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## What is Obstructive Sleep Apnoea?

Obstructive Sleep Apnoea / Hypopnoea Syndrome (**OSAHS**) is a condition whereby the upper airways collapse intermittently and repeatedly during sleep. This can vary between an **apnoea** (no airflow through the airways) and a **hypopnoea** (a reduction of airflow through the airways).

When you fall asleep, the soft tissue around your neck relaxes; this causes the airways to narrow and can eventually lead to airway collapse. To overcome this you will make more of an effort to breathe and this will lead to an arousal from deep sleep to wakefulness or a lighter sleep phase to allow the recommencement of normal breathing. This can happen many times throughout the night and results in poor quality sleep as you will not enter a deep and regenerating sleep phase.

## Features of OSAHS

- Unrefreshing sleep
- Loud Snoring
- Morning Headaches
- Daytime sleepiness
- Impaired memory, reduced alertness, increased risk of accidents
- Frequent urination at night
- Mood and personality changes
- Impaired quality of life
- Adverse effects on others – impaired relationships between spouses or partners.

## Who has OSAHS?

The main risk groups to having OSAHS are:

- Increased age
- Obesity
- Increased collar size (over 17 inches)
- Male gender
- Increased smoking and alcohol consumption
- Sedative drugs

## What happens if I have OSAHS and I don't treat it properly?

- High Blood Pressure
- Irregular heart rhythms or heart disease
- Heart attack
- Stroke
- Increased likelihood of driving or work-related accidents

## How is OSAHS diagnosed?

OSAHS is diagnosed with a small device that can be taken home and will take a number of measurements whilst you are asleep at night. The machine is set up in the sleep clinic where you will be issued with full instructions and details on how to fit the device before you go to bed. **It is usually carried out in the home setting as this is where the best results are obtained.**

The device takes measurements of your breathing pattern, rate, and any pauses or reduction in your breathing. It also measures your oxygen levels, heart rate and snoring levels. When downloading the data from the overnight sleep study, a calculation will be made of how many episodes of apnoea or hypopnoea that have occurred hourly associated with a possible drop in oxygen levels.

This will give an index known as the Apnoea / Hypopnoea Index (AHI).

- A normal AHI ranges from 0 - 5
- If the AHI is less than 15, it is diagnosed as **mild** OSAHS
- An AHI of 15 - 30 is diagnosed as **moderate** OSAHS
- An AHI of over 30 is diagnosed as **severe** OSAHS

If you are found to have moderate or severe OSAHS, you will be treated at the sleep clinic.

## DVLA

Many patients worry about the legal aspects of driving when OSAHS is diagnosed. The Scottish Intercollegiate Guidelines Network (SIGN) for the Management of Obstructive Sleep Apnoea state:

*'Untreated sleep apnoea often causes sleepiness which is dangerous whilst driving and can lead to an increased likelihood of having an accident. Patients should be informed that they must not drive if they feel sleepy, even if the diagnosis of OSAHS is only suspected, and that falling asleep at the wheel is a criminal offence and can potentially lead to a prison sentence'.*

When a person is diagnosed as suffering from sleep apnoea they must be told verbally and in writing that they should inform the Driver and Vehicle Licensing Agency (DVLA) of the diagnosis. This information must also be given to the GP. **There should be no problem about keeping a licence provided that patients comply with an effective treatment regimen." Failure to do so will result in a heavy fine of £1000 +.**

After diagnosis the patient should also inform their insurance company.

The DVLA recommends:

### **Group 1 Licences (normal car licence)**

Driving must cease **until** satisfactory control of symptoms has been attained.

### **Group 2 Licences (HGV, PSV)**

**Driving must cease until** satisfactory control of symptoms has been attained, with ongoing compliance with treatment, confirmed by consultant / specialist opinion. Regular, normally annual, licensing review required.

DVLA - [www.dvla.gov.uk](http://www.dvla.gov.uk) Phone: 0300 790 6806

## How can OSAHS be treated?

Lifestyle issues should be addressed in the first instance:

- **Lose Weight:** Weight reduction improves symptoms associated with OSAH and other weight related disorders. In some cases patients have returned their CPAP machines as they have lost sufficient weight and no longer suffer from OSAH
- **Avoid Alcohol:** Alcohol consumption increases the severity of OSAH and reduces quality of sleep. Although alcohol consumption may be effective in helping you fall asleep, it will impair sleep during the second half of the night and lead a reduction in overall sleep time. Alcohol also anaesthetises the airway which will result in further airway collapse.
- **Sleep Hygiene:** Having a regular sleeping pattern can improve the symptoms of daytime sleepiness. This includes going to sleep and waking up at a sensible time every day. Try to avoid having naps in the daytime and early in the evening; this will result in you going to bed at a later time at night and then having poor quality sleep. Try to aim for 6-8 hours sleep per night
- **Reduce caffeine:** Caffeine is a stimulant and will also make you go to the toilet more regularly
- **Stop smoking:** Cigarettes contain nicotine which is a stimulant
- **Reduce stress:** Engage in relaxing activities before bed; read a book, have a relaxing bath, listen to soft music

## OTHER THERAPY - Continuous Positive Airway Pressure (CPAP)

A machine known as CPAP is most commonly used for the treatment of OSAHS. This is the treatment of choice according to the [National Institute for Clinical Excellence \(NICE\)](http://www.nice.org.uk).

