

INFORMATION FOR SURGERY PATIENTS – Dr. Allen

TWO WEEKS BEFORE SURGERY

1. Do your best to stay healthy! Limit tobacco and alcohol, eat healthy foods, remain well hydrated, and if given any pre-operative medications such as antibiotic or steroid pills begin taking these as instructed (usually starting 7 to 10 days before your surgery). Keep taking allergy medications, nasal steroid sprays or irrigations, and allergy immunotherapy (shots or drops) to ensure that your health is optimized for surgery.

2. Provide a list of ALL medications, over-the-counter meds, vitamins, supplements, herbals, etc. You will be given a form of medications and supplements to avoid prior to surgery. Please ensure that you stop any meds or supplements mentioned in this form or by the clinic staff at least 7-10 days prior to your surgery date, and wait to resume these at least 2 weeks after surgery. Many medications and supplements increase the risk of bleeding complications, so please let us know if you accidentally take these medications within the days leading up to your surgery. In some cases, surgery may need to be rescheduled to avoid this bleeding risk.

3. Patients on prescription blood thinners or anti-platelet medications such as aspirin: Depending upon the reason for taking these, we may need to coordinate with the prescribing physician to determine the safe time period for withholding these before and after surgery. In these cases, we will attempt to balance the risks of bleeding complications with any risks of withholding these needed medications and can help you understand these risks prior to surgery.

4. Patients undergoing sinus or nasal surgery will need to obtain the following essential supplies for post-op care BEFORE the day of surgery:

- a. Pain Medication – a prescription for pain medication may be given at a pre-operative visit prior to the day of surgery. These prescriptions may expire if not filled within 3 to 5 days, so please do not wait long to fill the prescription. Once obtained, keep these medications in a secure location and refrain from using them prior to surgery.
- b. Nasal Decongestant Spray (ex. Afrin) - used as needed (NOT scheduled) to stop bleeding from the nose after surgery.
- c. Sinus Rinsing Kit and supplies (ex. NielMed Sinus Rinse 240mL squeeze bottle and at least 100 to 150 premixed salt packets, gallon jugs of distilled water from grocery store) - used every other hour while awake to gently rinse nose for initial 1-2 weeks after surgery, then 3 times daily until fully healed (the physician will tell you in the clinic when it is ok to stop these rinses). Powered rinsing devices should be avoided during the initial 2 to 3 weeks after surgery, but can be used safely once healed from surgery.
- d. Other useful, but optional supplies:
 - i. Tylenol and/or Advil are often adequate to control headaches and milder discomfort following nasal or sinus surgery.
 - ii. Neosporin or similar antibiotic ointment to treat any irritation at the opening of the nostrils after surgery

- iii. Hydrogen peroxide to use gently on q-tips to remove dried blood from the nostrils
- iv. Cotton balls to soak in Afrin and apply gently inside nostril if bleeding is persistent or bothersome from the front of the nose (more common after septoplasty or turbinoplasty)
- v. Cold gel or ice packs can be applied to the face or back of the neck to relieve some discomfort (and may also help stop nasal bleeding after surgery in addition to above measures)

5. PRE-OPERATIVE TESTING AND MEDICAL CLEARANCES should be obtained during this 2-week time period leading up to surgery if possible. Your physician and their staff will help coordinate obtaining any needed tests and clearances. Failure to get these done may cause your surgery to be cancelled. In general, if you see a Cardiologist, Pulmonologist, or are over 50 years of age with any major medical problems, then surgical clearance by your other physicians may be required to ensure that your health is adequate and optimized for elective surgery.

THREE DAYS BEFORE SURGERY

1. Please let us know if you experience any changes to your health leading up to your surgery date, including fevers >100 F, upper respiratory symptoms such as cough or worsening nasal congestion/drainage, wheezing or bronchitis symptoms, sore throat, shortness of breath, or even if you need to use an asthma inhaler more than usual. Elective surgeries or procedures are safer when your health is optimized, and we can help you decide if any changes may require rescheduling your surgery date.
2. If you are taking Metformin or certain other diabetic medications, the Anesthesia providers from the surgical facility may instruct you to stop these one or more days prior to your procedure. If unsure, please reach out to the facility for further instructions from their Anesthesia staff.

