Esophageal Surgery Perioperative Information

How do you get ready for esophageal surgery?

You will receive instructions by our office staff regarding where to go and what time to be there for your surgery. You may be called the night before by the anesthesiologist.

Please ask if you have not received clear instructions regarding your medications. It is always helpful to have reviewed your medication list with your primary doctor before surgery, as some medications cannot be crushed and will need to be stopped or changed temporarily.

In general, please stop all weight-loss medications, steroids and medications that affect your immune system two weeks before surgery. Please stop all blood thinners (aspirin, Coumadin®, etc.), fish oil, and herbal medications at least one week before surgery. If you are unsure if you can stop or hold these medications, please contact your prescribing physician early.

What can you expect the day of surgery?

Please arrive on time according to your preoperative instructions, but realize that surgery start times are estimations. Some operations take longer than planned and we appreciate your patience.

Leave all non-essential valuables at home, but be sure to bring a good book or something else to read or do. Before surgery you may meet one of the “residents” who will be assisting during the operation (see below).

Your surgeon will meet with your family, etc., after surgery when you are in the recovery room. It usually takes another one to two hours from that time until they can see family. Many family members wish to leave the hospital during the operations which is perfectly acceptable. Your surgeon is happy to call the designated family member after the surgery, just be sure to designate someone to call and leave a working number.

What is a resident?

Residents are general surgeons in training who have been carefully selected to spend five or more years mastering all aspects of general surgery. They are essential to our team and you will see them regularly, probably more than your surgeon. Although they are excellently trained, residents are under the constant supervision of your surgeons.

What happens after surgery?

IMMEDIATELY AFTER SURGERY: Most patients will go to the post anesthesia recovery room for one to two hours for close observation before moving in to your hospital room. Many of you won’t remember much of the recovery room, which is normal. When you get to your room you will feel groggy but we want you to walk in the halls as soon as you feel up to it. The nurses will help you out of bed for the first few times until you are steady on your feet. We also want you to work on deep breathing to expand your lungs and prevent pneumonia. The nurses will give you an “incentive spirometer” to help with this. It is important to tell the nurses if you are having too much pain or nausea to perform these activities so that they can give you some medicine.

EATING IN THE HOSPITAL: You will not be given anything by mouth for at least six hours after surgery, this will prevent nausea and dry heaves from anesthesia. Many of you will need to wait to try anything by mouth until the next day, and after your X-ray. When you are given the go ahead to start drinking, you will be given a clear liquid diet (this includes jello).

POST OP X-RAY: Those with large hiatal hernia repairs, myotomy, pyloroplasty, etc., will have an X-ray before advancing the diet. You will go to the radiology department and they will have you stand up and drink some liquid (gastrograffin) that shows up on the X-ray. This routine test lets us look at the surgical repair and to make sure everything looks good.

NASOGASTRIC (NG) TUBE: A few of you will have a nasogastric tube to decompress your stomach to relieve extreme nausea, prevent vomiting and to decrease strain on stomach stitches. If needed, these tubes usually need to stay in place for the entire day after surgery.

When do you go home?

HOSPITAL DISCHARGE CRITERIA: You may go home when everyone is comfortable with you tolerating enough liquid to stay hydrated and when your pain and nausea are reasonably controlled with oral medications. This is typically one to three days after surgery. (three to five for a pyloroplasty). You may stop taking your heartburn medication unless otherwise instructed. Patients with gastroparesis/pyloroplasty are asked to continue taking their antacid medication.

POST-OPERATIVE PAIN: Pain from the incisions is normal. It will vary from day to day and with activity level, but should gradually decrease over time. Mild esophageal pain is also common and can feel like heartburn. It has many causes but most commonly from surgical swelling/healing, spasm, and distention from overeating or rapid eating. Decrease your esophageal pain by adhering to the diet recommendations and avoiding very cold liquids (especially water) if they seem to be troubling you.

