

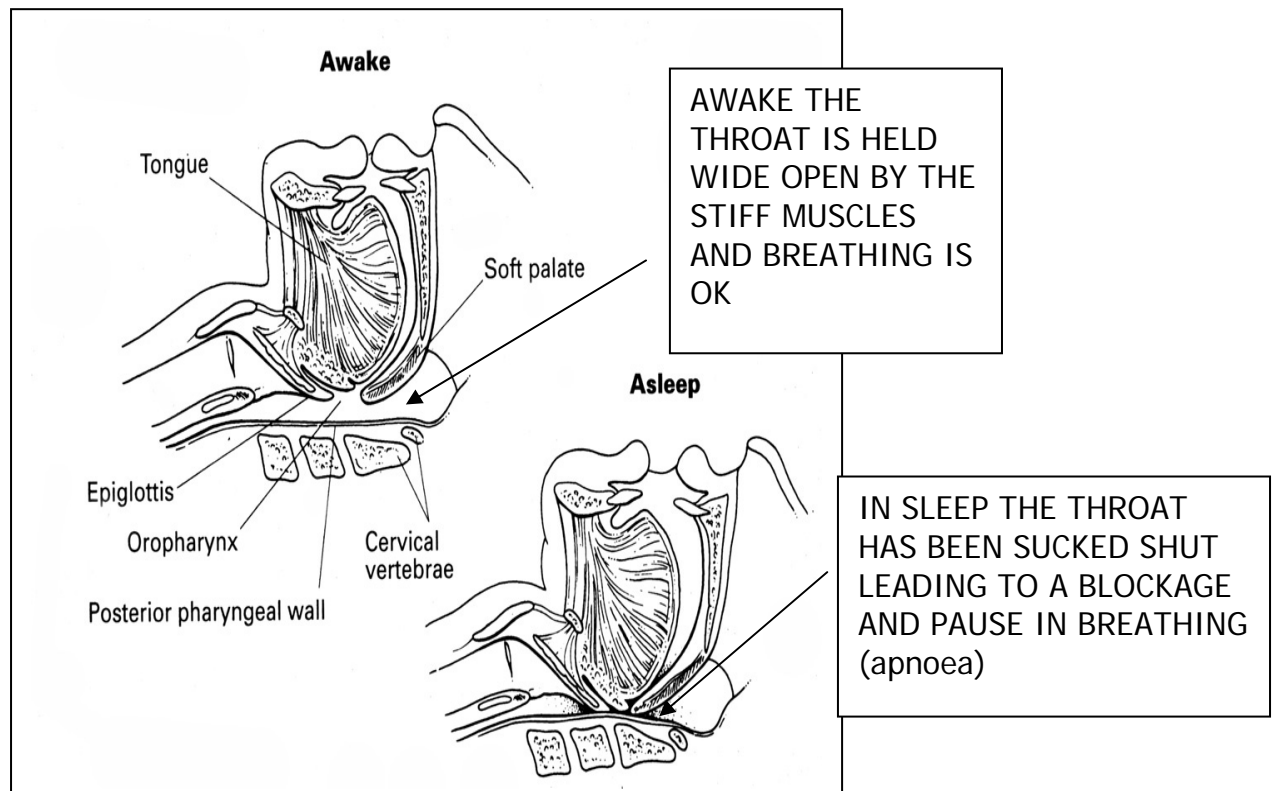
Patient Information Leaflet: Obstructive Sleep Apnoea
Greenlane Respiratory Services,
Auckland City Hospital & Greenlane Clinical Centre
Auckland District Health Board

What is Obstructive Sleep Apnoea?

While sleeping our muscles relax (go floppy and loose) and this includes our throat muscles. In some people the throat muscles can relax enough to cause the throat to get sucked shut above the voice box causing a blockage (an obstruction) which stops breathing (an apnoea). This disease is called obstructive (blockage) sleep apnoea (pause in breathing).

This pause in breathing results in the body trying harder to breathe to overcome the blockage which then disturbs sleep. The sufferer with a blockage to breathing then appears to struggle to breathe. When the sufferer arouses enough from sleep to open their throat they then give a gasp or snort and start breathing.

