

# **RCPCH Working Party on Sleep Physiology and Respiratory Control Disorders in Childhood**

## **Lay Summary 3 – Obstructive Sleep Apnoea in Down’s Syndrome**

### **What is Obstructive Sleep Apnoea?**

Obstructive sleep apnoea/hypopnoea syndrome (OSA) is a condition in which a person stops breathing for a short time when they are asleep because of closing or narrowing of the throat. This can happen many times during the night, and causes the person to wake up for very short periods to allow normal breathing to restart (although usually the person often won’t remember waking up). A child with sleep apnoea often snores, may be unusually sleepy or hyperactive during the day and may have problems in concentrating because of lack of sleep.

### **How common is OSA in children with Down’s Syndrome?**

Around one in 10 children snores regularly, but only a minority of these have OSA – between 1 and 3% of primary school children. In children with Down’s Syndrome snoring is common, and at least 70% have an abnormal level of obstruction during sleep.

### **What are the risks of OSA?**

In normal children, OSA can cause impaired growth and development, and is associated with poorer academic performance. It can also put extra strain on the heart, and occasionally causes pulmonary hypertension, a very dangerous condition with elevated blood pressure in the lungs. Children with Down’s Syndrome appear to be a particular risk of pulmonary hypertension, especially if they have a congenital heart problem.

### **What tests can be done to detect OSA in children with Down’s syndrome?**

We recommend that all children with Down’s Syndrome should be offered a screening test with overnight oximetry (recording of the blood oxygen levels using a soft probe wrapped around the finger or toe). This test should be done first at 6-9 months and if normal it should be repeated annually until the age of 3-5 years.

If the oximetry is abnormal, a more detailed cardiopulmonary sleep study or polysomnography should be performed. For more details about the tests see Lay Summary 1.

## **What can be done about OSA?**

If OSA is detected then surgery to remove the tonsils and adenoids (adenotonsillectomy) is the first step in treatment. In some cases this will be an adequate treatment, but it is less successful in children with Down's Syndrome than in other cases.

If abnormal breathing persists during sleep after adenotonsillectomy, then specialist help should be sought for further management, which may include a trial of Continuous Positive Airway Pressure (CPAP) where a device is fitted to the nose during sleep to prevent the collapse of the airway. If this proves impracticable, then oxygen therapy at night may be needed to prevent pulmonary hypertension, with careful monitoring of its effect on breathing.

Although these recommendations are based on the best current information available, further research is needed into the risks and benefits of screening for OSA in Down's Syndrome.