THE NIGHT BEFORE SURGERY

1. STOP EATING OR DRINKING AT MIDNIGHT – your stomach must be empty at the time of surgery the following day. If surgery is scheduled later in the day, the Anesthesia staff at the surgical facility may provide different instructions regarding when to stop eating or drinking. Following these rules is essential – failure to do so may risk severe respiratory distress if stomach contents are aspirated while placing a breathing tube or providing ventilation during a procedure.

THE DAY OF SURGERY

1. No makeup, hair products, or anything on the skin that might interfere with securing tape to hold the breathing tube in place during your surgery.
2. Do not wear jewelry or piercings to the surgical facility. Loops of string can be used within piercings if needed to prevent closure.

3. Do not wear contacts, but instead bring glasses with a case if needed to read and complete paperwork. Hearing aids, dentures, etc will also need to be removed and placed within a case or given to someone to look after them during your procedure.
4. Have a list of your current medications, supplements, etc. with you at the surgical facility. Remember to avoid any medications (such as pills for diabetes) the morning of surgery that haven't been pre-approved by Anesthesia staff at the facility.
5. You will see your surgeon and meet several nurses and Anesthesia staff at the surgical facility just prior to your procedure. Expect to complete any needed paperwork and consents, followed by preparation for surgery including changing into a patient gown, placement of intravenous (IV) access, and possibly medications prior to entering the operating room. Anxiety is common during this process, and after all paperwork is complete you may have the option of receiving medications to relax you. In addition, younger children may be given medications by mouth so that IV access can be obtained more comfortably after they are sedated in the operating room.
6. Once a patient is moved to the operating room, any family or accompanying individuals will be escorted to the waiting room or can provide a contact number and leave the facility as long as they are available when the patient is ready to go home.
7. During the procedure, operating room staff may update family contacts throughout the procedure (particularly those lasting longer than one hour). Once the surgery is complete, the surgeon will provide a more comprehensive update to the family or preferred contact (how the surgery went, any changes or unexpected findings, and reinforcing follow-up and post-operative care recommendations).
8. Most patients require about one hour in the recovery room before being cleared for discharge home by staff at the surgical facility. This may vary, however, based on age and other medical conditions. Longer surgeries also require longer recovery room times. Patients with obstructive sleep apnea may require longer so that they are more awake and breathing adequately on their own prior to discharge (bringing a portable CPAP machine to the facility may lessen the time needed to be cleared for discharge in these cases).
9. Staying in a hospital overnight or for several days may be needed after some surgeries (generally those involving tumors, CSF leak repairs, or intracranial access), and this will be discussed by your surgeon while planning for the procedure. Only rarely does a patient undergoing a planned outpatient procedure require observation overnight due to factors such as asthma control, prolonged sedation from anesthetic medications after longer surgeries, etc.
10. Any patient receiving a sedating medication or general anesthesia will require transportation to and from the surgical facility as well as someone to help care for them for at least 24 hours after the end of the procedure. Patients are generally drowsy for the rest of the day following surgery and require assistance with any medications, meals, etc.
11. Regular diet can be resumed after surgery once nausea resolves. Occasionally, post-op nausea persists for one or more days. If this is the case, contact your surgeon or their staff to request medications that reduce nausea. If nausea has been problematic with prior procedures, please let your physician know at the pre-op visit so they can prescribe these medications in advance. It is important to

resume eating and drinking healthy amounts as soon as possible after surgery. Clear liquids are tolerated best while nausea is a problem, but should be advanced to regular foods as tolerated.

