

# Laparoscopic Repair of Hernias

A simple guide to help answer your questions



A presentation from the  
Society of American Gastrointestinal and Endoscopic Surgeons  
(SAGES)

<http://www.sages.org/>

# What is a hernia?

- A hernia is defined as a hole or defect in the abdominal (belly) wall. A hernia can either be congenital (a problem that you are born with) or acquired (develops because of a weakness in the tissues or from an injury).
- Hernias are quite common, affecting 10%-15% of the population.
- Both men and women can suffer from hernias.



# How do I know if I have a hernia?

- Hernias are often associated with a visible bulge or lump which is the result of an organ or structure within the abdominal cavity (often the intestine or fat) protruding through the defect or hole and deforming the overlying skin.
- Hernias may be associated with pain (usually achy and related to strenuous activity), however may not have any symptoms at all.
- In the worst cases, hernias can cause severe pain, injury to one of the abdominal organs or intestinal blockages.



What are the common symptoms associated with a hernia?

- Bulge or lump under the skin
- Pain associated with straining or lifting
- Ache or pain when walking or running



# What can I expect if I develop a hernia?

- With time, hernias generally become larger and may cause more severe symptoms.
- With the exception of a belly-button hernia (umbilical hernia) in young children or infants, hernias usually do not heal themselves.



# Why do hernias occur?

- Prior surgery
  - incisions may not heal with the same strength as the original tissue
- Rapid increase in abdominal size
  - Pregnancy or weight gain
  - fluid in the abdomen (ascites)
- exposure to increased intra-abdominal pressure
  - lifting/straining
  - chronic cough
  - constipation
  - difficulty with urination (enlarged prostate in men)



# Why should hernias be fixed?

- The only way to permanently fix a hernia is with surgery.
- Patients with hernias are at risk to develop serious complications such as bowel incarceration (entrapment of the intestine in the hernia cavity potentially causing intestinal blockage) and bowel strangulation (compromise of the intestine's blood supply leading to gangrene). Both of these conditions require emergency surgical treatment.



# Why should hernias be fixed?

- Elective (non-urgent) repair of hernias generally leads to better results, a shorter recovery period, and far fewer postoperative complications



# Warning signs of incarceration or strangulation of a hernia

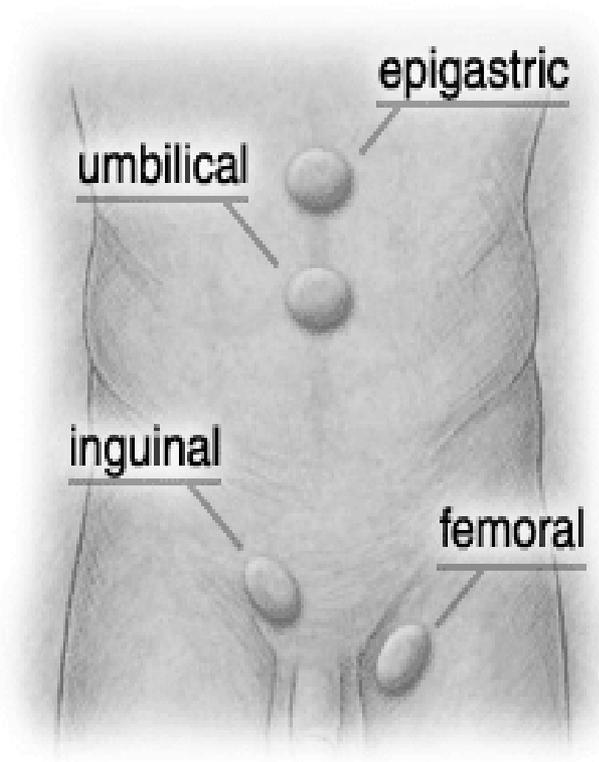
- Severe abdominal pain or distention (bloating)
- Nausea and vomiting
- Redness or tenderness/pain at the site of the hernia/bulge

