



## Obstructive Sleep Apnoea (OSA)

Obstructive sleep apnoea (OSA) is a condition where the walls of the throat relax and narrow during sleep, interrupting normal breathing.

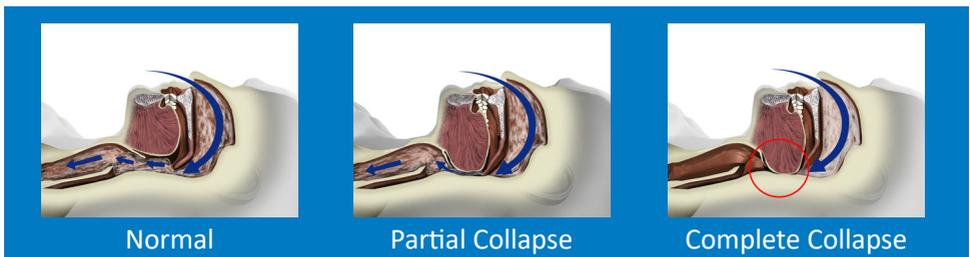
If closure of the airway stops for at least 10 seconds, it is known as an apnoea. It is normal for the muscles in the upper airway to relax and narrow when you go to sleep. In some people there can be excessive narrowing and collapsing of the airways resulting in OSA.

It is thought that in the UK up to 4% of adult males and 2% of adult females have OSA.

When the airways narrow too much or collapse, there is no passage of air into the lungs and therefore oxygen levels in the blood drop.

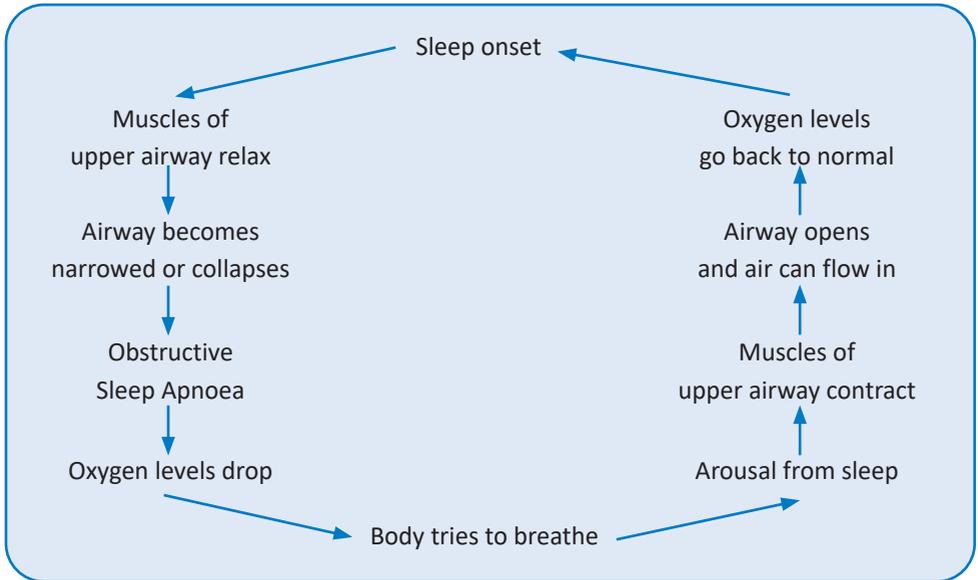
The body eventually detects this drop in oxygen levels and your brain then tells you to wake up and you make an extra effort to breathe.

This cycle can occur hundreds of times during the night, meaning that the sufferer is constantly being woken, even though they may not remember it. Each awakening disrupts the normal sleep pattern and prevents a person from getting good quality sleep.



Poor quality sleep results in a number of problems, including excessive daytime sleepiness, irritability, reduced cognitive function, needing to pass urine frequently during the night and impotence.

## The cycle of OSA



## Risk factors for OSA

OSA is more common in some people for a number of reasons. Below is a table showing some of the more common risk factors for OSA.

Increasing age	Changes in airway structure and decreased muscle tone
Male gender	Hormone-related and structural differences
Obesity	Excess pressure and tissue around airways
Neck size	Males > 17in Females >15cm Excess tissue around neck area causes further upper airway narrowing
Facial and neck anatomy	Large tonsils, large tongue, set-back jaw, large palate, crowded airway. In these cases an already narrowed upper airway made worse at onset of sleep
Smoking and alcohol	Smoking is linked to OSA. Alcohol relaxes all muscles, including those of the upper airway making OSA worse.
Sedatives	Muscle relaxants exacerbate the reduction in muscle tone at sleep onset further narrowing the upper airway

## Symptoms

The main symptoms of OSA are daytime tiredness and snoring, but there are many others. Below are some of the more common symptoms of OSA.

