AT CHILDREN’S HOSPITAL OF PITTSBURGH OF UPMC, we believe parents and guardians can contribute to the success of this test, and we invite you to participate. Please read the following information to learn about the test and how you can help.

Fast Facts About Upper Aerodigestive Tract Endoscopy

- Upper aerodigestive tract endoscopy (en-DÖSS-co-pee) is an effective way for the ENT doctor to get a good look at your child’s airway and swallowing tube, including the nose, throat, voice box, windpipe, lungs, and swallowing tube.
- Upper aerodigestive tract endoscopy requires general anesthesia (an-es-THÉZ-ya), a medication to make your child’s whole body go to sleep during the test.
- When general anesthesia is needed, there are important rules for eating and drinking that must be followed in the hours before and after the test.
- A complete upper aerodigestive tract endoscopy usually takes about 1 hour, but the recovery from the anesthesia can take a few hours.
- Very young children and those with moderate to severe airway or swallowing problems will be usually kept in the hospital overnight.

What Is An Upper Aerodigestive Tract Endoscopy?

The upper aerodigestive tract consists of the nose, the throat, the voice box, the windpipe, the lungs and the swallowing tube. A doctor might order an upper aerodigestive tract endoscopy if your child has:

- Problems swallowing, hoarseness or reflux (GERD)
- Noisy and difficult breathing (stridor) not related to tonsils, adenoids or asthma
- Inhaled a foreign object or swallowed a caustic liquid
- Had a surgery to the nose and/or throat
- A tumor in his or her airway
- A neck breathing tube, also called a tracheostomy (tray-kee-OST-oh-mee) or “trach” (TRAKE) tube, to check the size and position

An upper aerodigestive tract endoscopy might also be ordered if your child is too young to have—or was unable to tolerate—a flexible laryngoscopy (fair-en-GOSS-co-pee) in the doctor’s office.

To get a good look at the entire aerodigestive tract, the ENT doctor might use a number of different types of scopes. Some of the scopes that are used are “flexible.” These soft, thin scopes are able to travel around angled areas, such as the back of the nose, and can even be used in patients when they are awake, allowing the ENT doctor to see things moving (like the vocal cords).

Some of the scopes that are used are “rigid” or hard. These bigger, hollow scopes provide higher quality images (pictures) of the body and allow the ENT doctor to do more tasks through them (such as take biopsies, remove foreign bodies or breathe for the patient). These bigger scopes can be used only when the patient is asleep with anesthesia medication.

During the upper aerodigestive tract endoscopy, the ENT doctor might pass into the nose a flexible scope (flexible rhinoscopy) or a rigid scope (rigid rhinoscopy). Often, a flexible scope passed into the nose is also used to examine the back of the throat (adenoids, soft palate, tonsils, base of tongue) and the voice box. This procedure is called flexible fiber-optic nasopharyngolaryngoscopy (NAY-so-FARE-in-go-LARE-in-GOSS-co-pee). That means a scope of the “naso,” meaning nose, “pharyngo,” meaning throat and “laryngo,” meaning voice box, areas.

To look at the voice box more closely, rigid direct laryngoscopy is performed. The scope used for this part of the test is rigid, and the ENT doctor looks directly through it to actually see the voice box. The rigid laryngoscope consists of a tube and a light that is enclosed in a metal case shaped to fit inside a child’s mouth. Once the laryngoscope is in place, the doctor also can pass a fiber-optic scope through it to take microscopic, magnified pictures of the larynx, if needed.
TO SEE THE WINDPIPE, A LONG, THIN TELESCOPE IS PlACED PAST THE VOICE BOX INTO THE WINDPIPE. THIS PROCEDURE IS CALLED A TRACHEOSCOPY *(TRAKE-eE-oss-co-pee)*, MEANING A SCOPe OF THE TRACHEA.

To see the food pipe or esophagus, a long tube with a fiberoptic camera is placed into the swallowing tube. This procedure is called esophageoscopy *(e-SOFF-ul-geeE-oss-co-pee)*, or a scope of the esophagus.