If you have had a laparoscopic surgery, you may also have aches in your shoulders and neck, particularly on the left side. This is due to the carbon dioxide that was placed inside your abdomen during the surgery, this is harmless, and the air will disappear within a few days. You may also notice some small air bubbles under the skin of your abdomen or chest that crackle when pushed on. This is also normal and will resolve itself in a few days. The shoulder pain itself can last a few weeks in some patients and responds best to non-narcotic pain medication (liquid/crushed/chewable Tylenol® or ibuprofen) and heating pads.

Pain Medication

You may be given a prescription for pain medication (usually a narcotic such as oxycodone, Percocet®, Vicodin®, and Dilaudid®) upon leaving the hospital. Usually this is in liquid form for your convenience but due to various and occasional regional pharmacy shortages, pills may be required. As with all pills, please crush before taking until your diet is sufficiently advanced (usually two to four weeks).

Types of Pain Medications

Narcotics. Good pain relievers but often cause constipation. Use bulk fiber products, prune juice, or milk of magnesia as necessary for constipation. Narcotic pain medications affect your ability to drive and operate machinery safely. **Do not take with alcohol**.

Non-Steroidal Anti-Inflammatory Medications (NSAIDS). Ibuprofen, Advil®, Motrin®, Aleve® are examples of NSAIDS. These have no effect on mental capabilities, but can cause stomach upset or bleeding if taken continuously.

Tylenol. This has no effect on mental capabilities, but can cause liver damage if taken more frequently than every four hours. A reasonable strategy is to use Tylenol or a NSAIDS medication for minor pains and use narcotics for only major pain.

***** It is our policy not to refill non-urgent prescriptions outside of business hours. This includes pain medication. Please plan accordingly and call 303-398-1355 to request refills. In some situations, the prescription will need to be picked up or mailed. Narcotic pain medication refills may not be granted if the request is made more than four weeks after surgery unless a follow-up appointment is planned.***

When you are back at home

EATING AFTER YOUR ESOPHAGEAL SURGERY: After your esophageal surgery you can expect some difficulty swallowing. If food sticks when you eat it is called "dysphagia". This is due to swelling around your surgery site and will most likely resolve within a few weeks. **It is normal to feel "tight" for up to 10-12 weeks** but you should be able to advance your diet slowly. If your diet is not progressing by the time of your post-operative clinic visit, your doctor may suggest an outpatient procedure to help things along (outpatient endoscopy with esophageal dilation).

To help you through this temporary phase, we start you out on a pureed diet. We ask patients to **stay on the pureed diet (any liquid you can pour out of a cup) for the first two weeks to avoid anything getting "stuck" near your recent surgery**. At the end of this packet are some suggestions for your diet in the first few weeks after your surgery (level1-4). Don't be alarmed if your ability to swallow doesn't progress according to this plan. Everyone is different and some take longer or shorter to heal after surgery. Use common sense, if you are having trouble swallowing a particular food then avoid it. If food is sticking when you advance your diet, go back to the previous diet for a day or two.

General and simple rules to follow

- Maintain an upright position (as near 90 degrees as possible) whenever eating or drinking.
- Take small bites, only ½ to 1 teaspoon at a time at first.
- Eat slowly. It may also help to eat only one food at a time.
- Avoid talking while eating.
- Do not mix solid foods and liquids in the same mouthful and do not "wash foods down" with liquids, unless you have been instructed to do so by your surgeon. If you do feel that your meal is a bit "sticky" a small amount of warm liquid may help but avoid drinking too much or you may feel uncomfortable.
- Eat in a relaxed atmosphere, with no distractions.
- Following each meal, sit in an upright position (90-degree angle) for 30 to 45 minutes.
- Avoid carbonated (bubbly) drinks, they will make you feel bloated.
- If food does stick, don't panic. Try to relax and let the food pass on its own. Sipping strong, hot black tea or warm broth can also help. Standing up and walking around is also helpful.

STAYING HYDRATED: It is important to avoid dehydration so drink lots of fluids and at least 64 oz. of liquids daily. Cold beverages may cause painful esophageal spasms; room temperature or warmer liquids is often easier to drink. A daily chewable multivitamin is also recommended. Most people will lose 10-15 pounds after surgery depending on what they choose to eat.