IF THESE SYMPTOMS DEVELOP IT IS IMPORTANT TO CONTACT YOUR DOCTOR OR GO TO THE NEAREST EMERGENCY ROOM FOR TREATMENT/EVALUATION



# What are the common sites for hernias to develop?

- Groin (Inguinal & Femoral hernia)
- Belly button (Umbilical hernia)
- At the site of prior operations (Incisional hernia)
- Upper Abdomen (Epigastric hernia)

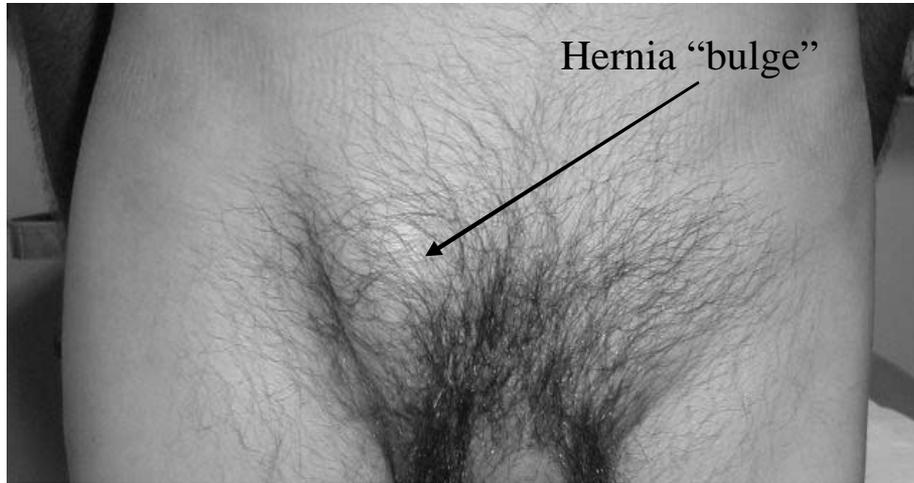


# What are the common sites for hernias to develop?

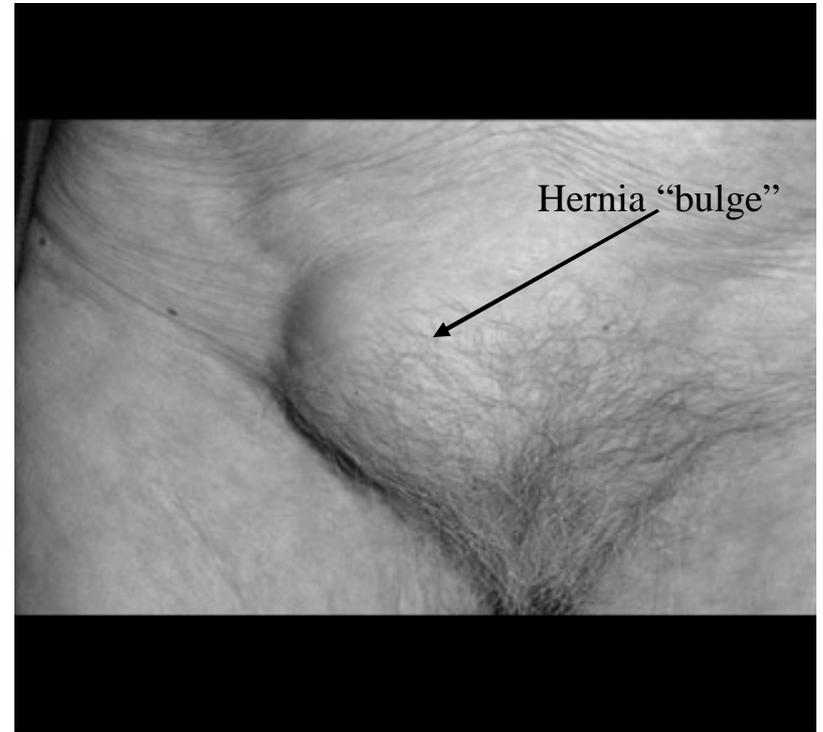
- Inguinal hernias are the most common
- Approximately 10% of abdominal surgical incisions will develop a hernia



