

TESTfacts

An Educational Health Series From National Jewish Health®

LINX Postoperative Care & Information

Main Office Phone & After Hours Line:

303.398.1355 Option 4 / After Hours: 303.398.1355

Preparing for an upcoming operation can be stressful. We have put this information together to help ease your mind. To us, going to the operating room is quite routine, since we spend most of our time there. For most of you, it is a strange place where everyone wears blue and covers their faces with masks. Not only that, but also you also have to put on the notoriously unfashionable gown and be wheeled around in a bed when you are perfectly capable of walking. Yes, it is a bit strange. We hope this will take some of the unknown out of it for you.

BEFORE SURGERY: You will receive instructions regarding where to go and what time to be there for your surgery. You may be called the night before by the anesthesiologist. Do not take blood thinning medication for seven days prior to surgery (aspirin, coumadin, etc.). Please ask if you have not received clear instructions regarding your medications.

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 will likely meet one of the "residents" (see information below) who will be assisting during the operation. Your surgeon will meet with your family and/or caregiver after surgery when you are in the recovery room. It usually takes another one to two hours from that time until your family will be able to see you. Many family members wish to leave the hospital during the operation 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 make sure the phone number you provide is a working number.

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WHAT IS A RESIDENT?: Residents are general surgeons in training who have been carefully selected to spend 5+ 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 to expect after your surgery

IMMEDIATELY AFTER SURGERY: Most of you will go to the post-anesthesia recovery room for one to three hours for close observation before being discharged home. Some of you will spend the night in the hospital if you have a lot of medical problems or a very large hiatal hernia. Many of you won't remember much of the recovery room, which is normal. Regardless of whether you are admitted or go home the same day, we want you up and walking as soon as you are able. 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.

POST-OPERATIVE X-RAY: If you have a large hiatal hernia repair you may have an X-ray before advancing your diet to the next level. You will go to the radiology department where they will have you stand up and drink some liquid (Gastrografin) that shows up on the X-ray. This routine test lets us look at the surgical repair and make sure everything looks good.

DRAINS: A few of you will have a tiny plastic tube (drain) connected to a suction bulb after surgery. This collects extra/unwanted fluid from the surgical site and allows us to test the fluid for salivary amylase (enzyme found in saliva). This is a routine way to make sure everything is healing properly.

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

Going home after your surgery

POSTOPERATIVE 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 the most common reasons are surgical swelling/healing, spasm and distention from overeating or rapid eating. Decrease your esophageal pain by following the diet recommendations and avoiding very cold liquids 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 acetaminophen).

or ibuprofen) and heating pads.

Pain Medication

You may be given a prescription for pain medication (usually a narcotic such as oxycodone, Percocet®, Vicodin® or 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).

Type of Pain Medication:

- **Narcotics.** They are 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 drive or operate machinery when taking narcotics. **Do not take with alcohol.**
- **Non-steroidal anti-inflammatory medications (NSAIDS).** Ibuprofen (Advil® and Motrin®), and naproxen (Aleve®) are some examples of NSAIDS. These cause no effect on mental capabilities, but can cause stomach upset or bleeding if taken continuously.
- **Acetaminophen (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 acetaminophen or NSAIDS for minor pain and use narcotics only for major pain.

EATING AFTER YOUR ESOPHAGEAL SURGERY:

After your esophageal surgery, you can expect some difficulty swallowing around weeks three through eight. If food sticks when you eat, it is called “dysphagia.” This is due to scar tissue forming around your surgery site and will most likely resolve over time.

ADVANCING YOUR DIET: THE POST LINX DIET PROGRESSION

DAY OF SURGERY: SOFT FOODS

A soft diet is recommended only for the day of LINX placement; a regular diet can be started the day after. We want you to get back to eating a normal diet right away. However, this initial soft food diet allows you to ease into solid foods. In general, a soft diet is “anything you can squish through your fingers,” but you can also start trying slippery noodles, whitefish and soft, cooked vegetables that are chewed well. Take it slowly – take small bites and chew well! Don’t be fooled. Avoid rice, bread, chicken and lettuce, as these things tend to be harder to swallow.