SMOOTHIES or Nutrition Shakes: These are always a good choice throughout your recovery but especially in the first few weeks. There are multiple store-bought options such as Ensure®, Carnation Instant Breakfast®, Boost® and even Gatorade® nutrition shakes. In addition, the local GNC® will have options. These choices are often expensive but they are convenient. Many people prefer to make their own nutritious drinks with their favorite fruits, protein powder, yogurt, and vitamin supplements. Feel free to experiment, you can hide a lot of healthy vegetables in a fruit smoothie without ruining the taste (examples are avocado, sweet potatoes, even leafy vegetables such as spinach or kale). Try to supplement with at least 50 grams of protein each day for the first few weeks (about two to three scoops of most powdered brands). Need ideas? There are lots of recipes on the internet, for example http://smoothiesrecipe.com/

MEDICATION: **CRUSH ALL MEDICATIONS OR TAKE IN LIQUID/CHEWABLE FORM FOR THE FIRST two to four WEEKS:** Various pill crushers are available at your local pharmacy. Many people find it helpful to take crushed medications with applesauce or juice to dampen the taste. Ask your doctor or pharmacist if you have questions regarding the "crushability" of your medications. It is always helpful to have reviewed your medication

list with your primary doctor or pharmacist before surgery as some medications cannot be crushed and will need to be stopped or changed temporarily.

ACTIVITY: Unless otherwise instructed it is appropriate to walk, climb stairs, ride as a passenger in a car, and perform tasks of daily living. Listen to your body and don't overdo it early on. Avoid heavy lifting (10 pounds or more) for four to six weeks to allow most of the wound healing to occur.

Major surgery and being in the hospital can disrupt sleep patterns. It is normal to feel fatigued after surgery and need more sleep than usual. This may last for several weeks and can be minimized by making sure you stay well hydrated. We do not routinely recommend sleep medication for home use.

You may need to avoid driving for up to two weeks. Pain and use of the narcotic pain medication will impair your ability to drive safely. DO NOT DRIVE WITHIN 24 HOURS OF TAKING NARCOTIC PAIN MEDICATION.

Unless otherwise instructed, sexual activity may be resumed as tolerated.

WOUND CARE: Most people will have four to six small incisions. Most incisions are closed with absorbable sutures that do not need to be removed. Dressings vary. If you have a clear dressing over your incision(s) you may remove the dressing five days after your surgery. If there is tape (steri-strips) over your incisions, leave them in place until they start to come off on their own (usually seven to 14 days). If you have skin adhesive over your incisions leave it alone for two weeks. It is ok if it flakes off but don't pick or pull it off.

In all situations (clear dressing, steri-strips, adhesive) it is ok to shower but no baths until after your post-operative office visit. Do not scrub incisions, the soap and water can run over them to clean them but do not scrub. Make sure to rinse your body well. Pat dry with a clean towel or gauze. You do not need to put additional dressings on the incision after showering but occasionally you may want to place a dry gauze or adhesive bandage for comfort or to protect clothing if it has drainage. Do not put ointment, creams or lotions on incisions. If surgical staples or non-absorbable sutures are used in its place, they will be removed at your follow up visit.

Minor drainage of **clear yellow or red-yellow** fluid from the incision is normal. **Thick, opaque, dark yellow fluid or redness spreading beyond incision site on skin can be associated with infection**. Please call if this occurs.

Bruising around the incision sites is normal and that will resolve on its own with time.

Most healing takes place within six weeks after surgery, but the scar will still soften over time. After six weeks it is ok to massage firm scars with lotions or vitamin E oil to help them soften. The final appearance of the scar may not be apparent until one year following surgery. Protect your incisions from sunburn with sunscreen for the first year to avoid darkening of the color.

