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# Snoring

**S**nororing can indicate a more serious problem. If you snore loudly with occasional pauses in breathing, and you frequently wake up during the night, you may be suffering from sleep apnoea. Ask your partner, or a member of your family to listen for signs of this disorder.

Sleep apnoea is periods when you stop breathing while you're sleeping. These interruptions in your breathing, which can last 10 seconds or longer, occur when the muscles in your soft palate, uvula, tongue and tonsils relax during sleep.

This is the same process involved with normal snoring, but with sleep apnoea, the airway narrows so much that it closes. Your

breathing stops, cutting off the flow of oxygen into your body and reducing the elimination of carbon dioxide (CO<sub>2</sub>) from the blood. Your brain detects this rise in CO<sub>2</sub> and briefly wakes you up, re-opening your airways and re-starting your breathing.

This process can be repeated many times during the night. Proper sleep can become impossible, resulting in severe fatigue and a decreased quality of life. Sleep apnoea in adults can increase the risk of serious health problems such as heart failure, because it deprives the sufferer of adequate levels of oxygen, making the heart work harder than normal.

## MANAGEMENT OF SLEEP APNOEA AND SNORING

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The recent recognition of obstructive Sleep Apnoea as a cause of considerable morbidity and mortality has produced much interest in upper airway function during sleep. Our understanding of Sleep Apnoea and snoring has increased enormously in the last ten years so that often much can be done to help both these conditions. As a result there has been an extraordinary rise in the number of referrals for these conditions. The purpose of this website is to explain what the dentist, the ENT clinic, and a sleep clinic are best at (and thus which patients are the most appropriate for which department).

### Background

During sleep the pharyngeal airway narrows in everyone, due to a reduction in dilator muscle tone. Snoring is simply vibratory noise generated from the pharynx and soft palate when this phenomenon goes beyond a certain point. Further narrowing produces not only louder snoring, but also laboured inspiration. Finally, yet further narrowing can cause complete obstruction, so called Sleep Apnoea. There comes a point where the increased aspiratory effort is sensed by the sleeping brain and a transient arousal provoked. A few of these arousals do not matter, but when there are many (sometimes hundreds) then sleep is seriously fragmented with consequent daytime symptoms of excessive sleepiness. Thus snoring and Sleep Apnoea are part of a spectrum extending from 'benign' or 'simple' snoring with no sleep disturbance, through to obstructive Sleep Apnoea with severe daytime symptoms and the physiological consequences of recurrent asphyxia.

### Is treatment really necessary?

Both ends of the spectrum deserve treatment. 'Benign' snoring can be far from benign. The social consequences can be extremely distressing: banishment from the bedroom, marital disharmony, no holidays because of the enforced sleep disruption when sharing a hotel room, fear of travelling falling asleep during long journeys on public transport and the consequent ridicule and embarrassment. Many of the stories we both hear are very sad and not worthy of the music hall joke approach to snoring.

Obstructive Sleep Apnoea, through the gross sleep disruption, produces greatly impaired performance at work, at home, and on the road. **Car accidents are much more common in this group.** The response to therapy is extraordinarily dramatic with a return to a state of alertness and vitality often not previously experienced for years or even decades. There is no doubt in our minds that treatment is essential for Sleep Apnoea and extremely appropriate for some snorers.

### Is the problem *only* severe snoring?

Are any of these features of Sleep Apnoea present?

- Daytime sleepiness (not tiredness) e.g. nodding off during less stimulating activities: reading, watching TV, meetings, etc.
- Spouse has noticed episodes of stopping breathing (although any snorer will have occasional such events, especially supine).
- Patient experiences waking with choking/obstructed episodes (although he will only recognise a tiny proportion of the number actually occurring).
- Regularly waking unrefreshed in the morning.
- Neck circumference over 17½" (thus usually, but not always, overweight).
- Small pharynx on visual inspection.

Both the 'American Sleep Disorders Dental Association' and the 'Sleep Disorders Dental Society' recommend that objective testing to assess for Obstructive Sleep Apnoea (OSA) be performed as a **FIRST STEP** prior to possible treatment with an oral appliance for snoring (Mandibular Advancement Appliance/Splint).

### Why is snoring or Sleep Apnoea present?

The commonest causes are shown below:

- Overweight
- Nasal stuffiness
- Evening alcohol
- Residual tonsils
- Smoking
- Receding lower jaw
- Hypothyroidism
- Menopause

One or more of these are usually present and may be amenable to simple therapy. Sometimes none of these are present and the reason for snoring is not clear. One catch here is that sometimes the complaint of snoring by the spouse is used as an excuse to leave the marital bed and may actually be trivial or absent. Suggesting the couple bring along a cassette recording of the offending noise can be quite useful in assessing this point and their motivation.

### What has the dentist to offer snorers?

There is now good evidence that intra-oral devices worn in the mouth at night can greatly help snoring. Their mode of action is to hold the lower jaw forward and closed during sleep, thus preventing the narrowing of the airway behind the tongue and thus greatly reducing snoring. The evidence is that they help snoring but do not work very well at all for Sleep Apnoea. Hence if a patient shows any of the features of Sleep Apnoea listed above then it would be wiser to suggest referral to a sleep clinic before going ahead with a mandibular advancement device. In their simplest form, mandibular advancement devices consist of two sports-type gum shields, one for the top teeth and one for the bottom teeth. These are then welded together so that when worn the lower jaw is protruded about 75% of maximum. Significant forces are imposed on the teeth and t-m joints so that the dentist has to be satisfied that these structures are sound.



Elastic holds the lower jaw forwards

### **What has surgery to offer for snorers?**

When these approaches have failed (including trying a mandibular advancement device), then the ENT department may be able to help. For example, septal straightening, polypectomy, turbinate reduction or surgical dilation of the anterior nares can help nasal stuffiness. Sometimes it is worth removing residual tonsils, although in adults this is not a trivial operation.

When all else has failed and the snorer is desperate for help (and a sleep study has been performed to confirm snoring and exclude significant Sleep Apnoea) then an operation on the pharynx (uvulopalatopharyngoplasty, or UPPP) may be appropriate. This operation removes part of the soft palate, any residual tonsils, and tightens the pharyngeal walls: it is very painful postoperatively and may produce temporary difficulty swallowing (and rarely some subtle changes in the voice). However, if the above preconditions are met, then in the thinner patients this can be a successful operation which most patients are pleased to have had done. Other surgical operations on the palate, such as laser scarring, are only experimental and do not appear to be very successful.

### **Treatment of Sleep Apnoea**

If the history suggests there may be Sleep Apnoea then it is best to refer to a sleep unit, as a sleep study will almost always be necessary. A sleep unit's main function is to diagnose this condition and offer treatment to those who are likely to benefit. If the symptoms are fairly disabling, and the diagnosis confirmed by sleep study, then the patients are offered nasal continuous positive airway pressure therapy (nCPAP) during sleep. This is an arduous therapy which involves wearing a mask over the nose at night connected to a quiet blower under the bed: it works by slightly pressurising the upper airway, blowing it open, thus preventing the Sleep Apnoea (and snoring).

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