

# Obstructive Sleep Apnea

Apnea is interruption of breathing for a certain amount of time, or when accompanied by a change in skin color. Obstructive sleep apnea (OSA) is an increasingly recognized problem in children. Symptoms include snoring at night and feeling sleepy during the day. Diagnosis and treatment are available.

## What is obstructive sleep apnea?

Obstructive sleep apnea is an interruption in breathing for longer than the normal time because air (oxygen) is blocked (obstructed) from getting into the airway. Sometimes the obstruction is partial, allowing less air than normal to get in.

Obstructive sleep apnea (OSA) occurs most commonly in adults but is being recognized more often in children and teens. For various reasons, the upper airway temporarily gets blocked and doesn't stay as open as it should while your child is sleeping. This can cause noisy breathing and snoring. The episodes of apnea may or may not wake your child up. Sometimes the airway is just partially blocked, so it's not "true" apnea. However, this can still result in less air getting to the lungs (called "hypoventilation").

## What does it look like?

The main symptoms of OSA are:

- *Snoring.* Especially in severe OSA, snoring is the most noticeable symptom. (*However, not all kids who snore have OSA!*)
  - A period of loud snoring may be followed by a few moments of silence. You may hear a snort as your child starts breathing again; then snoring may start again. Some children may appear to be struggling to breathe. In others, you may hear very loud snoring through most of the night.
  - Snoring is often quieter and less noticeable in children than in adults. This may make it more difficult to recognize OSA.
- *Restless sleep*—your child may wake up frequently during the night.
  - Sleeping in odd positions, for example, with the neck stretched out.
- *Daytime sleepiness*—your child may lack energy for the usual activities. Sleepiness at school may lead to poor grades and other problems. Some children with OSA have symptoms similar to those of attention deficit-hyperactivity disorder (ADHD): inattentiveness, hyperactivity, behavior problems.

- *Mouth breathing* may be a symptom, although most children with OSA breathe normally when they are awake. Children with more severe OSA may breathe noisily during the day as well.

## What causes obstructive sleep apnea?

- The most common cause of OSA in children is enlarged tonsils and adenoids. The tonsils and adenoids are lymph tissue that are part of the immune system. The tonsils are located in back of the throat and can be seen when the mouth is open wide. The adenoids are farther down and cannot be seen. The main cause of enlarged tonsils and adenoids is repeated respiratory infections (such as sore throats). In children, OSA is most frequent between ages 2 and 5, when the tonsils and adenoids are relatively large compared with the airway.
- Congestion in the nose, such as caused by allergies, can occasionally cause OSA. These children usually also have enlarged tonsils and adenoids.
- Some physical abnormalities can also increase the risk of OSA. These include having a large tongue and small jaw, which may occur in children with certain genetic conditions. Obesity also increases the risk of OSA, but children with OSA are not necessarily obese; in fact, most are not. Children with certain neurologic conditions, such as cerebral palsy, are also at increased risk.

## What are some possible complications of apnea?

- If it is severe and frequent, OSA can lead to complications affecting the heart, lungs, and brain, related to lack of oxygen. Most cases of severe childhood OSA are detected and treated before these problems occur.
- Poor growth and weight gain (failure to thrive).
- Complications related to intellectual functioning and behavior. Daytime sleepiness can interfere with your child's school work and other daily activities.

## Can obstructive sleep apnea be prevented?

- Most cases of OSA in children are probably not preventable.
- In obese children and teens with OSA, the problem is more likely to continue into adulthood. Weight management should be a long-term goal.

## How is obstructive sleep apnea diagnosed?

- The doctor will often recognize OSA from the child's symptoms. In these cases, the problem is often enlarged tonsils and/or adenoids.
- If there is a lot of swelling and congestion in the nose, usually from allergies, the doctor may recommend treatment with allergy medications to see if that improves the OSA symptoms.
- *Polysomnography* (sleep study). If the doctor isn't sure whether there is a sleep-related breathing problem or how severe it is, he or she may recommend a sleep study called polysomnography (PSG). This is an overnight test, done at the hospital in a special sleep laboratory.
  - Your child will be hooked up to various machines that measure how he or she is breathing while asleep, how much oxygen is in the blood, how frequently episodes of interrupted breathing (apnea) occur and how long they last, and how difficult it is for your child to breathe during sleep.
  - The test is not painful, although it could be scary for a younger child. A parent is usually allowed to stay overnight with the child.
  - The information gathered by PSG answers a lot of important questions about the presence and severity of OSA. This helps determine the most effective treatment.

## How is obstructive sleep apnea treated?

Treatments for OSA depend on your child's situation. Other doctors may be involved in your child's treatment, depending on the cause of the problem. We may recommend a visit to a doctor specializing in ear, nose, and throat problems (an otorhinolaryngologist or ENT) or to a specialist in lung and breathing problems (a pulmonologist).

- *Surgery*. For most children with OSA, the problem is caused by enlarged tonsils and adenoids. Treatment involves removing the tonsils and adenoids to create more room in the throat for your child to breathe. This operation is called adenotonsillectomy—"taking the tonsils (adenoids) out."

- For children who are otherwise healthy, this operation has a very high success rate. Problems with OSA usually clear up quickly. If your child is underweight or has been growing slowly, he or she may have "catch-up growth" after surgery.
- If problems other than enlarged tonsils and adenoids are present—such as obesity, cerebral palsy, or genetic diseases—there is an increased risk that sleep apnea will still be present or will return after surgery, if done. Your child will need continued medical follow-up.
- *Treatment for allergies*. If your child has problems with allergies, these may be treated first to see if the OSA symptoms improve. Oral antihistamines and decongestants may be used. Often, steroids sprayed into the nose (nasal steroids) are more effective.
- *Continuous positive airway pressure (CPAP)*. If the doctor feels that surgery would not be helpful, or if surgery did not solve the problem, he or she may recommend a treatment called CPAP.
  - The CPAP machine produces mild air pressure to keep the airway open while your child is sleeping. The machine delivers air through small tubes that fit in your child's nose and mouth. Although it takes a little getting used to, CPAP is highly effective in reducing episodes of apnea. Most patients requiring CPAP are cared for by a specialist.
- *Other operations* may be recommended in certain situations. For example, in children with facial deformities, reconstructive surgery may improve the problem with sleep apnea.

## When should I call your office?

Call our office (or your ENT doctor or pulmonologist) if your child continues to have symptoms of OSA after treatment:

- Snoring, noisy breathing.
- Waking up at night for no obvious reason, especially with snoring.
- Daytime sleepiness.