ABBREVIATIONS

AHI	Apnoea/hypopnoea index
COPD	Chronic Obstructive Pulmonary Disease
CPAP	Continuous Positive Airway Pressure
OSAHS	Obstructive Sleep Apnoea / Hypopnoea Syndrome
PSG	Polysomnography

PATIENT RESOURCES

The Scottish Association for Sleep Apnoea,
18 Albert Avenue, Grangemouth, FK3 9AT
Tel: 01324 471 879. Fax: 01324 471 879
E-mail: smtprice@bigfoot.com

SATA (The Sleep Apnoea Trust)
7 Bailey Close, High Wycombe, HP13 6QA
Tel: 01494 527772
www.sleep-apnoea-trust.org

American Sleep Apnoea Association
www.sleepapnea.org/

The Sleep Medicine Home Page
www.users.cloud9.net/~thorpy/

The Scottish Intercollegiate Guidelines Network (SIGN) supports improvement in the quality of health care for patients in Scotland by developing national clinical guidelines containing recommendations for effective practice based on current evidence.

The recommendations are graded A B C D to indicate the strength of the supporting evidence.

Good practice points ☑ are provided where the guideline development group wishes to highlight specific aspects of accepted clinical practice.

Details of the evidence supporting these recommendations and their application in practice can be found in the full guideline, available on the SIGN website: **www.sign.ac.uk**

This guideline was issued in 2003 and will be considered for review as new evidence becomes available.

For more information about the SIGN programme, contact the SIGN Executive or see the website.

This guideline is endorsed by the British Thoracic Society.

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Royal College of Physicians
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Obstructive Sleep Apnoea

This QRG provides a summary of the main recommendations in the SIGN guideline on management of obstructive sleep apnoea / hypopnoea syndrome (OSAHS). It addresses the diagnosis and treatment of sleep apnoea, clinical features of the condition and the effect of treatment on driving ability and quality of life.

DEFINITIONS AND CLINICAL BACKGROUND

- Apnoea - a ten second breathing pause
- Hypopnoea - a ten second event where there is continued breathing but ventilation is reduced by at least 50% from the previous baseline during sleep
- Obstructive sleep apnoea/hypopnoea syndrome (OSAHS) - the coexistence of excessive daytime sleepiness with irregular breathing at night
- Apnoea/hypopnoea index (AHI) - the frequency of apnoeas and hypopnoeas hourly (used to assess the severity of OSAHS)

As the sufferer falls asleep the muscle tone in the upper pharyngeal airway decreases leading to upper airway narrowing. This in turn produces an increase in inspiratory effort in an attempt to overcome this airway narrowing which then leads to a transient arousal from deep sleep to wakefulness or a lighter sleep phase which allows restoration of normal airway muscular tone and calibre. The patient then falls more deeply asleep again and the whole cycle repeats itself. This can occur many hundreds of times throughout the night leading to fragmentation of normal sleep architecture and a reduction in the quality of sleep with the generation of restless, disturbed and unsatisfying sleep.

CLINICAL FEATURES

- excessive daytime sleepiness
- impaired concentration
- snoring

} *Dominant features*

- unrefreshing sleep
- choking episodes during sleep
- witnessed apnoeas
- restless sleep
- irritability / personality change
- nocturia
- decreased libido

SEVERITY OF OSAHS

OSAHS may be subdivided into varying degrees of breathing abnormality, for example, depending on the AHI:

Mild	AHI 5-14/hr
Moderate	AHI 15-30/hr
Severe	AHI >30/hr

DIAGNOSIS

C **All patients who have suspected sleep apnoea and their partners should complete an Epworth questionnaire to subjectively assess the degree of pretreatment sleepiness.**

☑ The combination of severe OSAHS and COPD is potentially dangerous and in such cases clinicians should consider urgent referral to a sleep centre.

☑ Patients with symptoms suggestive of OSAHS, who are sleepy whilst driving or working with machinery, or are employed in hazardous occupations should be considered for urgent referral to a sleep centre, as should those with ventilatory failure.

☑ OSAHS should be excluded in patients before they are considered for surgery for snoring.