# What does an inguinal hernia look like?

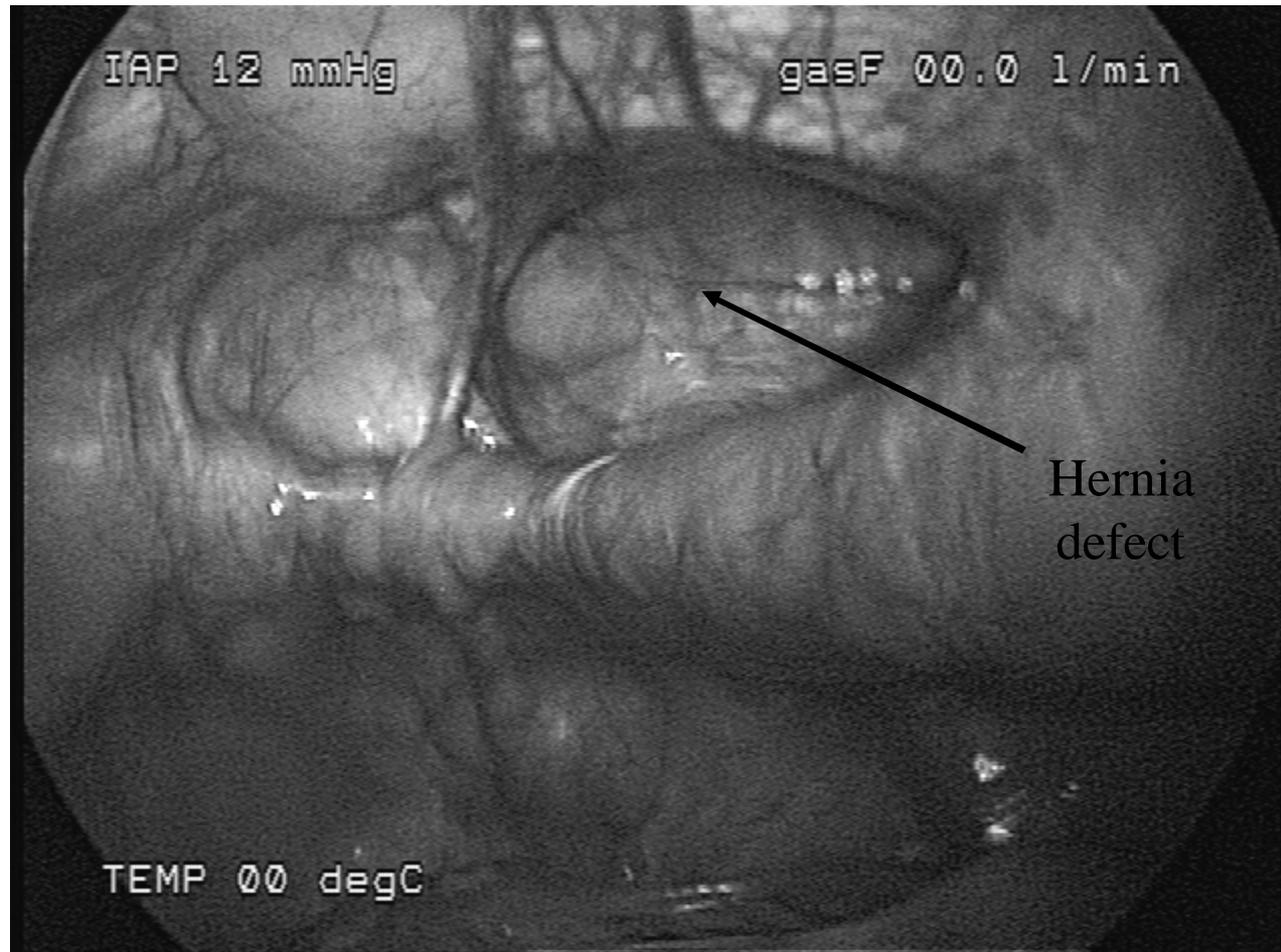


Male Patient



Female Patient

What does an incisional hernia look like from the inside of the abdomen (belly)?



