

## **6.7 OBSTRUCTIVE SLEEP APNOEA SYNDROME IN CHILDREN AND YOUNG PEOPLE**

Many children and young people snore. This occurs when there is partial obstruction of the nasal passages or when the tongue 'flops back' against the back of the throat when a child is deeply asleep.

Obstructive sleep apnoea syndrome (OSAS) occurs when a child who snores experiences a period of complete airway obstruction. When complete obstruction occurs the child initially tries to overcome this with breathing efforts, but then completely stops breathing (apnoea). Apnoea is associated with a reduced oxygen level and an elevated carbon dioxide level in the blood, causing the child to arouse and start breathing again.

Many repeated such episodes, with arousals throughout the night cause poor quality sleep. This in turn is associated with day time sleepiness and poor performance at school for example. In severe cases, where a child experiences long periods of low oxygen saturation at night over months and years, this can result in an irreversible strain on the heart.

There are many causes of OSAS including:

- Large tonsils and adenoids
- Obesity (becoming more common in children)
- Obesity syndromes – some children have syndromes associated with morbid obesity e.g. Prader Willi syndrome
- Craniofacial abnormalities e.g. cleft lip/palate
- Down's Syndrome – where children have a large tongue relative to their throat size and a tendency for their tongue to flop back when asleep.

Diagnosis is made following a detailed history and specialised tests, some of which can be carried out at home. The treatment depends on the cause and can include:

- Make more space in the airway such as removing the tonsils and adenoids
- Using a face mask at night to provide a continuous positive airways pressure (CPAP) to keep the airways from collapsing when asleep.

## Overarching standard 32:

### Assessment and treatment

All children and young people with obstructive sleep apnoea syndrome (OSAS) should have the condition accurately assessed for severity and treated in a timely fashion.

### Rationale:

Most children and young people snore at some time but not all have OSAS. Childhood OSAS is relatively common and may cause significant morbidity. It is also associated with day time sleepiness, poor school performance and behavioural disorders (e.g. ADHD). The causes differ from those in adults with upper airways physical narrowing being common as in adenotonsillar hypertrophy and craniofacial structural abnormalities. Also abnormalities of upper airway tone contribute and OSAS is therefore very common in Down's Syndrome. Syndromes with morbid obesity (e.g. Prader Willi syndrome) and 'common obesity' are currently less common causes, but common obesity is on the rise.

Currently it is unclear in the literature whether over night home monitoring with oxygen saturation and heart rate is an adequate screening test for those needing treatment or further more detailed polysomnography is required.

The mainstay of treatment is tonsillectomy and adenoidectomy (T&A) and CPAP is only required for the few who do not respond.

### Evidence:

Evidence summarised In: Principles and Practice of Pediatric Sleep Medicine. Editor SH Sheldon. Elsevier 2005. ISBN: 0-7216-9458-6

[http://www.elsevier.com/wps/find/bookdescription.cws\\_home/699412/description#description](http://www.elsevier.com/wps/find/bookdescription.cws_home/699412/description#description)

Chest 2007; 132: 2030-2041. Childhood obstructive sleep-disordered breathing. <http://www.chestjournal.org/cgi/content/abstract/132/6/2030>

Am J Resp Crit Care Med 2007; 174: 436-441. Pediatric Sleep apnoea. Implications of the epidemic of childhood overweight. <http://ajrccm.atsjournals.org/cgi/reprint/200606-790PPv1.pdf>

Chest 2003; 123: 96-101. Reference values for nocturnal home pulsed oximetry during sleep in primary care school children <http://www.chestjournal.org/cgi/content/full/123/1/96>

Royal College of Paediatric and Child Health, Working Party on Sleep Physiology and Respiratory Control Disorders in Childhood (Feb 2009) Draft Standards for Services for Children with Disorders of Sleep Physiology

**Responsibility for delivery / implementation**

HSC Trusts

**Quality Dimension**

1. Children and young people with potential OSAS should have access to assessment of its severity by way of a detailed history and home screening tests (e.g. overnight oxygen and HR) by a trained specialist who is aware of the limitations of these screening tests.
2. The RBHSC (central regional referral unit) should have staff trained in use and interpretation of limited polysomnography and have suitable equipment (Limited sleep studies should include, as a minimum, measures of snoring, airflow, thoraco-abdominal movement, oxygen saturation and HR monitoring).
3. The presence of large tonsil hypertrophy or nasal obstruction with a diagnosis of OSAS should prompt referral to an ENT surgeon for consideration of adeno-tonsillectomy.
4. Children and young people failing first line treatments and deemed suitable for CPAP should have access to appropriate equipment and training in its use within 4 weeks (with backup technical and equipment support).
5. Children and young people on CPAP should have easy and direct access to a clearly identified link person (respiratory nurse) on the multidisciplinary team based at RBHSC. This should include access to treatment for obesity, if required.

<b>Performance Indicator</b>	<b>Data source</b>	<b>Anticipated Performance Level</b>	<b>Date to be achieved by</b>
Percentage of children and young people with OSAS deemed suitable for CPAP who have had confirmed and timely access to a CPAP service	Belfast HSC Trust Regional database  Audit	50%	March 2012

Percentage of children and young people with a named link respiratory nurse to access the multidisciplinary team based at RBHSC	Belfast HSC Trust Regional database  Audit	70% 90%	March 2012 March 2013
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