Inguinal Hernia Surgery

Repairing Groin Hernias
Understanding Hernias

A hernia (or “rupture”) is a weakness or defect in the wall of the abdomen. This weakness may be present at birth. Or, it can be caused by the wear and tear of daily living. Although men are more likely to have hernias, they also occur in women and children. In fact, hernias are so common that people of any age can get them. Most hernias aren’t life-threatening. But treatment can help eliminate discomfort and prevent complications.

When a Bulge Forms

A weakness or break in the abdominal wall allows the contents of the abdomen to push outward. This often causes a bulge under the skin. It can also cause discomfort or pain. Your symptoms depend on the size and location of your hernia. Common symptoms include:

- A bulge in the groin, abdomen, thigh, or genitals. The bulge may get bigger when you stand and go away when you lie down.
- Discomfort or pain that is worse at the end of the day or after standing for long periods.
- Pain during lifting, coughing, sneezing, or physical activities.
- A feeling of weakness or pressure in the groin.
- Discomfort or pain during urination or bowel movements.
How Hernias Are Treated

A hernia will not heal on its own. Surgery is needed to repair the defect in the abdominal wall. If not treated, a hernia can get larger. It can also lead to serious medical complications. Fortunately, hernia surgery can be done quickly and safely. Below is an overview of surgical treatment.

Your Evaluation
Your surgeon will ask questions about your symptoms and overall health. You’ll also be examined. In some cases, tests are needed to make sure you’re healthy enough for surgery.

Surgical Treatment
In some cases surgery is done using a laparoscope, special instruments, and tiny incisions. In other cases, open surgery is used. You can usually go home the same day as surgery.

Your Recovery
After surgery, you can likely return to your normal routine within a short time. Repairing the hernia will also make it easier to enjoy daily activities without pain or worry.

What’s in This Book

<table>
<thead>
<tr>
<th>Understanding Hernias</th>
<th>Your Hernia and How It’s Fixed</th>
<th>Having Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Abdomen and Groin</td>
<td>Indirect Inguinal Hernias</td>
<td>Your Surgical Experience</td>
</tr>
<tr>
<td>Areas of Weakness</td>
<td>Direct Inguinal Hernias</td>
<td>14</td>
</tr>
<tr>
<td>Locations of Hernias</td>
<td>Repairing Inguinal Hernias</td>
<td>Your Recovery</td>
</tr>
<tr>
<td>How a Hernia Develops</td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Why Surgery Works</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4  5  6  7  8  10  11  12
The Abdomen and Groin

Hernias occur when part of the body bulges into an area where it shouldn’t. Most often, this happens when tissues in the abdomen bulge through an opening into the groin. Normally, the abdomen and groin are kept separate by a wall of muscle and tissue. The only natural openings in the wall are small tunnels called *canals*. These allow nerves, blood vessels, and other structures to pass between these two areas.

The Abdominal Wall

The *abdominal wall* is formed by layers of tissue, such as muscle and connective tissue. It helps protect and enclose the intestines and other organs.
Areas of Weakness

Certain areas of the abdominal wall are naturally prone to weakness. With time and physical stresses, these areas may weaken further and tear. This can allow the intestines or other tissues to bulge out through the opening. It may help to think of the abdominal wall as the rubber on a bicycle tire. If a spot on the outside of the tire weakens and frays, the inner tube will bulge out.

What Makes an Area Weak?

Any opening in the abdominal wall is prone to weakness. This includes canals in the groin area. It also includes previous openings that have closed, such as the navel (bellybutton) or the site of a healed surgical incision. In other areas, the abdominal wall can be weakened by injury or aging.

Weak Areas in Men

Most hernias in men occur at or near the inguinal canal. This is where nerves and vessels pass between the groin and abdomen.

Weak Areas in Women

Like men, women are most likely to get hernias in the inguinal area. But women are more likely to have femoral hernias than men.
Other Hernias

Abdominal hernias most often form around the navel or at the site of a previous surgery. Femoral hernias occur in the lower groin area.