Snoring
Excessive daytime sleepiness
Morning symptoms – headaches, unrefreshing sleep, morning ‘fog’, irritability, poor concentration, dry mouth
Restless sleep – your partner witnesses apnoeas, choking episodes during sleep, frequent awakenings
Nocturia (frequently getting up in the night to go to the toilet)
Decreased libido (decreased sex drive)

## Consequences of OSA

Untreated OSA can result in high blood pressure and cardiovascular problems. Treatment of OSA can help reduce the associated high blood pressure and reduce the risk of suffering a stroke or heart attack. It is therefore important that OSA is treated as soon as symptoms are recognised.

## Diagnosis of OSA

Diagnosis is usually based on a patient fulfilling criterion A and/or B plus criterion C:

- A. Excessive daytime sleepiness not explained by other factors
- B. Two or more of the following that are not explained by other factors:
  - Choking or gasping during sleep.
  - Recurrent awakenings from sleep.
  - Un-refreshing sleep.
  - Daytime fatigue.
  - Impaired concentration.

C. Overnight monitoring demonstrating more than five obstructive breathing events per hour during sleep.

Your doctor will discuss the diagnosis with you in clinic.

### **Treatment for OSA: What happens next?**

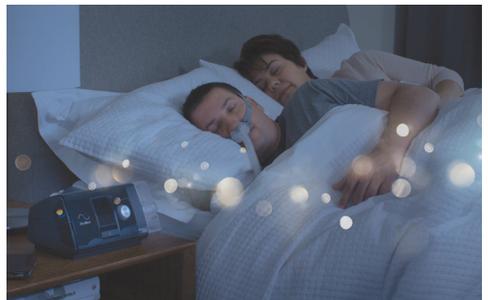
Where OSA is suspected by a GP, you will usually be asked to complete the Epworth Sleepiness Score questionnaire. If your score and combination of symptoms are suggestive of OSA, you are then referred to a sleep service via a respiratory consultant.

Once a referral has been made, there are several diagnostic tools that can be used to screen for OSA. You will first undergo an overnight pulse oximetry study, wearing a probe on our finger overnight to measure your oxygen saturation levels and pulse rate. Where more information is needed, you may undergo a more detailed sleep study. A positive diagnostic test results in a referral for Continuous Positive Airway Pressure (CPAP) therapy. As it is considered to be the most effective treatment, all patients are encouraged to trial CPAP before trying alternatives.

At the first appointment within the CPAP clinic you will be introduced to the therapy and how it works. You will take a CPAP machine home to trial for a one month period and then return for a follow-up appointment to review the treatment and discuss any problems. After this we will review you after three months to check how you are getting on. Once you are established on CPAP therapy, we will see you every 12 to 18 months in the sleep clinic.

### **What is CPAP?**

CPAP stands for continuous positive airway pressure and acts as a pneumatic splint to keep your upper airway open during sleep. You will be given a CPAP machine and mask to take home with you.



## The CPAP machine

The machine consists of a flow generator or pump, which sucks in room air and blows it into your airways under pressure to keep them open. Most CPAP machines are now automatic, which mean they respond to your airways and deliver the pressures accordingly. Machines vary in size and style, but all work on the same principle.

## The CPAP mask

There are four main types of mask, based on which part of the face they cover. Mask design varies between manufacturer and one type of mask may be more suitable for you, depending on whether you breathe through your nose or mouth when asleep.

The mask is attached to a tube that connects to the CPAP machine, allowing it to deliver the pressurised air to you as you sleep. During your initial appointment in the sleep clinic, you will spend some time finding a mask that is comfortable. Often you may need to try a few masks on before you find the right fit, this is quite normal.

### Full face mask

This type of mask covers your mouth and nose and will be recommended if you are a mouth breather. There are a variety of styles and sizes to ensure you get the best fit possible.



### Nasal mask

This type of mask just fits over your nose and is suitable if you just breathe through your nose, providing you have not had any nasal surgery. They are a lot smaller than full-face masks and come in a variety of sizes and styles.

## Nasal pillows

Nasal pillows are recommended if you are a nose breather and are especially good if you are claustrophobic as there is minimal contact with the face.



## Oral mouthpiece

This interface is good for mouth breathers who are claustrophobic. It also enables more movement during sleep. This mask requires you use humidification alongside it.

The physiologist you see in the sleep clinic will help find you the best mask to deliver effective treatment comfortably.

## How often do I need to use a CPAP machine?

You must use CPAP every night for a minimum of four hours to get the maximum benefit. If you miss a night your symptoms will return. If you are struggling to use the CPAP machine for the recommended amount of time you should contact the department.

## Advantages of CPAP

CPAP should improve the quality of your sleep so that you feel refreshed upon waking and do not feel sleepy during the day. CPAP therapy is safe and, if used for the recommended amount of time, you should notice an improvement in your symptoms straight away. In addition, it reduces the risk of the cardiovascular problems associated with OSA.

## Disadvantages

Sometimes CPAP can cause a dry mouth or nasal symptoms. These can be improved by using a humidifier with your machine. Humidification works by passing the air over heated water which adds humidity to the air as well as slightly increasing its temperature. A poor mask fit can cause the skin to rub on your nose or face. A change of mask and use of a gel nasal strip can help with these problems.

