

Dying for a good night's sleep

There are several forms of sleep apnoea, but the obstructive type is the most common form, and this is known as obstructive sleep apnoea. This article explores the symptoms and management of the condition

Snoring is not only extremely tiresome for those who have to listen to it night after night, but it can also be one of the most commonly ignored symptoms of sleep apnoea, a condition which, if left untreated, can have severe health implications, including cardiovascular disease and excess mortality. It is also associated with metabolic syndrome, insulin resistance and type 2 diabetes.

There are several forms of sleep apnoea, but the obstructive type is the most common form, and this is known as obstructive sleep apnoea (OSA). OSA is a condition characterised by repeated sleep disturbance due to an upper airway collapse affecting the person's ability to draw air down into their lungs resulting in hypoxia.^{1,2} Each pause in breathing lasting at least 10

“During sleep vital functions for good health take place; when we do not get enough there are serious adverse cognitive, cardiovascular and metabolic consequences”

seconds, called an apnoea, can last from a few seconds to minutes and may occur up to 60 times or more each hour. The pauses in breathing or instances of unusually shallow breathing, and resulting arousal, lead to poor-quality sleep in short bursts that are not restorative.

The obstruction can be of physiological nature caused by large tonsils, large tongue (common in patients with Down's syndrome), low soft palate or small chin (retrognathia). OSA can be triggered by alcohol or sedative use but is more commonly due to obesity, especially around the neck; men who take a collar size of 17 inches or larger are at an increased risk.

Just take a few minutes and hold your breath for as long as you can and imagine what this may do to your body, especially if it is happening many times a night.

For those lying next to the affected person it can be very frightening, as sufferers often appear to have stopped breathing all together. More importantly, it can lead to a range of debilitating symptoms for the sufferer. Symptoms of obstructive sleep apnoea include:

- Snoring.
- Tired all the time.

- Witnessed apnoeas.
- Waking unrefreshed.
- Morning headaches.
- Irritability.
- Limited attention span.
- Overweight and/or weight gain.
- Poor memory.
- Reflux.
- High blood pressure.
- Sexual dysfunction.
- Depression.
- Nocturia.

Today, as many as one in three people average about six hours of sleep per night. This is very different to the average sleep time of 40 years ago, when our parents or grandparents slept for about eight hours every night. During sleep vital functions for good health take place; when we do not get enough there are serious adverse cognitive, cardiovascular and metabolic consequences.

Key risk factors

- Diabetes. Numerous independent studies have demonstrated that sufferers of sleep apnoea are at an increased risk of diabetes, people living with diabetes are at an increased risk of sleep apnoea.^{11,12}
- Sleep apnoea increases insulin resistance and is independently associated with an increased prevalence of the metabolic syndrome.¹³

Box 1. Conditions associated with obstructive sleep apnoea

- Drug resistant hypertension (80%)³
- Obesity (70%)⁴
- Congestive heart failure (76%)⁵
- Pacemakers (59%)⁶
- Atrial fibrillation (49%)⁷
- Type 2 diabetes (48%)⁸
- All hypertension males (37%)⁹
- Coronary heart disease (30%)¹⁰

Jane DeVille-Almond

Senior Lecturer, Adult Primary Care
University of Wolverhampton
Vice Chair
National Obesity Forum

- Four out of five sleep apnoea patients have metabolic syndrome.
- OSA is known to be a risk factor for the development of hypertension, and the treatment of sleep apnoea with CPAP therapy has been shown to significantly reduce blood pressure and reduce cardiovascular events overall.¹⁴
- Obesity. In fact, 40% of patients with a body mass index (BMI) over 40 have significant obstructive sleep apnoea. Ironically, sleep deprivation can drive appetite due to a decrease in leptin and increase in ghrelin secretion in people with poor sleep quality.¹⁵
- OSA is three times as common in older adults as a result of lost muscle mass due to ageing.¹⁶
- Men are twice as likely as women to suffer from OSA.¹⁷
- Incidents of OSA in women increase after the menopause.¹⁸
- Alcohol and/or sedatives increase the likelihood of suffering from apnoeic episodes.¹⁷
- OSA is linked to daytime somnolence (sleepiness) increasing road traffic accidents seven-fold, making it a risk factor for people who work in areas such as long-distance lorry driver, machine operator etc.¹⁹

