Paraesophageal Hernia
What it is and how it is treated

This handout explains what a paraesophageal hernia is, its symptoms, and how it is diagnosed and treated. Included are details about what to expect before and after surgery to repair your hernia.

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What is a paraesophageal hernia?

In normal digestion, swallowed food goes down the esophagus (the tube that goes from the throat to the stomach) and into the stomach. The diaphragm is a flat muscle that separates the chest from the abdomen. The esophagus passes through an opening in the diaphragm called the esophageal hiatus.

A muscle called the lower esophageal sphincter (LES) is at the bottom of the esophagus. The LES acts as a valve between the esophagus and stomach. It lets food move into the stomach, but it keeps acid in the stomach from going up into the esophagus.

Hernias vary in size and how they form. The most common type of hernia is the sliding hiatal hernia. It is often linked to gastroesophageal reflux disease (GERD). In this type of hernia, both the LES and esophagus slide through the hiatus together.

Sometimes, when there is a weak spot in the esophageal hiatus, part or all of the upper stomach slides up through the hiatus (with or without the LES sliding up). It ends up next to the esophagus. This is called a paraesophageal hernia, and it is a more rare and severe type of hernia.

Symptoms

Many people who have a paraesophageal hernia do not have any symptoms. But, hernias that involve the LES often cause GERD because the LES cannot keep stomach acids from going up into the esophagus. This causes a burning feeling in the chest known as heartburn or acid indigestion.

Other common symptoms of a paraesophageal hernia are:

- Problems getting food down (dysphagia) or feeling full quickly (early satiety)
- Food regurgitation (food from the stomach backs up into the esophagus or mouth)
- Pain or discomfort in the chest or abdomen after or when you eat
Some of these symptoms may get worse when a person lies down or strains to lift heavy objects.

Causes
We do not know exactly why paraesophageal hernias develop. Some causes may be:

- Tissues in the diaphragm around the hiatus stretch out or become weak.
- The tissue that connects the esophagus and the diaphragm loosens.
- The esophagus has become shorter from chronic GERD. This may pull on the stomach and the diaphragm.

We believe that the condition occurs more often in Western nations because the usual Western diet contains less fiber. A low-fiber diet is linked with obesity, more constipation, and straining when having a bowel movement. All of these factors put pressure on the muscles and organs in the abdomen, and it may weaken them.

Risk Factors
- Women have a slightly greater risk than men.
- Obesity
- A hernia occurs more often after age 50.

Complications
Some complications of a paraesophageal hernia are:

- Pain
- Ulcers, which can lead to bleeding
- Twisting of the stomach, which blocks blood flow
- Blockage, which can keep food from passing through

How is it diagnosed?
A paraesophageal hernia is often discovered when a person has chest X-rays for an unrelated health condition.
**Endoscopy**

Your doctor may do an *endoscopy* to confirm a hernia. During an endoscopy, a thin, flexible tube (*endoscope*) is put down your throat. (See drawing below.)

The endoscope has a light and tiny camera at one end. The camera sends pictures of the inside of your esophagus onto a monitor in the exam room. This allows the doctor to see whether you have a hernia.

*During an endoscopy, a thin flexible tube called an endoscope is put down your throat.*

**Barium Swallow**

This is another test that is used to diagnose a paraesophageal hernia. The patient swallows a fluid that contains barium. At the same time, the doctor looks through a *fluoroscope* (similar to an X-ray) to observe the fluid as it goes through the esophagus. The images show whether the stomach has moved up into the chest through the esophageal hiatus. They will also show how severe the condition is. (See drawing on page 5.)
A barium swallow study

**pH Study**
A pH-study may be done to test for acid reflux. This is usually done by placing a wire through your nose and into your esophagus. Electrodes on the wire measure the acid level in your esophagus. This wire stays in place for 24 hours.

**Manometry**
To examine the function (peristalsis) of the esophagus, a manometry is usually done. During this test, you will have a wire down your esophagus while you are sipping liquid.

**How is it treated?**
When a paraesophageal hernia does not cause any symptoms, it may not be necessary to treat it, especially if the patient is over 70 years old.

If your symptoms are caused by GERD, your doctor may prescribe:

- Diet and lifestyle changes
- Medicine
- Surgery – usually needed for large hernias, since they cause problems other treatments cannot correct.

**Diet and Lifestyle Changes**
Small changes in your diet can reduce the amount of acid your stomach makes. These changes relieve symptoms for many people, and they do not need surgery.

