

Where are tonsils and adenoids located?

Tonsils are located in the back of the mouth on each side. Adenoids are in the back of the nose. Tonsils can be seen by looking in the mouth, but adenoids usually cannot be seen on routine exam. Evaluating the adenoids usually requires passing an endoscope through the nose, using a mirror in the back of the mouth, or obtaining an x-ray.

What is the function of tonsils and adenoids?

Tonsils and adenoids are lymphoid tissue and part of the immune system, but their role is limited. Removing tonsils and adenoids does not weaken the immune system. Instead, their removal may actually reduce the frequency of illnesses in some children.

Why are tonsils and adenoids sometimes removed?

Removal of tonsils and adenoids is considered when they are excessively enlarged or frequently infected. They do not have to have been infected to get enlarged. In fact, children often have obstructive problems from enlarged tonsils and adenoids without ever having had sore throats or “strep throat”.

What problems can enlarged tonsils and adenoids cause?

Enlarged tonsils and adenoids may cause:

- obstructed breathing during sleep (i.e. sleep apnea)
- poor disposition and irritable behavior
- eating problems
- delayed growth
- constant nasal obstruction and congestion
- poor alignment of teeth and abnormal facial development

What are the signs of obstructive breathing problems during sleep?

Snoring is one sign because it results from breathing through a passageway that is too small. On the other hand, snoring alone does not require removal of tonsils and adenoids. The additional signs of worrisome obstructive sleep include:

- mouth breathing throughout the night
- restless and fitful sleep that results in moving all around in the bed
- sleeping in unusual positions including tilting the head back or sleeping propped up
- choking episodes, periods of not breathing or apparent struggling to breathe
- waking up or sweating during the night for unknown reasons
- age-inappropriate bed wetting

Overall, children with significant obstructive sleep problems have a restless sleep during which they appear to struggle to breathe.

Is there a test to determine if a child is having obstructive sleep problems?

A sleep study can be performed in the hospital or a sleep lab which records numerous aspects of sleep including breathing pattern, oxygen level, heart rhythm and brain waves. By measuring these parameters, the presence and severity of obstructive sleep apnea can be determined. A formal sleep study is a reasonable consideration if uncertainty exists regarding the degree of a child's obstructive sleep problems. On the other hand, if a parent describes a sleeping pattern consistent with significant obstruction, most physicians will proceed directly with tonsillectomy and adenoidectomy based solely on parental observations without a sleep study.

What are the possible behavior effects from obstructive sleep?

Children with obstructive sleep may experience excessive daytime sleepiness including fatigue and may fall asleep at inappropriate times. In actuality, the more common daytime consequence of children's poor sleep quality is irritability and poor concentration, not tiredness. They tend to be cranky. They can have difficulty concentrating resulting in poor school performance. Admittedly, to determine whether poor behavior and school performance is more due to sleep issues or other factors is difficult.

What eating problems can enlarged tonsils and adenoids cause?

Children with enlarged tonsils and adenoids may be slow eaters and refuse certain foods due to the difficulty in chewing and breathing at the same time. They may have difficulty swallowing and occasional choking. In addition, they may have a poor appetite due to diminished senses of smell and taste resulting from poor airflow through the nose.

How can enlarged tonsils and adenoids affect a child's growth?

Delayed growth can be caused by the eating problems associated with enlarged tonsils and adenoids. Delayed growth can also result from disrupted sleep because growth hormone is predominantly produced during deep sleep. In addition to these growth issues, severe obstructive sleep apnea can, on rare occasions, lead to heart and lung problems.

How can I tell if my child's nasal obstruction is from enlarged adenoids?

Enlarged adenoids, allergies, sinus infections and colds can all cause nasal obstruction. Determining which one is the cause of the obstruction can be difficult. In general, enlarged adenoids cause constant nasal obstruction without significant discharge. In contrast, nasal obstruction from allergies may fluctuate based on different seasons, locations and activities. Allergies often cause other symptoms in addition to nasal obstruction including clear discharge and itchy nose and eyes. Nasal obstruction from sinus infections and colds occurs when the child is sick and is associated with infected secretions.

What is the connection between enlarged tonsils and adenoids and dental problems?

Their enlargement leads to chronic mouth-breathing which may result in abnormal facial development, misalignment of the teeth, and tooth discoloration. Admittedly, not all children with enlarged tonsils and adenoids develop a poor bite requiring orthodontic work. Orthodontists have differing opinions on the need for tonsil and adenoid removal to prevent or assist with dental braces.

What is involved with removing tonsils and adenoids?