## Looking after your machine

Please look after your CPAP equipment as it is very expensive. A CPAP machine costs approximately £500 and a facemask £150.

## Cleaning

It is important that you keep your mask clean to prevent infection.

### Daily

You should wipe the mask daily with a wet cloth. Do not use harsh chemicals.

### Weekly

Wash the mask and tubing in warm, soapy water and rinse clean. Allow to drip dry. Keep your machine clean and dust free by wiping it with a damp cloth. Take the filter out of the machine and flick any dust from it before replacing it.

### Every three to six months

Change the filter in the back of the machine. If you have pets or keep your machine on the floor, you may need to change it more regularly.

## Common problems

You may encounter some of the following whilst trialing CPAP. The physiologist in the sleep clinic will run through some solutions for these common problems during set up, but if you are struggling during your trial please contact the department. We can remedy these complaints if you let us know about them.

- Nasal congestion/sore throat/dry mouth.
- Claustrophobia.
- Sore nasal bridge.
- Mask leak.

## CPAP and holidays

You will need to take your CPAP machine with you when you go away on holiday. If you are flying, the CPAP machine should be taken as hand luggage. We can provide a travel letter for you to show to the airline. Be aware that plug sockets in hotels may not be easily accessible and you may need to consider an extension cable and also an adapter.

## OSA and driving

Driving whilst tired is illegal and falling asleep at the wheel is a criminal offence that can carry a prison sentence. If you have a driving licence, by law, you must notify the DVLA and your insurance company that you have OSA and are being treated with CPAP.

Failing to notify the DVLA of a medical condition that affects driving carries a fine of up to £1000. It is recommended that you do not drive when you feel sleepy, even if your diagnosis of OSA is only suspected.

## OSA and surgery

You will need to take your CPAP machine with you if you have an overnight stay in hospital as the wards do not have spare machines. If you are being admitted for surgery, it is extremely important that you inform your pre-op nurse/doctor and anaesthetist that you have OSA and are on CPAP therapy. If you are having general anaesthetic you may need to use your machine straight after the operation.

## Contacting the department

Both Doncaster Royal Infirmary and Bassetlaw Hospital do not offer a drop in service. Therefore if you turn up without calling and making an appointment it is unlikely that you will be seen. This is because the physiologists will be busy with other patients.

For urgent CPAP problems, calling first thing in the morning to arrange an appointment may increase your chance of being seen later that day. There are some things that we can help you with over the phone and you may not need to come in.

## Attending your appointments

It is extremely important that you attend your appointments. If you hold a driving licence you should be aware that inadequate monitoring and treatment of your condition may worsen your symptoms and impair your driving performance. The Driver and Vehicle Licensing Agency (DVLA) expect that people who suffer from sleep apnoea syndrome attend the clinic to ensure they are receiving adequate treatment in order to control symptoms.

Due to our large number of patients, failure to attend an appointment will result in the notification to your consultant and GP and retrieval of your machine. If you missed an appointment in error you should contact the department as soon as possible to re-arrange.

The departments are NOT open on weekends or bank holidays

## Important

- You are responsible for the safe keeping of the CPAP machine and equipment.
- You must attend regular follow-up appointments to ensure you are getting maximum benefit from the therapy and to allow us to safely test your machine and replace consumables.
- If you are no longer using your machine please return it to the department.
- Please contact the department if you have any problems, we are here to help!

## Contact details for Cardio-Respiratory Departments:

### **Doncaster Royal Infirmary**

Tel: 01302 642456 Monday to Friday 8.30am to 4.30pm

Doncaster patients email:

dbth.cpapdoncaster@nhs.net for consumables only.

### **Bassetlaw Hospital**

Tel: 01909 572761 Monday to Friday 8.00am to 4.30pm

Bassetlaw patients email:

dbth.cpapbassetlaw@nhs.net for consumables only.

## **Patient Experience Team**

The team are available to help with any concerns/complaints you may have about your experience at the Trust. Their office is in the Main Foyer (Gate 4) of Doncaster Royal Infirmary. Contact can be made either in person or by telephone 8.30am till 5.00pm, Monday to Friday (excluding bank holidays) or via email.

### **The contact details are:**

**Telephone:** 01302 642764 or 0800 028 8059

**Email:** [dbth.pals.dbh@nhs.net](mailto:dbth.pals.dbh@nhs.net)

## **CPAP USER GROUP**

We are setting up a CPAP User Group to offer support for sleep apnoea patients from Doncaster Royal Infirmary and Bassetlaw Hospital. The group is a chance to meet other users and find out about their experiences, as well as finding out more information about sleep apnoea and CPAP. In addition, you will have the opportunity to ask questions and to meet representatives from CPAP companies selling CPAP accessories not available through the hospital.

If you would like further information, to attend the next meeting or if you have any suggestions or ideas for topics that could be discussed then you can call or email us on the following :

01302 642456

[dbhcpapusers@gmail.com](mailto:dbhcpapusers@gmail.com)