RECOVERY – NOSEBLEED PREVENTION/TREATMENT, and NASAL RINSES

1. Mild, intermittent nosebleeds are common after sinus or nasal surgery and may persist for several days. These are generally stopped with the following nosebleed treatments. Rarely, a post-operative nosebleed can become severe and require treatment by a physician. Should you suspect a severe nosebleed, please contact your surgeon immediately, have someone take you to the nearest hospital Emergency Department, or call 9-1-1 for assistance.

2. **Preventing nosebleeds** after surgery: Most nosebleeds after sinus or nasal surgery are triggered by fluctuations in blood pressure or aggressive movement of air or rinses within the nasal passages.

- a. Activity restrictions for an average of 2 weeks after surgery help prevent fluctuations in blood pressure to the head, and include avoiding exercise, lifting greater than 30lbs (or enough to strain), leaning forward with head down (such as picking things up from the floor), straining while using the restroom, etc. In addition, reduce water temperature while bathing/showering to avoid excessive shifts in blood pressure or inhalation of steam. Light exercise can resume at 2 weeks, and progress to more strenuous sports, weightlifting, etc. after 3 to 4 weeks (once cleared by your surgeon). Please ask your surgeon to clarify if you are uncertain about the safety of any activities following surgery.
- b. Nose blowing should be avoided for 2 weeks following any nasal or sinus surgery. Instead, rely upon gentle saline rinses to clear any mucous or debris.
- c. Nasal saline rinses should be performed using a 240 mL squeeze bottle (see below for further instructions). Squeeze slowly and without significant pressure. The goal is to have a large volume of solution flow through your nose, not to dislodge crusts with a jet of solution (which can cause major bleeding). Crusting will loosen and flush out progressively over the initial 2-3 weeks, and any residual debris will be cleaned by your surgeon during post-operative visits.

3. Treating post-operative nosebleeds:

- a. While bleeding, lean forward and gently pinch nose just below nasal bones. If bleeding persists to your throat, release your nose and apply nasal decongesting spray (ex. Afrin) to the side that is bleeding (both sides if uncertain).
- b. If nasal pinching seems to stop the bleeding, hold pressure without letting go for at least 5 minutes. After releasing pressure, if bleeding resumes then spray nasal decongesting spray (ex. Afrin) and apply pressure again for 5 minutes.
- c. Avoid swallowing any blood, which may cause nausea/vomiting and worsen bleeding.
- d. If possible, place a cold gel or ice pack on the back of your neck and try to remain calm. Panic increases heart rate and blood pressure and may make stopping the bleeding much more challenging.

- e. Nasal decongesting sprays such as Afrin can be repeated every 5-10 minutes as needed until bleeding fully resolves, but if each treatment does not seem to effectively lessen or stop the bleeding then try a warm saline rinse.
- f. Prepare a warm saline rinse by microwaving the solution in the rinse bottle for a few seconds (this timing will vary based upon the strength of your microwave). Test the temperature prior to using inside the nose, ensuring that it is comfortably warm (approximately 100 to 120 degrees F). Lean over a sink and gently flush the warm solution through both sides and repeat until bleeding resolves. Again, avoid squeezing the bottle hard as this may worsen bleeding issues.
- g. If these measures fail to resolve a nosebleed, the bleeding recurs frequently, or the amount of bleeding is severe, please contact your surgeon for further instructions, report to a hospital Emergency Department, and/or call 9-1-1 if appropriate.

