



SLEEP APNOEA / HYPOPNEA

The facts about Sleep Apnoea/Hypopnea

- It is estimated that about 110,000 people in the UK suffer from sleep apnoea. Prevalence is higher in men than in women and higher in those who are overweight^{1,2}
- Obstructive Sleep Apnoea (OSA) is one of the most common sleep disorders. It's frequency is similar to that of Type 1 diabetes and twice that of severe asthma³
- At least three in every thousand men have severe sleep apnoea⁴
- It affects an estimated 4% of males and 2% of females in the UK, although it is thought to be considerably higher in specific groups and occupations, such as long-distance lorry drivers, where the consequences can be fatal or lead to serious injury if left undiagnosed and un-treated⁵
- It is estimated that only one in 10 patients with the syndrome has so far been diagnosed and treated. The rate of treatment in the UK is lower than most other developed countries⁶
- Untreated cases of obstructive sleep apnoea are costing the NHS £432million per year. This figure is based on the fact that 80% of patients are unaware of the condition and do not seek treatment, leading to hospital admissions and treatment for related conditions e.g. cardiovascular disease⁷
- Treating 500 patients for obstructive sleep apnoea/hypopnea syndrome for five years could be expected to prevent one fatal road accident, 75 accidents that cause injury and 224 accidents that involve damage to property. This equates to £5.3million saved against an estimated treatment cost of £0.4million⁸
- Obstructive sleep apnoea patients are prevented from driving whilst awaiting treatment⁹ and any delay in treatment can have serious implications for employment
- Sufferers have a seven-fold increased risk of road accidents while driving¹⁰

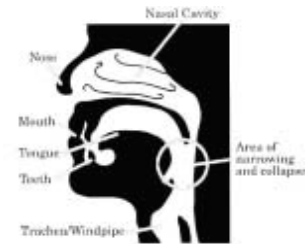
More about Sleep Apnoea/Hypopnea

- There are two types of sleep apnoea, obstructive sleep apnoea and central sleep apnoea:
 - The more common type is obstructive sleep apnoea which is usually caused by narrowing of the throat during sleep as a result of the relaxation of soft tissue in the back of the throat and tongue. This reduces or blocks the passage of air into the lungs during sleep. Sufferers usually resume breathing within a few seconds, but periods of as long as sixty seconds are not uncommon in serious cases. Other causes of obstructive sleep apnoea are dealt with below.

- The other type is central sleep apnoea which is extremely rare. This is caused by a problem in the central nervous system (particularly the areas of the brainstem responsible for the respiratory drive) causing irregularities in the brain's normal signals to breathe

- A combination of obstructive and central sleep apnoea is called mixed sleep apnoea

- An **Apnoea** is a breathing pause and **hypopnoea** is a marked reduction in breathing. These result from a significant narrowing or blockage of the throat during sleep. When a person is awake the throat muscles contract to keep the throat open when breathing in. Sleep relaxes all the muscles and so the throat tends to narrow when air is sucked in



- If the throat narrows to a slit, the disturbed air flow produces the vibration and noise of snoring. This itself is not medically harmful, but if the throat narrows further to block or very nearly block then the individual fights for breath until they wake themselves up. This is so brief that it is not normally recalled in the morning but is sufficient to activate the throat muscles again
- The subject takes in a few deep breaths and then falls rapidly back to sleep and so the throat muscles relax again and further brief awakenings ensue
- This recurrent cycle of blockage, waking, sleep, blockage, waking, sleep, may happen up to once or twice per minute all night. The many hundreds of awakenings per night shatter sleep quality and are the main cause of excessive daytime sleepiness - the major symptom of the sleep apnoea/hypopnea syndrome

Who does Sleep Apnoea/Hypopnea affect?

- The typical person who has heavy snoring and sleep apnoea/hypopnea is an overweight middle-aged man with a large neck, usually taking a size 17 inch collar or more. However, there are many people with sleep apnoea/hypopnea who are not particularly overweight, and in some we simply do not understand why they have the condition
- In children the commonest cause is enlarged tonsils. Sleep apnoea/hypopnea is a common reason for recommending that a young child has a tonsillectomy which will often cure the problem.
- Sleep apnoea/hypopnea and heavy snoring, severe enough to interfere with sleep quality, is probably much more common than is realised

Causes of Sleep Apnoea/Hypopnea

- Sleep apnoea/hypopnea is caused by anything that increases the normal narrowing of the throat during sleep. Anything that makes the throat narrower to start with (for example,

enlarged tonsils or a set back lower jaw) means that it is easy for the throat to close off a bit more and block the airway

- A partially blocked nose causes pressures lower down in the throat which tends to suck the walls of the throat together when you breathe in. Probably the most important factor is being overweight with a large neck. Extra fat in the neck squashes the throat from outside, particularly as the throat muscles become floppier during sleep

Hypertension

- The sleep apnoea/hypopnea syndrome is associated with high blood pressure. The drops in oxygen level and the awakenings with each breathing pause are associated with a marked rise in blood pressure. These blood pressure surges, occurring many hundreds of times every night over years or even decades, result in sustained hypertension. This almost certainly results in an increased risk of myocardial infarction (heart attack) and stroke. It had been found that sleep apnoea is associated with a 23-fold increased risk of heart attack¹¹ and also that 73.8% of male stroke victims have sleep apnoea¹²