These pauses in breathing or apnoeas happen time and time again through the night disturbs sleep. The arousals (brief half awakenings) are so short the sufferer does not remember them next day.



How does it affect people?

The patient with OSA has no idea what is going on at night but starts to get increasingly sleepy during the day despite having appeared to sleep for many hours. They can complain of all the symptoms of someone who has not had enough sleep.

What are the symptoms?

The sufferer develops the symptoms of lack of sleep:

- Wakening up feeling as if they had not been to bed (unrefreshing sleep);
- Falling asleep easily when not moving around and feeling they are fighting to stay awake a lot of the time;
- Poor concentration and increasing forgetfulness;
- Irritable and moody;
- And even a loss of interest in sex;

Their partners may notice that they stop breathing and, more importantly, appear to fight to breathe during the pauses in breathing.

Most sufferers will be loud snorers and it is often the snoring stopping as the throat blocks which first warns the partner there might be a problem.

Eventually they may be so sleepy they are falling asleep when sitting down, at work, while driving or even while talking to people. The sufferer is at high risk of driving accidents because they are so sleepy causing them to lack concentration or even fall asleep behind the wheel and have an accident.

Does sleep apnoea damage your physical health?

Sufferers from sleep apnoea have more ill health than people without sleep apnoea. It is unclear if that is simply because sufferers from sleep apnoea are often overweight and have other health problems such as high blood fats (cholesterol).

There are worries that sleep apnoea by straining the heart and blood vessels during sleep could cause heart and circulation problems to happen at a younger age. This remains unproven.

It seems very likely that obstructive sleep apnoea does increase blood pressure and cause high blood pressure in some sufferers.

Who gets Obstructive Sleep Apnoea and Why?

The reason why some people's throat narrows so much in sleep that it blocks off and other people's throat does not narrow is not yet understood.

We do know that a number of things appear to increase the risk of sleep apnoea, for example men get sleep apnoea more often than women.

Shape of throat:

Obstructive sleep apnoea often runs in families and it is thought that some of us inherit a long narrow throat from a parent (who themselves were often notorious snorers and may have been sleepy). So it seems the shape of their throat does put some people at increased risk of obstructive sleep apnoea, e.g. people with setback lower jaws seem to get more sleep apnoea.

Weight:

We know that putting on weight causes fat to be laid down round the throat narrowing it. This increased fat round the neck means the throat can get sucked shut and block more easily.

It is important to remember not everyone with obstructive sleep apnoea is fat.

Age:

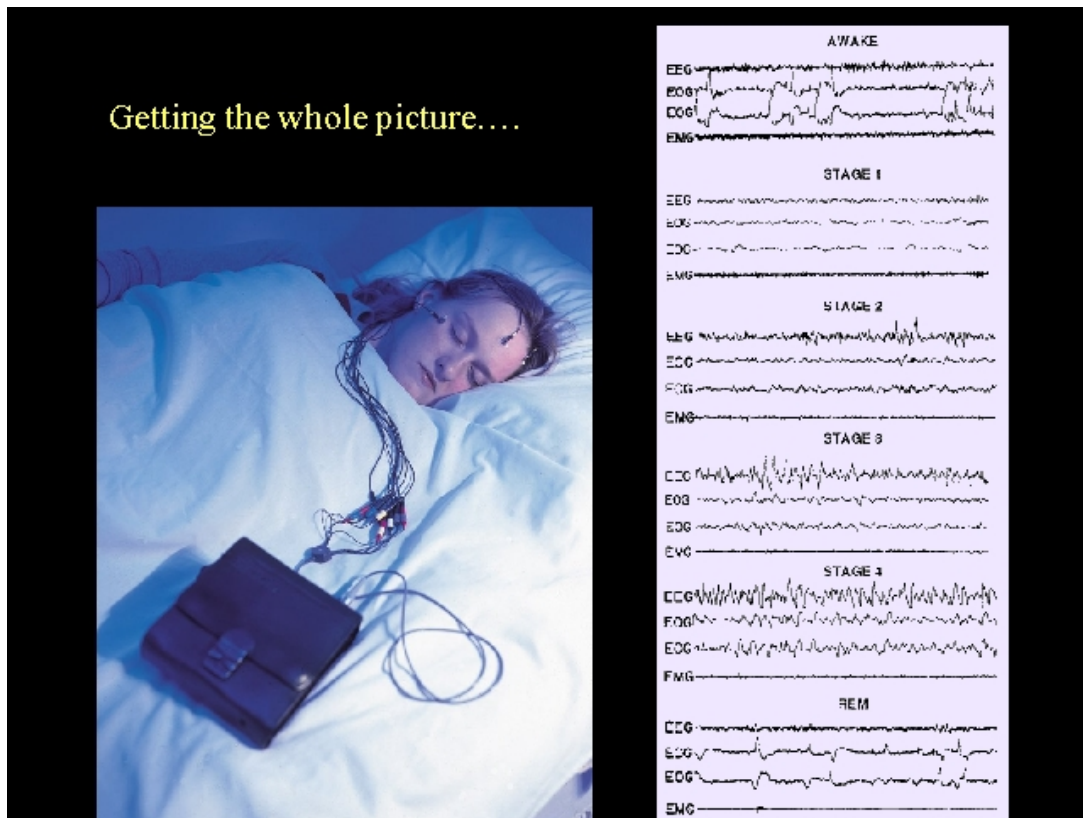
As we get older the throat seems to get more floppy in sleep and so collapses more easily.

