

Article

# Well-Treatment Approaches for Adenoid Hypertrophy in Children and Adults

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**Abstract:** Adenoid hypertrophy is one of the most common causes of chronic nasal obstruction in children and remains an important clinical problem in otorhinolaryngology. Enlarged adenoids may disturb normal nasal breathing, cause mouth breathing, snoring, recurrent rhinosinusitis, otitis media, hearing impairment and sleep-related breathing disorders. Although adenoid tissue normally regresses with age, persistent or pathological enlargement may lead to functional, developmental and infectious complications. In adults, adenoid hypertrophy is uncommon and therefore requires more careful diagnostic assessment, as it may be associated with chronic inflammation, allergy, smoking, air pollution, reflux disease or, rarely, neoplastic processes. This article discusses the main treatment approaches for adenoid hypertrophy in children and adults. Conservative management, antibiotic therapy, intranasal corticosteroids, allergy control, saline irrigation, physiotherapy, breathing exercises, supportive home care and surgical treatment are reviewed. The article emphasizes that treatment should be chosen not only according to the size of the adenoids, but also according to symptoms, complications, age of the patient and underlying causes.

**Keywords:** adenoid hypertrophy, enlarged adenoids, adenoiditis, nasal obstruction, mouth breathing, antibiotics, intranasal corticosteroids, adenoidectomy, sleep apnea, otorhinolaryngology.

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## 1. Introduction

Adenoids, or pharyngeal tonsils, are lymphoid tissues situated in the upper part of the nasopharynx, behind the nasal cavity. They are part of Waldeyer's lymphatic ring and participate in the immune protection of the upper respiratory tract. In early childhood, adenoids help the organism recognize and respond to microorganisms entering through the nose and mouth.[1]

In normal physiological development, adenoids are relatively large during childhood and gradually decrease in size after the age of five to seven years. By adolescence, they often become much smaller. However, in some children this process is disturbed. Repeated viral infections, bacterial inflammation, allergic rhinitis, poor nasal hygiene and environmental irritants may cause persistent enlargement of adenoid tissue.[2]

Clinically, adenoid hypertrophy is important because it directly affects nasal breathing. A child with enlarged adenoids often breathes through the mouth, sleeps with an open mouth, snores at night, speaks with a nasal tone and may have frequent nasal discharge. Long-term nasal obstruction may also influence facial growth, dental occlusion and speech development. In more severe cases, obstructive sleep apnea may occur. This condition is especially dangerous because it may affect concentration, memory, school performance, behavior and cardiovascular health.[3]

Adenoid hypertrophy may also contribute to recurrent otitis media and hearing problems. The anatomical location of the adenoids near the opening of the Eustachian

tube explains this relationship. Enlarged or chronically infected adenoids may block normal ventilation of the middle ear, leading to fluid accumulation, repeated ear infections and temporary hearing loss.[4]

In adults, adenoid hypertrophy is rare. For this reason, persistent adenoid enlargement in adults should not be ignored. It may be related to chronic infection, allergy, smoking, polluted air, gastroesophageal reflux or immune disorders. In rare cases, tumors of the nasopharynx may imitate adenoid enlargement. Therefore, adult patients with persistent symptoms require detailed ENT examination.

The aim of this article is to describe the major treatment methods used in adenoid hypertrophy and to clarify when conservative, medical or surgical treatment may be appropriate.[5]

## 2. Methods

This article was prepared as a narrative review based on clinical information and scientific literature related to adenoid hypertrophy and adenoiditis. The material was analyzed according to the IMRAD structure. Special attention was given to practical treatment approaches used in pediatric and adult otorhinolaryngology. The following aspects were studied:

1. Anatomical and functional role of adenoids;
2. Main causes of adenoid enlargement;
3. Clinical symptoms in children and adults;[6]
4. Conservative observation and follow-up;
5. Antibiotic treatment in bacterial adenoiditis;
6. Use of intranasal corticosteroids;
7. Allergy-related treatment;[7]
8. Saline irrigation and nasal hygiene;
9. Breathing exercises and physiotherapy;
10. Supportive home care;
11. Indications for adenoidectomy;
12. Special features of adenoid hypertrophy in adults.

