

6.6 OBSTRUCTIVE SLEEP APNOEA/HYPOPNOEA SYNDROME (OSAHS) IN ADULTS

What is the Sleep Apnoea/Hypopnoea Syndrome?

People who suffer from obstructive sleep apnoea/hypopnoea syndrome (OSAHS) breathe shallowly or stop breathing for short periods while sleeping. This can happen many times during the night. It results in poor sleep leading to excessive sleepiness during the day. Because these events occur during sleep, a person suffering from OSAHS is often the last one to know what is happening.

In deep sleep, the muscles of the throat relax. Normally this doesn't cause any problems with breathing. In OSAHS, complete relaxation of the throat muscles causes blockage of the upper airway at the back of the tongue. Normal breathing then slows or stops completely. Such an episode is called an apnoea. During an apnoea, people with OSAHS make constant efforts to breath against their blocked airway until the blood oxygen level begins to fall. The brain then needs to arouse the person from deep relaxed sleep so that the muscle time returns, the upper airway then opens and breathing begins again. Unfortunately when a person with OSAHS falls back into deep sleep, the muscles relax once more and the cycle repeats itself again and again overnight.

In OSAHS, the apnoeas can last for several seconds and in severe cases the cycle of apnoeas and broken sleep is repeated hundreds of times per night. Most sufferers are unaware of their disrupted sleep but awaken unrefreshed, feeling sleepy and in need of further refreshing sleep.

Who gets OSAHS?

Whilst OSAHS is more common in overweight middle-aged males who snore, it can also affect females, although female hormones and a difference in throat structures may protect women until the menopause. It is estimated that between 11,000 and 22,000 people in Northern Ireland, aged between 30-64, have OSAHS.

Narrowing of the back of the throat and the upper airway can also contribute to the risk of getting OSAHS, even in people who are not overweight or middle-aged. In such people a small jaw,

enlarged tongue, big tonsils and big soft palate help to block the upper airway in deep sleep, making OSAHS more likely to occur. Several of these problems can be present in any person at the same time.

The use of alcohol, sleeping tablets and tranquillisers prior to sleep relaxes the upper airway muscles and make OSAHS worse. Alcohol can also reduce the brain's response to an apnoea which in turn leads to longer and more severe apnoeas in people who would otherwise have only mild OSAHS and who would otherwise only snore.

What are the symptoms of OSAHS?

Most people with OSAHS snore loudly and breathing during sleep may be laboured and noisy. Sleeping partners may report multiple apnoeas which often end in deep gasping and loud snorting. Sufferers may report waking for short periods after struggling for breath. Symptoms are often worse when lying on the back in deepest sleep.

Although a person with OSAHS may not be aware of the many arousals from deep sleep, they suffer from poor quality sleep in spite of long periods of time spent in bed. Such people wake feeling that they haven't had a full refreshing night's sleep. They report difficulty maintaining concentration during the day, have a poor memory, and suffer from excessive daytime sleepiness.

At first an OSAHS sufferer may be sleepy only when seated and relaxed, e.g. watching TV, but eventually sleepiness becomes so severe that car accidents and accidents in the workplace occur. Other symptoms of OSAHS include morning headache, nocturia, depression, short temper, grumpiness, personality change and impotence in males, leading to loss of interest in sex.

What are the consequences of untreated OSAHS?

The most serious potential consequences of untreated OSAHS are road traffic accidents and accidents at work because of sleepiness. Untreated OSAHS is associated with a six-fold increase in the risk of such accidents. Patients may also experience difficulties with concentration due to tiredness, increased irritability and depression. There is evidence that patients with OSAHS have an

increased risk of high blood pressure and may have a slightly increased risk of angina, heart attacks and strokes. Because OSAHS significantly increases the risk of road traffic accidents, patients must not drive if experiencing excessive daytime sleepiness. Patients must inform the DVLA in Swansea following a diagnosis of the condition. In most cases, the DVLA are happy to allow car drivers to continue driving once they are established on a successful therapy.

How is OSAHS assessed?

When a person is suspected to have OSAHS, their doctor will ask questions about waking and sleeping habits and will make a physical examination. Reports from the sleeping partner or household member about any apnoeas are extremely helpful.

Referral to hospital to arrange an overnight sleep study (which is usually then carried out at home after a demonstration at hospital) will probably be required to confirm the diagnosis of OSAHS and to allow its severity to be measured. Occasionally a patient may have to be admitted overnight to hospital for further tests.

None of these procedures are uncomfortable or painful.

How is OSAHS treated?