There are increasing numbers of studies to show that OSA is independently associated with insulin resistance and type 2 diabetes, and with this in mind it is becoming extremely important that healthcare professionals have a system in place to appropriately assess, screen and refer the millions of patients who would benefit from further investigation at a sleep clinic.²⁰

As healthcare professionals, we often focus on the treatment of a disease, yet pay little attention to a person's quality of life. Having a 'good night's sleep' has to be up there as one of the most fundamental needs of human beings. Ultimately, people who are deprived of sleep, whether suffering from other chronic diseases or not, will end up with a poorer quality of life.²¹

Identifying OSA is not difficult, but it is often missed as other avenues are often explored first. Associate Professor Berg from the University of Lund in Sweden believes that all diabetic patients, along with those thought to be at risk, should be screened and suggests that patients get asked the following five questions.²²

- Is snoring present?
- Has apnoea been witnessed?
- Unrestful sleep?
- Sweating and/or nocturia?
- Are you tired all the time?

Treatment options

- Weight loss and lifestyle changes
- CPAP machine - a flow generator with mask is worn during sleep to gently and quietly provide the

individual with air, acting as a stent to ensure the airway remains open avoiding episodes of apnoea. The masks for these machines are becoming much less intrusive with designs to match the patient's needs (see Figure 1).

- Mechanical treatments such as a mandibular repositioning device (MRD) - repositions the jaw and opens the airways.
- Surgical treatment - most common in children eg. tonsillectomy

We know that OSA is associated with many adverse outcomes, such as type 2 diabetes, hypertension and CVD, and increases the risk of road traffic accidents; so it is crucial that we identify patients who suffer with it.

Furthermore, OSA is relatively easy to diagnose and treat, and ultimately improves a patient's quality of life making it even more important that screening is included in our assessment tools and appropriate action is taken when necessary. ●

References

1. Punjabi NM. The epidemiology of adult obstructive sleep apnoea. *Proc Am Thorac Soc* 2008;5:136-43.
2. Young T, Peppard PE, Gottlieb DJ. Epidemiology of obstructive sleep apnea: a population health perspective. *Am J Respir Crit Care Med* 2002;165:1217-39.
3. Logan AG, Perlikowski SM, Mente A et al. High prevalence of unrecognized sleep apnoea in drug-resistant hypertension. *J Hypertens* 2001;19:2271-7.
4. O'Keefe T, Patterson EJ. Evidence supporting routine polysomnography before bariatric surgery. *Obes Surg* 2004;14:23-6.
5. Oldenburg O, Lamp B, Faber L, Teschler H, Horstkotte D, Topfer V. Sleep-disordered breathing in patients with symptomatic heart failure: a contemporary study of prevalence in and characteristics of 700 patients. *Eur J Heart Fail* 2007;9:251-7.
6. Garrigue S, Pépin JL, Defaye P et al. High prevalence of sleep apnea syndrome in patients with long-term pacing: the European Multicenter Polysomnographic Study. *Circulation* 2007;115:1703-9.
7. Gami AS, Pressman G, Caples SM et al. Association of atrial fibrillation and obstructive sleep apnea. *Circulation* 2004;110:364-7.
8. Einhorn D, Stewart DA, Erman MK, Gordon N, Philis-Tsimikas A, Casal E. Prevalence of sleep apnea in a population of adults with type 2 diabetes mellitus. *Endocr Pract* 2007;13:355-62.
9. Sjöström C, Lindberg E, Elmasry A, Hägg A, Svärdsudd K, Janson C. Prevalence of sleep apnoea and snoring in hypertensive men: a population based study. *Thorax* 2002;57:602-7.
10. Schäfer H, Koehler U, Ewig S, Hasper E, Tasci S, Lüderitz B. Obstructive sleep apnea as a risk marker in coronary artery disease. *Cardiology* 1999;92:79-84.