- Avoid food and drink that could irritate your esophagus, such as hot peppers, citrus, tomato-based foods, and other high-acid foods.
• Reduce or avoid alcohol, caffeine, and high-fat foods.

• Drink plenty of fluids. Eating a high-fiber diet may also help. A healthy diet is very important – both constipation and obesity can make a paraesophageal hernia worse.

• Get plenty of exercise.

• Eat smaller meals throughout the day instead of 3 larger meals.

• Avoid cigarette smoking.

• If your job involves physical strain or heavy lifting, wear a supportive girdle or belt at work.

**Medicines**

There are no medicines to treat a paraesophageal hernia. If you have ulcers or bleeding as a result of your hernia, your doctor may prescribe medicines to help treat those conditions.

**Surgery**

Surgery is usually the best way to treat a paraesophageal hernia:

• Patients who are diagnosed with a life-threatening paraesophageal hernia may need surgery **right away**.

• Paraesophageal hernias that cause symptoms usually require surgery to repair them. In some cases, it may be up to the patient whether or not to have surgery. This is called *elective* surgery. But, if the hernia is twisting the intestines or stomach, surgery is needed more urgently.

• Patients who have hernias that may cause GERD, which leads to other long-term health problems, may also need surgery.

If you and your doctor determine that surgery is best for you, the goals of the surgery will be to:

• Restore the normal anatomy of the stomach (putting it back into the abdomen).

• Narrow the hiatus back to its normal size. This may include using a natural (*biologic*) mesh to make the area around the hiatus stronger.

• Create a new valve between the esophagus and stomach by wrapping part of the stomach around the esophagus. This procedure is called a *Nissen fundoplication*.

Nissen fundoplication surgery has been used for a long time to treat paraesophageal hernias and GERD. It is the most common form of this type of surgery done in the world today.
In this procedure, your surgeon wraps the top part of your stomach around your esophagus. This keeps stomach acid from flowing back into your esophagus, and it keeps your hernia repair stable.

**What happens during surgery?**

Almost all patients with a paraesophageal hernia can be treated with *laparoscopic surgery* at UWMC.

Laparoscopic surgery, also known as *minimally invasive* surgery, is a less invasive procedure than open surgery. This means that instead of doing open surgery through a large incision in the abdomen, about 5 small incisions are made. Each one will be 5 mm to 10 mm long (less than ¼ inch to ½ inch). Your surgeon will insert tiny instruments and a fiber-optic camera through these incisions.

The camera projects images from inside your body onto a video monitor in the operating room. This allows your surgeon to see the areas being worked on. Your surgeon uses these images and the small tools to do your surgery.

These illustrations show the different incisions used in open surgery and laparoscopic surgery:

![Open incision vs. Laparoscopic incisions](image)

Laparoscopic surgery creates less scarring and involves a shorter recovery time than open surgery. You can expect to go home in 1 or 2 days instead of 4 or 5 days with open surgery.
Risks
Some risks of surgery to treat a paraesophageal hernia are:

- Bloating after meals
- Increased gas or diarrhea
- Pain
- Difficulty swallowing food
- *Perforation* (a hole) or damage to the esophagus or stomach
- Bleeding
- Infection
- Reaction to medicine
- Another hernia in the future

Before Your Surgery
To assess your paraesophageal hernia, you may have these tests that were described in the “How is it diagnosed?” section on pages 3, 4, and 5:

- **Endoscopy** of your esophagus and stomach
- **Barium swallow study**
- **24-hour pH** (acid) study to check acid levels in your esophagus
- **Manometry** study to see how well your esophagus is working

Clinic Visit
When you come to the clinic, a Resident Doctor or Fellow (a doctor who is receiving advanced training) will take your medical history and do a brief physical exam. They will meet with your surgeon to review your test results. Your surgeon will then talk with you about what treatment options are best for you.

If you have certain medical conditions, your surgeon may talk with other medical specialists before doing your surgery.

If you are overweight, you may be advised to lose weight before your operation.

How to Prepare for Surgery

1 Week Before
For 1 week before your surgery, do **not** take aspirin, ibuprofen (Advil, Motrin) or naproxen (Aleve, Naprosyn) **unless** you are taking them for a specific health condition. If you are unsure whether to take a certain medicine, call Surgical Specialties at 206-598-4477.
2 Days Before

For 2 days before your surgery, do not shave any part of your body that you do not already shave every day. If you usually shave near your surgical site, stop shaving that area 2 days before your surgery.