Symptoms of Sleep Apnoea/Hypopnea

- Severe daytime sleepiness is the main symptom of sleep apnoea/hypopnea. This sleepiness results from waking up regularly throughout the night. To start with, sufferers only feel sleepy during activities like reading, watching television or driving on motorways, but when the sleepiness gets worse it begins to interfere with most activities, with sufferers falling asleep while talking, eating or standing up.
- Poor performance at work can mean people lose their jobs. Sleepiness while driving or working machinery can be fatal (sleep apnoea sufferers are about seven times more likely to have a car crash¹³, and because sleepy people do not take evasive action, those crashes are more likely to be serious). There are regulations about driving if you have sleep apnoea/hypopnea. It is also advisable that severe sleep apnoea/hypopnea patients ask a doctor's advice about carrying a medical alert card with details of their condition because if they become unconscious (for example following an accident), they might need to be put on continuous positive airways pressure treatment (see treatment section below) to keep their breathing steady
- Snoring will usually have been present for many years and have gone well beyond a joke within the family. There are many other symptoms of sleep apnoea, as you'd expect in someone who is seriously sleep deprived, for example, irritability. However, the twin symptoms of snoring and daytime sleepiness are the best pointers for doctors

Diagnosis of Sleep Apnoea/Hypopnea

- The symptoms described above may lead to the suspicion of sleep apnoea/hypopnea. Often the person's partner has read an article about sleep apnoea and recognises that this must be what their partner has

- Once sleep apnoea/hypopnea is suspected then a sleep study is conducted to confirm the diagnosis. The person will then be referred to a hospital lung specialist. A variety of measurements can be made during the sleep study - without the person experiencing any discomfort. The oxygen levels in a person's blood can be measured continuously from a clip on their finger. Breathing can be monitored by putting belts around the person's chest and tummy. The quality of sleep can be estimated from monitoring wires stuck to the scalp and from the number of body movements the person makes. Video recordings with sound are often used so that the doctor can actually see exactly how obstructed the person's breathing is and how disturbed their sleep is

Treatment of Sleep Apnoea/Hypopnea

- Sleep apnoea/hypopnea can be effectively treated with a programme of weight loss, avoiding evening alcohol and continuous positive airway pressure (CPAP) therapy - a machine which blows a gentle stream of air in through the nose to keep the throat open during sleep. Recent studies (many funded by the British Lung Foundation) have shown that CPAP significantly reduces a patient's blood pressure. Further studies have also shown that CPAP therapy results in improvement in symptoms, sleepiness, cognitive function, intelligence quotient, quality of life, mood and driving abilities
- Some patients also benefit from dental devices to keep the lower jaw forward during sleep or by sleeping on their side or half propped up

Prevention of Sleep Apnoea/Hypopnea

- Obesity is a significant risk factor for sleep apnoea/hypopnea. This is because being overweight generally means the person has a large neck. This extra fat in the neck squashes the throat from outside, which consequently causes snoring, the main symptom of sleep apnoea/hypopnoea when the person is asleep. Although this is not the case for all sleep apnoea/hypopnea sufferers, obesity is the most common cause and therefore in these cases a weight control programme may lead to considerable improvement or even cure.

British Lung Foundation-funded research

Impairment of driving ability in people with sleep apnoea

- Dr John Stradling from Churchill Hospital in Oxford conducted research into the severity of driving impairment in participants who suffered from sleep apnoea compared to participants who did not suffer from sleep apnoea and to see if treatment by nasal CPAP could help
- The results showed that the driving skills of people with sleep apnoea were markedly reduced compared to a control group but that this could be improved with nasal CPAP

- Professor Neil Douglas and his team at the Scottish National Sleep Laboratory in Edinburgh have been at the forefront of refining this form of treatment and comparing it with other types of treatment, backed by the British Lung Foundation

Sleep Apnoea in children and hyperactivity

- Dr Stradling also carried out research into sleep apnoea in childhood which found that there is a relationship between children suffering from sleep disordered breathing and daytime problems such as hyperactivity. Relief of the sleep disorder by removal of the tonsils was found to improve children's behaviour

For further information, please contact:
British Lung Foundation
Telephone: 020 7688 5555
Email: parliamentary@blf-uk.org

References:

- ¹ Sleep Apnoea Trust www.sleep-apnoea-trust.org/faq.html
- ² Written answer to parliamentary question from Angela Smith MP to Iris Robinson MP - 07-06-04
- ³ <http://www.osaonline.com/prevalence.asp>
- ⁴ <http://www.sleep-apnoea-trust.org>
- ⁵ <http://www.osaonline.com/prevalence.asp>
- ⁶ Lung Report III (2003) The British Lung Foundation
- ⁷ http://www.sleeping.org.uk/news/documents/SOSreport_pages_29.06.04.pdf
- ⁸ http://www.sleeping.org.uk/news/documents/SOSreport_pages_29.06.04.pdf
- ⁹ http://www.dvla.gov.uk/at_a_glance/ch7_renal_respiratory.htm
- ¹⁰ Lung Report III (2003) The British Lung Foundation
- ¹¹ <http://www.osaonline.com/prevalence.asp?order=2>
- ¹² <http://www.osaonline.com/prevalence.asp?order=2>
- ¹³ Lung Report III (2003) The British Lung Foundation