OSA in children

About this information

This information explains all about sleep-related breathing problems in children, focusing on the condition obstructive sleep apnoea (OSA).

It tells you what the risk factors are for OSA, and what you should look out for if you think your child might have the condition.

It also explains how OSA is diagnosed and what treatment options are available.

You can also download a form, which you can use to record your child's symptoms. When you go to your GP, you can help by filling in this form and taking it with you.

What is obstructive sleep apnoea (OSA)?

Obstructive sleep apnoea (OSA) is the term used to describe the most common breathing disorder that happens during sleep.

It is called OSA because:

- **Obstructive** = there is obstruction of the airway in the nose, throat or upper airway
- **Sleep** = it happens when your child is asleep
- **Apnoea** = this is a Greek word that means 'without breath' – there is insufficient air going down into the lungs

When we go to sleep, our muscles relax, including those in our throat. In some children, especially those with enlarged tonsils or adenoids, the relaxed muscles cause narrowing which can reduce the airflow. This can cause snoring and irregular breathing.

If the throat obstructs (closes) completely, a child might temporarily stop breathing. This is called 'apnoea'. If the throat partially closes, breathing is reduced. This is called 'hypopnoea'.

When breathing is interrupted or reduced, there may be a fall in the level of oxygen in the blood. Sensors in the brain will tell the body to restart or increase breathing. Breathing often restarts with a gasp or snort.

When the problem is severe this can happen many times each night and disturb the quality of sleep. This causes irritability, poor concentration and sometimes drowsiness the following day.

How common is it and what are the risk factors?

OSA is quite common and may affect up to 1 in 30 children. It affects boys and girls equally. The following factors increase the likelihood that children will be affected:

Common factors

- large tonsils and adenoids
- obesity
- family history of OSA
- Down's syndrome
- sickle cell disease

Rarer factors

- cranio-facial malformations such as an abnormally small chin, large tongue or cleft palate
- an extremely narrow upper airway
- rare diseases of the nerves or muscles, which cause loss of upper airway tone because of poor muscle strength
- problems with control of breathing

What should I look out for?

A child with OSA might show some or all of these symptoms:

Night-time

Common symptoms

- snoring (although this is also fairly common in children with no OSA)
- pauses in breathing noticed by parents and carers, which might be followed by a gasp or snort

Other possible symptoms

- gasps, snorts and choking sounds
- restlessness and sudden arousals from sleep
- laboured breathing
- unusual sleep posture, for example with the head bent backwards
- bedwetting (although this is common in children with no OSA)
- sweating
- breathing through the mouth, a dry mouth and bad breath

There is a video of Milo asleep at www.blf.org.uk/Page/OSA-in-children-symptoms.

Daytime

- changes in behaviour, for example being irritable and having tears and tantrums
- hyperactivity, which may alternate with sleepiness
- poor concentration
- poor or decreased performance at school
- tiredness and sleepiness
- failure to gain weight or grow
- developmental delay
- learning difficulties
- breathing through the mouth
- speech that sounds nasal
- difficulty swallowing
- early morning headache
- parents report that a child with OSA might seem to pick up illnesses more often than other children, and then might have difficulty shaking off infections

What should I do?

Visit your GP

If you think your child might have OSA, it is important that you talk to your GP. Take your child with you so the doctor can examine him or her.

Before you make an appointment, talk to your child-minder, nursery or school and ask if they think your child might have a problem.

When you go to your GP, you can help by taking with you:

- a completed form about your child's symptoms
- a recording of your child when asleep (most mobile phones have video recording)
- observations, reports or notes about your child from the child-minder, nursery or school that might be relevant.

Your GP should ask you about your child's symptoms, behaviour, general health and medical history.

If your GP is not concerned but you are, keep observing and recording your findings. You can ring the BLF Helpline on **03000 030 555** for further support and advice.

If your GP thinks your child might have OSA, the next step could be referral for assessment. Your GP will know about the local services and where referrals are accepted.