1 Day Before

- **Reminder call:** A staff member from the Pre-Anesthesia Clinic will call between 2 and 5 p.m. the day before your surgery. If your surgery is on a Monday, you will receive this call Friday afternoon. The Pre-Anesthesia staff person will remind you:
  - When to arrive at the hospital
  - Where to check in
  - What medicines you should or should not take the day of surgery

- **Fasting:** Usually you will be told not to eat or drink anything after midnight the night before your surgery. When the Pre-Anesthesia Clinic calls you the day before your surgery, they will tell you when to stop drinking fluids, based on the time of your surgery.

- **Showers:** Both the night before and the morning of your surgery, shower or bathe using Chlorhexidine Gluconate soap.
  - Do NOT use this special soap on your face or hair. Use your regular soap and shampoo for these areas.
  - Wash thoroughly from the neck down, especially around the area of your surgery.

Day of Surgery

- **Do not** wear makeup, deodorant, lotions, hair products, or scents.
- **Do not** wear contact lenses. Wear your glasses instead.
- Remove all jewelry.
- Wear loose clothing that will be easy to take off and comfortable to wear home.
- **Arrive early.** Please leave home early and plan to arrive before your scheduled check-in time. Allow extra time for traffic and the chance that operations scheduled before yours end early.

What to Bring with You

- Bring these items with you on the day of surgery:
  - A written list of your current medicines, including their exact doses and when you last took them
- A photo ID
- Your insurance and pharmacy cards
- Co-payments for medicines

- If you have these items, also bring:
  - A copy of your advance health care directive and/or durable power of attorney for health care. They will be placed in your medical record.
  - Your CPAP machine, if you use it for sleep apnea.

**Arriving at the Hospital**

- You will check in and sign admission forms at your check-in location.
- Different members of your health care team will ask you your name, date of birth, and what procedure you will be having done. We usually ask these questions many times for your safety.
- After you check in, you will be brought to the Pre-Anesthesia area.
- You will be covered with a heating blanket to keep your body warm. This will also help reduce your risk of infection.
- You will have an intravenous line (IV) placed.
- You will receive an injection in your belly to prevent blood clots in your veins.
- When these steps are done and the operating room is ready, your anesthesia provider will transport you back to the operating room.
- After you are brought to the operating room, you will receive general anesthesia. This medicine will make you sleep.

**After Surgery**

**In the Recovery Room**

- Surgery for a paraesophageal hernia usually lasts about 3 to 4 hours.
- You will spend about 1 to 2 hours in the recovery room, as you wake up from surgery.
- Nurses in the recovery room will monitor your pain level and give you medicine to make you comfortable.
- Your family may be able to visit you in the recovery room. This depends on your situation and the care of other patients in the recovery room.
• When you wake up, you will have:
  - An **oxygen mask** over your face to supply extra oxygen. You will be switched to nasal prongs (oxygen under your nose) when your lungs are ready.
  - **Inflatable stockings** called *sequential compression devices* (SCDs) on your legs. These stockings squeeze and release. This improves blood flow and helps keep blood clots from forming.
  - A **urinary catheter** in your bladder. This allows us to monitor your urine output during and after your surgery. It will stay in place until the next morning.

• After 1 or 2 hours in the recovery room, you will be transferred to a regular hospital room.

**In Your Hospital Room**

• **Medicines:** All your medicines will be crushed or given to you in liquid form.

• **Exercise your lungs:** You will be given an *incentive spirometer* to use. This is a device you breathe into to exercise your lungs. Your nurse will show you how to use it.

   Using the incentive spirometer will help prevent pneumonia and other serious problems. It is very important to use it. To use the incentive spirometer:
   - Hold your mouth around the tube and inhale. Your breath will raise a small ball and exercise your lungs.
   - Inhaling more deeply will make the ball stay up longer. Deep breathing exercises your lungs more than shallow breaths.

• **Activity:** It is important for you to get up and try to walk, even in the evening after your surgery. Your nurse will help you the first few times to make sure you are steady on your feet.

   Please ask your nurse to help you. Do not wait for someone to ask you if you need help.

**Family and Friends**

Family and friends are very important to your recovery. Besides keeping you company, they can help keep you comfortable by fluffing your pillow, getting you a glass of water, or finding your remote control.

**Your Diet After Surgery**

• You will be started on clear fluids and advanced to a soft esophageal diet.
• A dietitian will meet with you after your surgery to give you more details about your diet and to create a plan to meet your specific nutritional needs.

• Limit foods that cause gas, bloating, or intestinal discomfort, such as carbonated beverages and some vegetables. Please refer to the handout, “Esophageal Diet After Surgery,” your dietitian gave you.