4. Nasal Saline Irrigations for Cleansing Nose and Sinuses: VERY IMPORTANT!

- a. Begin gentle nasal saline irrigations the morning following your surgery day. After sinus surgery, these rinses should be performed every other hour while awake and an absolute minimum of four times daily. After other nasal surgeries (such as septoplasty/turbinoplasty without sinus surgery), rinsing two to three times daily should be adequate.
- b. These rinses are essential during your recovery to aid in clearing mucous, blood clots, crusting, and germs that might proliferate if debris is not flushed on a regular basis. Bacterial infection following sinus or nasal surgery is rare and tends to occur when rinsing is not done adequately. Keeping the nasal cavities moisturized with rinses may also help prevent excessive dryness and crusting that both increases the risk for major bleeding and leads to increased discomfort during post-operative debridements (visits where your nose is cleaned using nasal endoscopy and small instruments or suction). Please let your surgeon know if you experience difficulties rinsing (ex. rinses fail to move through your nose and out of the other side as expected with slow, steady application of pressure to the rinse bottle, or cause excessive ear pressure/discomfort or fluid within ears).
- c. Standard rinsing supplies include: NielMed 240mL sinus rinsing squeeze bottle (can be found in most pharmacies), at least 100-150 salt packets (pre-mixed) to get through the recovery period, and multiple gallon jugs of distilled water (can be found in most grocery stores).
- d. Head position during rinses: In most cases, adequate cleansing of the nasal cavities and sinuses can be achieved by rinsing a large volume of saline slowly and gently through one nostril while flowing out the other side with your head in a forward position (nose aimed down at the sink). You may feel the solution enter the various sinuses (cheeks, forehead, between your eyes). Using a single salt packet, rinsing should feel comfortable and not cause excessive burning. Avoid using too little or too much salt in rinses, particularly while recovering from surgery.
- e. Your surgeon may want you to rinse in different head positions throughout your recovery to ensure that particular sinuses are treated or cleaned. Generally, the frontal sinus (forehead area) is best rinsed with the nose aimed downward; the maxillary sinus (cheek area) is best rinsed with the head down and the maxillary sinus to be rinsed turned towards the floor; and the sphenoid sinus (furthest back in the nose) is best rinsed with the nose aimed upward at the ceiling.

- f. Rinses can be done at room temperature or warmed to a comfortable temperature using a microwave.
- g. Your surgeon may ask you to add medications to the nasal rinses once or twice daily. Generally, this begins after the initial post-operative cleaning visit. However, some patients are using these medicated rinses prior to surgery and should continue them during the post-operative healing phase. These medications include topical steroids (such as Budesonide or Mometasone), topical antihistamines (Azelastine), antibiotics, and rarely antifungals. Your surgeon will provide guidance as to when it is ok to stop using medications in your rinses, as well as when they may prove useful on an as-needed basis after your recovery. Also, don't forget to add a salt packet when mixing a medicated rinse!
- h. Cleaning rinse bottle: Your sinus rinse bottle can be cleaned safely by using bottle brush with warm water and soap, a dishwasher, and/or filling it half full of distilled water and microwaving for 90 seconds. Some germs form protective layers and are harder to disinfect – for this reason, it is recommended that any sinus rinsing bottle be replaced every 3 months.
- i. Sterile water is essential for safe nasal irrigations – always use distilled water when available. Bottled water is a safe alternative while traveling or when distilled water is unavailable. Tap water (even if filtered by any available technique) should only be considered safe if boiled for 5 minutes and cooled to a safe temperature.

5. Nasal steroid sprays (Flonase, Xhance, Nasonex, Rhinocort, Dymista, etc.) should be stopped for at least 4-6 weeks while healing from sinus or nasal surgery. Often, surgery eliminates the congestion or obstruction symptoms as well as the need for these medications. Resuming them should be determined after healing from surgery and based upon any ongoing symptoms.

RECOVERY – WHAT TO EXPECT

1. Time off from work: Patients that can resume work without risking nosebleeds (jobs that do not involve heavy lifting, climbing, etc.) are generally able to do so one week or less after their surgery. If your job does involve activities that risk nosebleeds, you will require two weeks off prior to resuming those activities but could potentially participate in light duty that is less risky. You should not fly in an airplane or drive long distances in a vehicle for two to three weeks after surgery to avoid any chance of severe bleeding in a setting where medical care is unavailable. You should also consider any ongoing need for pain medication, maintaining an adequate nasal rinsing regimen, etc. prior to resuming work. Any required doctor notes, specific paperwork describing this need for time off, or FMLA paperwork will be provided or completed upon request.