**Locations of Hernias**

The type of hernia you have depends where it is located. Inguinal hernias form in the groin, in or near the inguinal canal. Other types form in the abdomen or in other parts of the groin. Hernias can also form on both sides of the body (bilateral hernias), or recur in the same spot (recurrent hernias). In some cases, you can have more than one type at a time.

**Inguinal Hernias**

Inguinal hernias occur in the groin. They are some of the most common types of hernias.

- **Direct inguinal hernias** occur in the groin near the opening for the inguinal canal.
- **Indirect inguinal hernias** occur in the groin at the opening of the inguinal canal.

**Other Hernias**

- **Incisional hernias** occur at the site of a previous surgical incision.
- **Epigastric hernias** occur in the upper abdomen at the midline.
- **Umbilical hernias** occur at the navel.
- **Femoral hernias** develop in the femoral canal.
How a Hernia Develops

Although a hernia bulge may appear suddenly, hernias often take years to develop. They grow larger as pressure inside the body presses the intestines or other tissues out through a weak area. With time, these tissues can bulge out beneath the skin of the abdomen. Or, they can bulge into the groin, thigh, scrotum, or labia. In some cases, a loop of intestine may become tightly trapped by muscle tissue. This can cause severe pain and requires immediate treatment.

The Wall Weakens or Tears
The abdominal lining bulges out through a weak area and begins to form a hernia sac. The sac may contain fat, intestine, or other tissues. At this point, the hernia may or may not cause a visible bulge.

The Intestine Pushes into the Sac
As the intestine pushes further into the sac, it forms a visible bulge. The bulge may flatten when you lie down or push against it. This is called a reducible hernia and does not cause any immediate danger.

The Intestine May Become Trapped
The sac containing the intestine may become trapped by muscle (incarcerated). If this happens, you won’t be able to flatten the bulge. You may also have pain. Prompt treatment may be needed.

The Intestine May Become Strangulated
If the intestine is tightly trapped, it becomes strangulated. The strangulated area loses blood supply and may die. This can cause severe pain and block the intestine. Emergency surgery is needed to relieve the blockage.
Why Surgery Works

Both laparoscopic and open surgery treat a hernia by repairing the weakness in the abdominal wall. An incision is made so the surgeon has a view of the hernia, either directly or through the laproscope. With laparoscopy, special instruments are inserted through a few tiny incisions to perform the surgery. But with open surgery, the repair is done through the single larger incision. To repair the defect, muscle and connective tissue may be sewn (sutured) together. This makes a “traditional repair.” More often, though, special mesh materials are used to patch the weak area and make a “tension-free repair.”

Layers of the Abdominal Wall

The abdominal wall is made up of layers of muscle, fat, and other tissues. These layers work together to give strength to the abdominal wall. During hernia surgery, the goal is to repair the weakness in the muscle and connective tissue. This prevents the intestines or other tissues from bulging out again.

Traditional Repairs

To make a traditional repair, an incision is made over the hernia. The muscle tissue surrounding the weak area is then sewn together to repair the defect. The incision is closed with stitches, staples, surgical tape, or special glue. This method can be used to repair any type of hernia.
Tension-Free Repairs Using Mesh

Most hernias are treated using “tension-free” repairs. This is surgery that uses special mesh materials to repair the weak area. Unlike traditional repairs, the abdominal muscle isn’t sutured together. Instead, the mesh covers the weak area like a patch. This repairs the defect without “tension” on the muscles. It also makes recovery faster and less painful. The mesh is made of strong, flexible plastic that stays in the body. Over time, nearby tissues grow into the mesh to strengthen the repair.

Where the Mesh Is Placed

Tension-free repairs are made in different ways. In some cases, the mesh materials are placed in front of the weak area (anterior repair). In others, the mesh is placed behind the weak area (posterior repair). Occasionally, a combination repair is used.

Repair in Front

An incision is made over the hernia. A mesh “patch” is then placed in front of the weak area. The patch is sutured to nearby tissues to hold it in place.

Repair in Back

An incision is made over the hernia. A mesh “patch” is placed behind the weak area. It is then sutured to nearby tissues. Pressure inside the abdomen helps hold the patch in place.