# What are the treatment options for hernias?

- Non-surgical - use of a truss or abdominal binder and avoidance of strenuous activity
  - non-surgical option is often ineffective and is reserved for patients who are too ill or old for surgery.
  - Only treats the symptoms; does not fix the hernia
- Surgical
  1. **Open** - single large incision using standard instruments
  2. **Laparoscopic** - several small incisions using a video camera and special instruments



# Surgical Treatment of Hernias

Over the course of the past 10 years, laparoscopic hernia repair has become increasingly popular. For many surgeons, laparoscopic hernia repair has replaced open hernia repair as their procedure of choice. Laparoscopic repair seems to have the following advantages:

- Less pain
- Quicker recovery
- Faster return to normal activities and work
- Smaller scars

# Surgical Treatment of Hernias

Because the most common type of hernia is an inguinal or groin hernia, the following slides will review the various surgical treatment options in the repair of such hernias

# Open repair of an inguinal hernia (using traditional surgical techniques)

- The operation is performed through a 2-4 inch incision over the area of the hernia (where the bulge is located)
- Can be performed using local, spinal, epidural or general anesthesia
- Usually performed using a plastic mesh (screen) to repair or patch the hole where the hernia defect is located



# Laparoscopic Repair of an Inguinal Hernia

- 3 small incisions are made ( $\frac{1}{2}$  inch or less) on the belly through which the instruments and laparoscope (telescope connected to a camera and bright light) are placed
- The surgeon then uses a TV monitor to visualize and fix the hernia
- A piece of plastic mesh (screen) is used to repair the hernia defect (hole)
- Requires general anesthesia in most all cases, however sometime may be performed under spinal or epidural anesthesia

