# Laparoscopic Surgery for Hernia Repair

**What is a hernia?**

A hernia occurs when the inside layers of the abdominal wall weaken then bulge or tear. The inner lining of the abdomen pushes through the weakened area to form a balloon-like sac. This, in turn, can cause a loop of intestine or abdominal tissue to slip into the sac, causing severe pain and other potentially serious health problems.

Men and women of all ages can have hernias. Hernias usually occur either because of a natural weakness in the abdominal wall or from excessive strain on the abdominal wall such as strains from heavy lifting, substantial weight gain, persistent coughing, or difficulty with bowel movements or urination. Eighty percent of all hernias are located near the groin. Hernias might also be found below the groin (femoral), through the navel (umbilical), and along a previous incision (incisional).

**What are the symptoms of hernias?**

- A noticeable protrusion in the groin area or in the abdomen
- Feeling pain while lifting
- A dull aching sensation
- A vague feeling of fullness
- Nausea and constipation

**Am I a candidate for laparoscopic hernia repair?**

Only after a thorough examination can your surgeon determine whether laparoscopic hernia repair is right for you. The procedure may not be best for some patients who have had previous abdominal surgery or underlying medical conditions.

**What preparation is required?**

- Most hernia operations are performed on an outpatient basis or one day.
- Preoperative preparation includes blood work, medical evaluation, chest x-ray and an EKG depending on your age and medical condition.
- After your surgeon reviews with you the potential risks and benefits of the operation, you will need to provide written consent for surgery.
- It is recommended that you shower the night before or morning of the operation.

- If you have difficulties moving your bowels, an enema or similar preparation may be used after consulting with your surgeon.
- After midnight the night before the operation, you should not eat or drink anything except medications that your surgeon has told you are permissible to take with a sip of water the morning of surgery.
- Drugs such as aspirin, blood thinners, anti-inflammatory medications (arthritis medications) and Vitamin E will need to be stopped temporarily for several days to a week prior to surgery.

**Equipment**

- Laparoscopic hernia repair require the following standard laparoscopic equipment: 1) Blunt graspers, 2) Hook electrocautery, 3) A 30º laparoscope, 4) A tacking device or glue applicator system.
- A laparoscopic clip applier and suction irrigator should be available on standby.
- Foley catheter: The authors routinely place a Foley catheter to decompress the bladder and maximize the preperitoneal space. Patients undergoing unilateral hernias and with no history of urinary retention can probably avoid a Foley catheter if they void immediately prior to the operation.
- Balloon dissector and trocars: The author find that a balloon dissector saves time and routinely use an integrated trocar/dissector balloon system for the infraumbilical port.
- Mesh: The mesh must be a permanent material large enough to produce a wide overlap beyond the defect's edges (polypropylene mesh coated titanium 7 x 15cm is more cost-effective).
- No Tacks, for avoid the danger zones. A tisular adhesive add an extra layer of security with excellent results. The potential benefit is that even if a nerve is inadvertently impinged, the tack will be resorbed with time. This benefit has not been critically evaluated.

**How is a laparoscopic hernia repair performed?**

Laparoscopic surgery uses a thin, telescope-like instrument known as an endoscope that is inserted through a small incision at the umbilicus (belly button). Usually, this procedure is performed under general anesthesia. This requires an evaluation of your general state of health, including a history and physical exam, possibly including lab work and EKG.

You will not feel pain during this surgery. The endoscope is connected to a tiny video camera, smaller than a dime, which projects an "inside view" of the patient's body onto television screens in the operating room. Other cannulas are inserted which allow your surgeon to work inside. Three quarter inch incisions are usually necessary. The hernia is repaired from behind the abdominal wall. A small piece of surgical mesh (*TiMesh*, lightweight mesh) is placed over the hernia defect and held in place with adhesive tisular synthetic (*Ifabond*). No with surgical staples (these sutures can caused pain).

**What are the benefits of laparoscopic hernia surgery?**

- Three tiny scars rather than one large abdominal incision
- Short hospital stay (You might leave the day of surgery or the first day after surgery)
- Reduced post-operative pain
- Low hospital costs
- Faster return to work
- Shorter recovery time and earlier resumption of daily activities (a recovery time of days instead of weeks)

**What can I expect after surgery?**

- Following the operation, you will be transferred to the recovery room where you will be monitored for 1-2 hours until you are fully awake.
- Once you are awake and able to walk, you will be sent home.
- With any hernia operation, you can expect some soreness mostly during the first 24 to 48 hours.
- You are encouraged to be up and about the day after surgery.
- With laparoscopic hernia repair, you will probably be able to get back to your normal activities within a short amount of time. These activities include showering, driving, walking up stairs, lifting, working and engaging in sexual intercourse.
- Call and schedule a follow-up appointment within 2 weeks after you operation.

**How safe is laparoscopic hernia repair?**

This procedure is as safe as open surgery, in carefully selected cases, when performed by specialists in this field.

**What complications can occur?**

- Any operation may be associated with complications. The primary complications of any operation are bleeding and infection, which are uncommon with laparoscopic hernia repair.
- There is a slight risk of injury to the urinary bladder, blood vessels, nerves or the sperm tube going to the testicle.
- Difficulty urinating after surgery is not unusual and may require a temporary tube into the urinary bladder for as long as one week.
- Any time a hernia is repaired it can come back.

**Pearls**

- Trocar placement should always be done under direct vision. To prevent bleeding and hematoma formation, the trocars should be placed exactly in the midline so as to avoid tearing the rectus muscle fibers. *The author only uses blunt trocars.*
- The use of an ample-sized mesh is the key to minimizing recurrences. It must be large enough to extend 2cm medial to the pubic tubercle, 4cm above the Hesselbach triangle, and 5cm lateral to the internal ring. *The author uses a mesh of titanium coated 15cm low density and high biocompatibility (TiMesh).*
- Extreme care must be exercised when placing the mesh fixation tacks. This point cannot be overstated. A nerve injury caused by an errant tack can be truly debilitating, and treating these injuries can be very challenging. Tacks should be placed only above the iliopubic tract. *To avoid this problem, the author uses a tisular adhesive to fix the mesh (Ifabond).*