11. Botros N, Concato J, Mohsenin V, Selim B, Doctor K, Yaggi HK. Obstructive sleep apnea as a risk factor for type 2 diabetes. *Am J Medicine* 2009;122:1122-27.

12. Young T, Peppard PE, Gottlieb DJ. Epidemiology of obstructive sleep apnea: a population health perspective. *Am J Respir Crit Care Med* 2002;165:1217-39.

13. Spiegel K, Leproult R, Van Cauter E. Impact of sleep debt on metabolic and endocrine function. *Lancet* 1999;354:1435-39.

14. Barbé F, Durán-Cantolla J, Capote F. Long-term effect of continuous positive airway pressure in hypertensive patients with sleep apnea. *Am J Respir Crit Care Med* 2010;181:718-26.

15. Knutson KL, Spiegel K, Penev P, Van Cauter E. The metabolic consequences of sleep deprivation. *Sleep Med Rev* 2007;11:163-78.

16. Punjabi NM. The epidemiology of adult obstructive sleep apnea. *Proc Am Thorac Soc* 2008;5:136-43.

17. Durán J, Esnaola S, Rubio R, Iztueta A. Obstructive sleep apnea-hypopnea and related clinical features in a population-based sample of subjects aged 30 to 70 yr. *Am J Respir Crit Care Med*

2001;163:685-9.

18. Dancy DR, Hanly PJ, Soong C, Lee B, Hoffstein V. Impact of menopause on the prevalence and severity of sleep apnea. *Chest* 2001;120:151-5.

19. Stradling J. Driving and obstructive sleep apnoea. *Thorax* 2008;63:481-3.

20. Report from the symposium 'The Forgotten Millions', sleep apnoea and the metabolic syndrome. EASD, 2010. www.diabetes-symposium.org

21. Martínez-García MA, Soler-Cataluña JJ, Román-Sánchez P, González V, Amorós C, Montserrat JM. Obstructive sleep apnea has little impact on quality of life in the elderly. *Sleep Med* 2009;10:104-11.

Resources

RealSleep

W: www.osauk.org

Healthy Sleep and Diabetes

W: www.bettersleepanddiabetes.com

Doctors.net

W: www.doctors.net.uk

Free from back pain or your money back

DR MARIA CAFFERTY'S husband had suffered from lower back pain for many years. He'd visited many specialists, but had only temporary relief. Then he tried Flexibak.



Relieving back pain since 1999

"It was nothing short of a miracle" said Dr Cafferty, "He persevered with your product and is now free from back pain. If any work affects his back, he just uses it and immediately all pain is gone."

Flexibak works by traction, acupuncture and massage. Use it just a few minutes a day – it relaxes the muscles, eases compressed discs, helps restore flexibility and relieves back pain.

only £59.95 plus £6.95 P&P



Flexibak is proven to work for more than 8 out of 10 sufferers.

It will work for you – or simply return it within 60 days for your money back.

Put back pain behind you today - contact us now:

0800 085 0900 www.flexibak.net

DESIGNED BY AN OSTEOPATH CLINICALLY TESTED ENDORSED BY DOCTORS



A Revolutionary Hydrophilic Catheter

The VaPro intermittent catheter uses sterile water vapour to activate the catheter coating, making the catheter ready to use right out of the packaging, with no need to add water.

The catheter is designed to be:

- Ready to use
- Spill-free
- Hygienic

Discover more about the VaPro intermittent catheter and receive FREE samples for your own evaluation.

Visit: www.cathetersample.co.uk
 Freephone: 0800 521377
 e-mail: samples.uk@hollister.com



Ensure that VaPro is always used in accordance with the directions for use. Hollister and logo, VaPro and "Attention to Detail. Attention to Life." are trademarks of Hollister Incorporated. ©2011 Hollister Incorporated. CC0036.



Attention to Detail. Attention to Life.