The simplest treatment is to lose weight. This is best done by cutting down on all foods, especially fatty foods, sweet things and alcohol. Alcohol within six hours of bedtime should be avoided as it contributes to OSAHS symptoms. If these measures are not enough, the best form of treatment is continuous positive airway pressure (CPAP) therapy in which a gentle flow of air is applied through the nose at night keeping the pressure in the throat above atmospheric pressure and stopping the throat narrowing to prevent breathing pauses and snoring.

Another form of treatment includes gumshield-like devices (mandibular repositioning devices) which attempt to keep the airway clear by moving the jaw forward. This is less effective than CPAP and not appropriate for all patients.

Overarching Standard 28:

Assessment and investigation

All adults with a clinical suspicion of having obstructive sleep apnoea/hypopnoea syndrome (OSAHS) should have investigation at a specialist OSAHS service led by a respiratory physician.

Rationale:

Any individual with symptoms suggestive of sleep apnoea should have timely investigation and treatment by appropriately trained staff. Sleep apnoea is a treatable condition but, untreated, causes severe sleepiness and may have cardiovascular consequences.

Evidence:

National Institute for Health and Clinical Excellence (NICE) (2008) Continuous positive airway pressure for the treatment of obstructive sleep apnoea / hypopnoea syndrome <http://guidance.nice.org.uk/TA139>

Scottish Intercollegiate Guidelines Network (SIGN) (2003) Management of Obstructive Sleep Apnoea /Hypopnoea in Adults
<http://www.sign.ac.uk/pdf/sign73.pdf>

Strategic Framework for Respiratory Conditions (N. Ireland) (2006)
http://www.dhsspsni.gov.uk/pcd_-_respiratory_framework.pdf

Regional Obstructive Sleep Apnoea Hypopnoea Strategy for Adults in Northern Ireland (October 2007)

American Academy of Sleep Medicine, Kushida et al, Practice parameters for the indications for polysomnography and related procedures: An update for 2005. Sleep 2005, 28 (4): 499-521

Responsibility for delivery / implementation

HSC Board
Public Health Agency
HSC Trusts
Primary care

Quality Dimension			
<ol style="list-style-type: none"> 1. All people referred from primary care should be assessed according to the agreed protocol in the Northern Ireland Strategy. 2. All people who meet the SIGN guidance definition for urgent referral should be seen within two weeks. 3. All patients should have a standardised assessment and examination as per the Regional OSAHA Strategy. 4. All patients should be investigated according to the standards laid out in the Regional OSAHA Strategy. 5. All staff interpreting oximetry and limited sleep studies should be appropriately trained and aware of the limitations of the tests. 6. All high risk patients should have overnight oximetry within four weeks of referral from the GP. 7. People should be able to access the service at local trust area. 			
Performance Indicator	Data Source	Anticipated Performance Level	Date to be achieved by
Establish a system to ensure patients are appropriately referred, clinically assessed and investigated within agreed timeframes by appropriately trained staff	HSC Trust report	All HSC Trusts	March 2012

Overarching Standard 29:

Polysomnography (PSG)

All patients with more complex obstructive sleep apnoea disorders should have timely and appropriate access to attended polysomnography (PSG).

Rationale:

Although most cases of sleep apnoea can be diagnosed by means of overnight oximetry and/ or a limited sleep study, sleep disorders can be missed by these techniques and therefore access to polysomnography is essential.

Evidence:

National Institute for Health and Clinical Excellence (NICE) (2008) Continuous positive airway pressure for the treatment of obstructive sleep apnoea / hypopnoea syndrome <http://guidance.nice.org.uk/TA139>

Scottish Intercollegiate Guidelines Network (SIGN) (2003) Management of Obstructive Sleep Apnoea /Hypopnoea in Adults
<http://www.sign.ac.uk/pdf/sign73.pdf>

Irish Sleep Society Guidelines (2006)
http://www.irishsleepsociety.org/iss_guidelines.htm

Strategic Framework for Respiratory Conditions (N. Ireland) (2006)
http://www.dhsspsni.gov.uk/pcd_respiratory_framework.pdf

Regional Obstructive Sleep Apnoea Hypopnoea Strategy for Adults in Northern Ireland (October 2007)

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Responsibility for delivery / implementation

HSC Board
Public Health Agency
HSC Trusts

Quality Dimension

1. Patients should be investigated by PSG if limited sleep studies are not diagnostic and clinical suspicion is high, according to the standards in the Regional OSAHS Strategy.

Performance Indicator	Data Source	Anticipated Performance Level	Date to be achieved by
Percentage of patients with complex obstructive sleep disorders who are appropriately referred and investigated according to the standards in the Regional Sleep Apnoea Strategy	Regional PSG database Belfast HSC Trust Report	Establish baseline Performance level to be determined once baseline established	March 2012

Overarching Standard 30:

Treatment - Lifestyle factors

All patients with OSAHS should be provided with information on lifestyle modification and referred to services as appropriate.

