CONDITION

Pediatric sleep apnea

Pediatric sleep apnea causes repeated pauses or reductions in a child's breathing during sleep.

WHAT IT IS
Repeated pauses or reductions in breathing during sleep

BODY SYSTEM
Breathing and sleep

MAIN SYMPTOMS
Snoring, breathing pauses, restless sleep, daytime behavior changes

WHAT CAUSES IT
Blocked airway or reduced breathing signals

HOW IT IS DIAGNOSED
Overnight sleep study

MAIN TREATMENT
Airway surgery, positive airway pressure, or cause-specific care

CAN IT BE CURED?
Sometimes - removing the blockage may stop the apnea

IS IT AN EMERGENCY?
Sometimes - blue lips or severe breathing difficulty

LONG-TERM OUTLOOK
Often improves with treatment, but persistent apnea can occur

Overview

Pediatric sleep apnea is a condition in which a child repeatedly stops breathing or breathes too shallowly during sleep. A complete pause is called an apnea. A partial reduction in airflow is called a hypopnea.

The most common type in children is obstructive sleep apnea . This happens when tissues in the throat narrow or block the upper airway during sleep. Enlarged tonsils and adenoids are frequent causes. Adenoids are pads of tissue behind the nose.

Less often, children have central sleep apnea . In this type, the brain does not consistently send the signals needed to breathe. Some children have both obstructive and central events.

Brief breathing changes can occur normally, especially in newborns. Sleep apnea involves

repeated events that disturb sleep, reduce oxygen levels, or affect how the body regulates carbon dioxide.

Untreated sleep apnea can interfere with attention, behavior, learning, growth, and cardiovascular health. Symptoms may be subtle. A child may seem active or irritable rather than obviously sleepy.

Snoring does not always mean that a child has sleep apnea. However, frequent snoring combined with pauses, gasping, or daytime concerns should be assessed.

Symptoms

Symptoms often appear during sleep, so a parent or caregiver may notice them before the child does.

Nighttime symptoms can include:

Some children sleep with their neck extended or their body propped up, which may help them keep the airway open. Central sleep apnea may cause breathing pauses without loud snoring.

Daytime effects can look different from those seen in adults. Children may have:

No single symptom confirms sleep apnea. Children can snore for other reasons, including a cold or allergies. Some children with sleep apnea also snore only lightly.

- Frequent, loud, or labored snoring
- Pauses in breathing followed by gasping, choking, or snorting
- Restless sleep or unusual sleeping positions
- Mouth breathing, sweating, or repeated waking
- Bedwetting after a child had previously stayed dry
- Irritability, impulsive behavior, or difficulty paying attention
- Problems with schoolwork or memory
- Morning headaches or a dry mouth
- Sleepiness, low energy, or difficulty waking
- Poor growth in some cases

Causes and risk factors

Obstructive sleep apnea develops when the upper airway becomes too narrow during sleep.

Muscles naturally relax during sleep, making an already narrow airway more likely to close.

Enlarged tonsils and adenoids are a common cause in children. Other factors that can increase the chance of obstruction include:

Higher body weight is only one possible factor. Children of any body size can have sleep apnea, and discussions about weight should be supportive rather than blaming.

Central sleep apnea has different causes. It may occur with certain brain, heart, lung, genetic, or neuromuscular conditions. Some medicines that suppress breathing can also contribute. In premature infants, immature breathing control can cause a separate pattern called apnea of prematurity.

Sometimes more than one cause is present. For example, a child may have enlarged tonsils as well as an underlying condition that makes the airway more likely to collapse.

- A smaller or differently shaped jaw, face, or airway
- Nasal blockage from allergies or other conditions
- Higher body weight
- Reduced muscle tone or a neuromuscular condition
- Down syndrome or another condition affecting airway structure
- A family history of obstructive sleep apnea
- Previous airway or craniofacial surgery

Diagnosis

A healthcare professional will ask about snoring, witnessed breathing pauses, sleep quality, daytime behavior, growth, medicines, and other medical conditions. Examining the nose, mouth, tonsils, jaw, and neck can identify possible airway narrowing.