Alternatively he or she might want to observe your child for a while and try some initial treatments such as nasal drops or weight loss.

There are a number of hospitals that offer a specialist sleep service and have facilities for overnight monitoring. If this is necessary, they are usually contacted by the hospital or community paediatrician once your child has been referred on from the GP.

Assessment and diagnosis

It might be necessary to carry out a number of observations and/or tests to diagnose OSA. These include:

Parental observations

Reports (including videos or recordings) by the parent or carer are a major source of information about a child's sleeping pattern and symptoms.

Oxygen saturation monitoring

This measures the level of oxygen in the blood continuously as the child sleeps. It involves having a small light sensor taped, usually, to a fingertip or toe. The results need to be reviewed by a specialist, although it is sometimes possible for this simple test to be done in the child's home.

Oxygen saturation monitoring may help diagnose severe OSA, but on its own it can miss milder cases. More complex monitoring might be required. This can include monitoring:

- levels of oxygen and carbon dioxide (the waste gases we breathe in and out)
- breathing movements of the chest and tummy
- heart rate and rhythm
- airflow
- video and sound
- brain wave activity (EEG), although this is less common.

This monitoring is done overnight in specialist sleep centres. You can usually sleep in a bed next to your child during the assessment. Most large centres in the UK now have these facilities.

How is OSA treated?

The following options are available for the treatment of childhood OSA.

Common treatments

Nasal inhaled corticosteroid sprays or drops

These may be helpful in treating mild OSA or when an operation to remove the tonsils and adenoids has not been completely successful. They are particularly useful if the child has associated allergic asthma or other allergy-related conditions. Children of pre-school age might have difficulty accepting sprays squirted into their nostrils and may be better with drops.

Adenotonsillectomy

Removing the child's tonsils and adenoids has a high success rate for treating OSA in children who are otherwise well. Some centres will only carry out this procedure after an overnight study has confirmed the diagnosis. Others will go ahead with the operation if the diagnosis is clear from taking a medical history and examining the child.

Removing the tonsils and adenoids may not cure OSA in children with a small chin, large tongue or cleft palate, in obese children or in those with other health conditions.

Weight loss

If your child is overweight or obese, weight loss is an essential first step to controlling OSA.

Continuous or Bi-level Positive Airway Pressure (CPAP or BiPAP)

CPAP or BiPAP is an effective treatment for a small number of children with OSA. It is a simple machine that pushes air through a mask worn at night to keep your airway open. The machine uses ordinary room air and is powered from the home electrical power supply.

Children usually find it surprising comfortable, but the fitting and follow up should be planned and managed by a specialist respiratory paediatric team.

Tracheostomy

In a tracheostomy, the surgeon creates an opening in the neck at the front of the windpipe. This is only required in extremely severe OSA if all other options have failed.

Rarer treatments

Oral jaw repositioning devices

This option could be considered for OSA in children with 'malocclusion' of the jaw. This means faulty contact between the upper and lower teeth when the jaw is closed, for example when the lower jaw is set back.

Mandibular and maxillary advancement surgery

This may be helpful for children with craniofacial syndromes (a group of similar inherited conditions affecting the skull, face and sometimes the limbs), which cause a set-back lower jaw.

What about sleep position?

Opinions vary about how important sleep position is in children with OSA. Some experts suggest that OSA can be worse when a child sleeps on his or her back, but others suggest that sleep position has little impact in children compared with adults.

What happens if OSA isn't treated?

It is important that OSA in children is diagnosed and treated. Untreated OSA has been linked with:

- poor growth or weight gain
- worsening behaviour, hyperactivity and aggression
- poor or impaired performance at school
- poor quality of life
- risk of high blood pressure or heart disease

Remember, OSA is a treatable condition and if your child is diagnosed with it there is lots that can be done to help them.

For more information

For more information about OSA, and to talk to someone who cares, call the BLF Helpline on **03000 030 555**.

British Lung Foundation
73-75 Goswell Road
London EC1V 7ER

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