

Snoring

Snoring is a common sleep related problem affecting more than 20% of the population at some stage in their lives. Snoring occurs when various parts of the throat, including the soft palate, tonsils or back of tongue, vibrate when we breathe in and out at night. The noise is particularly loud when there is an obstruction to the free flow of air. In addition, if the nose is blocked, such as due to inflammation or a deviated nasal septum, the mouth will naturally open, increasing the chance of vibrations occurring in the throat and thereby creating snoring.

What factors contribute to my snoring?

Anyone of any shape or size may snore, but there are certain features which significantly increase the chance of snoring. For example:

- **Overweight:** People who are overweight (i.e. have a high body mass index or BMI) are far more likely to snore than those who are the correct weight for their height (i.e. have a normal BMI). This is mainly because of the excess fat in and around the throat which increases the chances of vibrations occurring
- **Age:** Snoring in general gets worse with advancing age
- **Gender:** Men are three times more likely to snore than women. After the menopause, women tend to catch up and are equally affected after about the age of 55
- **Family history:** Snoring is closely related to the anatomical shape and size of your throat, jaw and voice box. Certain features are particularly related to snoring, such as having a lower jaw that is slightly recessed or retroposed backwards (i.e. the opposite of a chin that sticks out). These features often run in families like everything else that we inherit!
- **Alcohol:** Alcohol is a factor which tends to make snoring worse. This occurs because alcohol relaxes the muscles of the throat, thereby causing the throat and airway to collapse more readily. This causes snoring
- **Smoking:** Smoking is also related to increased snoring. It is not known whether this is a direct effect, or whether people who smoke also tend, on average, to be more overweight than non-smokers
- **Blocked nose:** If you have a blocked nose at night, you will tend to breathe through your mouth whether you are aware of it or not. This increases the vibrations of the throat and increases the chance of snoring. Correcting the nasal abnormality may help to reduce the snoring but it rarely abolishes it completely as other factors are often involved
- **Sleeping position:** It is said that lying on your back increases snoring and lying on your side reduces it. The theory is because when lying on your back, your tongue tends to fall backwards and block the airway. However, in patients with severe snoring or even sleep apnoea (see below), the snoring can occur in whatever position

- **Hypothyroidism:** An underactive thyroid may result in snoring due to a slower metabolic rate, which causes more muscle relaxation and therefore vibrations within the throat. It is easily identified and treated
- **Large tonsils and adenoids:** Snoring in children is a special case scenario as it is almost always due to enlarged tonsils and/or adenoids. Otherwise known as adenotonsillar hypertrophy, this can cause severe snoring and sleep apnoea in children which can be quite dramatic although is rarely medically serious. It can be easily reversed with surgery to remove the enlarged tonsils and adenoids (adenotonsillectomy)

What is Obstructive Sleep Apnoea?

Obstructive Sleep Apnoea (OSA) is a condition in which temporary pauses in your breathing occur whilst you are asleep. There are two types of sleep apnoea – central and obstructive.

- **Central:** This is less common and is due to reduced impulses from the breathing centres in the brain, thereby reducing the drive to breathing. The causes for this include sedatives such as excessive alcohol, or central nervous system disorders such as tumours or multiple sclerosis
- **Obstructive:** This is by far the more common cause of sleep apnoea in snorers. This is because the throat actually blocks off the airway while you are sleeping. This causes the person to struggle for air for a few seconds. During this process, the brain increases the drive from the breathing centres, increasing the effort required to overcome the obstruction. Eventually, the extra effort succeeds in forcing open an airway past the obstruction and the person breathes again, often with a loud grunt or snort. The effort required to breathe again often wakes the person, who may report that they actually hear their own snoring. Someone who snores and wakes themselves regularly at night is therefore likely to suffer with OSA

Are there any other symptoms of OSA?

Apart from causing restless sleep with regular episodes of wakefulness, the snorer may experience considerable tiredness during the daytime because of the disturbed sleep. People may find it difficult to stay awake even when doing important tasks such as driving.

If I snore, am I likely to develop OSA at some stage?

OSA and snoring are part of the same condition. Snoring is at one end and OSA at the other, more severe end of the spectrum. Overweight people with very loud, habitual snoring tend to develop sleep apnoea. Likewise, people with a normal BMI who snore due to a well defined anatomical abnormality may improve once the problem has been treated. However,

it must be noted that occasional pauses in breathing during sleep happens in everyone and is not unusual. In fact, if a pause in breathing lasts for less than 10 seconds, it is not regarded as an apnoeic episode and is within normal limits. If however the pauses last for more than 10 seconds, occur more frequently than 5 episodes per hour, or cause significant sleep disturbance and/or daytime somnolence, OSA is more likely.

What should I do if I am worried about my snoring?

If you snore and you or your partner is affected by this, it would be worth checking your weight and calculating your BMI (which is your weight (in kg) divided by your (height)² in metres). If your BMI is greater than 25, you are overweight and you should take steps to reduce this. Your GP will be able to give you advice about achieving your correct weight for your height, and this is indeed the first thing they will discuss with you if you make an appointment to see them about snoring. Indeed, most specialists will not consider any other treatments for snoring until you are near to or at your correct weight for your height. If you drink excessive alcohol, try to reduce or avoid this. Similarly, if you smoke, consider giving this up. Some people feel that stopping smoking causes weight gain. There is no good scientific evidence for this at all, although it is true that in some people this does indeed happen. The key is to avoid replacing smoking with food as the main source of addiction.