**Going Home and Home Care**

• You will most likely go home the day after your surgery, after you have met with the dietitian.

• If you live more than a 2-hour drive from the hospital, we recommend that you stay in the Seattle area an extra 1 or 2 nights after you leave the hospital. This rest time will help your recovery. You will also be close by in case any problems develop.

• **You cannot swallow whole pills for 4 weeks after your operation.** You will go home with liquid medicines or pills that can be crushed. This includes your pain medicine and anti-nausea medicine.

**When to Call Your Surgeon**

It is important to call your surgeon if you have:

• A fever higher than 100.5°F (38°C)

• Shaking or chills

• Difficulty getting food or liquids down

• Nausea or vomiting that will not go away or keeps getting worse

• Abdominal or chest pain that keeps getting worse

• Any signs of infection in your incision:
  - Redness
  - Swelling
  - Foul-smelling drainage

**Incision Care and Activities**

**Incision Care**

• You may remove your outer bandage in 48 hours.

• Leave the white *Steri-Strips* (the pieces of tape across your incision) in place. They will fall off on their own in about a week.
Showering
- You may shower the day after surgery. The dressings on your incision will not absorb water.
- Do **not** take a bath, sit in a hot tub, or go swimming for 4 weeks after your surgery.

Physical Activity
- Do not lift anything over 10 pounds for 6 weeks after your operation. A gallon of milk weighs 8 pounds.
- Avoid activities that make you contract your abdominal muscles, such as pushing or pulling.
- It is important to walk. You should walk 3 to 4 times every day. Slowly increase how far you go.

Sexual Activity
- Avoid sexual activity for 2 weeks after your surgery. Once you resume it, continue to follow the other restrictions listed above in “Physical Activity.”

Driving
- Do **not** drive for at least 2 weeks after your surgery. You must be off all of your pain medicine and be able to easily move and quickly apply brakes if needed before you resume driving.

Diet and Nutrition
- You will not be able to eat and drink your normal foods for the first 4 to 6 weeks after surgery.
- Common side effects of this type of surgery are:
  - Difficulty swallowing and feeling full
  - “Dumping syndrome,” which is when food moves through the intestines too quickly, causing nausea, diarrhea, or discomfort

After surgery, your diet will follow these steps, in this order:
- **Step 1: Clear liquids** such as tea, apple juice, broth, or Jell-O (no carbonated beverages)
- **Step 2: Full liquids** such as strained soups, milk, pudding, and Cream of Wheat
- **Step 3: Soft esophageal diet** (bland, low-fat, soft foods)
Foods to Eat During Step 3
Some foods you may want to try after surgery when you may eat the Step 3 diet are:

- Milk, yogurt, and cottage cheese
- Scrambled eggs
- Soft or moist casseroles, meatloaf, meatballs
- Pasta dishes
- Fish
- Mashed potatoes

Tips to Reduce Problems After Surgery

**DO:**

- Eat 6 to 8 small meals (about ½ cup of food at each meal).
- Eat foods that are soft and easy to chew.
- Take small bites.
- Try canned fruit, bananas, soft vegetables, and cooked cereal.
- Eat a variety of foods from all food groups.
- Include protein foods at each meal or snack.
- Drink most fluids **between** meals.

**Do NOT:**

- Eat tough cuts of meat, crunchy foods, and fruits or vegetables with strings, seeds, and thick skins.
- Eat foods that are high in sugar.
- Drink fluids with your meals.

Follow-up Visits

**2-Week Follow-up**

You will need to come to the clinic for a follow-up visit 2 to 3 weeks after your surgery.

When you get home, please call our clinic at 206-598-4477 to schedule your follow-up visit.

If you live more than 2 hours away from the clinic, please ask your surgeon if you need to have this follow-up appointment.
6-Month Follow-up

You will need to come to the clinic again 6 months after your surgery. Please call our clinic at 206-598-4477 to schedule this 6-month follow-up visit.

At this visit:

- We will do a barium swallow study to check your esophagus.
- We will also ask you to write down your answers to questions about how you are feeling and any symptoms you are having. If you have any symptoms, other tests may be needed.

You may also have these tests:

- Upper gastrointestinal barium X-rays
- 24-hour pH monitoring

Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns.

Weekdays from 8 a.m. to 5 p.m., call Surgical Specialties at 206-598-4477.

After hours and on weekends and holidays, call 206-598-6190 and ask for the Resident on call for Surgery to be paged.