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HERNIA

A hernia is a weakness or tear in the abdominal muscles. The inner lining of the abdomen pushes through the weakened area of the abdominal wall to form a small balloon-like sac. A loop of intestine or abdominal tissue can push into the sac, which can cause a noticeable bulge under the skin. The pressure of tissue pushing through the weakened area can cause significant pain. Your surgeon will check to see if he feels this protrusion.
Any part of the abdominal wall can develop a hernia. The most common site is in the groin. Approximately 80% of all hernia repairs are for hernias in the groin, which are called inguinal hernias.

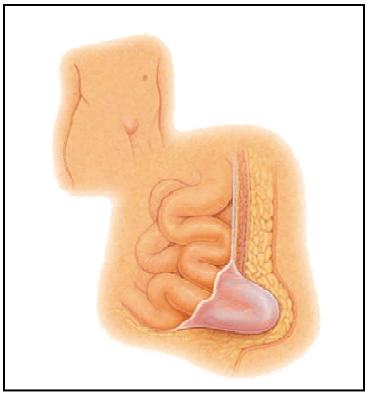
How Hernias Develop

The abdominal wall has natural areas of potential weakness that are present from birth. Other areas of weakness develop due to a variety of factors, such as surgery, injury, pregnancy, aging or strain. Most **inguinal hernias** that occur in adults result from strain on abdominal wall muscles that have been weakened by age or **congenital** factors – the weakness has been present since birth. Most **incisional hernias** occur near the site of previous trauma to the abdomen or an incision from a prior surgery. An incision can sometimes break down, and a hernia can form. Patients who develop **ventral hernias** may have multiple incisions in the same place, and may also be overweight. A ventral hernia may develop without a previous abdominal incision.

You may have heard that hernias are caused by heavy lifting. While heavy lifting and other strenuous activities can aggravate a hernia, they don't really cause them. The reality is that most hernias are the result of a weakness in the abdominal wall that exists long before a hernia even appears.

These activities and events may aggravate a hernia, or may lead to the discovery of a hernia:

- Lifting
- Twisting, pulling, or muscle strains
- Weight gain
- Chronic constipation
- Chronic cough
- Or, the weakness may be present since birth



The hernia makes a "hole" in the abdominal muscle wall, allowing the inner lining of the abdomen to push through the weakened area. A loop of intestine or fatty tissue may push against this lining, forming a sac. At this point, you may have no idea you're developing a hernia, although you may

feel burning or tingling.

As the loop of your intestine pushes into the sac formed by the weakened abdominal lining, you may develop a bulge visible on the outside. Early on, it may flatten out when you lie down because it's still a **reducible hernia**.

The loop of intestine can be trapped and cause pain-- an incarcerated hernia has formed. It can then strangulate and the trapped tissue can die, resulting in very serious problems.

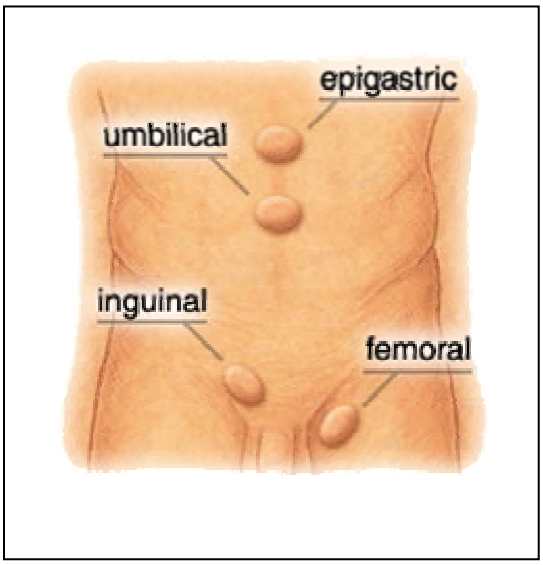
Signs and Symptoms

Each hernia is different, and the symptoms of a hernia can appear gradually or suddenly. Different people feel varying degrees of pain. Some people feel nothing except the presence of a lump, while others feel that something has ruptured or given way. Others feel “burning or bubbling” sensations.

Other symptoms may include:

- Feelings of weakness, pressure, burning or pain in the abdomen, groin or scrotum
- A bulge or lump in the abdomen, groin or scrotum that is easier to see when you cough and disappears when you lie down
- Pain when straining, lifting, or coughing

These symptoms may start out as mild but become progressively worse, causing increasing discomfort. The pain may be present in the directly affected area, but may also radiate into the hip region, back, leg or even down towards the genitalia region. This discomfort is called referred pain, and can become quite severe at times. The pain and discomfort usually worsens with duration of activity, and then may become either somewhat or completely relieved with rest.



Inguinal hernias are the most common type of hernia to develop in adults. They occur in a part of the abdominal wall known as the groin or inguinal canal, and are much more common in men. A man's testicles must descend through this area before birth. This leaves a natural defect called the **internal ring** that can develop into a hernia if it doesn't seal properly. As a result, the contents of the abdomen, such as intestine, may protrude through the opening, creating pain and/or a bulge. **Epigastric or ventral hernia** is another kind of hernia more common in men than women. It occurs above the navel, in the upper-middle area of the abdomen. If you've had a surgical incision in your abdomen, you may be at risk for an **incisional hernia**. These hernias can appear at the site of a previous surgery weeks, months, or even years later, and can vary in size from small to very large and complex. Over time they may enlarge, cause severe symptoms, and become extremely difficult to repair.

