

Clinical Threshold Policy

Diagnostic Investigations and Treatments for Obstructive Sleep Apnoea/Hypopnoea Syndrome (OSAHS) in Adults

Pathway

This pathway aims to cover the diagnosis and treatment of adults with obstructive sleep apnoea and hypopnoea syndrome (OSAHS) (see reference 1).

Patients with ventilatory failure, severe or rapidly deteriorating symptoms should be referred urgently outside this pathway.

For information on surgery for OSAHS please refer to "[Surgery for Obstructive Sleep Apnoea/Hypopnoea Syndrome and Snoring](#)" policy.

It is the responsibility of referring and treating clinicians to ensure compliance with this policy. Referral proforma should be attached to the patient notes to aid the clinical audit process and provide evidence of compliance with the policy. For patients not meeting the policy criteria, but are considered to be exceptional, clinicians can apply for funding to the Exceptional Cases Panel by completing the exceptional funding section of the [referral proforma](#). Patients should not be referred until there is funding approval from the exceptional cases panel.

Primary Care: Snoring **And** daytime sleepiness (eg Epworth score ≥ 11 , see Appendix 1) as opposed to tiredness **And** one of the following:

- witnessed nocturnal apnoeic episodes (person stops breathing);
- waking from sleep due to sensations of choking/obstruction;
- diabetes mellitus;
- neck circumference ≥ 17 ins in a man or > 15 ins in a women;
- retrognathia;
- a crowded oro-pharynx on visual inspection.

And when other causes of daytime sleepiness have been considered (eg insufficient sleep, shift work, psychological conditions and sedating drugs).

Provide lifestyle/behaviour modification advice, particularly to encourage weight loss, smoking cessation, moderate alcohol consumption and regular sleep routines.

Follow the NICE pathway over the page.

OSAHS is classified according to the number of apnoeas and hypopnoeas per hour (AHI) measured by polysomnography or estimated from the Oxygen Desaturation Index (ODI). The categories used are:

- mild (5-14/hr)
- moderate (15-30/hr)
- severe (>30 /hr – see reference 2)

Diagnosis

- Offer home respiratory polygraphy
- If access to home respiratory polygraphy is limited, consider home oximetry
- Consider respiratory polygraphy or polysomnography if oximetry results are negative but the person has significant OSAHS symptoms
- Consider hospital respiratory polygraphy if home respiratory polygraphy or home oximetry are impractical or additional monitoring is needed
- Consider polysomnography if respiratory polygraphy results are negative but symptoms continue
- Use the results of the sleep study to diagnose OSAHS and determine severity

Priority factors for rapid assessment

- vocational driving or vigilance-critical job
- unstable cardiovascular disease
- pregnancy
- preoperative assessment for major surgery
- non-arteritic anterior ischaemic optic neuropathy

Discuss lifestyle changes tailored to the person's needs
Give information on OSAHS, including the treatments available and choosing the best treatment for the person
Consider tonsillectomy if the person has large obstructive tonsils and BMI <35 kg/m²

Mild OSAHS with no symptoms or symptoms that do not affect usual daytime activities

Offer lifestyle and sleep advice alone

Mild OSAHS with symptoms that affect quality of life and usual daytime activities

Offer fixed-level CPAP:

- at the same time as lifestyle advice if they have priority factors for assessment (see above) or
- if lifestyle advice alone has been unsuccessful or is inappropriate

Moderate or severe OSAHS

Offer fixed-level CPAP in addition to lifestyle advice

Rhinitis

Assess people with nasal congestion for rhinitis and treat if confirmed (for details, see the guideline)

Changing from nasal to orofacial masks and adding humidification can help with CPAP tolerance

Offer telemonitoring for up to 12 months and consider it for longer

Consider auto-CPAP instead of fixed-level CPAP if:

- high pressure is needed only for certain times during sleep or
- fixed-level CPAP is not tolerated or
- telemonitoring cannot be used for technological reasons or
- auto-CPAP is available at the same or lower cost than fixed-level CPAP and this price is guaranteed for an extended period of time

Consider heated humidification for upper airway side effects, such as nasal and mouth dryness, and CPAP-induced rhinitis

Other treatment options

If CPAP is not tolerated or declined, consider a customised or semi-customised mandibular advancement splint in people aged 18 and over with optimal dental and periodontal health

If other treatments are unsuitable or not tolerated consider a positional modifier for mild or moderate positional OSAHS or referral for assessment for oropharyngeal surgery for moderate or severe OSAHS

Monitoring and support (for further details, see the guideline)

- Monitor and optimise therapy with CPAP, mandibular advancement splints, surgery and positional devices
- Tailor follow-up to the person and offer face-to-face, video or phone consultations with telemonitoring data, if available
- Ensure follow-up is in line with [DVLA guidance on assessing fitness to drive](#)
- Offer access to a sleep service for CPAP users for advice, support and equipment
- Offer educational or supportive interventions by trained specialists to improve adherence
- Consider stopping treatment if OSAHS may have resolved. After at least 2 weeks without treatment, re-evaluate any return of symptoms and consider a sleep study

Important Considerations

Untreated OSAHS leads to an increased risk of motor vehicle collisions and driving related incidents are the leading cause of work-related deaths in the UK. It is the responsibility of people who are sleepy during the day (regardless of the cause) to cease driving until their symptoms resolve (see [Tiredness can kill](#), DVLA leaflet). If the symptoms are severe enough to affect driving performance and are due or very likely due to a medical condition (including OSAHS) the driver must inform the DVLA. Although clinicians are not required to inform the DVLA about the patient's symptoms, they are responsible for advising the patient appropriately.