Combination Repair

An incision is made over the hernia. Mesh devices are then placed in front of and behind the weak area. In some cases, this type of repair includes mesh that goes through the defect in the abdominal wall.
Understanding Inguinal Hernias

Inguinal (groin) hernias are common in both men and women. There are two types: indirect inguinal hernias and direct inguinal hernias. They form at or near a tunnel between the abdomen and groin called the inguinal canal. Since these hernias form in the same area, your surgeon may not be able to determine which type you have prior to surgery. Regardless, your surgeon will be able to identify and repair either type during surgery.

Indirect Inguinal Hernias

An indirect inguinal hernia forms at the inside opening of the inguinal canal (the internal inguinal ring). This is an area that is naturally prone to weakness. With time and the effects of gravity, the intestine can press into the canal and form a bulge in the groin.

Indirect Inguinal Hernias in Men

Indirect inguinal hernias are the most common hernias in men. As a male fetus develops in the womb, the testicles move from the abdomen down through the inguinal canal into the scrotum. If the tissues around the canal don’t close properly, a hernia can follow the same path later in life. This means the intestine can sometimes bulge all the way through the canal into the scrotum.

Indirect Inguinal Hernias in Women

Indirect inguinal hernias can also happen in women. As a female fetus develops in the womb, a ligament and other structures move from the abdomen down through the inguinal canal. If the tissues around the canal don’t close properly, a hernia can follow the same path later in life. This means the intestine can sometimes bulge all the way through the canal into the labia.
Direct Inguinal Hernias

Direct hernias are similar to indirect hernias, but less common. They form at a weakness in the abdominal wall next to the opening of the inguinal canal (the internal inguinal ring). Over time, the intestine can press through the weak area and bulge into the groin.

Direct Inguinal Hernias in Men and Women

Men are more likely to get direct hernias. But they may occur in either gender — especially after the age of 40. Direct hernias often get worse with age or physical stress. They can also occur at the same time as an indirect hernia. For this reason, the direct area may also be reinforced during surgery for an indirect hernia.
Repairing Inguinal Hernias

Your surgeon will talk with you about the best method to repair your inguinal hernia. In some cases, a traditional repair is used. More often, a mesh device is used to make a tension-free repair. Over time, new tissue grows into the mesh. This will strengthen the repair and help prevent the hernia from recurring.

Reducing the Hernia

An incision is made above the weakened area. The hernia is then reduced by pushing the hernia sac and any protruding tissue back into the abdomen. If needed, the sac may be tied off and removed. The defect can then be repaired.

Repair with a Patch

A thin mesh patch is placed in front of or behind the defect. It is then secured to nearby tissues. Once the patch is in place, the skin is closed with stitches, staples, surgical tape, or special glue.
Repair with a Plug and Patch
A mesh plug is used to fill the hole in the abdominal wall. A mesh patch is then secured above the defect to provide strength. Once the mesh is in place, the skin is closed with stitches, staples, surgical tape, or special glue.

Repair with a Combination Device
A combination device uses mesh patches placed in front of and behind the defect. They are connected by a mesh bridge that goes through the opening in the abdominal wall. Once the mesh is secured in place, the skin is closed with stitches, staples, surgical tape, or special glue.
Your Surgical Experience

The first step in preparing for surgery is having a physical exam. Your surgeon will also ask about your medical history. Then you and your surgeon will schedule a date for surgery. Follow your surgeon’s advice on how to prepare for the procedure. Most people go home the same day, no matter whether they’ve had laparoscopic or open surgery. In some cases, though, an overnight hospital stay may be needed.

Medical History and Physical Exam

Your surgeon will ask questions about your symptoms, health, and any history of hernia problems. You’ll then have a physical exam. You may be asked to cough or tighten your stomach muscles while your surgeon checks for signs of a hernia. Certain tests may also be needed to ensure you’re healthy enough for surgery.

