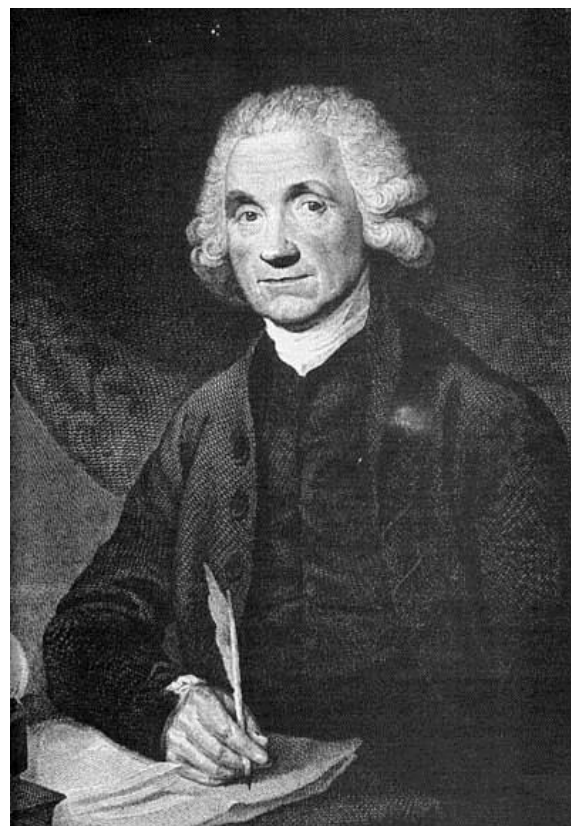
# Oxygen use – What is the evidence?


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Lead respiratory Nurse  
BHNFT

# In the beginning...

## ▶ Joseph Priestley 1733–1804

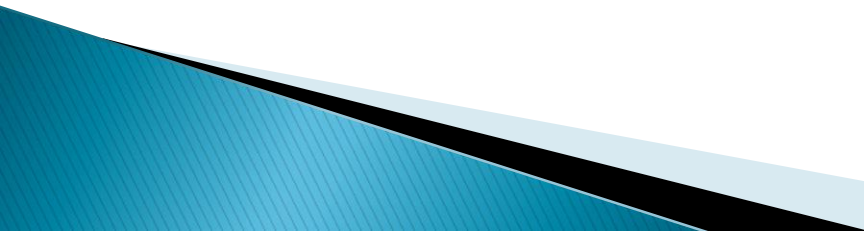
- Born in Parish of Birstall, Leeds
- Obtained a colourless gas by heating mercuric oxide.  
Recognised that the candle flame would burn brighter in “dephlogisticated air”.



- ▶ “Who can tell but that in time this pure air may become a fashionable article in luxury”
  - ▶ Oxygen first used clinically in dental anaesthesia in 1868
  - ▶ 1885, oxygen first used in the treatment of bacterial pneumonia
  - ▶ Nasal prongs came into use around 1900
- 

- ▶ Between 1900–1950 oxygen was used medically for the treatment of bacterial pneumonia
- ▶ 1958 Cotes & Gilson – first published use of ambulatory oxygen
- ▶ By the mid 50s domiciliary oxygen was very popular:
  - Eg In Wales in 1955 (pop. 2.5m) 860 pts were using oxygen, all using cylinders

# Landmark studies: NOTT 1980

- ▶ 203 patients
  - ▶ Patients with hypoxaemia
  - ▶ Randomised to either continuous or nocturnal oxygen
  - ▶ Oxygen delivered 1–4l/min depending on requirements, increased by 1l/min on exercise/sleep
  - ▶ At least 12 months follow up
- 

# Results

- ▶ 203 patients followed for an average of 19 months
- ▶ Overall mortality was 31.5% for all patients

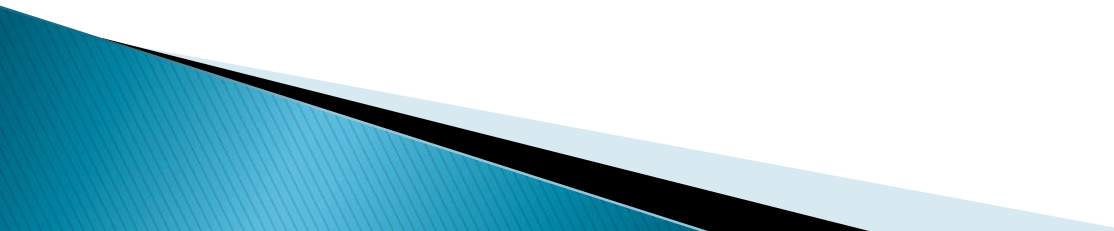
| Mortality | Nocturnal oxygen | Continuous oxygen |
|-----------|------------------|-------------------|
| 12 months | 20% (n=80)       | 11.9% (n=87)      |
| 24 months | 40%(n=27)        | 22%(n=37)         |