WEEKS 1 – 2: REGULAR FOOD

We call the first one to two weeks the “honeymoon” stage. Many patients report food going down relatively well, and acid at a minimum, if any. (This is true only if a hiatal hernia repair is not performed). During this time, we suggest you:

- Take small bites of food.
- Chew food very well.
- Eat frequently: five to seven small meals per day or a small snack every one to two hours.
- Minimize the amount of dry food intake (i.e., chips, hard bread, crackers).

Weeks 3 – 8: DYSPHAGIA TIMEFRAME

- Scar tissue will be forming at this time. This is a good thing! This is your body's way of healing. The scar tissue forms a capsule around the device, preventing it from sliding up or down.
- You may experience some difficulty swallowing, increased belching or chest pain. Occasionally, spasms of the esophagus cause the chest pain. Your esophagus is a muscle, and like any other muscle in your body, it may spasm as a result of the surgery. This pain is sometimes described as "sharp" or "stabbing" but does not last long. These are all known and expected symptoms! You should continue eating frequently, as eating often alleviates these symptoms.
- If you experience food "sticking" or difficulty swallowing, drinking warm tea or other warm liquids will help by relaxing the esophagus.
- To prevent the LINX device from scarring into a fixed position, "physical therapy" will be required. What is physical therapy for the LINX? EATING! By eating small meals frequently, you are exercising the device. Similar to exercising a knee after surgery, constant movement will allow the device to stay mobile and prevent long-term problems with swallowing.
- We encourage eating five to seven small meals throughout the day or a small snack every one to two hours. Every time you swallow a bite of food, the device opens and closes, which stretches out the scar tissue. This results in optimum healing of the LINX.
- If you do not eat solid foods, you may require a procedure called a dilation — **this is rare and preventable if you follow the diet guidelines.**
- In general, you should refrain from drinking carbonated beverages to avoid gassiness.
- Drinking warm liquids, such as tea, before a meal relaxes the muscle around the device. Some patients state that this has helped with food going down.
- Experiment with your food!

In general, some simple rules to follow are:

- 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 down" foods 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. However, 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.

PPI USE (ALL ANTACID MEDICATIONS): The LINX surgery should stop the need for

antacid medications such as Nexium®, Protonix®, or Prevacid®. You should stop taking these medications once you are discharged home unless otherwise instructed by your surgeon.

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

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 (20 pounds or more) for 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 of you 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 this five days after your surgery. If there is tape (steri-strips) over your incisions, leave it in place until the strips 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 postoperative office visit. Do not scrub incisions. Soap and water can run over them to clean them, but do not scrub. Make sure to rinse your body well. Pat the incisions 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 pad or adhesive bandage for comfort or to protect clothing if the incision has drainage. Do not put ointment, creams or lotions on incisions. If surgical staples or non-absorbable sutures are used, 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, most patients take off between five to 14 days before returning to work. Please remember that upon returning to work, you should not lift more than 20 pounds until six weeks after surgery. Please ask the surgeon or the medical assistant about any forms needing to be filled out 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 to four weeks after discharge from the hospital. Call our office, 303.398.1355, Option 4 (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 the 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 to and feeling bloated or gassy are 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, you should 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 not eating enough natural fiber, eating 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.** (Sugar includes 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:** After surgery, some of you will experience a slight gastroparesis, or lazy stomach. If you experience this, please note 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, and 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 the 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.
- **DO NOT** get an MRI greater than 1.5 tesla — this will demagnetize the device. Talk to your doctor before getting an MRI to find out the strength. You will get a card to keep in your wallet after surgery.

Note: This information is provided to you as an educational service of LUNG LINE® (1.800.222.LUNG). It is not meant to be a substitute for consulting with your own physician.

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