Getting Ready for Surgery

Your surgeon will talk with you about preparing for surgery. Follow all the instructions you’re given and be sure to:

- Tell your surgeon about any medications, supplements, or herbs you take. This includes both prescription and over-the-counter items.
- Stop taking aspirin, ibuprofen, and naproxen as directed.
- Arrange for an adult family member or friend to give you a ride home after surgery.
- Stop smoking. Smoking affects blood flow and can slow healing.
- Gently wash the surgical area the night before surgery.
- Don’t eat or drink after midnight, the night before your surgery.
The Day of Surgery

Arrive at the hospital or surgical center at your scheduled time. You’ll be asked to change into a patient gown. You’ll then be given an IV to provide fluids and medication. Shortly before surgery, an anesthesiologist will talk with you. He or she will explain the types of anesthesia used to prevent pain during surgery. You will have one or more of the following:

• Monitored sedation to make you relaxed and sleepy.
• Local anesthesia to numb the surgical site.
• Regional anesthesia to numb specific areas of your body.
• General anesthesia to let you sleep during surgery.

After Surgery

When the procedure is over, you’ll be taken to the recovery area to rest. Your blood pressure and heart rate will be monitored. You’ll also have a bandage over the surgical site. To help reduce discomfort, you’ll be given pain medications. You may also be given breathing exercises to keep your lungs clear. Later, you’ll be asked to get up and walk. This helps prevent blood clots in the legs. You can go home when your surgeon says you’re ready.

Risks and Complications

Hernia surgery is safe, but does have risks, including:

• Bleeding
• Infection
• Numbness or pain in the groin or leg
• Risk the hernia will recur
• Damage to the testicles or testicular function
• Anesthesia risks
• Mesh complications
• Inability to urinate
• Bowel or bladder injury
Your Recovery

Help make your surgery a success by taking an active role in your recovery. Start by reducing pain and swelling. Then begin easing back into your routine. For best results, take short walks as soon as you can. This helps prevent blood clots in the legs. It will also help speed healing. Follow your surgeon’s advice about caring for your incision. And be sure to keep appointments for follow-up visits.

Reduce Swelling
You may have swelling that gets worse after a few days. This is because blood and fluids can collect in the groin and genitals. To help reduce swelling, you can put an ice pack or bag of frozen peas in a thin towel. Then place the towel on the swollen area 3 to 5 times a day for 15 to 20 minutes at a time. For men, wearing supportive underwear, such as briefs, can also help reduce discomfort.

Incision Care
Take care of the incision as advised by your surgeon. Sometimes the area around the incision becomes swollen, discolored, and sore. If this happens, ice the incision area as described above. You should also ask your surgeon when it’s okay to start bathing again. In most cases, this is a day or two after surgery.

Manage Pain
You will likely have some pain for the first few days. You may also feel bloated and tired. To help you feel better, your surgeon will prescribe pain medications. Don’t wait for pain to get bad. Take your medications on time as directed. Be aware that some pain medications can cause constipation. So, your surgeon may also suggest a laxative or stool softener.
Return to Activity
You can start getting back to your routine as soon as you feel able. Just take it easy at first. Follow all your surgeon’s advice for recovery. The following tips may help:

• Take short walks to improve circulation.
• Avoid heavy lifting for at least a week.
• Ask your surgeon about returning to work.
• Eat healthy, high-fiber foods and drink lots of fluids.
• You can begin having sex again when you feel ready.

Keep Follow-up Appointments
Keep follow-up appointments during your recovery. These allow your surgeon to check your progress and make sure you’re healing well. You may also need to have your stitches, staples, or bandage removed. During office visits, tell your surgeon if you have any new symptoms. Your surgeon can also help answer any questions or concerns you may have.

When to Call Your Surgeon
Call your surgeon if you have any of the following:

• A large amount of swelling or bruising (some testicular swelling and bruising is common)
• Bleeding
• Increasing pain
• Fever over 101°F (38.3°C)
• Increasing redness or drainage of the incision
• Trouble urinating
• Nausea or vomiting
Feeling Good Again

Don’t let a hernia put limits on your life. By deciding to have surgery, you can help eliminate discomfort and prevent future problems. This makes it easier to enjoy daily activities—even if it’s just a day on the job.