

Oral Appliance Therapy for Snoring and Obstructive Sleep Apnoea

Of every 10 Australian adults, two will experience snoring during their lifetime. Snoring usually causes no significant medical problem. However, for some people, snoring may indicate a more serious condition called obstructive sleep apnoea (pronounced ap-NEE-ah).

Obstructive sleep apnoea can be harmful to health and may ultimately lead to life-threatening conditions such as stroke, heart disease or an increase in blood pressure.

The use of specialised mouthpieces known as oral appliances can be an effective method of treating both snoring and obstructive sleep apnoea.

Oral appliances are fitted by a dentist who is trained in their use, usually in consultation with a respiratory or sleep-disorder physician.

The causes of snoring and obstructive sleep apnoea

During normal breathing, air is drawn through the nose and past soft tissues at the back of the throat. These tissues include the uvula, the soft palate and the tongue.

During waking hours, the airways are held open by the tone of the muscles around them. During sleep, these muscles relax. In some people, the soft tissues may relax too much (or "collapse"), leading to obstruction of the airways.

In an attempt to overcome the obstruction, the person breathes harder, using the chest wall muscles and diaphragm. But the harder the person tries to breathe, the more the walls of the airway collapse; this is similar to trying to suck through a straw which collapses as the effort to withdraw liquid is increased.

The obstruction may be partial (hypopnoea) or complete. If breathing is absent for more than 10 seconds, the condition is known as apnoea.

Oral appliance therapy uses a dental device fitted inside the mouth to prevent the airways from collapsing during sleep. This is usually achieved by holding the jaw forward.

The symptoms and signs of obstructive sleep apnoea

People who have obstructive sleep apnoea almost always snore loudly and usually have a number of other symptoms, including:

- ▼ choking or gasping during sleep
- ▼ tiredness on waking
- ▼ sore, dry throat on waking
- ▼ morning headache
- ▼ excessive daytime sleepiness
- ▼ poor concentration
- ▼ memory deterioration
- ▼ decreased sex drive or impotence
- ▼ personality changes that may include irritability
- ▼ decrease in job performance
- ▼ anxiety or depression.

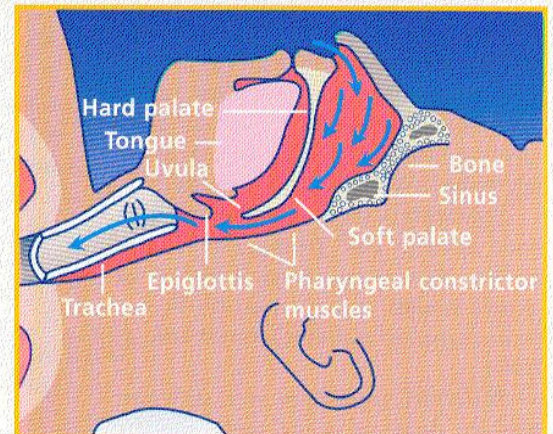
Diagnosis and assessment of obstructive sleep apnoea

Proper diagnosis of the cause of sleep apnoea is essential so that the most appropriate treatment can be offered. People with symptomatic snoring should be assessed in a sleep disorder clinic before any treatment starts.

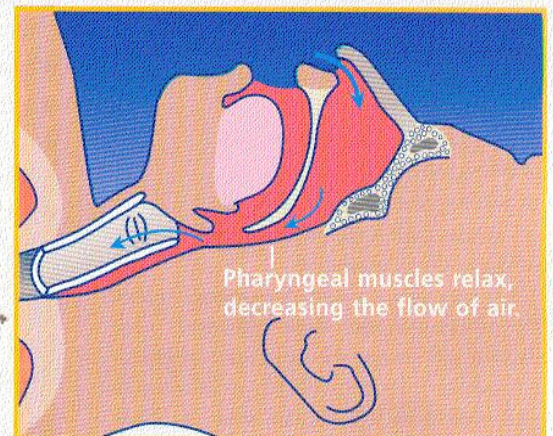
As many different problems can cause symptoms, this assessment may involve specialists with expertise in a number of areas, including dentistry, respiratory medicine, ear-nose-throat surgery, neurology, and speech pathology. Assessment in a sleep disorder clinic will often involve the monitoring of sleep patterns during an overnight stay.

Obstructive sleep apnoea can cause interruptions to breathing many times during the night, each episode lasting from 10 seconds to two minutes. A person is considered to have sleep apnoea if there are more than five partial or complete obstructions per hour of sleep.

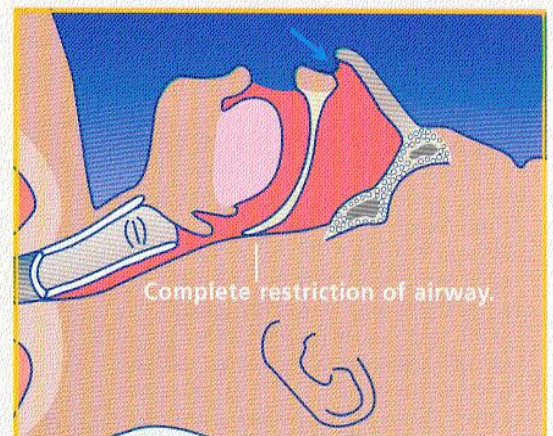
Typically, the apnoea episode ends when the person wakes up briefly. Usually, the person has no awareness of these brief episodes at the time but finds that sleep is not refreshing.



