

Medicine for Managers

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Sleep Apnoea

Sleep Apnoea is a temporary cessation of breathing during sleep. It is potentially serious and in more severe cases breathing repeatedly stops and restarts. It may be suspected in anyone who snores loudly, particularly if associated with what appears to be breath-holding, followed by a sudden deep intake of breath. Sufferers awake after a night's sleep still feeling tired.

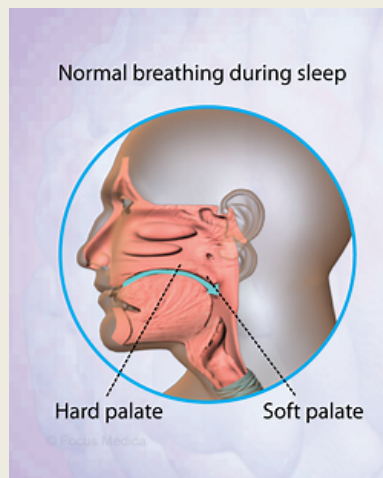
The principal types of sleep apnoea are:

- **Obstructive Sleep Apnoea**
- **Central Sleep Apnoea** which occurs when the electrical control from the brain does not work effectively

Obstructive sleep apnoea is the much more common form..

... and, essentially, occurs when the muscles of the upper respiratory tract (throat, nose and mouth) relax, allowing the airway to completely close and preventing the individual from breathing for at least ten seconds.

Effectively the tongue tends to fall backwards, resulting in it making contact with the back wall of the pharynx with the creation of a seal which prevents air moving into the lungs for a period.

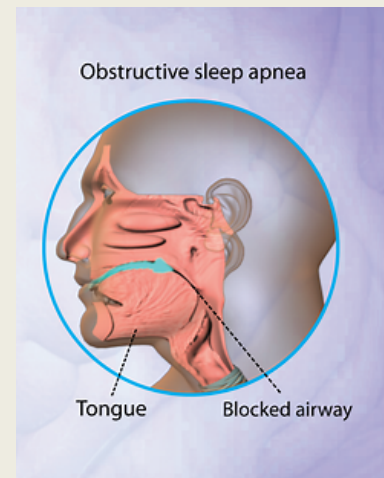


After a temporary period of obstruction, the sufferer will awake temporarily, usually taking a gasp of breath and often feeling as though he or she is choking, and will then fall asleep quickly again, often not recalling the event(s) the following morning.

The mechanism is that the obstruction causes a fall in oxygen levels and increased carbon dioxide in the blood.

The brain senses the changes and the inability to breathe, rouses the individual from sleep, resulting in movement and opening of the airway.

The cycle of a period of obstruction, which may last up to ten seconds or even more, followed



by a gasping intake of air, may occur up to hundreds of times during a night's rest.

The Causes of Sleep Apnoea

The essential problem with sleep apnoea is that the airway becomes too narrow because of obstruction by encroachment of the soft tissues. There are a number of factors that predispose to the condition.

- Overweight or obesity, the factor most linked to the condition
- Being male (two or three times more common than women), especially of middle age or over
- Having a collar size above 17 inches (43 cm)
- Excessive alcohol consumption before bed
- Smoking
- Nasal congestion
- Using sedative or hypnotic drugs
- Sleeping on the back.
- Medical conditions such as an under-active thyroid, type 2 diabetes, heart failure, high blood pressure or Parkinson's disease.
- Down's syndrome or acromegaly

The Symptoms of Sleep Apnoea

The most common symptoms are:

- Excessive drowsiness and falling asleep during the day, often accompanied by reduced ability to concentrate
- Snoring loudly. Usually the complaint of a partner, who may move to another room (or occasionally another house!)
- Breath-holding, choking or gasping noises followed by a deep intake of breath
- Morning headache
- Dry mouth when waking
- Irritability

The disorder can be disruptive of daytime activity because of the chronic sleep deprivation associated with the condition.

The Consequences and Complications of Sleep Apnoea

Sleep apnoea may have serious medical consequences. A variety of medical conditions may be more likely to develop or be aggravated by the disorder.

High Blood Pressure or Heart Problems.

Repeated drops in oxygen levels can increase blood pressure and lead to strain on the heart. Heart attack and other abnormalities may be the consequence.

Stroke is an increased risk.

Daytime fatigue increases irritability, disrupts concentration and adds to the risks of an accident. Depression may also occur.

Type 2 Diabetes is an increased risk.