Symptoms and an examination cannot reliably confirm or rule out sleep apnea. The main test is an overnight polysomnogram , commonly called a sleep study.

During a sleep study, sensors record breathing, airflow, oxygen level, heart rate, brain activity, sleep stages, and body movements. The test shows how often breathing events occur and whether they affect oxygen, carbon dioxide, or sleep quality. It does not hurt, although some children need time to become comfortable with the sensors.

Home sleep apnea tests designed for adults are not generally recommended as the main diagnostic test for children. Limited tests, such as overnight oxygen monitoring, may provide useful information in selected situations, but a normal result may not rule out sleep apnea.

Depending on the findings, the child may be referred to a pediatric sleep specialist, ear, nose, and throat surgeon, lung specialist, neurologist, or another relevant specialist. Children with central apnea may need testing for an underlying cause.

Treatment and management

Treatment is based on the type and severity of apnea, its cause, the child's age, and any other health conditions.

When enlarged tonsils and adenoids are blocking the airway, surgery to remove them may be recommended. This is called adenotonsillectomy. It improves obstructive sleep apnea in many children, but it does not always eliminate it. Children with severe apnea or other health conditions may need closer monitoring around surgery.

Positive airway pressure , or PAP, keeps the airway open by delivering air through a mask during sleep. Continuous positive airway pressure, called CPAP, supplies steady pressure. Other PAP devices adjust the pressure or provide different pressures for breathing in and out.

Finding a comfortable mask and helping a child get used to PAP can take time. Follow-up allows the care team to check the fit, review device information, and address dry nose, air leaks, or skin irritation.

For selected children with mild obstructive sleep apnea, management may include observation with planned reassessment or treatment of nasal inflammation. Medicines used for nasal allergies or airway inflammation are not appropriate for every child. Montelukast, sometimes considered in selected cases, carries a boxed warning about serious mood and behavior effects.

If higher body weight contributes to airway narrowing, gradual family-based weight support may be part of care. It should usually accompany another treatment when apnea needs prompt control rather than delaying treatment.

Some children may benefit from orthodontic treatment, treatment of a specific facial or airway difference, or other airway surgery. These options require specialist assessment.

Central sleep apnea is treated differently. Care may focus on the underlying medical condition, adjusting a contributing medicine, or providing oxygen or breathing support. Oxygen and breathing devices must be selected and monitored professionally.

A repeat sleep study may be needed after treatment, especially if symptoms continue or the child has factors that increase the chance of persistent apnea.

Complications

Repeated sleep disruption can affect concentration, emotional control, memory, and learning. In some children, these effects resemble attention-deficit or behavior problems.

Sleep apnea can also contribute to poor growth, metabolic changes, and increased blood pressure. Severe, long-lasting disease can place strain on the heart and lungs, although serious cardiovascular complications are not inevitable.

A child may have a higher risk of complications if the apnea is severe, continues for a long time, or occurs alongside heart, lung, neuromuscular, or genetic conditions.

Treatment reduces these risks, but some difficulties may have more than one cause. Improvement in sleep does not guarantee that every learning, behavior, or growth concern will disappear.

Prevention

Pediatric sleep apnea cannot always be prevented. Enlarged tonsils, inherited features, facial structure, and many underlying medical conditions are not caused by anything a family did.

Managing nasal allergies may reduce blockage when allergies are contributing. Supporting healthy sleep routines and healthy growth can also benefit overall health, but these measures do not replace treatment for confirmed apnea.

Avoid exposing children to tobacco smoke, which can irritate the airway. Safe-sleep guidance for infants remains important, but it does not specifically prevent obstructive sleep apnea.

Do not use over-the-counter anti-snoring devices, positioning products, oxygen, or an adult's PAP machine without professional guidance. These products may not address the cause and can be unsafe for a child.

Living with it and what to expect

The course of pediatric sleep apnea is not the same for every child. Some children improve after their tonsils and adenoids are removed. Others have residual apnea and need additional care. Symptoms can also return as the airway, body, and health needs change with age.