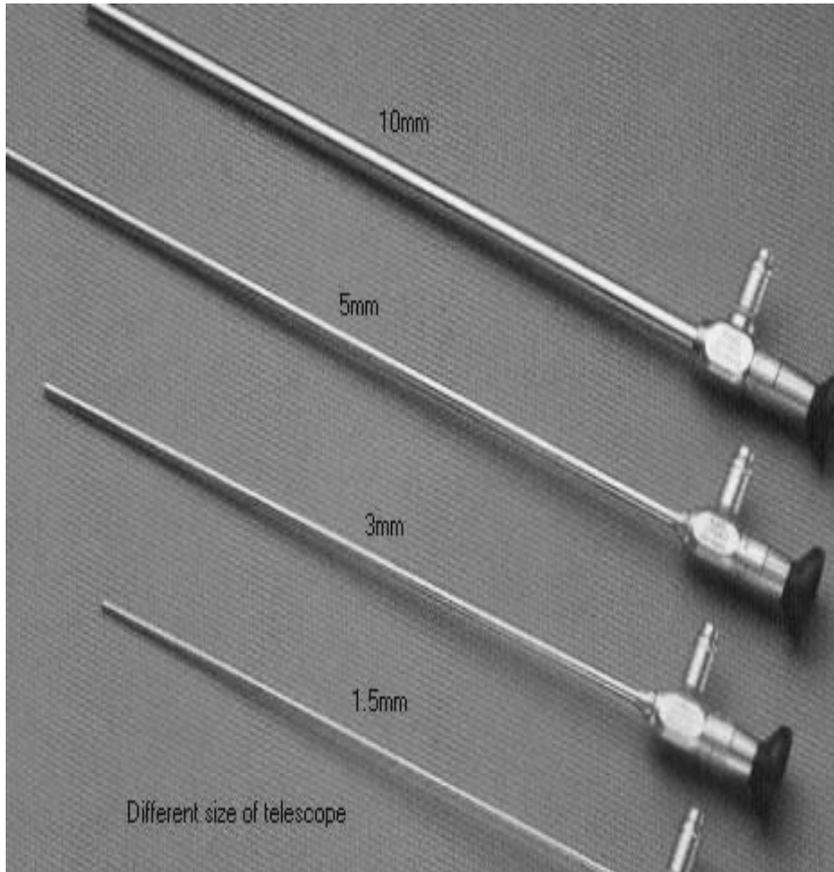


# What is a laparoscope?

A laparoscope is a long, thin telescope which allows surgeons to visualize or “see” the part of the body that they are interested in. The laparoscope is connected to a video camera and bright light which enables the surgeon to project the image onto a TV screen. This technology permits surgeons to operate through smaller incisions and still obtain an excellent view of the organs or structures that they are operating on.



# Equipment used in a Laparoscopic Surgery



Laparoscopes which are used to visualize the surgery



TV monitors which allow the surgeon to see everything clearly

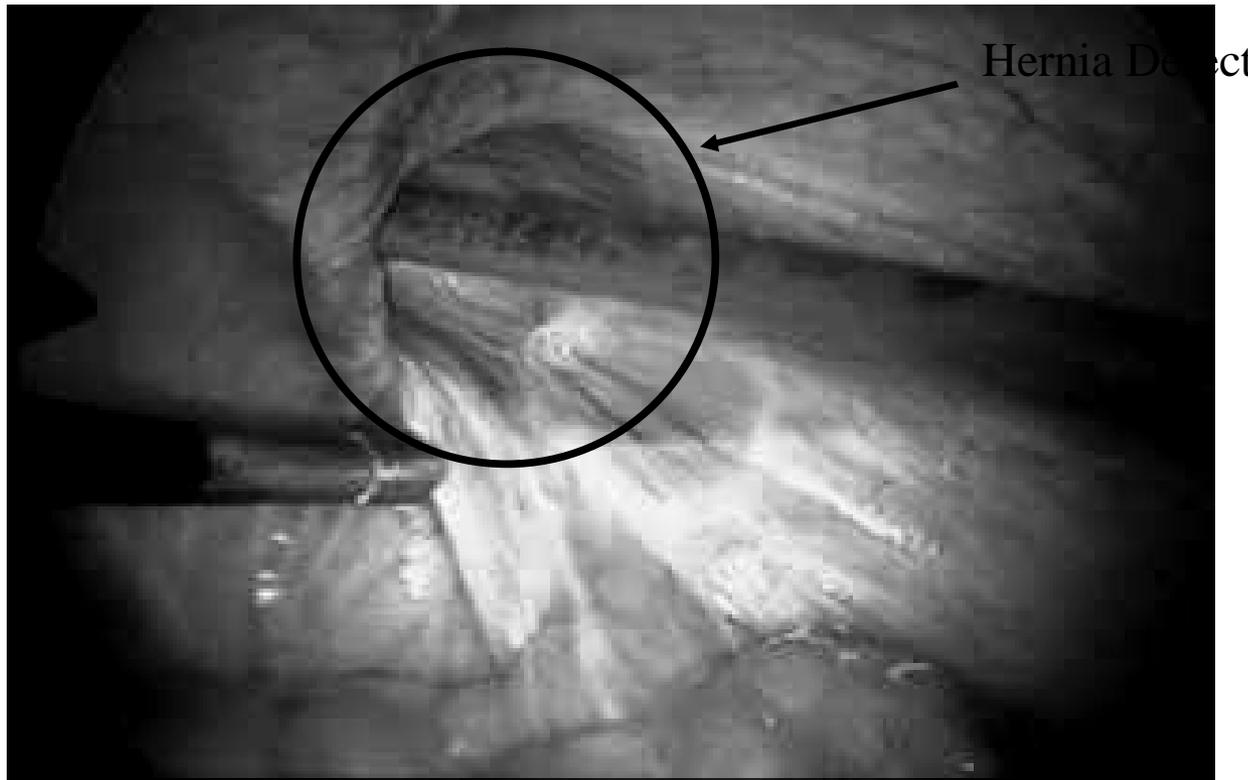


# How is laparoscopic inguinal hernia repair performed?

- In most cases, three small incisions are made on the belly to allow the surgeon to place their instruments and the laparoscope through the wall of the abdomen.
- The hernia defect (hole) is identified and the material which is protruding through is put back in the appropriate location. The hernia defect is then repaired with a piece of plastic mesh.