To see the lungs, the scope is placed even further, and this procedure is called bronchoscopy *(bronk-oss-co-pee)* or a scope of the bronchi, the large tubes of the lungs. The doctor also might perform a procedure called bronchial alveolar lavage *(bronk-ee-ee-ul al-vee-OLE-ar la-vahj)* or BAL. Using a sterile saline solution (similar to tears), the doctor will wash the lung area then draw out the solution and send it to the lab to be tested for foreign particles or infection. Sterile saline is completely safe to use inside the body. The doctor may also take an esophageal biopsy.

The scopes the doctor uses for the tracheoscopy, bronchoscopy and esophageoscopy might be flexible or rigid, depending on the size of the child and what the doctor needs to see in those areas of the aerodigestive tract.

Upper aerodigestive tract endoscopy is a safe way for doctors to examine these internal body parts; however, there are some risks involved. Although rare, these risks include possible swelling in the windpipe requiring special treatment and overnight observation; voice box injury; windpipe injury leading to escape of air and requiring a chest tube to re-expand the lungs; or infection in the chest, requiring surgical drainage and antibiotics. Your child’s doctor will discuss these risks with you prior to your child’s test.

**Home Preparation**

When general anesthesia is needed, there are important rules for eating and drinking that must be followed in the hours before the surgery. One business day before your child’s surgery, a surgery nurse will call your home between 1 and 9 p.m. (Surgery nurses do not make these phone calls on weekends or holidays.) Please have paper and a pen ready to write down instructions.

- The nurse will ask you about your child’s medical history, current medications and readiness for the test. If you have any questions, you may ask the nurse at this time.
- The nurse will tell you what time you should arrive at the hospital or outpatient center. Allow extra time for travel and parking. Arriving late might delay your child’s test or cause it to be rescheduled.
- The nurse will give you specific eating and drinking instructions for your child based on your child’s age. Below are the usual instructions, but you should follow the specific instructions given to you on the phone by the nurse and doctor.

**FOR CHILDREN OLDER THAN 12 MONTHS:**
- After midnight the night before the test, do not give any solid food or non-clear liquids. That includes milk, formula, juices with pulp, tea, chewing gum or candy.

**FOR INFANTS UNDER 12 MONTHS:**
- Up to 6 hours before your scheduled arrival time, formula-fed babies may be given formula.
- Up to 4 hours before your scheduled arrival time, breastfed babies may nurse.

**FOR ALL CHILDREN:**
- Up to 2 hours before your scheduled arrival time, give only clear liquids. Clear liquids include water, Pedialyte®, Kool-Aid® and apple juice.
- In the 2 hours before your scheduled arrival time, give nothing to eat or drink—not even a sip of water, gum or a mint.
- For the safety of your child, it is important to follow these specific times for eating and drinking. Remember: If your child does eat or drink after the scheduled times, it will delay the test or cause it to be rescheduled for another day.

- If, during the pre-test exam, your ENT doctor recommended that your child see another specialist prior to the test, you must make that appointment, see the specialist and have the results available on the day of the upper aerodigestive tract endoscopy.
- Do not give your child any medication containing aspirin or ibuprofen for the 10 days before the test.
- Do not give your child any natural supplements or homeopathic therapy for the 10 days before the test.
- Make sure you have non-aspirin children’s pain reliever (Tylenol® or acetaminophen), and a thermometer at home for use after the test.
- Buy juices, clear soups and soft, bland foods like bread, rice and oatmeal to have at home for after the test.

**A Parent’s/Guardian’s Role During the Test**

The most important role of a parent or guardian is to help your child stay calm and relaxed before the surgery. The best way to help your child stay calm is for you to stay calm.

- Once your child is registered for the test, your child’s nurse and doctor will meet with you to take your child's vital signs, weight and medical history.
- The pediatric anesthesiologist, a doctor who specializes in anesthesia for children, will meet with you and your child to review your child’s medical information and decide which kind of sleep medication your child should get. As the parent or legal guardian, you will be asked to sign a consent form before the anesthesia is given.
If you wish, you may stay with your child until just prior to the sleep medication being given, and then you will be taken to the waiting room.

Your child may bring along a “comfort” item, such as a stuffed animal or “blankie,” to hold during the test.