Mild obstruction may improve as the airway grows, but it can also continue or worsen. It is not possible to know from snoring alone whether a child will outgrow the problem.

If PAP is prescribed, regular use during all sleep periods gives the greatest benefit. Children

often need practical and emotional support while adjusting to a mask. A gradual routine, age-appropriate choices, and help from the sleep team can make treatment easier.

Follow-up may include reviewing symptoms, growth, school functioning, blood pressure, PAP information, or sleep study results. Tell the healthcare team if snoring, pauses, bedwetting, morning headaches, sleepiness, or behavior concerns return after improving.

Most children continue their usual school, play, and family activities while being assessed or treated. Children with more complex medical conditions may need longer-term specialist follow-up.

When to get medical help

Arrange a routine medical appointment if your child regularly snores, breathes through their mouth at night, sleeps restlessly, or has unexplained daytime attention, behavior, or sleepiness concerns. Mention any gasping or witnessed pauses, even if the child seems well during the day.

Seek prompt medical advice if breathing pauses are becoming more frequent, symptoms worsen quickly, or a child with known sleep apnea can no longer tolerate prescribed breathing support. Infants and children with significant heart, lung, brain, or neuromuscular conditions may need earlier assessment.

Call emergency services if your child:

If breathing has stopped and the child is unresponsive, call emergency services and begin CPR if you know how. Follow the emergency operator's instructions.

- Has blue, gray, or unusually pale lips or skin
- Is struggling to breathe or pulling in deeply around the ribs
- Does not restart breathing promptly
- Is difficult to wake, collapses, or is not responding normally

Common questions

Is pediatric sleep apnea the same as snoring?

No. Snoring is the sound of tissue vibrating as air moves through a narrowed airway. Many children who snore do not have sleep apnea. Repeated pauses, gasping, disrupted sleep, or daytime effects make apnea more concerning, but a sleep study is usually needed to confirm it.

Can a child outgrow sleep apnea?

Some children improve as their airway grows or after a temporary source of blockage resolves. Others continue to have apnea or develop it again later. Waiting for a child to outgrow symptoms without follow-up may leave clinically important apnea untreated.

Will removing the tonsils and adenoids cure it?

It may. Adenotonsillectomy often improves obstructive sleep apnea caused by enlarged tonsils and adenoids. Apnea is more likely to persist when it is severe or when a child has higher body weight, an airway difference, reduced muscle tone, or another medical condition.

What happens during a child's sleep study?

The child sleeps at a sleep center while sensors record sleep and breathing. A caregiver can usually stay nearby. Staff place sensors on the scalp, face, chest, finger, and legs. The study does not use needles, although the wires and unfamiliar setting may feel awkward.

Does my child have to use CPAP forever?

Not necessarily. Some children use PAP while awaiting another treatment, while others need it longer. Ongoing review and, when appropriate, repeat testing help determine whether the pressure should change or whether PAP is still needed.

Should I wake my child when breathing pauses?

A brief pause that ends with normal breathing does not always require waking the child, but repeated pauses should be medically assessed. If breathing does not restart promptly, the child changes color, struggles to breathe, or is difficult to wake, call emergency services.

Sources

- American Academy of Pediatrics: Diagnosis and Management of Childhood Obstructive Sleep Apnea Syndrome , Pediatrics , 2012
- American Academy of Sleep Medicine: Home Sleep Apnea Testing for the Diagnosis of Obstructive Sleep Apnea in Children , Journal of Clinical Sleep Medicine , 2017
- American Academy of Otolaryngology-Head and Neck Surgery Foundation: Clinical Practice Guideline-Tonsillectomy in Children, Update , Otolaryngology-Head and Neck Surgery , 2019
- American Thoracic Society: Management of Persistent, Post-adenotonsillectomy Obstructive Sleep Apnea in Children , American Journal of Respiratory and Critical Care Medicine , 2024

- National Heart, Lung, and Blood Institute: Sleep Apnea in Children , National Institutes of Health