Obstructive Sleep Apnoea in Children

On-the-spot management

INFORMATION FOR HEALTH PROFESSIONALS

Sleep Health
Primary Care
Resources

Definition

Obstructive sleep apnoea (OSA) is a medical condition in which people have difficulty breathing when they are asleep. It can occur in adults and children.

During sleep, muscles around the airway relax, causing the throat and upper airway to narrow. This can lead to snoring with partial airway obstruction and breathing pauses with complete airway obstruction. Trying to breathe against a narrow airway may cause oxygen levels to fall and carbon dioxide to rise. These blockages can be intermittent because the brain triggers a movement or awakening to re-open the airway. These brief awakenings can significantly disturb children's sleep.

Obstructive sleep apnoea affects between 1 and 3% of children. The most common cause of childhood OSA is enlargement of the tonsils and adenoids, which may outstrip growth of the bony pharynx. This can exacerbate airway narrowing during sleep and lead to obstructive events. Adenotonsillar hypertrophy peaks in the pre-school years. Obesity is an additional important risk factor. Other risk factors include nasal allergy or hay fever and underlying medical conditions that cause low muscle tone or abnormal craniofacial structure with small airway size, such as Down syndrome or achondroplasia.

Consequences of OSA

Untreated OSA can negatively impact daytime learning, behaviour, mood and in the long term may affect cardiovascular health. In severe cases it can cause hypertension, heart failure and failure to thrive.

Signs and Symptoms of OSA

- Snoring and/or noisy breathing during sleep which occurs on 3 nights per week
- Apnoeas (Pauses in breathing during sleep): Parents may see respiratory effort during periods of absent airflow, but the absence of a report of apnoeas does not exclude OSA
- Choking, gasping, or snorting during sleep
- Restless sleep
- Increased respiratory effort during sleep
- Sweating during sleep
- Unusual sleep positions, for example hyper-extended head postures, or needing to be propped up high on pillows
- Mouth breathing during the day and during sleep
- Nocturnal enuresis – the presence of OSA may exacerbate bedwetting at night
- Morning headaches
- Tiredness on waking and during the day despite what seems like adequate sleep time
- Difficulty paying attention, behaviour problems and learning difficulties

- Enlarged tonsils can lead to problems with swallowing food
- Enlarged adenoids may cause nasal congestion during the day as well as at night

Tests and Investigations for Childhood OSA

Overnight polysomography (sleep studies) are the 'gold standard' method to diagnose OSA. However, at present, availability of paediatric polysomnography is limited to referral to specialised paediatric sleep centres (with most of these located in tertiary paediatric hospitals). Direct referral to an Ear Nose and Throat (ENT) surgeon may also be appropriate in children with a strong history and enlarged tonsils and/or adenoids, so that adenotonsillectomy can be considered. Certain groups of children, such as those who are <2 years of age or have specific underlying medical conditions, are known to have an increased post-operative risk and may therefore benefit from a pre-operative polysomnography or overnight oximetry study. More information regarding this can be found in the suggested reading list.

Some centres will also use overnight oximetry as a surrogate diagnostic test or to help prioritise patients for polysomnography or ENT surgery. It is important to recognise that a negative or normal screening oximetry does not exclude OSA.

Treatment for Childhood OSA

- Treatment varies depending on the cause and severity of the OSA.
- Children with chronic nasal symptoms (e.g., allergic rhinitis) may trial a mix of different medical treatments including topical steroid sprays.
- Children who are very overweight (obese) would benefit from an exercise and weight management program.
- Children with enlarged adenoids and tonsils should be referred for tonsillectomy and adenoidectomy. Adenotonsillectomy remains the first-line treatment for almost all children with moderate or severe OSA. This successfully treats OSA in 80-90% of children with adenotonsillar hypretrophy. Children at high risk of post-operative complications should have their surgery performed in centres with expertise in paediatric anaesthesia and paediatric intensive care facilities.
- A small subset of children with specific medical conditions may warrant an alternative first-line treatment. For example, children with craniofacial abnormalities may benefit from maxillofacial surgery, and those with hypotonia and nocturnal hypercarbia may benefit from non-invasive bilevel ventilation (BiPAP).
- Children with persistent moderate/severe OSA despite other treatments may be treated with continuous positive airways pressure (CPAP).

Further reading

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Prepared by members of the ASA Paediatric Council; reviewed by the GP Education Subcommittee; endorsed by the Education Committee and ASA Board.