Oral Appliance Therapy for Snoring and Obstructive Sleep Apnoea

A guide for patients

Of every 10 Australians older than 40, seven are likely to snore at some time. Snoring can cause significant medical problems. For many people, snoring may indicate a more serious medical condition called obstructive sleep apnoea (ap-NEE-ah).

Obstructive sleep apnoea may lead to heart disease, diabetes, an increase in blood pressure, or a life-threatening event such as stroke or heart attack. All people who snore should be tested for obstructive sleep apnoea by a respiratory or sleep physician.

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

The apnoea episodes end when the person wakes up briefly. Most of the time the person does not awaken. Usually, the person has no awareness of these brief episodes at the time but finds that sleep is not refreshing.

The use of specialised mouthpieces known as oral appliances can be an effective method of treating snoring and obstructive sleep apnoea. These are fitted by dentists (who are trained in their use), in cooperation with respiratory or sleep physicians.

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, as shown in the figures (right).

During waking hours, 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 that collapses as the effort to withdraw liquid is increased.

The obstruction to airflow may be partial or complete. If airflow is interrupted by at least 50% for more than 10 seconds, the condition is known as apnoea or hypopnoea.

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

Symptoms and signs of obstructive sleep apnoea

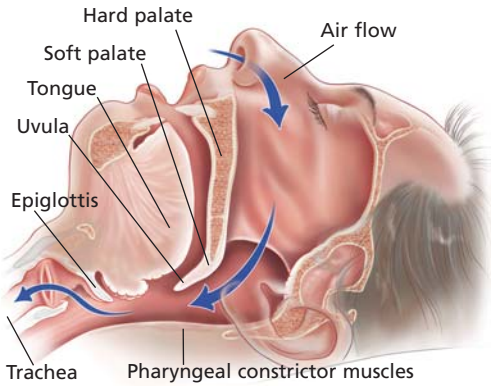
People with obstructive sleep apnoea almost always snore loudly and can have other symptoms, which may include:

- disrupted sleeping
- excessive daytime sleepiness
- choking or gasping during sleep
- sore, dry throat on waking
- morning headache
- 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

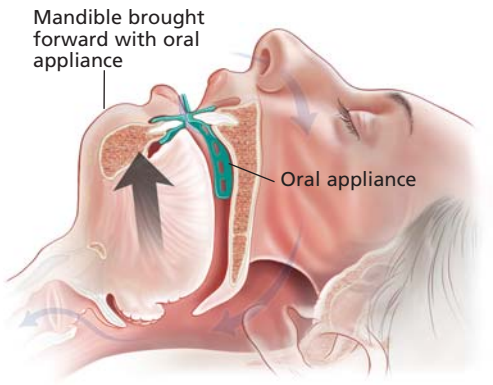
Diagnosis of the cause of sleep apnoea is crucial so that the most effective treatment can be offered. People who snore should be assessed in a sleep disorder clinic before any treatment starts.

As many different problems can cause symptoms, this assessment may involve specialists with expertise in various areas, including dentistry, respiratory medicine, ear-nose-throat surgery and neurology. Assessment by a sleep disorder clinic will often involve the monitoring of sleep patterns overnight in a hospital or at home.



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



The airway is open with the oral appliance in place.

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