

Functional Endoscopic Sinus Surgery (FESS)

What is Functional Endoscopic Sinus Surgery (FESS)?

The nasal telescope has greatly changed the management of sinusitis. This instrument, which provides a view of the structures in the nose and sinuses, is used both in the operating room and in the office.

During office visits, the otolaryngologist (ENT physician) may use the telescope to evaluate you. The telescope allows for a better view within the nose and sinuses and, together with sinus CT scans, often reveals problems that otherwise would not be evident.

The nasal telescope also gives a view for ‘opening’ the natural drainage passages during sinus surgery. These procedures are performed without cuts on the face. Sophisticated instruments permit greater tissue preservation, which facilitates healing and improves outcomes. Before the nasal telescope, sinus surgery was often destructive and focused on the removal of so-called “diseased” tissue; however, today’s endoscopic procedures are less invasive.

These techniques generally eliminate the need for incisions on the face—although in very rare instances, the telescope may be used through an external incision.

Functional endoscopic sinus surgery focuses on treating the underlying cause of the problem. The ethmoid sinuses (sinuses between the eyes) are usually opened; this then allows for visualization of the maxillary (cheek sinuses), frontal (forehead sinuses), and sphenoid (sinuses below the brain) sinuses. The sinuses can then be viewed directly, and diseased or obstructive tissue can be removed as necessary. There is often less removal of normal tissue, healing is quicker, and outcomes are better.

Recovery after the surgery is often faster than anticipated. The surgery is most commonly performed on an outpatient basis (or with a 23-hour hospital stay). Patients typically return to normal activity within a few days.

When is Functional Endoscopic Sinus Surgery indicated?

Functional endoscopic sinus surgery is generally reserved for those patients with chronic rhinosinusitis (swelling of the lining of the nose and sinuses) that persists despite aggressive medical treatment (typically antibiotics, oral steroids, topical nasal sprays, mucus-thinning drugs, and/or anti-allergy treatments).

It should be remembered that many conditions can cause nasal and sinus symptoms; therefore, the diagnosis of chronic rhinosinusitis must be confirmed through a detailed evaluation, including nasal endoscopy and CT scan. Most patients with chronic rhinosinusitis will not require sinus surgery, since antibiotics and other medications will often provide symptom relief.

Because bacterial infection is felt to be one of the most important factors in chronic rhinosinusitis, initial treatment includes long courses of oral antibiotics. Other medications that reduce inflammation (mostly steroids) and reduce mucus viscosity

(guaifenesin, “Mucinex”) are also used. When these treatments do not provide meaningful improvement, or the symptoms return after treatment is stopped, then sinus surgery is considered. Most patients will also receive nasal saline (salt water) irrigations or sprays.

On occasion, functional endoscopic sinus surgery may be required for the drainage of mucocele (a blocked sinus that fills with mucus and slowly grows in size). Mucoceles typically produce no symptoms until they are quite large and compressing the eye or brain. Thus, early drainage is required to prevent this complication.

How am I evaluated for Functional Endoscopic Sinus Surgery?

The decision to proceed with sinus surgery requires consideration of many factors. This process begins with a careful initial evaluation, including a detailed history and physical examination as well as nasal endoscopy. Previous CT scans (if available) are helpful, and previous treatment records are also reviewed.

The initial step for chronic rhinosinusitis treatment is usually medical therapy. Such treatment may include culture-directed or empiric antibiotics as well as systemic and topical corticosteroids. If previous treatment has been inadequate, then complete medical treatment will be started so that the need for surgery may be eliminated.

If medical treatment is unsuccessful, then it is appropriate to consider sinus surgery. Your physician will discuss this procedure in detail with you. After your consent is obtained, preoperative testing will be completed, and the surgery will be scheduled.

How do I prepare for surgery?

All patients need to have a relatively recent CT scan before surgery. In some instances, CT scans performed at other institutions may need to be repeated.

Depending on your overall health, routine preoperative testing may include blood work, EKG and CXR. Additional testing may be necessary. If testing is performed at another institution, we will need the results here to add to your medical record.

Typically, you will have a preoperative visit shortly before your planned surgery. Pre-operative studies may be scheduled for this day.

In some cases, your physician will prescribe medications for you to take before your surgery. Please start these treatments as directed.

If you have asthma, please continue to take all of your asthma medications, even if your asthma seems under good control.

Of course, please continue to take all of your other medications, unless you are directed not to do so.

Also remember:

- If you are on aspirin, warfarin (Coumadin), anti-platelet drugs (clopidogrel, or Plavix, plus many others) and/or any other blood thinner, be sure to discuss this with your surgeon, who will coordinate with your other physicians and make recommendations for holding these prior to surgery.