Vocational drivers of Heavy Goods Vehicles (HGVs) or Public Service Vehicles (PSVs) meeting the referral criteria of this policy may be referred for investigation with oximetry/polysomnography without attempted lifestyle modification and, if diagnosed with OSAHS at any level of severity may be offered oral devices or CPAP as initial options. For vocational drivers, if a diagnosis of OSAHS has been made or is strongly suspected adequate symptom control should be confirmed by a specialist before driving resumes and annual licensing review is required.

Rationale and Evidence

Screening

Clinical characteristics have been associated with increased risk of OSAHS (see references 3 & 4) and the [Epworth Sleepiness Scale](#) (ESS) or the [STOP-Bang](#) questionnaire can be used to assess severity in someone with suspected OSAHS. The ESS is a useful tool in population studies but may over estimate sleepiness in patients with low mood and people with chronic fatigue. 'The likelihood of falling asleep' is a difficult concept for some patients and it is useful to follow up a high ESS score with specific questions asking when the patient last actually fell asleep, for example, in mid conversation, during a meal, or when driving. Similarly, where the patient is describing sleepiness, but the ESS is <11 such specific questions may raise more concern about their safety and support referral for investigation. Falling asleep after a meal, watching television in the evening, or as a passenger in a car is not necessarily abnormal and would not routinely require further investigation.

Lifestyle Modification Advice

NICE recommend discussion of appropriate lifestyle changes with all people with OSAHS (see reference 3). This includes information on weight loss, stopping smoking, reducing alcohol intake and improving sleep hygiene, tailored to the person's needs. Lifestyle changes are important because obesity increases the prevalence and severity of OSAHS, smoking causes upper airway inflammation (which can exacerbate symptoms), and excess alcohol before sleep reduces upper airway tone (increasing apnoeas) and reduces sleep quality. Advice on sleep hygiene may include ensuring adequate sleep time, avoiding caffeine and stimulants that interfere with sleep before bedtime, exercising regularly, having a quiet, comfortable, darkened bedroom, and winding down before sleep.

Oral Appliances/Mandibular Advancement Devices

A recent evidence review by NICE reported clinical benefit for mandibular advancement splints compared to placebo in moderate severity OSAHS (see reference 4). Additionally, evidence suggested a benefit to quality of life and patient reported outcomes such as ease of use and preference when compared with continuous positive airways pressure (CPAP). Therefore, oral applications (self-funded) should be promoted where appropriate, which will suit some patients better than CPAP.

Pulse Oximetry

There is a lack of high-quality evidence regarding the value of oximetry compared to other methods of diagnosing OSAHS (see reference 5). Oximetry can be considered as a viable method of assessing people for OSAHS when interpreted by trained staff. Negative oximetry results, in people with a presentation of OSAHS, cannot exclude the diagnosis and access to further tests is a requirement of a functional sleep service.

Continuous Positive Airway Pressure

CPAP has been shown to be effective (see reference 6). NICE guidance recommends CPAP as a treatment for adults with moderate or severe OSAHS. NICE only recommend CPAP as a treatment option for mild OSAHS in limited circumstances: if patients have undergone lifestyle advice and other treatment options have been attempted unsuccessfully/are considered inappropriate or at the same time as lifestyle advice for those with priority factors (vocational driving or vigilance-critical job, unstable cardiovascular disease, pregnancy, preoperative assessment for major surgery, non-arteritic anterior ischaemic optic neuropathy – see reference 6).

Estimated Number of People Affected

Risk factors associated with OSAHS include male sex, increasing age and obesity. Current estimates suggest that 1.5 million adults in the UK have OSAHS and of these 55% have mild OSAHS (see reference 7).

Glossary

AHI:	Apnoea Hypopnoea Index- the number of times per hour that a person has apnoeas and hypopnoeas based on measures of airflow and chest and abdominal movements.
Apnoea:	Temporary absence or cessation of breathing
Continuous positive airways pressure (CPAP) device:	A device to generate airflow, directed to the airway via a mask. The airflow generates positive pressure which prevents upper airway collapse.
Hypopnoea:	Reduction in airflow (usually due to partial obstruction of the upper airway) during sleep.
Mandibular advancement device/splint:	Device to move the lower jaw forward.
Obstructive sleep apnoea /hypopnoea syndrome (OSAHS):	A condition in which a person experiences repeated episodes of apnoea or hypopnoea causing closure or narrowing of the pharyngeal airway during sleep.
Pharyngeal airway:	The part of the throat where the nasal and oral cavities meet.
Pulse oximetry:	Measurement of a person's blood oxygen concentration.
Respiratory polygraphy:	An overnight test monitoring airflow, respiratory effort and pulse oximetry to diagnose sleep disorders.
Tonsillectomy:	Surgical removal of the tonsils.

References

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The Epworth Sleepiness Scale (ESS)

How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:

0 = would never doze

1 = slight chance of dozing

2 = moderate chance of dozing

3 = high chance of dozing

Situation	Chance of Dozing (0–3)
Sitting and reading.	
Watching television.	
Sitting inactive in a public place (eg a theatre or meeting).	
As a passenger in a car for an hour without a break.	
Lying down to rest in the afternoon when circumstances permit.	
Sitting and talking to someone.	
Sitting quietly after a lunch without alcohol.	
In a car, while stopped for a few minutes in the traffic.	
Total Score	