**Going to Sleep**

- If your child is very scared or upset, the anesthesiologist might give a special medication to help him or her relax. This medication is flavored and takes effect in about 10 to 15 minutes.
- Young children get their sleep medication through a “space mask” that carries air mixed with medication. Your child may choose a favorite scent to flavor the air flowing through the mask. There are no shots or needles used while your child is still awake.
- Older children may choose between getting their medication through the mask or directly into a vein through an intravenous (IV) line.

**While Asleep**

- While your child is asleep, his or her heart rate, blood pressure, temperature and blood oxygen level will be checked continuously.
- An IV for additional sleeping medication will be placed in your child’s hand so that your child will remain comfortable and have no memory of the test.
- Oxygen will be delivered through the scope.

**The Test**

In upper aerodigestive tract endoscopy, the doctor will be assisted by the pediatric anesthesiologist. The anesthesiologist will monitor your child’s heart rate and breathing during the test and give the oxygen and medications that will keep your child asleep for the test.

- Although your child will be asleep for the test, he or she usually will still be breathing on his or her own and will have motion of the vocal cords. This is important to allow the doctor to see the function of the airway/swallowing tube.
- When your child is asleep, the doctor will position his or her head so that the laryngoscope can be easily placed into your child’s mouth and threaded carefully down the throat.
- The doctor will thoroughly examine and may even photograph your child’s nasal passages, windpipe, voice box, bronchi and throat.
- Special instruments, such as lasers or forceps, could be used to remove foreign objects or tumors, to stop bleeding or to take tissue samples (biopsies).
- After the test, the doctor will discuss the results with you and, together, you will plan for the best interests of your child. The plan may include additional tests, X-rays, surgery, hospitalization, office visits, medication, a special diet or consultations with other specialists.

**Waking Up**

When the test is over, the medications will be stopped and your child will be moved to the recovery room. You will be called to the bedside so that you can be there as your child wakes up.

- It is OK to hold your child in your arms or on your lap.
- Your child will need to stay in the recovery room to be watched until he or she is alert and his or her vital signs are stable. Some children take longer than others to wake up after anesthesia.
- Children coming out of anesthesia have a variety of reactions. Your child might cry, be fussy or confused, feel sick to his or her stomach, or vomit. Very young children and infants might cry and “arch” their backs. These reactions are normal and will go away as the anesthesia wears off.
- You might notice a band-aid and a little red mark on your child’s hand from the IV placed during the test.
- Your child will have no memory of the test.
- In the recovery room, he or she will be encouraged to drink or to eat an ice pop.

**Going Home**

After your child goes home, he or she still might be groggy and should take it easy for the day.

- Your child may begin to eat and drink a little at a time and resume normal eating and drinking as long as he or she is feeling well. Start with clear liquids first and, if they stay down, give bland, soft foods like bread, rice and oatmeal.
- A nurse will call you 24 hours after the test to check how your child is doing.
- Your child may resume normal activities at the rate he or she is comfortable with, usually within a day. Your child’s doctor will discuss whether your child may need to miss school or if any sports or activities will be off limits.

**Common Symptoms After Upper Aerodigestive Tract Endoscopy**

After the test, you might notice some of the following signs. These symptoms are normal:

- Your child might have a sore throat and some hoarseness and coughing for a few days. Sucking on Popsicles® or gargling with warm, mildly salty water may help.
- Your child might be irritable from the throat pain and anesthesia. You may give your child Tylenol® or acetaminophen, as directed for your child’s age. DO NOT give aspirin, Advil, Motrin, Aleve or ibuprofen.
Warning Signs After Upper Aerodigestive Tract Endoscopy

Although most children recover quickly from the test with no problems, you should immediately call your child’s ENT doctor, pediatrician or Children’s Hospital test nurse if your child has any of these symptoms:

- Large amounts of blood, or bleeding for 24 hours
- Fever higher than 101°F
- Severe pain
- Severe nausea or vomiting, or can’t keep clear liquids down
- Breathing trouble
- Rashes anywhere on his or her body

Special Needs

If your child has any special needs or health issues you feel the doctor needs to know about, please call the Division of Otolaryngology (ENT) at Children’s Hospital before the test and ask to speak with a nurse. It is important to notify us in advance about any special needs your child might have.

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To see the list of all available patient procedures descriptions, please visit www.chp.edu/procedures.