# What do inguinal hernias look like through a laparoscope?



Completed repair with plastic mesh seen covering the hernia



Plastic Mesh

# Are all laparoscopic inguinal hernia repairs performed the same way?

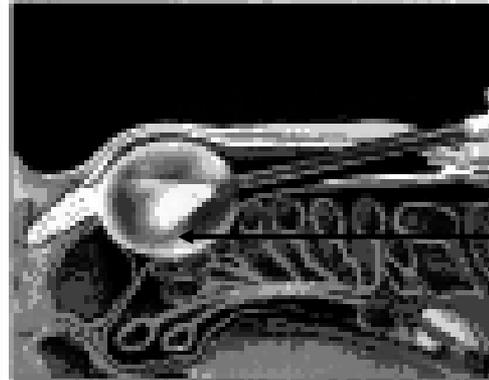
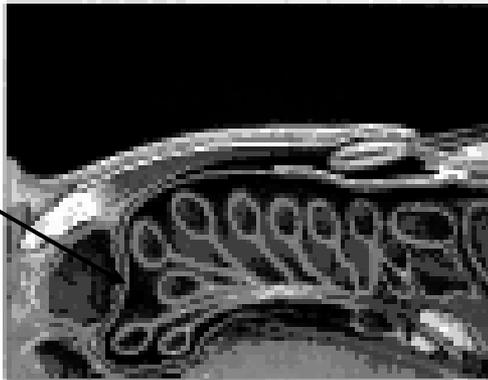
Two different techniques are commonly used:

1. **Transabdominal pre-peritoneal approach (TAPP):** this technique requires entry into the abdominal cavity (where the organs are located), dissection of the hernia, and placement of plastic mesh over the hernia defect. The mesh is then covered using the lining of the abdominal cavity.
2. **Totally extraperitoneal approach (TEP):** this technique avoids operating within the abdominal cavity. Instead, this procedure is performed outside the abdominal cavity, just above the lining of the abdomen. The hernia defect is identified and repaired using a plastic mesh.



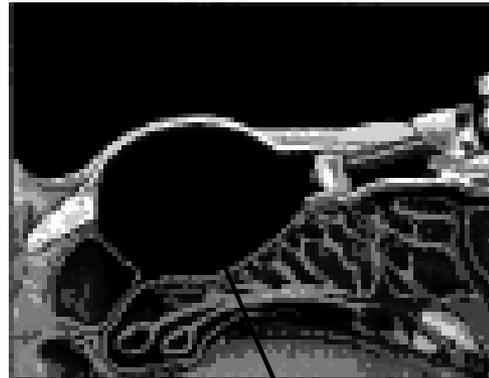
# How tissues are dissected and an operating space is made to perform a TEP repair

Lining of the abdominal cavity (blue line)



Special balloon dissection instrument which creates a space between the wall of the abdomen and the lining of the cavity

Intestines



Working space to perform surgery



# Is one laparoscopic technique better than others?

Different surgeons are likely to have their own preferences about the different techniques of hernia repair. In the hands of an experienced surgeon, both should provide excellent results. Both the TAPP and TEP procedures are associated with recurrence rates (return of the hernia following repair) of 2% or less.



