

# Explaining Obstructive Sleep Apnoea (OSA) to Your Patients

## What is OSA?

Obstructive sleep apnoea is a very common but under-diagnosed condition. It is as common as diabetes and asthma. OSA occurs due to an obstruction of the upper airway, this can cause the person to snore or to stop breathing.

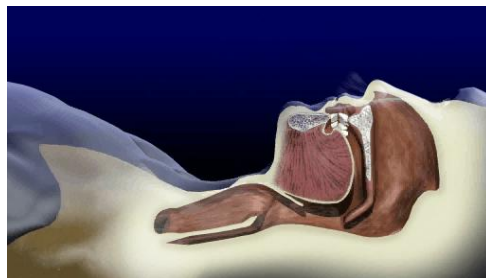
Obstructions occur during sleep for two primary reasons: lack of muscle tone and gravity. Excess tissue and anatomic abnormalities in the upper airway compound these factors. During sleep, especially in REM (dream) sleep, our bodies relax and muscle tissue like the tongue and soft palate lose tone. As we tend to sleep lying down, gravity pulls these tissues towards the back of the throat, which obstructs the upper airway.

Each obstruction deprives the body of oxygen and forces it to retain carbon dioxide that it would normally exhale. As a result, the body's blood gases become unbalanced and the body is subjected to a 'toxic' environment. When the body sets off 'alarms' that it needs more oxygen, the brain arouses the person and the obstruction clears until the next obstruction occurs. These obstructions increase the heart rate, raise blood pressure, and eventually blunt the body's automatic response system, resulting in increasingly more severe apnoeas and hypopneas. These obstructions and arousals can occur hundreds of times per night.

The brief arousals that OSA sufferers experience also diminishes their quality of sleep, resulting in sleep deprivation. The symptoms of sleep deprivation and snoring may be what bring most people with OSA to see you.

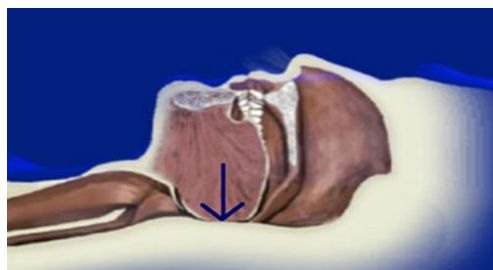
## Healthy Patient

During sleep, generally people retain their muscle tone to hold open their airway



## Patient With OSA

When these tissues obstruct the upper airway completely, they prevent breathing. They actually work to suffocate the sleeper.



The sleeper wakes up enough to regain control of the upper airway, breathe again, and then fall back to sleep. These are called arousals and can happen hundreds of times during the night for people with OSA, but they usually are unaware of the sleep disturbances. However, the partner is often very aware of the snoring and lack of breathing resulting in disturbed sleep for them also.

## Common Symptoms

Hypertension, stroke and decreased blood oxygen levels are common symptoms for people with OSA, but these are not easily detected.

Here are some symptoms that are easiest to identify without diagnostic testing;

- Excessively sleepy
- Snoring (people with OSA usually snore but not always)
- Witnessed apnoeas or irregular breathing during sleep (gasping, long pauses, etc – a spouse or partner may notice these)
- Impaired concentration
- Impaired memory
- Morning headaches
- Sexual dysfunction
- Nocturia (frequent nocturnal urination)

## Risk Factors for OSA

Physicians have identified a number of factors that may increase a person's risk of having OSA: -

- Obesity
- Snoring
- Anatomy (e.g. Small upper airway, large tongue, large uvula, recessed chin, excess tissue in the throat and or soft palate)
- Heavier people have a greater risk of OSA. In addition, the heavier a person becomes the more severe OSA becomes; so most physicians recommend exercise and a healthy diet for people with OSA.
- Family history of OSA or snoring

## Health Consequences of Untreated OSA

### Hypertension

- The most recent report (Seventh) of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (US Dept of Health & Human Services, National Institutes of Health, National Heart, Lung & Blood Institute) published in 2003 has listed OSA first on the list of identifiable causes of hypertension<sup>1</sup>.

### Coronary Artery Disease

- In the Sleep Heart Health Study cohort, OSA emerged as an independent risk factor for coronary artery disease<sup>2,3</sup>.

### Congestive Heart Failure

- Epidemiological studies have shown an association between both obstructive and central sleep Apnoea with congestive heart failure<sup>4,5,6</sup>.

### Diabetes

- Severe OSA increases the risk of overt diabetes mellitus five-fold<sup>9</sup>.
- OSA patients have higher levels of fasting blood glucose, insulin and glycosylated haemoglobin, independent of body weight<sup>10</sup>.

### Motor Vehicle Accidents

- Patients with OSA are 7 times more likely to have a car accident<sup>11</sup>.

### Cerebrovascular Disease

- OSA is highly prevalent in stroke patients, however it is not clear if OSA is an independent risk factor in cerebrovascular disease<sup>7,8</sup>.

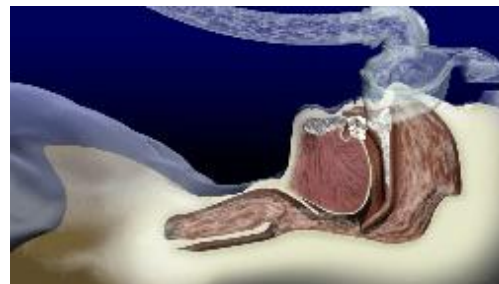
### References:

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## What is CPAP Therapy?

CPAP (pronounced "see-pap") is short for "Continuous Positive Airway Pressure." Positive airway pressure therapy is the most effective non-invasive treatment for OSA and is considered to be the gold standard. CPAP systems consist of a flow generator, air tubing, and a mask (usually a nasal mask). The flow generator blows air through the tubing and nasal mask. The air passes through the nose and into the throat, where the slight pressure keeps the upper airway open. The low air pressure does not interfere with breathing - though some people need a few nights to get used to the sensation of positive airflow. Many clinicians describe this therapy as a pneumatic splint – literally an air splint to hold your upper airway open.

The following diagram illustrates a pneumatically splinted upper airway. The tongue and soft tissue have fallen to the back of the throat, but the pressure of the air pumped in by the CPAP holds the upper airway open.



## Symptomatic Patient - What to do Next?

If you have a symptomatic patient they should be referred for further screening and a diagnostic sleep study. Patients with associated co-morbidities should also be considered for referral.

This can be done via your nearest NHS sleep clinic or by referring your patient to the ResMed Centre for Healthy Sleep, where we can offer: -

- Support
- Education
- Screening
- Diagnostic testing
- Treatment set-up
- Mask fitting
- Treatment reviews and ongoing care

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