WORK: Depending on the type of surgery you have, most patients take off between 10-14 days before returning to work. Please remember that upon returning to work, you should not lift more than 10 pounds until four to six weeks after surgery. Please ask the surgeon or their medical assistant about any forms needing to be completed related to work, insurance or disability issues.

FOLLOW-UP OFFICE VISIT: Please call the office when you return home from the hospital to schedule your follow-up appointment. Unless otherwise instructed a follow up typically takes place about three or four weeks after discharge from hospital. Call **303-398-1355 Option 4, and ask for general surgery.**

TELEPHONE ADVICE:
Our surgeons are committed to providing you with the highest quality of care during your surgery and recovery. You can be assured that your surgeon will not be interrupted during your operation unless a matter is urgent. Therefore, our office staff has been extensively trained to answer many common questions you may have before or after your surgery. Your surgeon will review your calls and make sure the information provided to you by their team is accurate and appropriate for your individual needs.

In general, expect non-urgent phone calls to be returned within two business days. If the acuity of your problem/question requires more than approximately 10 minutes of phone time, you may be redirected to appointment scheduling. This will allow you and your surgeon a face-to-face conversation to discuss concerns in a private setting. Above all, please do not hesitate to call if you are concerned or worried.

SPECIAL CIRCUMSTANCES

Gas bloat: Feeling full sooner than you are used too and feeling bloated or gassy is common. This almost always settles down with time as the swelling decreases in your esophagus. Chewing slowly and taking smaller bites will help by decreasing the amount of air you swallow. Gas-X® with meals is also helpful. Certainly avoid carbonation and foods that typically cause gas (beans, broccoli, sauerkraut, etc.) if you are feeling uncomfortable.

Diarrhea: You may experience loose stools during the first weeks after your surgery as your body adjusts. It can have multiple causes including the liquid diet without enough natural fiber, too many simple carbohydrates, gastric or vagus nerve irritation from surgical manipulation and/or increased gas in the gastrointestinal tract. This typically gets better with time as your diet advances and you continue to recover. Increasing fresh fruits and vegetables and decreasing the amount of sugar you consume will help a lot. Sugars to reduce include table sugar, sucrose, fructose, lactose and sorbitol. If you are experiencing very watery stools for more than a few days or having loose stools several times each day call your doctor. It may be sign of an imbalance of bacteria in the intestine, which can be easily treated with an antibiotic. Please call the office if this occurs. Otherwise, feel free to try over the counter Imodium and CITRUCEL supplements.

Nausea: Many people experience nausea after stomach/esophageal surgery. Sometimes it is related to the anesthesia, a side effect of the pain medication, or related to gas bloat but often it is simply a part of healing. Nausea related to any of these causes almost always improves with time. Please call the office if you are experiencing troublesome nausea and we would be happy to give you a prescription for anti-nausea medication if you didn't get one at the time of hospital discharge.

Gastroparesis: Some of you have been diagnosed with gastroparesis, or lazy stomach. Since liquids empty from the stomach most easily, you may feel pretty good during the first few weeks after surgery. If so, take notice of what you are eating/drinking so that you will have an "emergency backup diet plan" to go back to during flare ups of nausea/vomiting in the future. Remember that your stomach feels best when you limit the amount of heavy fats and raw fiber. However, as discussed above, eating too many carbohydrates and sugars will likely worsen diarrhea. It can be difficult at first to find the right balance. Some tips: cooked vegetables are easier to digest than raw, most things that are liquid are ok even fats and fiber, avoid beans, whole grains, nuts/seeds, berries, peas, and corn.

Trouble with urination: If you had a catheter (foley) placed into your bladder at the time of surgery, it is not unusual to experience minor discomfort or frequency during urination for several days after catheter is removed. This is usually a temporary problem that resolves with time. If you are urinating small amounts frequently (every hour or so), or if the discomfort persists or worsens, please call the office. Occasionally it is necessary to replace the catheter for a few days or take a short course of antibiotics.

If you experience vomiting, worsening abdominal pain/bloating/nausea or you are unable to swallow or pass gas please call the office or go to the Emergency Room.