Umbilical hernias occur near the bellybutton or navel, which has a natural weakness from the blood vessels of the umbilical cord. These hernias may occur in infants at or just after birth, and may resolve at 3 or 4 years of age, but the area of weakness can persist throughout life. In adults, umbilical hernias will not resolve, and may progressively worsen over time. They are sometimes caused or made worse by abdominal pressure due to being overweight, excessive coughing, or pregnancy.

The Importance of Seeking Treatment

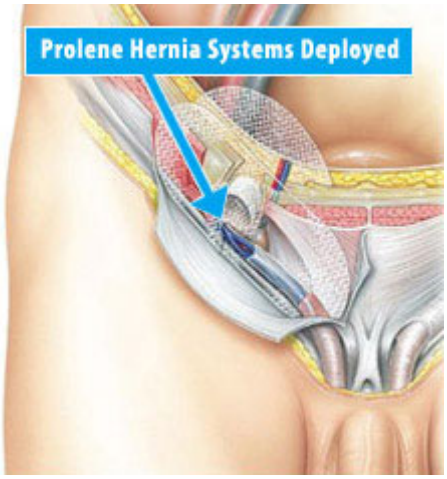
Hernias will not heal by themselves. The hernia may get larger, become **incarcerated, strangulated,** or become more painful. Hernias become more difficult to repair as they get larger, and more importantly, any hernia can lead to more serious complications that even have the potential to be life-threatening.

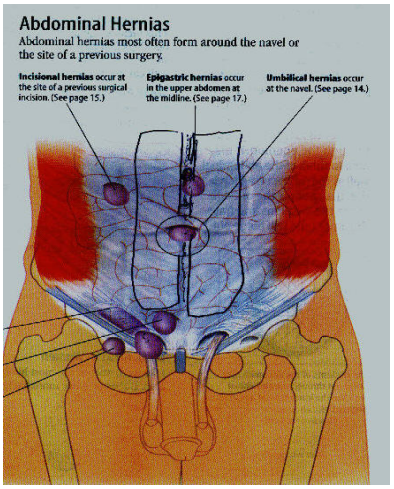
A **strangulated hernia** happens when part of your intestine or other tissue becomes tightly trapped, and the blood supply is cut off. Strangulated hernias can result in gangrene. This condition is considered a medical emergency and requires immediate surgery to undo the blockage and repair the hernia.

REPAIR

Hernia repair is generally a very safe procedure that causes a minimum of complications. However, as with any surgery, there are some potential complications:

- Infection and/or bleeding at the hernia site
- Seroma (collection of fluid) or hematoma (blood) formation
- A very slight chance exists that the intestines, bladder, blood vessels, internal organs or nerves may be injured during the procedure, or that extended scarring may occur
- Recurrence of the hernia
- Pain that last for a long time after surgery due to nerve entrapment
- The risk of complications increases if the patient smokes, uses drugs, is a heavy drinker, or is very young or old





The Use of Mesh in Hernia Repair

Also called a "patch," or "screen," mesh has been used for about 25 years, and represents a leap forward in the art of hernia repair.

Repairs utilizing mesh patches may also be called a "Lichtenstein Repair," because it was a surgeon named Irving Lichtenstein, MD, who popularized tension-free techniques as an outpatient procedure under local anesthesia. Prior to this, surgeons only used mesh for large or recurrent hernias, or when they thought it was absolutely necessary. They believed the mesh was a "foreign body" and would increase the risk of infection. However, subsequent studies proved the superiority of mesh, and now surgeons use mesh in their procedures frequently

There are many kinds of mesh products available, but generally what surgeons use is a sterile, woven material made from a synthetic plastic-like material, such as polypropylene. The mesh can

be in the form of a patch that goes under or over the weakness, or a plug that goes inside the hole. Mesh is very sturdy and strong, yet extremely thin. It is also soft and flexible to allow it to easily conform to body's movement, position and size. Mesh is used in both **open** and laparoscopic tension-free hernia repairs.

Here's How Mesh Works:

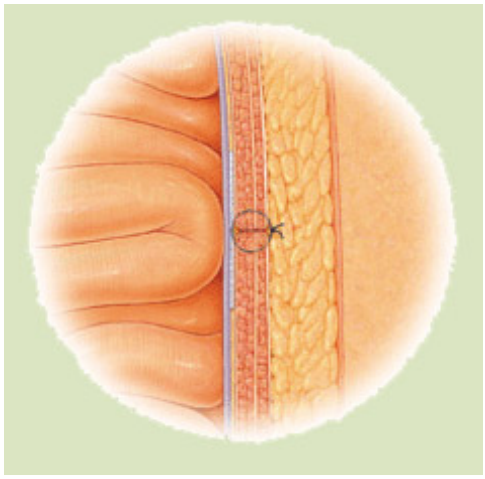
- The mesh is generally available in various measurements and can often be cut to size.
- Depending on the repair technique used, the mesh is placed either under or over the defect in the abdominal wall and held in place by a few sutures.
- The mesh acts as "scaffolding" for new growth of the patient's own tissue, which eventually incorporates the mesh into the surrounding area.
- The patient cannot feel the mesh, and because the repair is tension free, he or she may resume activity levels sooner after surgery than is usually seen with tension repair techniques.