In short, CPAP is a machine that delivers air under pressure through the airways, preventing collapse of the airways. This will reduce or abolish the amount of apnoeas / hypopnoea during sleep and lead to a more normal night's sleep.

**CPAP is not a cure for OSAHS, it is a treatment:** If you are compliant with the treatment and use it nightly, your symptoms will most likely disappear. If you do not use the CPAP or fail to use it for a few nights, you will revert back to having the symptoms associated with OSAH

### **Possible benefits of CPAP treatment**

- Refreshing sleep
- Reduction in snoring
- Better quality of sleep
- Reduced sleepiness during the day
- Increased energy, activity
- Improved concentration
- Improved relationship with partner / spouse
- Improvement in mood

### **How to use CPAP**

As soon as commencement on CPAP treatment begins, it is essential that full compliance begins the very day the machine is issued. The machine should be used every night, all night for it to have a beneficial effect. At the Sleep Clinic you will have full instructions and support on how to use CPAP.

### **The Machine**

All machines are issued with humidification. It is there to aid compliance/usage. It is intended to moisten the air which is being delivered to prevent a dry mouth/nose.

The best place to put the machine is either on the floor or close to it. This is to prevent moisture from collecting in the tube. Condensation build up will result in water in your mask system and tubing which will disturb your night's sleep. To remedy this, it is advisable to insulate your tubing during the winter months.

The CPAP machine has a memory chip and this calculates how often you use the machine and for how long. It will also measure your AHI whilst you are on treatment. This card will be read when you visit the Sleep Clinic to observe compliance (usage) and treatment.

Should you be admitted to hospital for an overnight stay, either for surgery or for a medial assessment please ensure that you bring your equipment onto the ward with you.

### **Maintenance and Servicing**

Your machine will require a yearly safety check carried out by the staff in the Electronics Departments within BCUHB. Full instructions and guidance on how to use the machine and mask are provided at the Sleep Service when you are set up on CPAP.

### **The Mask**

There are two main types of masks commonly provided at the Sleep Service: Nasal masks and Full Face masks. Put simply, a nasal mask delivers the flow of air through your nose, the full-face mask delivers the flow of air through your nose and mouth. There are benefits to both of these masks; you will be provided with the mask that best suits you.

### **Mask Fitting**

To ensure a correct and comfortable mask fitting, with minimal air leakage, it is important not to fasten the straps around the mask too tight. This may lead to even more leakage. If you are experiencing some mask leakage, loosen the straps first, if it continues to leak, then tighten the straps slightly. It is imperative that it is not over-tightened, as this can lead to a pressure sore developing on the bridge of your nose.

If during the night you experience problems with leakage when turning over etc, you may simply rearrange the mask on your face until it is comfortable again. If the leakage is excessive do not tighten the straps as you will crush the silicone seal, which will result in further leakage. Undo the mask system and then re-site it onto your face.

### **Care**

Keeping the mask clean is important for your own comfort. It is advisable to clean your mask daily with baby wipes and every 3 - 4 days with gentle washing liquid or baby wash. When cleaning the headgear for the mask, it is best to hand-wash rather than wash in the washing machine as it is delicate fabric.

**Please take care of your machine and mask and ensure that they are clean when you attend for compliance checks.**

### **Side Effects and Symptoms**

A range of minor side effects from CPAP treatment may arise. These symptoms may be:

- Nasal bridge soreness (this may be because the mask is too tight)
- Discomfort
- Claustrophobia
- Abdominal bloating – due to swallowing of air which can happen during the first few weeks after commencing on therapy.

If you experience any of these symptoms, contact the Sleep Service.

### **Power or Equipment Failure**

If a problem arises with the machine, arrangements will be made to repair it. You will be issued with a replacement in the meantime while it is being repaired. **As there is no out of hours/weekend service you will need to contact the clinic the next working day.**

If you damage any part of the mask, replacements can be sent through the post.

### **Clinic follow-ups**

After being set up on CPAP treatment, you will be reviewed in the Sleep Clinic in one month. This is to ensure that you are having no problems and also to check compliance from the smartcard. You will then be followed up depending on your compliance.

When patients are fully established on the CPAP flow generator, they will usually be seen yearly for safety checks on the machine and replace mask parts that need replacing. However, if there are any problems, patients are encouraged to contact the Sleep Clinic and an appointment will be arranged at short notice.

### **Travelling Abroad**

Patients with OSAHS who have a CPAP machine should be entitled to take their machine as additional hand luggage. A letter confirming that the patient has OSAHS and that the CPAP machine is required as part of ongoing treatment is available at the Sleep Clinic. CPAP machines are now designed to work at a variety of voltages and frequencies around the world and will adjust automatically.

It would however be advisable to check that the machine is compatible with where in the world you are going.

**PLEASE ALSO SEE OUR GUIDE TO A GOOD NIGHTS SLEEP AVAILABLE FROM YOUR SLEEP CLINIC OR VIA THE BCUHB WEBSITE.**