# What are the potential benefits of having a laparoscopic hernia repair?

- The laparoscopic technique usually requires smaller incisions and possibly causes less trauma to the surrounding tissues. As noted before, this can lead to less pain and a quicker recovery.
- The laparoscopic technique allows the surgeon the ability to fix hernias on both sides using the same 3 small incisions (no extra incisions needed)
- The laparoscopic technique allows the surgeon to examine or see both sides and potentially identify a hernia that did not produce any symptoms or was not noticed



# Are all patients candidates for laparoscopic hernia repair?

Although most patients are candidates for laparoscopic repair of their hernia, some patients may require the open (traditional) technique for a variety of reasons including:

1. Choice of anesthesia
2. Previous surgery in the vicinity of the hernia
3. Previous radiation treatment in the area of the hernia
4. Infection

It is important to discuss the pros and cons of all of the operative options with your surgeon.



# What preparation is necessary for hernia repair?

- No eating or drinking after midnight prior to the day of surgery
- Shower the night before or on the day of surgery with a good antibacterial soap
- Your surgeon may decide to cleanse your intestines by using an enema or similar preparations prior to the day of surgery
- Depending on your age, the choice of anesthesia and existing medical conditions, blood tests, X-rays and an electrocardiogram (ECG) may be necessary before your operation



# What preparation is necessary for hernia repair?

- Most hernia repairs are performed on an outpatient basis (no overnight stay in the hospital). If so, you will come to the hospital on the day of surgery and will be discharged later the same day.
- Do not shave any of the hair in the vicinity of the hernia before the operation. If needed, your surgeon will do this once you arrive in the operating room. Shaving the night before may increase the chance of infection.
- Medications such as Aspirin, anti-inflammatory medicines, blood thinners, and certain arthritis medications may need to be discontinued in advance (7-10 days) of your operation. You should volunteer information on all of your medications to your surgeon.



# What potential complications are associated with laparoscopic hernia repair?

- Similar to its traditional counterpart, laparoscopic hernia repair may lead to unexpected bleeding, incisional infection, or mesh infection.
- Less common complications include injury to the urinary bladder, the intestine, major blood vessels, nerves, the testicle or the tube which delivers sperm to the penis (resulting in sterility).

THESE ARE UNCOMMON AND SHOULD OCCUR  
LESS THAN 1% OF THE TIME!



# What potential complications are associated with laparoscopic hernia repair?

- Similar to the traditional technique, a small percentage of patients may encounter a recurrence of their hernia over time. This incidence should be below 2-3% for patients undergoing their first repair and 5-10% for patients undergoing repair of a recurrent hernia.



A small percentage of patients may not be able to undergo a laparoscopic repair of their hernia (despite wanting laparoscopic surgery), and may wake up from surgery with an open (traditional) repair and a larger incision. Conversion to the traditional open approach in the OR is sometimes necessary to assure that your hernia is fixed properly. Your surgeon may need to do this to optimize your safety and the outcome of the operation.



# What should I expect following my hernia repair?

- You will be discharged from the recovery room or the hospital after you have had the opportunity to walk on your own, urinate and drink liquids.
- Any technique of hernia repair will lead to soreness for several days. Most activities may be resumed in 1 to 2 weeks. Full recovery occasionally may take up to 6 weeks if your repair was performed without a plastic mesh.
- Your surgeon is likely to see you for follow-up in 2-3 weeks following your operation.



# What should I expect following my hernia repair?

- You should contact your surgeon for anything out of ordinary including high fever, chills, vomiting, severe diarrhea or constipation, incisional drainage or redness, and pain that is not controlled with appropriate amounts of prescribed pain medications.



# How can I potentially reduce my risk of developing a recurrence of my hernia?

- It is advisable to avoid heavy lifting or other strenuous physical activity immediately following your operation. Make sure that you check with your surgeon before returning to these types of activities.



How can I potentially reduce my risk of developing a recurrence of my hernia?

- Other precautions include prevention of constipation (high fiber diet), elimination of chronic cough (stop smoking), elimination of urinary symptoms (prostate health in men), and appropriate exercise and workout which do not place tension on the lower abdominal wall muscles.



If you have any questions or concerns about laparoscopic repair of inguinal hernia.....

Contact one of the member surgeons of SAGES  
for assistance



<http://www.sages.org/>