During sleep, the pharyngeal constrictor muscles (at the back of the throat that control the tongue and soft palate) normally keep the airway open. Breathing is unrestricted.



During sleep, these muscles can relax too much, causing the airway to become restricted. This results in snoring and laboured breathing.



The muscles can relax so much that the back of the throat comes into contact with the soft palate and uvula. This restricts the airway completely, and breathing stops. This condition is called obstructive sleep apnoea.

Snooring and obstructive sleep apnoea may be treated using oral appliances, nasal continuous positive airway pressure (nasal CPAP), or surgery.

Oral Appliance Therapy

Dentists with training in oral appliance therapy are part of the team involved in the management of obstructive sleep apnoea and troublesome snoring. They have expertise in the types of oral appliances that will best suit your needs.

Following a thorough assessment of your mouth and teeth, which may include X-ray examination or the use of dental moulds, your dentist will fit you with an appliance that you can try out at home.

Different appliances suit different people, depending on their specific dental or medical condition, so it may take more than one visit for the right appliance to be fitted.

Oral dental appliances have helped many people who snore or suffer from obstructive sleep apnoea. The types of appliances are numerous. They are worn during sleep and help to keep the airway open by:

- bringing the jaw forward, or
- lifting up the soft palate, or
- holding the tongue forward.

Some appliances use a combination of these three methods.

A specially trained dentist will select the appliance that best suits you. The dentist will review the appliance regularly to make sure it is working satisfactorily and that you are happy with it. This fitting and assessment may take some weeks to complete.

In every 100 snorers, about 95 will have a decrease in the noise levels they make during sleep.

Of every 100 people with mild to moderate obstructive sleep apnoea, about 80 will have either good or excellent results while using these appliances.

TALK TO YOUR DENTIST

This pamphlet is intended to provide you with information about oral appliance therapy.

It is not a substitute for advice from your dentist and does not contain all known facts about snoring, obstructive sleep apnoea and oral appliance therapy.

Be sure to read all of this pamphlet carefully. Some technical terms are used, but don't let that deter you.

Give your dentist your complete medical and dental history. Write down any questions you want to ask. Your dentist will be pleased to answer them.

If you are not sure about the benefits

The appliances may be used alone or in conjunction with other treatments such as surgery or nasal CPAP.

Advantages of oral appliance therapy

The treatment of snoring or obstructive sleep apnoea with oral appliance therapy is safe, painless and effective. Treatment is usually reversible and does not involve surgery. The appliances are relatively inexpensive and easy to wear.

It is often possible to speak, yawn or even drink while wearing an oral appliance.

As the appliances are small and light, they are easy to carry during travel. If an oral appliance is cleaned and stored correctly, it should last for years.

Side effects of oral appliance therapy

Side effects of oral appliance therapy may include:

- temporary discomfort around the teeth or jaw joint
- dry mouth
- excessive salivation
- irritation to the soft tissues of the mouth
- minor irregularities to the bite (this is usually temporary).

More severe side effects are rare. These may include significant discomfort to the jaw joint or permanent changes to the bite.

Nasal Continuous Positive Airway Pressure (CPAP)

This involves wearing a mask over the nose at night that delivers air under pressure via a quiet pump. This gently forces the airways open during sleep. This is generally used for patients with moderate to severe apnoea or for patients with heart or lung disease.

and side effects of treatment, terms used in this pamphlet, or anything else, ask your dentist.

This pamphlet should only be used in consultation with your dentist.

Oral appliance therapy may be unsuitable for some patients with:

- ▼ a pre-existing disorder of the jaw joint (the temporomandibular joint or TMJ)
- ▼ severe untreated gum disease or dental decay
- ▼ full dentures.

If you have any of these conditions, your dentist will advise you if oral appliance therapy is suitable for you.

THREE TYPES OF APNOEA

OBSTRUCTIVE APNOEA

This is due to an obstruction of the upper airways. Obstructive apnoea is commonly caused by the collapse of the muscles around the throat and tongue. While associated with snoring, it is a more advanced, serious condition.

CENTRAL APNOEA

This occurs when the part of the brain that controls breathing "forgets" to send messages down to the breathing muscles, so breathing stops. This is usually not associated with snoring.

MIXED APNOEA

This is a combination of central apnoea and obstructive apnoea. Snoring is usually present in mixed apnoea.

Surgery

Several different surgical procedures can be used, including surgery:

- to open the breathing passages in the nose
- to remove tonsils
- occasionally to remove some of the excess tissue at the back of the throat
- to reduce tongue size
- to bring the upper or lower jaw forward
- to pull the tongue muscles forward.

As discomfort or complications may occur, careful discussion with a surgeon is necessary.

Other methods of relief

Symptoms may also be reduced by:

- loss of excess body weight
- taking regular exercise
- avoiding alcohol or medications that may increase drowsiness
- sleeping on the side rather than on the back.

Costs of Treatment

Your dentist can provide you with an estimate of the costs involved in having an oral appliance fitted. These costs will not include assessment or treatment in a sleep disorder clinic.

Your dentist will advise you about which costs may be rebateable from private health insurance following a referral from another medical sleep specialist.

Costs will vary according to the extent of treatment. As the treatment and outcome may become different from what was first proposed, the final account may be different from the original estimate.

It is best to discuss costs before and during treatment, rather than afterwards.