# Landmark studies: MRC 1981

- ▶ 87 patients
- ▶ Randomised to oxygen therapy or no treatment
- ▶ Minimum 15 hours a day

| Mortality | Treated | Controls |
|-----------|---------|----------|
| 5 years   | 45%     | 66%      |

# And then..

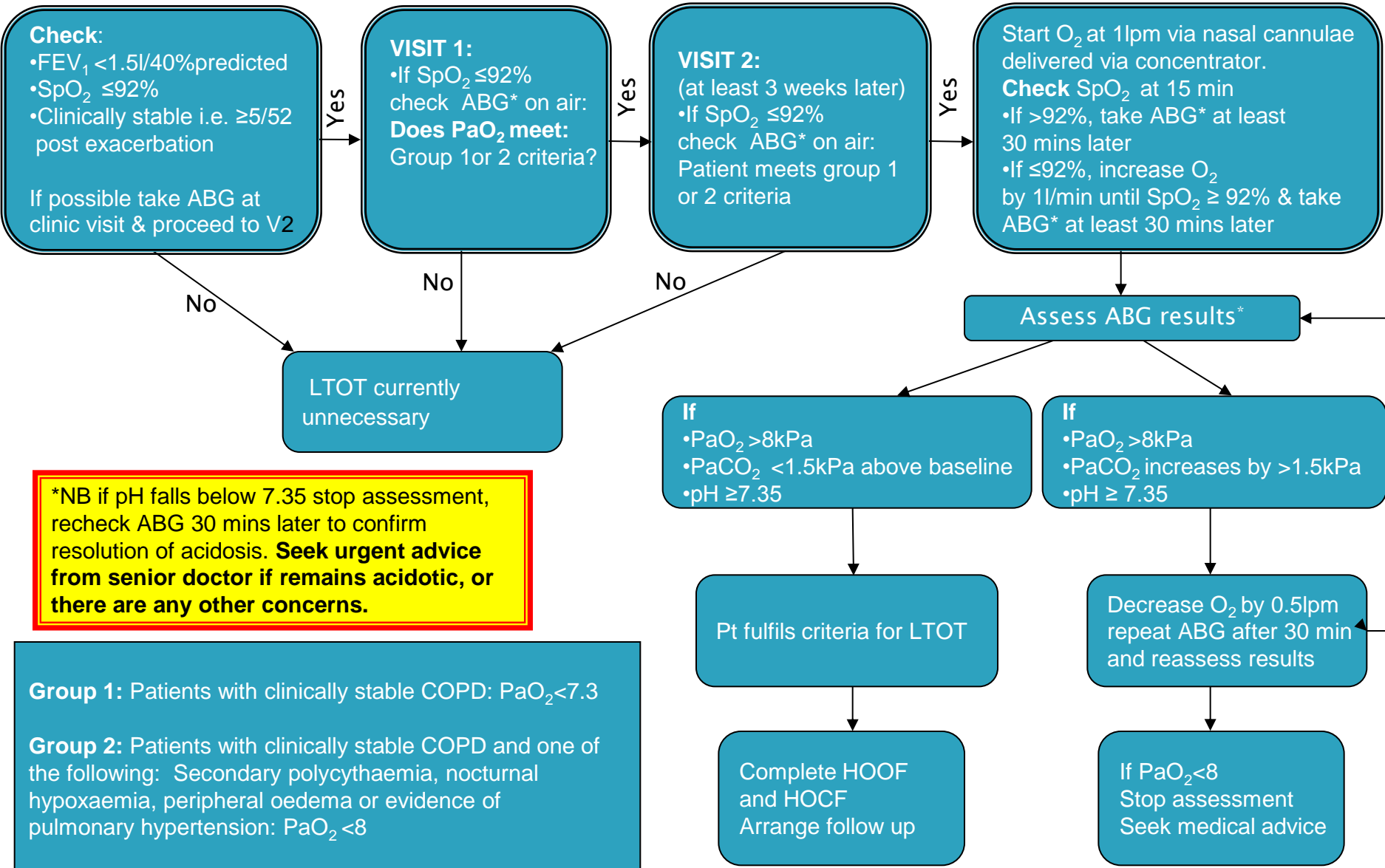
- ▶ 1985 Domiciliary oxygen concentrator service
  - ▶ 1999 Domiciliary oxygen therapy services clinical guidelines and advice for prescribers
  - ▶ 2006 Clinical component for home oxygen service in England & Wales
- 