PHYSICAL EXAMINATION

Examination by itself cannot allow an accurate diagnosis of OSAHS but it does help to exclude other causes for the patient's symptoms. The following should be included in a physical examination:

- weight and height
- neck circumference
- mandible size
- nasal patency
- upper airway obstruction
- oral cavity (for macroglossia and dentition status)
- pharyngeal appearance
- blood pressure
- routine respiratory, cardiovascular and neurological measures

DIAGNOSTIC TOOLS

Various diagnostic tools are used in the assessment of OSAHS. Of these polysomnography, limited sleep studies and oximetry have been shown to be of value; flow volume loops, radiological imaging, questionnaires and nasendoscopy have not.

B **Limited sleep studies to assess respiratory events are an adequate first-line method of diagnostic assessment for OSAHS.**

☑ Full PSG with EEG-based sleep staging is not necessary to diagnose sleep apnoea in most patients. It should be available in regional sleep centres for patients who have typical symptoms of excessive daytime somnolence but no objective evidence of obstructive sleep apnoea on limited testing.

☑ Oximetry studies cannot exclude OSAHS. Studies using oximetry alone may have a role in the initial assessment of OSAHS, however their significant limitations must be fully appreciated before using them to make diagnostic and therapeutic decisions.

TREATMENT

Current evidence from randomised controlled trials indicates that improvements with treatment can be found in symptomatic patients with AHI ≥15 or a 4% oxygen saturation dip rate at the level of > 10/hour.

BEHAVIOURAL INTERVENTIONS

C **Weight loss should be encouraged in all patients with obesity contributing to their OSAHS. Attempts at weight loss should not delay the initiation of further treatment. Weight loss should also be encouraged as an adjunct to CPAP or intra-oral devices as it may allow discontinuation of therapy.**

☑
- Patients who smoke should be advised to stop
- Alcohol and sedatives or sleeping tablets should be avoided
- Non-sleepy snorers should be discouraged from sleeping on their backs.

NON-SURGICAL INTERVENTIONS

Continuous Positive Airway Pressure (CPAP)

A **CPAP is the first choice therapy for patients with moderate or severe OSAHS that is sufficiently symptomatic to require intervention.**

C **Persistent low CPAP use (less than two hours per night) over six months, following efforts to improve patient comfort, should lead to a review of treatment.**

☑ CPAP therapy should not be abandoned without:
- the attention of a trained CPAP nurse / technician
- a titration study / use of autotitrating CPAP to troubleshoot problems
- the use of heated humidification.

B **Bi-level ventilation should not be used routinely in OSAHS but should be reserved for patients with ventilatory failure.**

Intra-oral devices

A **Intra-oral devices are an appropriate therapy for snorers and for patients with mild OSAHS with normal daytime alertness.**

B **Intra-oral devices are an appropriate alternative therapy for patients who are unable to tolerate CPAP.**

D **The use of intra-oral devices should be monitored following initiation of therapy to allow device adjustment and assessment of OSAHS control and symptoms.**

Pharmacological therapy

A **Pharmacological therapy should not be used as first line therapy for OSAHS.**

SURGICAL INTERVENTIONS AND ANAESTHESIA

B **Use of UPPP or LAUP for the treatment of OSAHS is not recommended.**

☑ The presence of large tonsils in a patient with diagnosed OSAHS should prompt referral to an ENT surgeon for consideration of tonsillectomy.

☑ The effect of anaesthesia during surgery may increase the severity of the apnoea postoperatively. When a patient is being treated by CPAP preoperatively this should be continued immediately following surgery.

☑ All patients with OSAHS should be monitored with oximetry postoperatively and further management decided on an individual basis.

DRIVING AND QUALITY OF LIFE

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. After diagnosis the patient should also inform their insurance company.

The DVLA recommends:

Group 1 Licences (normal car licence)

Driving must cease if continuing to cause excessive awake time sleepiness. Driving will be permitted when satisfactory control of symptoms achieved.

Group 2 Licences (HGV, PSV)

Driving must cease if continuing to cause excessive awake time sleepiness. Driving will be permitted when satisfactory control of symptoms achieved *and confirmed by specialist opinion.*

A **CPAP should be considered for the improvement of driving ability in patients with severe OSAHS as it reduces daytime sleepiness.**

☑ CPAP treatment should be prioritised to sleepy drivers and occupational drivers with OSAHS given the public health consequences of untreated OSAHS, sleepiness and accidents.