Liver diseases may occur, including disturbances in function and evidence of non-alcoholic fatty liver disease.

Spouses and Partners. Snoring and repeated sleep disturbances for partners can have damaging effects on relationships. It prevents them getting a good night's sleep and may result in moving to another room when possible.

Diagnosis of Sleep Apnoea

The diagnosis of the condition is usually not difficult, based on the history and symptoms, with information obtained from the patient and his/her partner. Physical findings may increase the suspicion of the diagnosis. In consultation a GP will make enquiries to establish how the condition is affecting daily living, influencing normal activities and the consequences on

relationships. The **Epworth Sleepiness Scale** is used to assess the degree of symptoms.

A general physical examination may be carried out together with blood tests to exclude other causes of sleepiness such as thyroid disorders.

The GP can refer the patient to a Specialist Sleep Clinic. Following review the individual may be supplied with devices which assess breathing, to identify the degree and frequency of apnoeic episodes, and also the effects on heart rate. The testing may be carried out with the patient remaining in the clinic overnight or it may be supplied for home testing.

The tests indicate the presence and severity of sleep apnoea and provides an **Apnoea Hypopnoea Index (AHI) Score**.

Treatment of Sleep Apnoea.

1. Self-help lifestyle changes

There are a number of actions that a sufferer can undertake which may relieve the symptoms. These include

- a) Lose weight
- b) Stop smoking
- c) Reduce alcohol consumption especially in the evening
- d) Avoid the use of hypnotic drugs
- e) Trying to avoid sleeping on the back, but lying on the side.

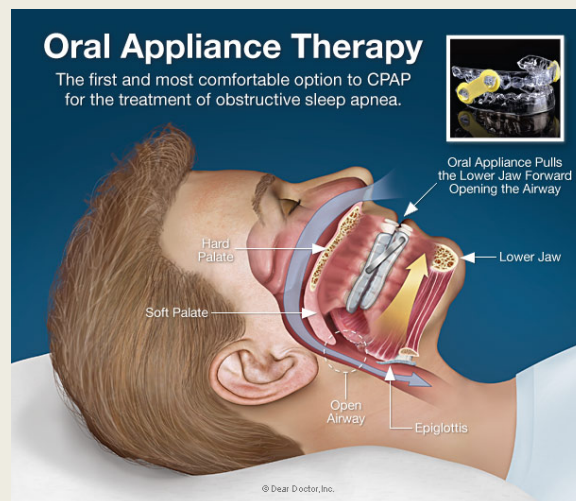
2. Medical Treatment

There are a variety of treatments for those cases of apnoea which are moderate or severe and the purpose of the treatment is simply to open the airway to allow the free movement of air. The current most popular techniques are positive pressure and oral devices.



Continuous Positive Airway Pressure is usually the most effective treatment for the condition. Air is supplied via a mask over the nose or face from a machine which delivers it at a slightly higher pressure than normal air pressure. It is cumbersome, there is tubing that leads from the mask to the machine, which is noisy and the mask is uncomfortable.

However, it is reliable and effective. Although it may be difficult to master, most people do so and find a mask that is easy to adjust to achieve comfort and secure fit.



Oral Appliances. There are a range of appliances which fit in the mouth and which are designed to ensure good air passage, essentially by pulling the lower jaw forward, thereby pulling the back of the tongue away from the throat and restoring the airway.

There are a range of devices which pull the lower jaw forward. Such a device is a *Somnowell*® appliance, which clips over

the upper and lower teeth and applies traction to the lower jaw. There are a range of other

devices of different designs but all are designed to achieve the same outcome.

If considering a device for self-diagnosed nocturnal apnoea, it would be wise to consult a doctor to ensure that the most suitable type is recommended. Some oral devices may be expensive, ineffective and inappropriate.



3. Surgical Treatment

Surgery is considered only in those patients with intractable sleep apnoea in whom other techniques have failed to control the problem and which are potentially life-threatening. In essence surgery reduces the bulk of tissue at the back of the throat to restore the airway and a variety of techniques have been proposed.

They include tissue removal, tissue shrinkage, jaw repositioning, and even tracheostomy. In the UK it is rarely undertaken.

In Britain, the number of patients with some degree of sleep apnoea is thought to be considerable, perhaps into the millions.

It is important because of its contribution to morbidity with cardio-vascular and respiratory disorders, diabetes and liver problems, as well as the dysharmony that it may bring to relationships.

Inveterate snorers may do well to consider whether apnoea is a component of their night-time sleep pattern.

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