CONDITION

Blockage of upper airway

Learn how upper airway blockage can affect breathing, what may cause it, which symptoms need emergency care, and how doctors diagnose and treat it.

WHAT IT IS
Partial or complete upper airway blockage

BODY SYSTEM
Respiratory

MAIN SYMPTOMS
Noisy breathing, difficulty breathing, choking, trouble swallowing

WHAT CAUSES IT
Foreign objects, allergy, infection, injury

HOW IT IS DIAGNOSED
Laryngoscopy, bronchoscopy, X-ray or CT

MAIN TREATMENT
Airway support and cause-specific treatment

CAN IT BE CURED?
Sometimes - when the cause is treatable

IS IT AN EMERGENCY?
Sometimes - cannot breathe, speak, or cough

LONG-TERM OUTLOOK
Cause-dependent; severe blockage may cause brain injury or death

Overview

A blockage of the upper airway limits the movement of air through the nose, mouth, throat, or voice box. The medical term is upper airway obstruction . A blockage may be partial, allowing some air to pass, or complete.

Some blockages begin suddenly. Examples include choking on food, swelling from a serious allergic reaction, or an object caught in the airway. These situations can quickly become emergencies.

Other blockages develop more gradually. Enlarged tonsils, scarring, problems with vocal cord movement, or a growth in the throat may slowly narrow the airway. Obstructive sleep apnea causes repeated upper-airway narrowing or closure during sleep.

Upper airway obstruction is different from asthma and other conditions involving the smaller airways inside the lungs. However, both can cause noisy or difficult breathing. A medical assessment is often needed to find where the problem is and what is causing it.

A complete blockage prevents oxygen from reaching the lungs and requires immediate first aid and emergency care. Partial or long-term narrowing also matters because it may disturb sleep, make eating difficult, or place extra strain on breathing.

Symptoms

Symptoms depend on where the blockage is, how severe it is, and how quickly it developed.

Call emergency services immediately if someone cannot breathe, speak, or cough effectively; becomes blue, gray, very pale, confused, or unresponsive; or appears to be choking with little or no air movement.

Other possible symptoms include:

Stridor is not the same as wheezing. Stridor usually comes from narrowed airflow in the throat or voice box. Wheezing is commonly a musical sound from narrowed airways in the lungs. The distinction is not always easy to make without an examination.

Infants and young children may not be able to describe their symptoms. Poor feeding, a weak cry, chest pulling in during breathing, unusual quietness, or a sudden change in behavior can be important signs.

- Noisy, high-pitched breathing called stridor , especially when breathing in
- Gasping or obvious effort to breathe
- Pulling in of the skin between the ribs or above the breastbone
- Choking, gagging, or sudden coughing while eating
- A muffled, weak, or unusually hoarse voice
- Drooling or trouble swallowing saliva
- Swelling of the tongue, lips, face, or throat
- Rapid breathing, agitation, unusual sleepiness, or confusion
- Pauses in breathing, loud snoring, or repeated gasping during sleep
- A persistent feeling that something is stuck in the throat
- Shortness of breath that becomes worse when lying down or with activity

Causes and risk factors

A foreign object is a common cause of sudden blockage. Food is a frequent cause in adults, while children may inhale food, coins, toy parts, balloons, or other small items. Risk is higher when a person has swallowing difficulties, poor teeth, reduced alertness, or a neurologic condition that affects swallowing.

An allergic reaction called anaphylaxis can cause rapid swelling of the tongue and throat. It may also cause hives, vomiting, dizziness, or breathing difficulty. Foods, medicines, and insect stings are among the possible triggers.

Infections can inflame or swell the upper airway. Croup, which usually affects young children, causes swelling near the voice box and often produces a barking cough. Epiglottitis is inflammation around the flap of tissue above the voice box. Throat or neck abscesses are pockets of infection that can press on the airway.

Injury may cause swelling, bleeding, or structural damage. Possible causes include a blow to the neck, inhalation of smoke or hot gases, burns, and complications of surgery or a breathing tube. Swelling may not always be immediate after an injury.

Long-term or recurring narrowing may result from:

Young children have smaller airways, so modest swelling can interfere with airflow more than it would in an adult. Older adults and people with swallowing problems, sedation, alcohol intoxication, or certain neurologic disorders have a higher risk of choking.

Smoking and heavy alcohol use increase the risk of some head and neck cancers. Obesity and certain jaw or throat structures can increase the chance of obstructive sleep apnea.

- Enlarged tonsils or adenoids
- Obstructive sleep apnea
- Vocal cords that do not open normally
- Scarring beneath or around the voice box
- Benign or cancerous growths
- Abnormal airway structure present from birth
- A large thyroid gland pressing on nearby structures
- Severe inflammation related to acid reflux or another condition

Diagnosis

Emergency assessment begins with whether the person can move air and maintain an adequate oxygen level. Treatment to secure the airway may need to begin before the exact cause is known.

Clinicians ask how the symptoms started and whether there was choking, an allergic exposure, infection, injury, recent surgery, or use of a breathing tube. They listen for stridor and assess the voice, swallowing, chest movement, alertness, and work of breathing.

A pulse oximeter placed on a finger estimates the oxygen level in the blood. A normal reading does not always rule out an important blockage, especially early in the process.

When the person is stable, a clinician may examine the throat or use a thin, flexible camera called a laryngoscope to look through the nose at the throat and voice box. A bronchoscope can be used to examine the larger breathing passages and remove some foreign objects.

