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Obstructive Sleep Apnoea in Childhood



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Obstructive sleep apnoea (OSA) is a medical condition in which children have difficulty breathing when they are asleep. During sleep, muscles around the airway relax causing the throat and upper airway to narrow. This leads to snoring, but it can also lead to the airway being blocked. Trying to breathe against a blocked airway causes oxygen levels to fall and carbon dioxide to rise. The blockages tend to be intermittent because the brain triggers a movement or awakening that re-opens the airway. These brief awakenings can significantly disturb sleep.

Obstructive sleep apnoea is common and affects between 1 and 3% of children. The peak age-group is the pre-school years. Problems that OSA can cause include impacts on daytime learning, behaviour, and cardiovascular health. In severe cases it can cause cor pulmonale and failure to thrive. In school-age children, obesity is also a risk factor, and as the prevalence of paediatric obesity rises the rates of childhood OSA are also expected to rise.

Signs and symptoms

- Regular snoring and noisy breathing during sleep. Snoring may be benign in some cases, but can also be a sign of more significant OSA.
- Increased work of breathing during sleep
- Pauses in breathing during sleep: Parents may see ongoing 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 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.

- Morning headaches.
- Tiredness on waking despite what seems like adequate sleep time.
- Enlarged tonsils can lead to problems with swallowing food.
- Difficulty paying attention, behaviour problems and learning difficulties.

Causes of childhood OSA

The most common cause of childhood OSA is enlargement of the tonsils and adenoids. Tonsils and adenoids grow most quickly in the pre-school years, sometimes outstripping growth of the bony pharynx and leading to airway obstruction. Other risk factors include obesity in older children, nasal allergy or hay fever, underlying medical conditions that cause low muscle tone, or abnormal craniofacial structure with small airway size, such as Down syndrome or achondroplasia.

Tests and investigations for childhood OSA

Overnight sleep studies are the best method to diagnose OSA. Other tests are available, but should be arranged through referral to a paediatric sleep centre. At present, most of these are located in tertiary paediatric hospitals.

Because sleep studies can be hard to obtain, direct referral to an Ear Nose and Throat surgeon may also be appropriate in children with a strong history and enlarged tonsils and/or adenoids, so that adenotonsillectomy can be undertaken. Factors that increase peri-

operative risk and therefore mean that pre-operative sleep studies may be preferred include age under 3 years or children with underlying medical conditions or syndromes. More detailed lists may be found in the suggested reading list.

Treatment for childhood OSA

Treatment varies depending on the cause and severity of the OSA.

- Children with enlarged adenoids and tonsils should be referred for tonsillectomy and adenoidectomy. This successfully treats OSA in 80-90% of children. Children at high risk of post-operative respiratory complications after adenotonsillectomy should have their surgery in centres with expertise in paediatric anaesthesia and paediatric intensive care facilities.
- Children who are very overweight (obese) would benefit from an exercise and weight management program.
- Children with chronic nasal allergy may trial a mix of different medical treatments including topical steroid sprays.
- Children with persisting OSA despite other treatments can be treated with continuous positive airways pressure (CPAP).

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Further reading:

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