What tests are needed to diagnose?

Many of us snore and occasional pauses in breathing in sleep are common in all of us (the message from the brain to breathe sometimes stutters in sleep causing pauses for a few seconds). So it is not possible to diagnose sleep apnoea simply by talking to the sufferer and their partner. Often the partner's reports of what they see at night plus a very sleepy patient can make the doctor or nurse highly suspicious of sleep apnoea.

Some form of sleep test is required and which test and how complicated a test depends on many factors. Often the person has to sleep in a "sleep laboratory" where their sleep is watched and measured throughout the night to see how many pauses in breathing occur and how much the disturbance of breathing is breaking up sleep.

A patient sleeping in the sleep laboratory with equipment recording their brain waves and letting us know how well they are sleeping.



What treatments are available?

There are a number of ways of trying to decrease the number of throat blockages (apnoeas) in sleep. Some are only successful in a handful of patients and are not suitable for all patients. Predicting in which patients these treatments will work is very difficult and often only a trial of the treatment will tell if it helps that person.

Weight Loss

Putting on weight often starts people snoring. Then if they put on more weight they get sleep apnoea because of fat being laid down round the neck narrowing the throat inside. As weight can lead to obstructive sleep apnoea then losing weight helps. In some sufferers losing just 5-10 kg of weight can get rid of all their symptoms. Other sufferers have to get rid of a great deal of weight and may still be left with some symptoms such as just snoring but no sleepiness after losing weight .

Remember if you are overweight then weight loss is also good for your general health including high blood pressure, diabetes and problems with joints and muscles such as osteoarthritis.

For many sufferers from obstructive sleep apnoea weight loss is the most sensible and useful treatment but it is never easy to lose weight. The sufferer needs not just to alter their diet for a few months but needs to alter their diet for the rest of their life and to increase the amount of exercise they do every day.

Mandibular advancement devices and similar mouth appliances

There are many devices that have been designed to go in the mouth at night in an attempt to stop snoring and pauses in breathing. The fact there are dozens of devices says that no one has come up with the perfect design.

What these appliances are trying to do is to hold the lower jaw and the tongue forward at night. By pulling the tongue forward the back of the throat is wider so it no longer collapses and gets sucked shut as easily. If the throat is wider then the noise of snoring is reduced.

Sadly in lots of people with sleep apnoea and many snorers the sufferer do not find these appliance work for them. Either they find the appliance does not work (fails to move the tongue far enough forward to make a difference) or that they cannot keep it in their mouth all night and sleep.

A mandibular advancement splint to help snoring and mild OSA



Surgery to Nose and Throat

Over the years many operations on the throat and/or the nose have been developed to try and help both snoring and sleep apnoea. They can be very successful but only in a small number of loud snorers or people with bad sleep apnoea.

