Don't Fall Asleep!

In recent years, the UK motoring public have been reasonably well educated about the dangers of driving tired, but few people are aware of how the medically defined sleep condition Obstructive Sleep Apnoea (OSA) can dramatically increase the risk of being involved in a fatal or serious crash.

OSA is defined as excessive daytime sleepiness coupled with irregular breathing at night. It degrades problem solving performance, decision making and memory abilities, as well as causing mood and personality changes. It also increases the risk of developing high blood pressure, and is generally associated with a reduction in quality of life. But it can also be a fatal condition for drivers and/or other road users that are unfortunate enough to be caught in their wake. There have been many high profile and tragic cases of OSA sufferers falling asleep at the wheel, and these cases often involve long-haul male lorry drivers who are particularly vulnerable to developing this disorder, especially if they are middle-aged and overweight.

What is Obstructive Sleep Apnoea (OSA)?

OSA is the most commonly diagnosed sleep disorder and a significant public health problem. It is actually caused by repeated collapse of the upper airway in the throat, resulting in a loss of oxygen and arousal from sleep. Essentially, when we fall asleep, our throat opening muscles relax so that the throat gets narrower each time we inhale, preventing good air flow and causing the audible vibration (snoring) as the throat collapses. If the throat is so narrow that it is partially or completely blocked, the sleeper will actually stop breathing (apnoea: defined as cessation of breathing for a minimum of ten seconds) or battle for breath (hypopnoea: defined as a minimum ten second event) until they wake up with a loud snore or gasp, along with movements of the whole body. This awakening is sufficient to make their throat opening muscles work so they can breathe in again, but they usually fall asleep again so quickly that they don't recall the event at all. However, partners who have to sleep with OSA sufferers are usually well aware of this condition, especially when there can be as many as 400 to 500 apnoea episodes a night! Essentially, this means that the sufferer tends to sleep lighter and have less REM sleep, and the body fails to get the rest it needs to function adequately during the day.

What Causes OSA?

Men are especially prone to developing excessive fat around the neck, especially with age, which makes the throat narrower. In fact, once collar size reaches 17inches, there is a dramatic increase in risk of developing the condition. Consequently, about 50% of OSA sufferers are obese, with men much more likely to develop the condition than women. Around 4% of middle aged men are thought to suffer from the condition, which adds up to approximately 500,000 people (Young et al, 1993). Smoking and drinking alcohol substantially increase risk.

One of the most worrying aspects of this condition is that many sufferers go undiagnosed because the two most common symptoms (loud snoring and excessive daytime sleepiness) are often regarded as quite normal and medical attention is not deemed necessary, or sought.

The Hidden Dangers

Several studies coming from different parts of the world show that more work-related crashes are reported amongst those that experience daytime sleepiness and snore during sleep (Lindberg et al, 2001). Partly as a result of the sedentary nature of their jobs, there is a significant incidence of obesity amongst professional drivers - obesity is strongly associated with OSA. The relationship between OSA and road traffic collisions has been recognised for over two decades, but its real prevalence is unknown because crash statistics rarely report crashes that may have been due to suspected or declared sleepiness.

It has even been suggested that OSA may have an even more pronounced affect on driving than epilepsy (Alonderis et al, 2008).The first study to report the link between OSA and crashes was published in 1988, showing that individuals with OSA had a seven-fold greater risk of road traffic crashes than non-OSA sufferers, and the crash rate of sufferers was 2.6 times the rate of all licensed drivers in Virginia, USA (Findley et al, 1988). Later studies show that there may be as much as a 15-fold increase in risk for OSA drivers compared with those without the condition (Teran-Santos et al, 1999; Horstmann et al, 2000). In studies of simulated driving performance, OSA sufferers score worse than drunk participants on hazard detection and reaction time measures (George et al, 1996). Perhaps OSA drivers fail to respond fast enough to hazards, have 'microsleeps' whilst driving or simply fall asleep at the wheel.

As well as the high number of actual sufferers, it is suspected that as many as one in six professional drivers are going undiagnosed (Howard et al, 2004). At-work drivers that suspect they might be suffering from OSA often fail to report their condition for fear of losing their licence. But the risk of being involved in a crash is so great that this should really be the overriding fear and only greater publicity and awareness of the condition, and its potential repercussions, are going to change this state of affairs.

For example, the tragic case of the truck driver Paul Couldridge shows just how lethal this condition can be. After falling asleep at the wheel, he ploughed into a car on the opposite carriageway of the M20 in Kent, killing a couple traveling in their BMW. Couldridge had already been told by doctors to stop driving because they suspected he was suffering from OSA.

It emerged in court that he had nodded off in the cab of his vehicle 15 times on previous journeys, causing minor incidents, but he still continued to drive despite the obvious seriousness of his condition. Paul Couldridge was jailed for eight years and banned from driving for life

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The Treatment

Unless the condition is adequately treated - you should not drive! If you suspect you might be suffering from this condition, seek medical advice. A relatively cheap and now widely available screening tool for OSA is the pulse oximeter, which can be used overnight at home. With experienced interpretation, 80-90% of OSA cases are correctly identified.The recommended treatment is Continuous Positive Airway Pressure therapy (CPAP). CPAP functions as a pneumatic splint to open the airway, using a flow generator to deliver pressure through air tubing to a nasal mask worn during sleep. In March 2008, the National Institute for Health and Clinical Excellence (NICE) recommended that CPAP should be available throughout the NHS - so there really is no excuse not to seek treatment. You might look a bit like the elephant man with the tubing arching from your nose - but patients are often exhilarated to experience the best sleep they've had in years.

You can reduce your risk of developing OSA by losing weight and exercising more. Don't drink alcohol for three hours before going to bed. Avoid taking sleeping pills, sedatives and certain allergy tablets (antihistamines) before going to bed. You can also prop up your head when sleeping, which will help keep the airflow constant and increase the chances of you being able to drift into deeper sleep. Once diagnosed, the majority of individuals need CPAP treatment for life (unless they take steps to change their lifestyle), but the good news is that there is an instant effect on quality of life and the potential impact of treatment on crash risk is enormous. One study found that patients with OSA reported 0.93 sleep-related driving incidents (including crashes and near crashes) per 10,000 miles before treatment, but 0.14 after treatment.

And finally.....

It is clear that there needs to be a tightening up of the requirements for identifying potential sufferers of this potentially fatal condition. In particular, PSV and LGV drivers should be regularly screened. Gurubhagavatula et al. (2008) considered that the cost of screening all commercial drivers was higher than the estimated cost of OSA-related crashes themselves - but screening selected drivers would be cost-effective providing 74% take up effective treatment. Companies would also see a reduction in their crash claims costs.

Whilst researching OSA, I was particularly concerned to discover that amongst the 25 countries in Europe, only six countries count OSA among the various medical conditions that increase the risk of road traffic collisions. These are Spain, Belgium, France, Sweden, The Netherlands and the UK (Alonderis et al, 2008). Setting aside the problem of UK drivers being reluctant to declare this condition (even if they are aware of it), there are commercial drivers from 19 other European countries that are still permitted to travel across Europe whether they have been diagnosed or not.

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