# And now..

- ▶ 1 LTOT refers to the provision of oxygen therapy for continuous use at home for patients with chronic hypoxaemia ( $\text{PaO}_2 < 7.3\text{kPa}$ ) demonstrated on 2 occasions, not less than 3 weeks apart, during a period of clinical stability.

## LTOT Assessment for patients with COPD



\*NB if pH falls below 7.35 stop assessment, recheck ABG 30 mins later to confirm resolution of acidosis. **Seek urgent advice from senior doctor if remains acidotic, or there are any other concerns.**

**Group 1:** Patients with clinically stable COPD: PaO<sub>2</sub> < 7.3

**Group 2:** Patients with clinically stable COPD and one of the following: Secondary polycythaemia, nocturnal hypoxaemia, peripheral oedema or evidence of pulmonary hypertension: PaO<sub>2</sub> < 8

# Ambulatory oxygen

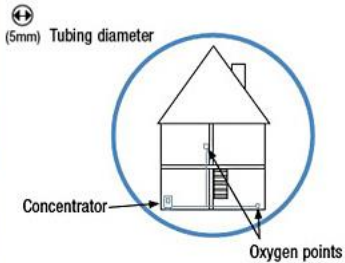
- ▶ Not recommended for patients without exercise desaturation, or patients with chronic heart failure
- ▶ When then?
  - LTOT patients requiring 24hrs of oxygen, who go out
  - Patients who desaturate on exercise & demonstrate improvements in exercise tolerance when using the equipment
    - 4% points, to a value below 90%

# Short burst oxygen therapy

- ▶ Defined as the intermittent use of supplemental oxygen at home usually for

- ▶ T **NO ADEQUATE EVIDENCE FOR FIRM RECOMMENDATIONS, FURTHER RESEARCH REQUIRED**

# Equipment



**Fig.1 The 3 main types of concentrators**

On average concentrators weigh around 25kg (55.1lb) and are 50–70cm (19.5 – 27.5ins) high. They make a slight humming noise, like a fridge, when switched on.

**AirSep Newlife Elite concentrator**

- A On/Off switch
- B Flow meter/Adjustment knob
- C Oxygen outlet
- D Indicator lights
- E Handle grip
- F Filter
- G Power cord
- H Circuit breaker reset button
- I Hour meter



**DeVilbiss concentrator**

- A On/Off switch
- B Flow meter/Adjustment knob
- C Oxygen outlet
- D Indicator lights
- E Handle grip
- F Filter
- G Power socket
- H Circuit breaker reset button



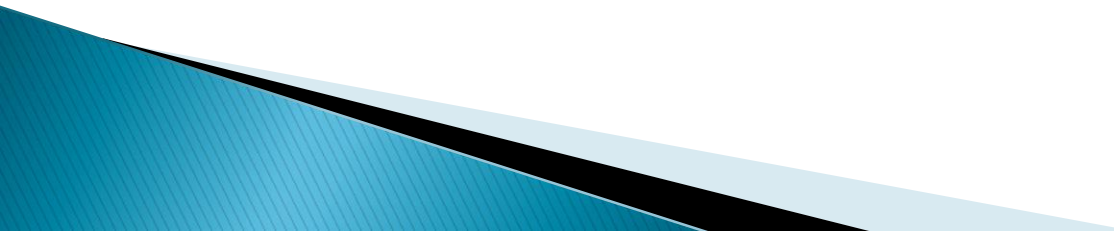
**Respironics Millennium concentrator**

- A On/Off switch
- B Flow meter/Adjustment knob
- C Oxygen outlet
- D Indicator lights
- E Handle grip
- F Filter
- G Power socket
- H Hour meter