ADVANCING YOUR DIET (the post fundoplication levels)

LEVEL 1 Pureed Foods (for the first 2 weeks after surgery)

Foods in this group are pureed or blended. A safe rule is "anything you can pour" but you can try foods that are a smooth, mashed potato-like consistency. If necessary, the pureed foods can keep their shape with the addition of a thickening agent. Meat should be pureed to a smooth pasty consistency. Hot broth or hot gravy may be added to the pureed meat, approximately 1 oz. of liquid per 3 oz. serving of meat. Most people just skip meats during this time.

CAUTION: If any foods do not puree into a smooth consistency, it may make eating or swallowing more difficult. Avoid lumpy foods such as oatmeal and foods with big seeds or tough skins (peas, corn, zucchini seeds) as they sometimes do not blend well.

SAMPLE MENU: PUREED DIET EXAMPLES

BREAKFAST	LUNCH	DINNER
Orange juice ½ cup	Pineapple juice ½ cup	Pureed turkey barley soup ¾ cup
Cream of Wheat or cottage cheese ½ cup	Pureed chicken noodle soup ¾ cup	
Pureed Scrambled eggs with cheese ½ cup Tea or coffee Fruit and yogurt smoothie	Mashed potatoes ½ cup Pureed and cooled broccoli ½ cup Apple sauce ½ cup Milkshake	Mashed potatoes ½ cup Pureed spinach ½ cup Frozen yogurt ½ cup Coffee or tea

LEVEL 2 Soft Diet

After your first two weeks, you can advance to a soft diet. In general, this diet is Level 1 plus “anything you can squish through your fingers” but you can also start trying soft noodles, white fish, minced moist meat, and soft, cooked vegetables that are chewed well. Take it slow, take small bites and chew well! Don’t be fooled, avoid rice. Stay on this diet until everything goes down easily.

PLEASE ADVANCE TO LEVEL 2 FOR AT LEAST TWO DAYS PRIOR TO YOUR OFFICE VISIT.

SAMPLE MENU: LEVEL 2 DIET EXAMPLES

BREAKFAST	LUNCH	DINNER
Favorite smoothie 1 cup Oatmeal ½ cup Scrambled eggs ½ cup Tea or coffee	Pineapple juice ½ cup Flat buttery noodles 1 cup Mashed potatoes ½ cup Minced broccoli ½ cup Applesauce ½ cup	Soup ¾ cup Minced moist meat 3 oz. Cooked spinach ½ cup Frozen yogurt ½ cup

LEVEL 3 Soft Diet and Some Regular Foods

After all of the foods in Level 2 (soft diet) are passing through well you should advance up to the next level. This level includes French toast, pancakes, all pasta, ground red meat, steamed vegetables. It is still important to cut these foods into small pieces and eat slowly.

HOT FOODS	COLD FOODS
Ground or flaked meat	Cottage Cheese
Eggs	Milk
French toast or pancakes	Milkshakes
Noodles or pasta	Juices
Cooked vegetables, no frozen corn, peas or mixed vegetables	Canned fruit
Soup	Pudding, mousse or custard

LEVEL 4: Regular Foods

Foods in this group are soft, moist, regularly textured foods. This level includes red meat and breads, which

tend to be the hardest things to swallow. Eat very slowly, chew well, and continue to avoid carbonated drinks.

HOT FOODS	COLD FOODS
Fish	Cheeses
Poultry	Fruits
Red Meat	Vegetables
Eggs	Dairy products
Bread and pasta	Green salad

Questions for your health care team

If you are being seen at National Jewish Health and have questions, please call 303-398-1355, option 4 during.

Visit our website for more information about support groups, clinical trials and lifestyle information.

National Jewish Health is the leading respiratory hospital in the nation. Founded 123 years ago as a nonprofit hospital, National Jewish Health today is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of patients with respiratory, cardiac, immune and related disorders. Patients and families come to National Jewish Health from around the world to receive cutting-edge, comprehensive, coordinated care. To learn more, visit njhealth.org.