Rationale:

While CPAP treatment (continuous positive airway pressure) is effective for moderate/ severe sleep apnoea syndrome, it should be prescribed in conjunction with lifestyle measures.

Evidence:

Clinical Resource Efficiency Support Team (CREST) (2005) Guidelines for the Management of Obesity in Secondary Care <http://www.crestni.org.uk/obesity-guidelines-report.pdf>

DHSSPS (2002) Investing for Health
http://www.dhsspsni.gov.uk/show_publications?txtid=10415

DHSSPS (2003) A Five Year Tobacco Action Plan 2003-2008
<http://www.dhsspsni.gov.uk/tobaccoplan.pdf>

DHSSPS (2000) Strategy for reducing alcohol related harm in Northern Ireland
http://www.dhsspsni.gov.uk/alcohol_strategy.pdf

Scottish Intercollegiate Guidelines Network (SIGN) (2003) Management of Obstructive Sleep Apnoea /Hypopnoea in Adults
<http://www.sign.ac.uk/pdf/sign73.pdf>

Irish Sleep Society Guidelines (2006)
http://www.irishsleepsociety.org/iss_guidelines.htm

Strategic Framework for Respiratory Conditions (N. Ireland) (2006)
http://www.dhsspsni.gov.uk/pcd_respiratory_framework.pdf

Regional Obstructive Sleep Apnoea Hypopnoea Strategy for Adults in Northern Ireland (October 2007)**

**Reference to generic health promotion standards and CREST Obesity guidance

Responsibility for delivery / implementation			
HSC Board Public Health Agency HSC Trusts Primary Care			
Quality Dimension			
<ol style="list-style-type: none"> 1. All patients should have access to appropriate written information on lifestyle modification as per the Regional OSAHS Strategy. 2. All patients with OSAHS, with a BMI of >25, should have access to appropriate information and services as per CREST and the Regional OSAHS Strategy. 3. All patients who smoke should have access to appropriate advice and services for smoking cessation as per regional strategies. 4. All patients should have alcohol intake assessed and given advice and/or referral as appropriate as per regional strategies. 			
Performance Indicator	Data Source	Anticipated Performance Level	Date to be achieved by
Establish a system to ensure that all patients have the lifestyle assessment pro forma completed, appropriate advice given and appropriate referral offered	HSC Trust Report	All HSC Trusts	March 2012

Overarching Standard 31:

Treatment

- **Continuous Positive Airway Pressure (CPAP) Treatment**
- **Intra oral devices**

All patients should have timely and equitable access to CPAP treatment, review and follow up at Trust level. Patients who are unable to tolerate CPAP should have access to assessment for suitability for an intra oral device.

Rationale:

The correct use of a CPAP mask is an evidence based and highly effective treatment for patients with moderate/ severe obstructive sleep apnoea/ hypopnoea syndrome. For those who cannot tolerate CPAP, the use of intra oral devices can be an effective alternative.

Evidence:

National Institute for Health and Clinical Excellence (NICE) (2008) Continuous positive airway pressure for the treatment of obstructive sleep apnoea / hypopnoea syndrome <http://guidance.nice.org.uk/TA139>

Scottish Intercollegiate Guidelines Network (SIGN) (2003) Management of Obstructive Sleep Apnoea /Hypopnoea in Adults
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Regional Obstructive Sleep Apnoea Hypopnoea Strategy for Adults in Northern Ireland, (October 2007)**

**Reference to generic health promotion standards and CREST Obesity guidance

Responsibility for delivery / implementation

HSC Board
Public Health Agency
HSC Trusts

Quality Dimension			
<ol style="list-style-type: none"> 1. Quality assured CPAP equipment and services should be available for all appropriate patients in a timely fashion, as per the NI Strategy for OSAHS. 2. CPAP should be available in four weeks for urgent patients. 3. Patients should have access to appropriate review arrangements for CPAP as per the NI Strategy for OSAHS. 4. A telephone advisory service should be available for follow up support of patients using CPAP. 5. Appropriate written information and advice on support organisations should be available for patients. 6. Patients who are unable to tolerate CPAP should be able to access assessment for the suitability for an intra oral device. 			
Performance Indicator	Data Source	Anticipated Performance Level	Date to be achieved by
Percentage of patients on CPAP who were appropriately treated, reviewed (standardised compliance monitoring) and followed up*	Trust CPAP database HSC Trust report	Establish baseline	March 2011
		Performance level to be determined once baseline established	March 2012
Percentage of appropriate patients who have been assessed for suitability for an intra oral device	Trust CPAP database HSC Trust report	Establish baseline	March 2011
		Performance level to be determined once baseline established	March 2012

*This should include access to information, advice and telephone support.