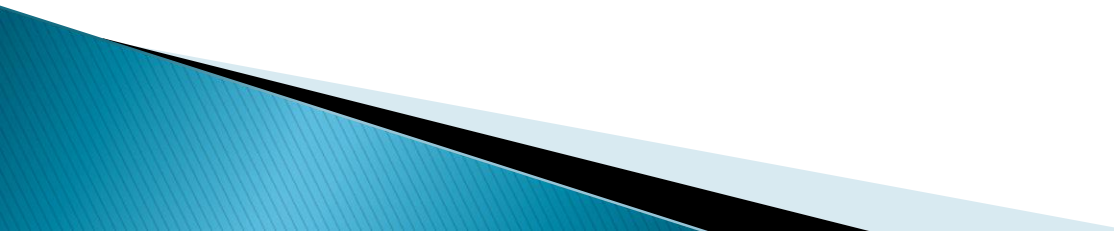


# **B**arnsley **RE**spiratory **A**ssessment & **THE**rapy

01226 431673

- ▶ Supported discharge for people with exacerbation of COPD
  - ▶ Primary care clinics
  - ▶ Hot clinics & primary care referrals
  - ▶ HOS-AR
- 

# Home Oxygen Service – Assessment & Review

- ▶ Moving assessments to the home
  - ▶ Data capture
  - ▶ Cost-effective prescribing
  - ▶ Expertise
- 



### Information

- [OXYfit Home](#)
- [Buy Oxygen](#)
- [Why we need Oxygen](#)
- [How to use OXYfit](#)
- [Reviews](#)
- [Oxygen Resources / Links](#)
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- [Oxygen News](#)
- [Frequently Asked Questions](#)
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- ### Latest oxygen news
- Oxygen therapy 'brilliant for helping people exercise more'**  
11/04/2011 16:59:12
  - Richard Lee aiding fitness through oxygen therapy**  
11/04/2011 13:03:36
  - New deal for portable oxygen user Alex Waller**  
08/04/2011 13:56:23
  - Oxygen equipment to help London Marathon entrant to train?**  
07/04/2011 17:07:28
  - Oxygen therapy to aid alertness on the road?**  
07/04/2011 14:07:12

### OXYfit - the purest oxygen in a can available in the UK

The human body cannot function properly without a regular supply of high-quality oxygen.

Boost your energy levels and lifestyle with a natural solution to the effects of pollution, illness and an over-busy modern life.

Our body's cells need a regular supply of high quality oxygen to function at peak levels and successfully renew as healthy cells. We live in an increasingly polluted and over-crowded environment and whilst we can live without food for weeks and without water for days, we would last just a few minutes without oxygen.

A poor supply of oxygen can cause a range of problems including:

- › Poor Physical Performance
- › Poor Brain Function
- › Low Energy
- › Headaches and Dizziness
- › Fatigue and Depression
- › Poor Immune Function



Learn more about [why we need oxygen](#)

### Sports and Fitness

A growing number of elite athletes and amateur sports enthusiasts are realising the benefit of breathing oxygen-enriched air as part of a regular training programme. Oxygen allows them to train harder, train longer and to recover faster. The natural result is that you can get more out of your training and get closer to your goals in a shorter space of time.

**MCE British Superbike Championship rider**  
**Simon Andrews**  
Simon says Oxyfit will be his not-so "secret weapon" in the intense battle for this year's title.  
[Read more...](#)

**CASE STUDY: Daniel Sims, 23, Triathlete**  
"Normally, after my intensive training sessions I would have to sleep during the day to recover, but this isn't the case now I'm breathing oxygen. I am now able to complete another training session in the evening!"  
[Read more...](#)

### Latest from OXYfit

The Leisure Industry Week show at the NEC was a fantastic success!

Ultramarathon runner Mike Buss takes on OXYfit!

Richard Gozdecki narrowly misses out on become world natural bodybuilding champion

Natural bodybuilder Richard Gozdecki was just pipped to the winning spot in Barcelona after winning the British championships and praises OXYfit for its help in pushing him further.

- ### Best sellers
- Oxygen in a can (8 litres) with inhaler cap  
£15.99  
[VIEW](#) [BUY](#)
  - Oxygen in a can (8 Litres) with breathing mask and tubing  
£23.99  
[VIEW](#) [BUY](#)
  - Oxygen in a can (110 Litres) with valve and mask  
£99.99  
[VIEW](#) [BUY](#)
  - Oxygen in a can (5 litres) with inhaler cap  
£11.99  
[VIEW](#) [BUY](#)
  - Oxygen in a can (2 litres) with inhaler cap  
£7.99  
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