Prior to surgery, there is no routine need for blood tests and no starting of IV's. The child is given a relaxing medication before going back to the operating room which minimizes separation anxiety from the parents. Once in the operating room, the child goes off to sleep by breathing an anesthetic gas and then the IV is inserted.

Both tonsils and adenoids are removed through the mouth without any external incisions. The instruments used to remove the tonsils and adenoids vary between surgeons because none has been proven to be consistently safer, less painful and more cost-effective than another. Bleeding is usually minimal and easily controlled with electrocautery, not sutures. The time in the operating room is typically less than one hour.

A parent is allowed to go back to the recovery room once the child is becoming more alert. The child is initially upset and disoriented but soon settles down. He/she remains at the surgical facility for at least a few hours after surgery to ensure that there are no problems with pain, nausea, bleeding or breathing. If a child is having any such difficulties, or if the child is under three years old, then he/she may be admitted to a hospital overnight for observation.

What are the potential benefits of removing enlarged tonsils and adenoids?

Tonsillectomy and adenoidectomy has an excellent chance of eliminating obstructive sleep problems. If a child has fatigue, irritability, or concentration problems due to poor sleep quality, then these problems can also be improved. A child may eat better and gain weight after tonsillectomy and adenoidectomy. In addition, the surgery often allows a child to breathe better through the nose which potentially can help with normal facial and dental development. Although removal of tonsils and adenoids has multiple potential benefits, these benefits cannot be guaranteed in every case.

What are the risks of tonsillectomy and adenoidectomy?

The main risk associated with tonsillectomy is bleeding. Scabs form where the tonsils are removed. These scabs fall off after approximately one week and can lead to bleeding. Stopping the bleeding may require going back to the operating room. Even in the cases of rebleeding, needing a transfusion or choking on the blood is extremely rare. Other uncommon risks of tonsillectomy include teeth injury, taste disturbance, and cautery burns.

The main risk associated with adenoidectomy is a change in voice quality. Adenoidectomy opens more space behind the nose which allows more air into the nose while talking, possibly resulting in a high-pitched, squeaky voice. While a temporary nasal voice is common, a permanent voice problem is rare. Another uncommon risk of adenoidectomy is troublesome scarring.

Dehydration can occur during recovery due to poor pain control. The duration and severity of pain varies among children. In general, the pain lasts approximately one week and can be controlled with medications. On rare occasions, the discomfort prevents adequate fluid intake, requiring a return to the hospital for intravenous (IV) fluids. Dehydration requiring intravenous fluids can also result from persisting nausea and/or vomiting.

The risks of general anesthesia are often parents' main concern. While life-threatening problems can occur, the chance is exceptionally low. In a healthy child, the risk involved with general anesthesia is equivalent to the risk associated with a long distance car trip.

What are the costs associated with tonsillectomy and adenoidectomy?

Since the surgery is performed in an operating room, costs include fees from the surgeon, anesthesiologist and surgical facility. Fortunately, these charges are usually covered by insurance. We will assist you in trying to obtain insurance approval. Even with insurance approval, you will be responsible for any deductibles, co-insurance, or co-payments.

What are the alternatives to tonsillectomy and adenoidectomy?

Antibiotics are unlikely to permanently reduce the size of tonsils and adenoids. Daily use of a nasal steroid spray may reduce the size of adenoids, but not tonsils. Medical treatment of any associated allergies or chronic sinus infections may improve nasal breathing and sleep quality, but probably will not affect the size of the tonsils and adenoids.

Watchful waiting may be a reasonable alternative. Tonsils and adenoids typically get smaller as the child gets older. They usually are at maximum size around six years of age and have substantially reduced in size by around 12 years. Adult snoring and sleep apnea are seldom due to enlarged tonsils and adenoids. The issue usually is not whether the child will outgrow the problem. Instead, the issue is the impact on the child's quality of life while waiting for conditions to improve. The other concern is any long-term consequences on the heart, lung, or facial development.

Should my child have tonsillectomy and adenoidectomy?

The decision to proceed with surgery always involves weighing the potential benefits against the possible complications, postoperative recovery issues, and financial costs. We will only recommend tonsillectomy and adenoidectomy if we feel the potential advantages outweigh the disadvantages. Regardless, only you can determine if your child's obstruction and associated symptoms are bothersome enough to warrant the risks, discomfort, and costs of surgery. Clinical studies do substantiate that the vast majority of parents are pleased with the results from their child's surgery and would do it again.

We hope this handout has been helpful in allowing you to make an informed decision regarding tonsillectomy and adenoidectomy. We welcome any additional questions you may have.

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