Your GP (or specialist if you have seen one) may want to check your thyroid function to ensure you are not underactive, and also a full blood count to check that the snoring and/or OSA have not caused any increase in your blood count (haemoglobin) level.

There is little point in seeking medical help for snoring unless you have seriously considered these factors. Any treatments for snoring, particularly surgery, are considerably less effective if you are overweight and have not addressed the above reversible factors.

What is the next step?

Your GP may decide to refer you either to a respiratory physician or an ENT surgeon. It does not really matter which specialist you are referred to – in some cases you may need to be seen by both. Each specialist will tackle the problem at hand from a slightly different angle but in the end your issues will be addressed in full.

Things to expect

It is likely that a detailed history will be taken and you will be examined for any evidence of anatomical or structural problems in the throat or head and neck. Your BMI will also be calculated. You may also need to fill an Epworth questionnaire which gives the clinician a good idea as to the impact of your snoring or possible sleep apnoea on daytime activities such as driving, reading a book or sitting at a computer, amongst others.

Will I need further investigations?

As mentioned before, you may be asked to have a blood test to check for thyroid function and full blood count. There are two main investigations that may be arranged:

- **Sleep study:** This is a test which involves assessing your breathing pattern, blood oxygen level and pulse rate whilst sleeping at night. It can be done either in the hospital or by taking a portable machine home with you, which is very easy to use. If the “sleep study” reveals you have obstructive sleep apnoea, specific treatment will be recommended as discussed below. A sleep study identifies the presence and severity of OSA.
- **Sleep nasendoscopy:** This test involves having a flexible nasendoscope passed through the nose whilst you are under a very light general anaesthetic, which is administered in a carefully controlled way to simulate real sleep. In this way, the ENT surgeon can visualise the precise anatomical location at which the majority of the vibrations are occurring. This test does not tell you how severe the snoring or OSA is (a sleep study does this); it identifies the likely anatomical location or locations of the snoring

What happens if my sleep study confirms that I have OSA?

The sleep study will give an indication as to how severe the obstructive episodes are, ranging from mild to moderate to severe. If the problem is mild, it may be addressed through surgical treatments (if there is a readily identifiable anatomical problem) or non-surgical means in a similar way as for moderate or severe OSA.

If you have moderate or severe OSA, the gold standard treatment involves having **Continuous Positive Airway Pressure treatment or CPAP**. This involves wearing a mask over your nose at night. The mask gently blows air into your airways all the time, under a slight positive pressure which can overcome any obstructions within the throat thereby holding the airway open. This treatment is highly effective but needs careful supervision. The machine needs regular maintenance and some minor problems can occasionally occur, such as a dry nose or nose bleeds. Some people also find it difficult to tolerate.

Are there any other non-surgical treatments for snoring or OSA?

Another effective option to consider is the mandibular advancement splint (MAS). This is a device that is made to fit inside your mouth along the jaw line. It has the effect of gently pulling the lower jaw forwards, which in turn draws the back of the tongue forwards as well. This means that when you are lying in bed at night, the tongue is less likely to fall backwards and obstruct the throat. Breathing therefore tends to be easier and snoring/OSA much reduced. However, many people do not tolerate these devices as they can be uncomfortable and can cause excess salivation. Also, they are not usually available on the NHS. Their cost ranges from about £40 up to several hundred pounds, and as with anything in life you get what you pay for. However the advantage is that you may not need an

operation so it may be worth considering. Your specialist will be able to discuss whether this is a suitable option for you.

Please be aware, however, that there is no magic, quick guaranteed cure for snoring or OSA. Adverts which claim that a nasal spray here or a throat spray there will abolish your snoring are likely to rely heavily on a placebo effect, and in many cases are ineffective.

What are the surgical options for snoring or OSA?

If you have snoring alone or mild OSA at most, a surgical option may be considered. This is particularly the case if you have undergone a sleep nasendoscopy and it has identified an anatomical problem such as a long floppy soft palate, large tonsils or bulky tongue base, as these problems may well be amenable to surgical correction in many patients. The options include:

- **Blocked nose:** You may require a septoplasty to straighten a deviated nasal septum, or reduction of inferior turbinates if the inner lining of the nose is inflamed or swollen
- **Lax soft palate:** This can be shortened and stiffened to reduce the amount the soft palate vibrates during sleep. There are a number of different ways of achieving this, including the use of a laser or radiofrequency ablation. The benefits and risks of the options will be discussed with you
- **Bulky tongue base:** If this is felt to be a significant contributing factor to the snoring, the tongue base can be reduced in bulk by means of a radiofrequency probe similar to the technique used for the soft palate
- **Large tonsils:** You may be offered a tonsillectomy, either separately or in combination with one or other of the techniques listed above

The evidence is that the results of surgery are not very reliable and there is quite a high rate of recurrence of snoring after an initial improvement. Ask about this.

If your airway closes at the level of your tongue, you may be offered a Mandibular Advancement Prosthesis (this may need to be arranged through a dentist). This is worn in your mouth to pull your lower jaw forward at night. This holds the airway open.

In children who snore badly or have obstructive sleep apnoea, tonsillectomy and adenoidectomy can be very effective in curing the problem.

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