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- Stop vitamin E supplements as well as herbal remedies 1 week prior to surgery, since these are associated with an increased risk of bleeding.
- If possible, do not smoke for at least 2-3 weeks prior to surgery. Smoking increases the risks of anesthesia, and it may increase the risk of failure of the sinus surgery.
- Do not eat or drink anything after midnight before surgery. If you are taking medications, ask if these can be taken on the morning of surgery. Finally, it is important to schedule your post-operative visits before surgery. These visits are an important part of the surgical plan.

What will happen during surgery?

Most sinus surgery is performed under general anesthesia. If local anesthesia with intravenous sedation is an option, your surgeon will discuss this.

The surgery will only begin after the anesthesiologist administers the anesthetic drugs. Your surgeon will proceed as discussed in the office. Of course, intra-operative findings may require adjustments to the surgical plan so that the procedure may be completed to give you the best possible result.

At the end of the surgery, it is rarely necessary to place traditional nasal packing. In many instances, resorbable material, which helps control bleeding and acts as dressing, may be placed in the sinuses. New technologies, including stents that release steroids, are sometimes placed into your sinus cavity at the end of surgery. Other times, no material whatsoever is placed in the sinuses.

In some cases, it may be necessary to repair the nasal septum at the time of sinus surgery. Similarly, surgical reduction of the inferior turbinates may also be performed. Septal surgery and turbinate reduction will be reviewed with you before surgery if your surgeon feels that these may be necessary.

What can I expect after sinus surgery?

Some bloody discharge may occur for approximately two weeks after this procedure. This is normal and slowly improves. You should not blow your nose for at least two weeks following surgery. As normal sinus drainage becomes reestablished, you may blow out some thick bloody mucus. This is also normal.

After surgery, you will receive detailed instructions for your postop care. The details may vary, but in most instances, these measures include nasal irrigations, oral antibiotics and pain medicine.

In addition, routine post-operative office visits are necessary. During these visits, the surgical cavity is cleaned and inspected. Early scar tissue may be removed, and the medical treatment strategy will be adjusted.

Although complications from the manipulations performed during the post-operative visits are very rare, the theoretical risks are the same as the surgery itself.

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Consent for surgery includes consent for post-operative care, since the surgery and post-operative care are so closely related.

What are the risks of endoscopic sinus surgery?

Bleeding. Although the risk of bleeding appears to be reduced with this type of sinus surgery, occasionally significant bleeding may require termination of the procedure. Bleeding following surgery could require placement of nasal packing and hospital admission. A blood transfusion is very rarely necessary.

Blood Transfusion. In the rare instance that a blood transfusion is necessary, there is a risk of adverse reaction and the transfer of infection.

Infection. Any surgical procedure carries the risk of post-operative infection. If an infection develops after surgery, antibiotics will be initiated based upon cultures.

Visual Problems. Although extremely rare, there are occasional reports of visual loss after sinus surgery. Usually, the loss of vision only involves one side and the chance for recovery is not good. Temporary or prolonged double vision has also been reported after sinus surgery.

Cerebrospinal Fluid (CSF) Leak. All operations on the ethmoid, sphenoid, and frontal sinuses carry a small chance of cerebrospinal fluid (CSF) leak. CSF is the fluid that surrounds the brain, and if the barrier that separates the sinuses from the brain space is disrupted (due to disease or due to surgical manipulation), CSF may leak into the nose. If this rare complication occurs, it creates a potential pathway for infection that can spread from the nose and sinuses to the brain. Today, most sinonasal CSF leaks are repaired using the nasal telescopes. If a CSF leak were to occur, additional hospitalization and possibly surgery may be required.

Decreased Sense of Smell. Permanent loss or decrease in the sense of smell can occur following nasal and sinus surgery. However, in patients who report decreased sense of smell before surgery, the sense of smell will often improve.

Anesthesia Risks. General anesthesia is associated with occasional but possibly serious risks. Adverse reactions to general anesthesia should be further discussed with the anesthesiologist.

Other Risks. Tearing of the eye can occasionally result from sinus surgery or sinus inflammation and may be persistent. You may experience numbness or discomfort in the upper front teeth for period of time. Swelling, bruising, or temporary numbness of the lip may occur, as well as swelling or bruising around the eye. Subtle changes in the sound of your voice are common.

Septoplasty Risks. If septoplasty (surgical correction of a deviated septum) is performed, you could experience numbness of the front teeth, bleeding, infection and/or septal perforation. A septal perforation, which is simply a hole through the septum, may cause nasal obstruction, crusting and bleeding; in some instances, surgical repair of a septal perforation will be necessary. Since the cartilage in the septum has a “memory,” it may shift post-operatively and result in a renewed

deviation. There is also a small risk of a change in shape of the nose, loss of sense of smell, and CSF leak.