

OBSTRUCTIVE SLEEP APNOEA

What is obstructive sleep apnoea?

“Apnoea” means stoppage of breathing for 10 seconds or longer. When apnoea occurs in sleep it is called “sleep apnoea”. Sleep apnoea is usually caused by obstruction of the throat when we sleep - hence the name “Obstructive Sleep Apnoea” (OSA).

This obstruction can be caused by several factors:

1. The air passage in the throat becomes narrow when there is deposition of fat in the region as occurs when one gains weight. Excess weight is the most common cause of obstructive sleep apnoea.
2. Many individuals have relatively small jaw – either upper jaw (maxilla) or lower jaw (mandible). This reduces space at the back of the throat.
3. The pharyngeal airway is surrounded by muscles. Our muscles lose tone during sleep. This loss of muscle tone leads to collapse of the pharynx in sleep.

When the pharynx is already narrow due to obesity or small bony structure of the face the pharyngeal airway is prone to occlusion during sleep as a result of loss of tone in the muscles of the pharynx that occurs during sleep.

What happens in sleep apnoea?

As one sleeps the muscle tone goes down. This results in narrowing of the throat leading to snoring. As one sleeps deeper the narrowing becomes more severe and snoring becomes louder. As sleep deepens the obstruction causes breathing to become very shallow (known as hypopnoea). This progresses to complete blockage of the throat causing stoppage of breathing (apnoea). When breathing becomes very shallow or stops snoring stops. The blood oxygen starts plummeting. When it reaches very low levels the brain recognises it. At this point it is necessary to briefly “wake” up (it is known as cerebral arousal). This arousal re-establishes the tone of the pharyngeal muscles and the throat opens. This results in re-establishment of normal breathing and blood oxygen level improves. The person promptly sleeps and the whole cycle repeats. Such repetitive blockage of the throat and apnoea occur several times during sleep.

If it occurs frequently sleep is interrupted by frequent arousals. For sleep to be refreshing it has to be continuous. The discontinuity of sleep caused by frequent arousals due to apnoea results in unrefreshing sleep. Many patients feel they want to go back to bed no sooner than they wake up in the morning.

Consequences of sleep apnoea

The night-time features of obstructive sleep apnoea include loud snoring, waking up with a snorting sound, waking up frequently to pass urine and restless sleep.

Sufferers usually wake up not feeling refreshed. The best known manifestation of obstructive sleep apnoea is excessive sleepiness and fatigue in wake-time. The greatest danger is falling asleep at the wheel causing motor vehicle accidents. Accidents at work place is another major problem.

If severe and untreated it often progresses to respiratory failure and right-sided heart failure. Untreated obstructive sleep apnoea may lead to heart disease, poor control of high blood pressure and strokes. Rarely it can lead to sudden death.

How is obstructive sleep apnoea treated?

Obstructive sleep apnoea is caused by obstruction of the throat that occurs in sleep. This obstruction can be alleviated by increasing the space in the throat. This can be achieved by “opening up the throat” by exerting air pressure in the throat. This is achieved by using a CPAP machine.

In mild cases of sleep apnoea one may also use a mandibular advancement device to bring forward the jaw and thereby increase the space at the back of the throat.

In those patients who are overweight, the ultimate goal should be weight reduction. If one loses significant amount of weight, then the obstructive apnoea will become less severe and in some cases resolve completely.

What does the treatment involve?

This involves the use of a CPAP machine and mask. The majority of patients require a mask that covers the nose and mouth. The mask is secured to the face with straps that go around the head. It is connected to the CPAP machine by a large tube. The connections are very flexible and you will be able to sleep in almost any position. You can even sleep on your tummy as long as you head is tilted to one side.

How does CPAP work?

In obstructive sleep apnoea your throat closes as you fall asleep. CPAP works by gently increasing the pressure in your throat and splinting your throat open. This is very much like opening a balloon by blowing into it. Once the airways open you can breathe normally. The sleep interruption caused by sleep apnoea goes away. As a result you sleep well and wake up feeling refreshed.

How easy is it to use CPAP?

CPAP is easy to use. Even so, some 10% of patients offered CPAP therapy would reject it outright believing that they will not be able to cope with the equipment. Another 10% start using it but may discontinue for a variety of reasons.

My opinion is that a lot depends on one’s disposition and outlook to medical treatment.

How effective is CPAP?

CPAP is one hundred percent effective in the treatment of Obstructive Sleep Apnoea provided that it is used correctly.

How long should I use CPAP?

A better question to ask is how long do I need to have good sleep? If you think you need seven hours of sleep every night you will need to get seven hours of uninterrupted sleep for this duration. Therefore you will need to use CPAP for as long as you need to sleep.

Why do some authorities say that you need to use CPAP only for four hours?

Many believe that using CPAP for four hours is enough. If you think logically most of us would need more than four hours of sleep - the average sleep duration is 7 ½ hours.

If you have significant sleep apnoea then your sleep is interrupted throughout the sleep period. To get adequate sleep one would need to use the CPAP equipment throughout the sleep period. My own opinion is that **“you should use CPAP whenever you sleep,**

wherever you sleep for as long as you sleep”. You should take the equipment with you when you travel.

How quickly can I expect improvement?

There is great variation in the time it takes for patients to feel better. There are some who feel improvement within a day or two. The vast majority feel improvement within a week to a month. A small percentage may take longer.

On average some 60% of people using CPAP would feel improvement within the first week and a further 20% within the first month. Another 10% may take longer and improve by about 3 to 6 months.

Approximately 10-20% of patients may not feel great benefit even after long usage due to a variety of reasons. It is usually because there are other conditions causing symptoms. If you have not improved after three months you may need further evaluation to find out the precise cause.

In a small percentage of patients, the initial improvement may wear off after a few months. However it is rare that they will go back to the same degree of symptoms as before starting treatment.

Further information: Please visit the British Lung foundation website for further information.

<https://www.blf.org.uk/support-for-you/obstructive-sleep-apnoea-osa/treatment>