

KIDS AND SLEEP APNOEA

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Most people think of tonsillectomy as treatment for recurrent tonsillitis. However I now do tonsillectomies 5 times more frequently for sleep apnoea than recurrent tonsillitis.

It is important to raise awareness about sleep apnoea in children because leaving sleep apnoea untreated can have a profoundly negative impact on their future intellectual, dental and facial development.

WHAT IS OBSTRUCTIVE SLEEP APNOEA (OSA)?

OSA is a loss of adequate airflow and oxygen supply to the brain. In children this is most commonly due to adenotonsillar hypertrophy. The tonsils and adenoids are enlarged, not because of recurrent tonsillitis, but because of a genetic predisposition and possibly because of frequent coughs and colds.

As the tonsils naturally enlarge at about the age of 2 years, many children with OSA start snoring more loudly around this time. A smaller percentage of children develop symptoms around age 7-9. In these children allergy and obesity may play a role.

The following may be seen in young children with sleep apnoea:

- During sleep, they tilt their head and neck back to stretch open the airway. This sign has the highest correlation with a positive sleep study.
- They may snore, although up to a third do not. Some parents just describe heavy breathing.
- Parents may note occasional pauses in the breathing, gasps and choking noises. Children are more sensitive to apnoea than adults. Even 1 – 3 seconds of apnoea is significant.
- They tend to be restless and can pivot around the bed. Parents who co-sleep often note kicking. Waking one or more times at night is common.
- They may be sweaty at night.
- Bedwetting is sometimes seen.
- Some are skinny because they are burning up calories at night, working hard to breathe.
- They prefer a mushy diet such as yoghurt, cheese and pasta. It is easier to swallow soft food if the tonsils are bulky.
- Bulky food like meat tends to make them gag or spit.

WHY DO WE NEED TO TREAT PAEDIATRIC OSA?

If sleep apnoea is untreated, it will have an impact on the developing brain. While adults with sleep apnoea become tired and forgetful, children become hyperactive, although they can also be tired and cranky especially at the beginning and end of the day. Their bad behaviour may be mistaken for ADHD.

In 2010 a research study performed by the University of Chicago found that children with untreated sleep apnoea had an impaired uptake of picture based memory tasks for immediate and overnight recall. This study concluded that as acquisition and retention of new material is impaired in children with sleep apnoea, they need more time and more learning opportunities to keep pace with healthy children.

An even more impressive study was done by researchers in Boston. This study demonstrated that children with sleep apnoea who were evaluated at the age of 4 and then re-evaluated at the age of 8, with no treatment for their sleep apnoea, had impaired literacy and numeracy skills equivalent to a 10 point drop in their IQ.

After learning to walk, speech is the next educational challenge for a young child to conquer. Sleep apnoea in children results in poor daytime concentration and may contribute to speech delay.

HOW TO ASSESS AND TREAT PAEDIATRIC OSA?

Ask the parents to bring in a smart phone video of the child sleeping. Twelve percent of children snore but only 3% have sleep apnoea. However, even children who just snore or those who wake frequently are at risk of behavioural problems later.

Examine the child for enlarged tonsils and signs of nasal obstruction which may be due to enlarged adenoids. If the child does not breathe through the nose, the mouth remains open and lips become dry. Some children dribble. Others get dark rings under their eyes. The palate can shrink upwards so it is important to look for a high arched palate. Having a high narrow palate crowds the teeth so look for a cross bite, where the teeth are angled inwards. (See figure 1 on page 7) A small jaw or syndromes involving facial abnormalities with features such as an enlarged tongue also make OSA more likely.

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It is also worthwhile asking about sleep apnoea in relatives as sleep apnoea can be hereditary.

If there are positive findings, refer the child for a sleep study with a paediatric sleep physician or review by an ENT Surgeon.

The definitive treatment for sleep apnoea is adenotonsillectomy as the child needs a bigger airway. Due to their increased growth rate, the tonsils and the adenoids are occupying too much space within a small oropharynx.

Removal of the tonsils and adenoids does not impair immunity. The tonsils and adenoids are just 3 of approximately 120 lymph glands in the head and neck. After adenotonsillectomy parents often comment that coughs and colds are of shorter duration. This may be due to better drainage because of the larger nasal airway.

Tonsillectomy involves an overnight stay in hospital, although a third of children who are 3 years and older can go home on the day of surgery if they are eating well. This occurs when their pain is under control. Most children will need regular Panadol for 5-7 days supplemented with prn

Oxynorm, especially at night. Codeine is no longer used postoperatively. Ultra-rapid metabolism is seen in up to 10% of Caucasians and 10-29% of North African and Middle Eastern people and can lead to morphine toxicity even at low doses, predisposing to respiratory arrest. The risk is greater in children who have undergone airway surgery, especially with a history of sleep apnoea.

The risk of bleeding is reduced by avoiding Nurofen, Fish Oil and Vitamin E in the 2 weeks before surgery. Nurofen is given postoperatively if there is no alternative analgesia. It is normal to have a cough, temperature and referred pain to the ears after the operation and children may snore softly for 4-5 days due to swelling of the uvula.

After 2 weeks parents often comment that the child is more rested and settled in the daytime. Parents are being woken less at night too! By 3 months the parents often comment that the child is eating more and has grown possibly due to the growth hormone which is now being produced more efficiently in the deep sleep cycle. Adenotonsillectomy restores normality for children with OSA.

The 3 key messages are to look for sleep apnoea if the child's sleep is disturbed, the speech is delayed or the behaviour is poor.

This article is an abridged version of Dr Dunlop's video which can be seen on: www.kidssleepapnoea.com.au

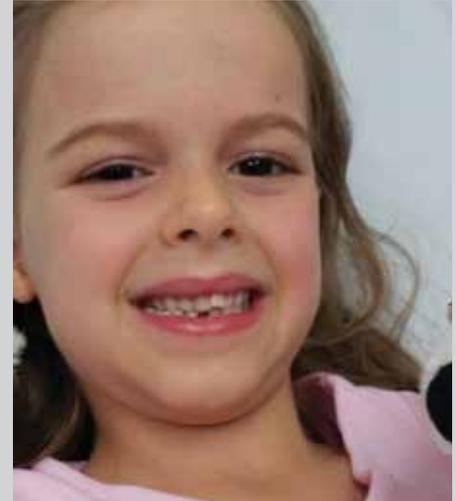


Figure 1: Crossbite – irregular angulation of teeth

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