Neck or chest X-rays may show certain objects, swelling, or airway narrowing. However, food and plastic may not appear on an X-ray. A CT scan can provide more detail when it is safe for the person to lie flat and leave the immediate treatment area.

For symptoms that mainly occur during sleep, a sleep study can record breathing, oxygen levels, heart rate, and sleep patterns. A biopsy may be needed if an abnormal growth is found.

Treatment and management

Treatment depends on the cause, but maintaining an open airway comes first.

For severe choking, call emergency services. If the person can cough forcefully or speak, encourage coughing and watch closely. Do not reach blindly into the mouth because this may push an object deeper.

If the person cannot cough, speak, or breathe effectively, use the recommended choking first-aid method for their age while someone calls for help. Infants require back blows and chest thrusts rather than abdominal thrusts. If the person becomes unresponsive, begin cardiopulmonary resuscitation, or CPR, and follow the emergency dispatcher's instructions. First-aid training can help people perform these steps correctly.

Suspected anaphylaxis is also an emergency. A person who has been prescribed an epinephrine auto-injector should use it promptly according to their emergency plan, then call emergency services. Symptoms can return after temporary improvement, so medical observation may still be needed.

In a medical setting, treatment may include oxygen, suction to clear blood or secretions, and close monitoring. Clinicians may place a breathing tube through the mouth or nose. If this

cannot be done safely, an emergency opening may be made through the front of the neck to allow air to reach the lungs.

A trapped object may be removed with a laryngoscope or bronchoscope. The approach depends on the object's location and whether the patient is stable.

Medicines may reduce airway swelling when inflammation or an allergic reaction is responsible. Epinephrine is central to treating anaphylaxis. Corticosteroids like prednisone or hydrocortisone may be used for conditions such as croup or other inflammatory swelling, but they do not replace emergency airway support when breathing is severely limited. Antibiotics like amoxicillin or doxycycline are used for specific bacterial infections, not for every cause of airway symptoms. An abscess may require drainage.

Long-term treatment addresses the underlying problem. Options may include surgery for enlarged tonsils or adenoids, treatment of a growth, or procedures to correct scarring or vocal cord problems. Obstructive sleep apnea may be managed with lifestyle measures, positive airway pressure therapy, an oral appliance, or surgery, depending on the cause and severity.

People with swallowing problems may benefit from an assessment by a speech-language pathologist. This can identify safer food textures, eating positions, or swallowing techniques without relying on guesswork.

Complications

A severe blockage can prevent enough oxygen from reaching the brain, heart, and other organs. Without rapid relief, this can cause loss of consciousness, cardiac arrest, brain injury, or death.

Other complications depend on the cause. A foreign object can injure the airway or lead to pneumonia if material enters the lungs. Infection can spread into deeper neck tissues or the bloodstream. Emergency airway procedures may cause bleeding, infection, or damage to nearby structures.

Long-term obstruction can disrupt sleep and concentration. Untreated obstructive sleep apnea is associated with cardiovascular and metabolic health problems. Persistent narrowing can also affect speech, swallowing, nutrition, and physical activity.

Follow up

Follow-up needs vary based on the cause and treatment. After a choking event, a clinician may check for a remaining object, airway injury, or material that entered the lungs. New fever, chest

pain, ongoing cough, trouble swallowing, or breathing symptoms should be reported promptly.

After anaphylaxis, routine follow-up may include reviewing possible triggers, learning when and how to use an epinephrine auto-injector, and considering evaluation by an allergy specialist. The emergency plan should also be shared with family members, caregivers, or school staff when appropriate.

People treated for an infection should follow the care plan and attend recommended reassessment. Persistent hoarseness, noisy breathing, neck swelling, trouble swallowing, unexplained weight loss, or symptoms that keep returning deserve medical review.

For sleep-related obstruction, follow-up may assess snoring, daytime sleepiness, treatment comfort, and whether breathing improves during sleep. Children with enlarged tonsils or adenoids may need monitoring of sleep, behavior, growth, and school performance.

Seek urgent medical assessment for worsening noisy breathing, increasing trouble swallowing, repeated choking, or new swelling of the throat. Call emergency services for severe breathing difficulty, inability to speak or cough, blue or gray coloring, confusion, collapse, or suspected anaphylaxis with airway symptoms.

Sources

- U.S. National Library of Medicine. "Airway Obstruction." MedlinePlus Medical Encyclopedia .
- Panchal AR, Bartos JA, Cabañas JG, et al. "Part 3: Adult Basic and Advanced Life Support: 2020 American Heart Association Guidelines for CPR and Emergency Cardiovascular Care." Circulation . 2020;142(16 Suppl 2):S366-S468.
- American Red Cross. "Adult and Child Choking: Steps to Take." First Aid Guidelines and Emergency Instructions .
- Cardona V, Ansotegui IJ, Ebisawa M, et al. "World Allergy Organization Anaphylaxis Guidance 2020." World Allergy Organization Journal . 2020;13(10):100472.
- Mitchell RB, Archer SM, Ishman SL, et al. "Clinical Practice Guideline: Tonsillectomy in Children (Update)." Otolaryngology-Head and Neck Surgery . 2019;160(1 Suppl):S1-S42.
- Wong P, Wong J, Mok MUS. "Anaesthetic Management of Acute Airway Obstruction." Singapore Medical Journal . 2016;57(3):110-117.