There are a number of options available depending on the surgeon's approach and needs of the patient. Umbilical hernias, inguinal hernias, and ventral / incisional hernias can usually be repaired either laparoscopically (using a scope and camera through a few small entry holes) or through an "open approach" (direct incision access) repair techniques.

Laparoscopic Repair

In laparoscopic surgery, your surgeon inserts a laparoscope (a thin instrument with a light source and magnifying lens) through a small incision in your abdomen. The laparoscope enables your surgeon to examine the hernia and place a mesh patch on the inside of your abdominal wall. This surgery is called posterior hernia repair. It differs from traditional mesh repairs (discussed above), in which the mesh is placed on the outside of the abdominal wall.

Surgeons have been performing laparoscopic repairs for more than 15 years. In laparoscopic surgery, your surgeon makes a small incision and creates a space under the muscle in your abdomen. He or she will then insert a cannula (trochar), or slender tube, into your abdomen, which acts as a channel to the inside. Through this space, the surgeon inserts the laparoscope, which is a thin telescope, and views the hernia and surrounding tissue on a video screen. The surgeon must then insert 2 to 3 additional cannulas through small abdominal incisions. The hernia sac is pulled back into the abdomen and piece of surgical mesh inserted, which is held in place with small surgical staples and sometimes sutures.



Advantages:

- Pressure from within the abdominal cavity helps to hold the mesh in place
- Minimally invasive repair, which may mean less pain and shorter recovery time
- Allows for visualization of undiagnosed hernias
- May have advantages in repair of bilateral and recurrent hernias.

Disadvantages:

- Must be performed under general anesthesia
- There is a slight risk of injury to the urinary bladder, the intestines, blood vessels, nerves or the sperm tube going to the testicle.

This type of surgery may not be appropriate for patients who:

- Are pregnant
- Cannot tolerate general anesthesia
- Have a severe lung disease
- Have had multiple previous abdominal surgeries
- Have a bleeding disorder or are taking medications to prevent blood clots
- Are obese

Recovering from Surgery

After surgery, you will be taken to the recovery room and may be given fluids and pain medication through an intravenous (IV) tube for a few hours. In most cases, you may return home soon after surgery. Before sending you home, the staff will probably want to see that you're well enough to eat, drink, urinate, and walk around. You may also receive a prescription for pain medication to take at home.

Arrange for someone to drive you home from the hospital or surgery center, and, if possible, have someone stay with you. It could take a day or two before you can get back to resume some of your normal activities. It is recommended that you have some help at home for a few days.

Driving is discouraged for at least 3 days following surgery due to the effects of the anesthesia. Driving may also put a strain on the incision site, so your doctor may ask that you wait longer to drive. In addition, if you are still taking pain medication, you may not be able to drive or operate machinery. Ask your doctor if you are not sure.

You may notice some swelling or blue-black discoloration around the incision site, or down in the scrotum -- which is normal. It is also normal for the incision site to be bruised, tender or numb. You may need to be gentle while showering so as not to irritate the incision. Prevent constipation by using stool softeners. This is especially prudent if you are taking pain medications, as these always cause constipation.

When to Call Your Doctor If you experience any of the following problems when you return home after surgery:

- Fever over 101.5^0 0
- Excessive swelling that makes the skin bulge up like there is a balloon inside
- Difficulty urinating
- Redness that extends more than a half inch around the incision
- Bleeding that does not stop with 20 minutes of pressure
- Pain that cannot be well managed

After Surgery

Once you're back at home, try to ease into your normal daily activities. The amount of pain and/or discomfort you experience depends on the location of the hernia, the type of repair, and your personal pain tolerance level. Pain may be difficult for the first few days after surgery, it may be difficult to get up from bed, and climbing stairs may be difficult – but is allowed.

You should be able to drive your car within a few days following the surgery, when you are mobile and not taking prescription pain medication.

Depending on your occupation, full recovery from hernia surgery may take anywhere from one to six weeks. How soon you can return to work will depend on the kind of work you do. If you have a very strenuous job or one that requires heavy lifting, it may be several weeks before you can get back to work. You may be back at a desk job in as little as three days. Be sure to ask your doctor for advice on when to return to work and resume your normal daily activities.

Moderate exercise such as walking is recommended, and helps to improve your circulation and speed the healing process. Avoid putting a severe strain on your repair - as with lifting and strenuous exercise - for several weeks after the surgery. Ask your surgeon to advise you as to when you can resume heavy lifting, jogging or doing strenuous exercise. Patients who play sports may not be able to play for several weeks, as an impact to the repair could disrupt it.

FOR MORE INFORMATION CHECK OUR WEBSITE AT

WWW.WCSURGEONS.COM