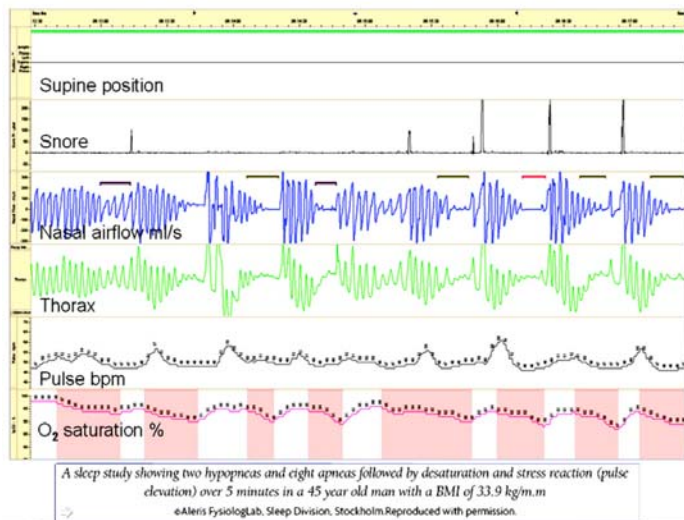


## A Cambridge very low-calorie diet (VLCD) improved obstructive sleep apnoea in just nine weeks in 26 out of 30 Swedish men.

Obstructive sleep apnoea (OSA) is characterised by cessation of airflow at the mouth and nose for more than ten seconds, occurring more than 30 times in a seven hour sleep, caused by airway obstruction (see figure). OSA causes snoring interrupted by pauses in breathing, choking and gasping during sleep, restless sleep and excessive daytime sleepiness and perhaps falling asleep at work or while driving a motor vehicle. Quality of life may be seriously impaired by general fatigue, poor concentration, irritability, forgetfulness, morning headaches, depression and sexual dysfunction. Obesity may cause OSA.



Johannsson and colleagues at the Karolinska Institute in Stockholm reported in a paper published in the British Medical Journal on-line on December 4th 2009 that sixty-three obese Swedish men with moderate and severe OSA were allocated to one of two groups. Thirty men followed a seven week Cambridge VLCD (554 kcal/d) followed by two weeks of rising dietary energy intake in preparation for a one year maintenance programme, and thirty-three men (the control group) received no treatment and followed their usual diet.

### In the Cambridge VLCD treated group:

- 26 out of 30 saw improvement in their OSA, of whom,
- Five were so improved as to be cured of their OSA
- Average weight loss was 18.7kg (average baseline weight was 113.4kg)
- Average reduction of waist circumference was 18.7cm(baseline was 120.1cm)
- There was a 3.8 cm reduction in neck circumference (baseline was 45.1cm)

- A little over one quarter of body fat (30.1% at baseline) was lost by nine weeks
- 22 out of 30 were not obese (BMI under 30) after nine weeks
- No one dropped out from the VLCD treated group [in contrast, two subjects out of 33 dropped out from the control group]

**In the control group** there was a small weight gain of 1.1kg (average) and very slight increases in neck circumference and body fat. Four subjects saw improvement in their OSA, five deteriorated and 24 out of 33 stayed unchanged. The differences between the VLCD group and the control group were highly significant.

### This paper is important because:

- It is the first (and only) published randomized controlled trial of VLCD in moderate and severe sleep apnoea
- It provides high quality evidence that a relatively short period of VLCD diet can result in effective weight loss and improve OSA in a majority of patients

Research subjects are now following a one year weight maintenance programme, results from which should be available late in 2010. In a recent study reported from the United States Foster et al showed that maintenance of more than 10kg weight loss was necessary to maintain an improvement in OSA for one year and Lojander et al (1998) have shown that this is possible in an observational one year study in 24 patients with OSA.

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