2. Pain experienced after sinus and nasal procedures varies, ranging from mild aches that respond well to Tylenol or Advil to more significant discomfort initially requiring narcotic pain medications. Most patients experience pain that is on the milder end of this spectrum and are able to discontinue pain medications after only a few days. If drilling is required to open your sinuses you may experience more headaches, particularly in the forehead, for up to several weeks after the procedure. Patients are encouraged to try a rotation of Tylenol and Advil (if not allergic to these medications) every two to three hours for mild to moderate pain and headaches, and resort to narcotic pain medications only when these other options are inadequate. Try to wean the use of narcotic pain medications as quickly as possible after surgery, and never drive or operate machinery while under their influence. Many narcotic

pain medications contain acetaminophen (Tylenol) and the total dose of acetaminophen should be monitored and kept less than 4g daily for adults. Pain medications should never be used while under the influence of alcohol or any other sedating medications, as this may lead to dangerous respiratory depression. If you need a refill of narcotic pain medication please plan ahead so that a hand-written prescription can be provided and picked up during normal hours of clinic operation, as these medications cannot be called into a pharmacy.

3. Sense of smell is universally dull for a time after most nasal procedures due to a combination of swelling, crusting, and nasal packing materials limiting airflow to these nerves at the top of the nasal passages. This is similar to the smell dysfunction noted during a cold when your nose is congested. Smell is an important aspect of flavor while eating, and you will notice differences in how flavorful food is perceived until your smell function improves. Most patients notice a full return of smell function within two to four weeks after sinus surgery, and much faster after nasal surgery alone (septoplasty and/or turbino-plasty) or simple office procedures. Occasionally, smell dysfunction is caused by inflammatory damage to these nerves and requires additional time for recovery. Rarely, smell dysfunction is a permanent complication of sinus surgery (ranging from slightly dull to a complete loss of smell function).

4. Occasionally the upper dentition and/or roof of the mouth feel numb or partially numb following sinus surgery or septoplasty. This results from inflammation of nerves near areas where surgery was performed and should resolve over the course of a few weeks (often only a few days). Very rarely, this altered sensation may take months to resolve or may become permanent.

5. Dissolving steroid stents (ex. Propel by Intersect ENT) are used in sinus surgery to maintain larger sinus openings and reduce the risks of scarring and problematic swelling during the initial recovery phase. These stents remain in place for up to six weeks but may be removed by your surgeon if crusting excessively. As they dissolve you should expect to see small, clear plastic strands flushing out during nasal irrigations.

6. Post-op Visits: You will be scheduled for several post-op visits with your surgeon beginning in the second week after your surgery. These visits are essential as the surgeon will look to ensure that you are healing appropriately and without signs of scarring or infection and remove nasal crusting that might prevent adequate rinsing of your sinuses. The mucosal lining within the nose and sinuses may occasionally contract and scar over sinus openings while you are healing, and in the majority of cases this can be corrected with gentle manipulation in the office setting in order to avoid additional surgical procedures in the future. Medications are also adjusted to control any inflammatory or infection problems noted during your recovery. The initial visit requires more time and cleaning than subsequent visits. It is recommended that for the first, and possibly second post-op visit, you have a driver and take pain medication with food just before leaving home. This will lessen any discomfort during the clinic visit and reduce anxiety while your surgeon is working to ensure a great surgical outcome.

6. It is a great honor to be trusted with providing surgical care, an honor that we take very seriously. Our commitment starts before surgery to ensure that appropriate care is provided in the safest possible manner, and continues for as long as it takes to achieve the goals established for improving your health and the impact that sinus and nasal problems have on your quality of life. Please contact us for any questions or concerns that arise before or after your surgery and give us feedback if you note any room for improvement.