The treatment approaches were compared according to their indications, advantages and limitations.[8]

## 3. Results

**Clinical Manifestations of Adenoid Hypertrophy:** The symptoms of enlarged adenoids are usually connected with obstruction of the nasopharyngeal airway. The most common complaints include difficulty breathing through the nose, constant mouth breathing, snoring, restless sleep, bad breath, nasal speech and frequent nasal discharge.[9]

In children, parents often notice that the child sleeps with an open mouth or wakes up tired. Some children may become irritable, inattentive or sleepy during the day. In severe cases, short pauses in breathing during sleep may occur. These symptoms suggest possible obstructive sleep apnea and require medical evaluation.

Adenoid hypertrophy may also be associated with recurrent sinus infections, chronic rhinitis, middle ear fluid and hearing loss. When a child frequently asks to repeat words, turns up the volume of the television or has delayed speech development, middle ear involvement should be considered.[10]

**Observation and Watchful Waiting:** Not every case of adenoid enlargement requires immediate active treatment. If symptoms are mild and there are no complications, observation may be enough. This approach is especially reasonable in children because adenoids often shrink naturally with age.

However, watchful waiting does not mean ignoring the condition. The child should be monitored regularly. If nasal obstruction becomes stronger, snoring increases, ear infections repeat or sleep quality worsens, treatment should be reconsidered.[11]

**Antibiotic Therapy:** Antibiotics are useful only when adenoid enlargement is associated with bacterial infection. Signs suggesting bacterial adenoiditis may include fever, purulent nasal discharge, sore throat, unpleasant breath and general weakness.

Amoxicillin is commonly used as a first-line antibiotic because of its effectiveness and relatively safe profile. If symptoms do not improve, amoxicillin-clavulanate or cephalosporins such as cefuroxime or cefdinir may be considered. In patients allergic to penicillin, macrolides such as azithromycin or clarithromycin may be used. It is important to emphasize that antibiotics do not reduce adenoid size in all cases. They are not effective for allergy-related or purely hypertrophic enlargement. Unnecessary antibiotic use may cause resistance and side effects.[12]

**Intranasal Corticosteroids:** Intranasal corticosteroids are one of the most effective conservative treatments for adenoid hypertrophy, especially when inflammation and allergy are involved. These sprays reduce swelling of the nasal mucosa and adenoid tissue.

Regular use may improve nasal breathing, reduce snoring and decrease nasal blockage. Examples include mometasone, fluticasone and budesonide. Their effect is not immediate; treatment usually requires several weeks.

This method is often preferred before surgery in children with moderate symptoms. However, the treatment should be prescribed and controlled by a physician.

**Allergy Management:** Allergic rhinitis is one of the common factors that worsen adenoid hypertrophy. If a child has sneezing, watery nasal discharge, itchy nose, seasonal symptoms or family history of allergy, allergic inflammation should be suspected.[13]

Treatment may include antihistamines, intranasal corticosteroids, allergen avoidance and, in selected cases, immunotherapy. Reducing exposure to dust, cigarette smoke, animal hair and strong chemical odors may also help.

When allergy is properly controlled, inflammation decreases and nasal breathing often improves.

**Saline Irrigation and Nasal Hygiene:** Saline sprays and nasal rinses are simple but useful supportive methods. They help clean mucus, allergens and microorganisms from the nasal cavity. Saline irrigation may also improve the effect of nasal sprays by preparing the mucosa for medication. This method is generally safe and can be used as part of daily care, especially in children with chronic nasal congestion.