The surgeon has the problem that there is no reliable way of finding which part of the throat is collapsing so there is a big danger the operation fails to widen the throat at the correct part.

A rule of thumb is that the heavier the sufferer the less likely surgery is to help. Also the older the sufferer the less likely surgery is to help. Lastly the worse the sleep apnoea then surgery is not likely to make much difference.

Continuous Positive Airway Pressure (CPAP)

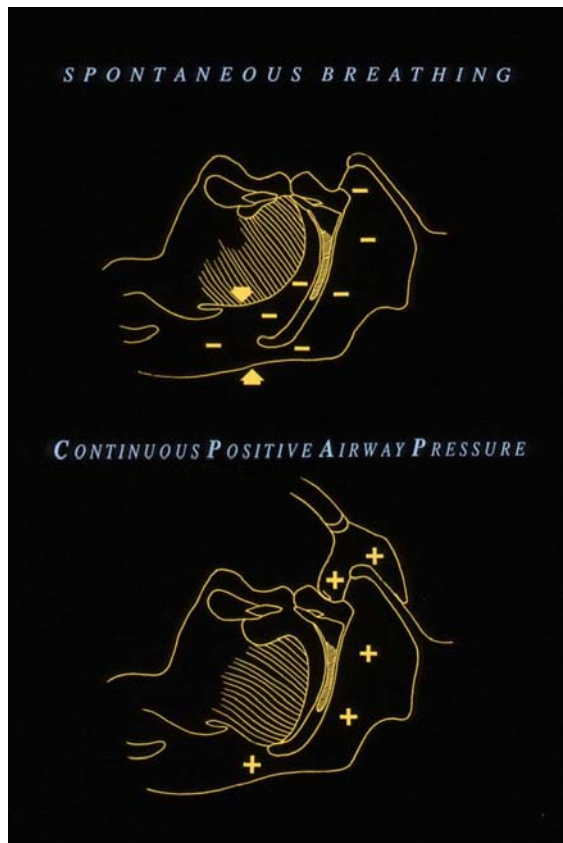
There is a good "treatment" for sleep apnoea called CPAP. The sufferer has to wear a mask on their face all night, usually a mask on the nose. Air is pumped through the mask under pressure which pushes open the floppy throat and holds it open. If the pressure is set at the right level for the sufferer then it can be guaranteed to get rid of all apnoeas and all snoring and this improves the quality of sleep and helps daytime sleepiness.

As the pressurised mask is worn all night, continuously and there is a positive pressure in the mask this treatment is called continuous positive airway pressure therapy or CPAP for short. This is not a cure but a "crutch" holding open the throat each night but only if the mask is worn each and every night.



A sufferer from sleep apnoea in bed wearing a CPAP mask with the machine (pump) on the bedside table.

Remember this is a life sentence in almost all sufferers unless they lose weight.



Upper Panel: the throat is being sucked shut by the low pressure in the throat during breathing inwards.

Lower Panel: with CPAP machine and mask on the positive pressure in the throat holds open the floppy throat just like blowing into a paper bag will hold it open.

This treatment has two problems. It does not fix anything long term so the mask and pump have to be used every night for the rest of the person's life.

Also the mask and pressure disturb sleep and so if sleep apnoea is mild – only a few apnoeas per hour then the mask system will tend to disturb sleep as much and so the sufferer feels no better (or occasionally worse!) the next morning.

So this system is really only suitable for sufferers with a lot of daytime sleepiness who have very disturbed broken up sleep which the machine and mask will improve.

A small number of people simply cannot sleep with a mask on their nose each and every night.

Nasal Mask:



This is the most widely way used to give the pressure from the CPAP pump and there are many designs and sizes to choose from with no evidence that one is better than the other.

Some sufferers cannot use the nasal mask because of nasal disease or damage.

Oral Device:



Some sufferers prefer an oral device which delivers the pressure to the back of the throat directly. They like the fact there is no headgear to hold the oral device while the standard device requires headgear.

Full Face Mask:



For patients who cannot tolerate a nasal mask or have nasal passage blockage then a full face mask allows them to cover both the mouth and nose.