**Physiotherapy and Breathing Exercises:** Long-term nasal obstruction often forms a habit of mouth breathing. Even after inflammation decreases, some children continue to breathe through the mouth. Breathing exercises may help restore normal nasal breathing. Simple exercises include short inhalation through the nose followed by slow exhalation through the mouth. Head movements combined with nasal breathing may also improve respiratory control. These exercises should be performed regularly and correctly. In children with speech, swallowing or facial development problems, cooperation with speech therapists, orthodontists or physiotherapists may be useful.

**Supportive Home Care:** Supportive care cannot replace medical treatment, but it helps strengthen the body and reduce repeated infections. Adequate sleep, balanced nutrition, sufficient fluid intake, fresh air and good hygiene are important.

Warm drinks may reduce throat irritation. Salt-water gargling can relieve discomfort in older children and adults. Honey with lemon may soothe the throat, but honey should not be given to very young children without medical advice.

It is also necessary to avoid tobacco smoke, dusty rooms and cold air exposure, because these factors may worsen nasal inflammation.

**Surgical Treatment: Adenoidectomy:** If conservative and medical treatment do not give enough improvement, adenoidectomy may be required. Adenoidectomy is the surgical removal of enlarged adenoid tissue.

The main indications for adenoidectomy include:

- persistent nasal obstruction;
- obstructive sleep apnea;
- recurrent adenoiditis;
- chronic or recurrent sinusitis;
- recurrent otitis media;
- middle ear fluid and hearing loss;
- failure of conservative treatment;
- serious effect on sleep and quality of life.

Adenoidectomy usually improves nasal breathing, sleep quality and frequency of infections. In some patients, especially those with enlarged tonsils, adenotonsillectomy may be performed.

In adults, surgery may be considered only after careful diagnostic evaluation. Persistent adult adenoid enlargement may require endoscopy, imaging or biopsy to exclude serious pathology.

#### 4. Discussion

Adenoid hypertrophy should be treated individually. The size of the adenoids is important, but symptoms and complications are even more important. Some children may have large adenoids but mild complaints, while others may have moderate enlargement with serious sleep or ear problems.

Conservative treatment is suitable for mild and moderate cases. Intranasal corticosteroids, allergy treatment and saline irrigation may reduce inflammation and improve breathing. These methods are especially useful when the condition is connected with allergic rhinitis or chronic inflammation.[14]

Antibiotics have a limited but important role. They should be used when bacterial infection is present. They are not a universal treatment for all enlarged adenoids. Correct use of antibiotics protects patients from unnecessary side effects and helps prevent antimicrobial resistance.

Surgical treatment remains the most effective option in severe cases. Children with sleep apnea, recurrent infections and hearing problems often benefit from adenoidectomy. The operation can significantly improve quality of life, but it should be recommended only after proper examination.

Adult adenoid hypertrophy is a special clinical situation. Since adenoids usually regress after childhood, their enlargement in adults needs careful attention. Chronic irritation, smoking, allergy and reflux may be responsible, but more serious causes must also be ruled out.

Thus, the best treatment strategy is not the same for all patients. A combined approach is often needed: medical therapy, hygiene, lifestyle changes, follow-up and, when necessary, surgery.[15]

#### 5. Conclusion

Adenoid hypertrophy is a common condition in children and a rare but clinically important problem in adults. It may cause nasal obstruction, mouth breathing, snoring, recurrent infections, hearing problems and sleep-related breathing disorders.

Mild cases may be managed with observation, nasal hygiene and supportive care. Inflammatory and allergic cases may respond well to intranasal corticosteroids, antihistamines and saline irrigation. Bacterial adenoiditis requires appropriate antibiotic treatment. Severe cases with persistent obstruction, sleep apnea, recurrent otitis media or chronic sinusitis may require adenoidectomy.

Effective management depends on early diagnosis, correct identification of the cause and individual selection of treatment. Timely referral to an otorhinolaryngologist helps prevent complications and improves the patient's quality of life.

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