Weight Loss before Hernia Repair Surgery

What is an abdominal wall hernia?

The abdomen (commonly called the belly) holds many of your internal organs. In the front, the abdomen is protected by a tough outer wall of tissue called the "abdominal wall." A hernia is a weakness or defect in the abdominal wall muscle that allows fat or intestine to bulge out through an opening. Hernias can occur close to scars from previous surgeries or in other weak areas in the abdominal wall. The most common causes for hernias are:

- muscle weakness due to weight gain and aging
- muscle strain from heavy lifting or pregnancy
- injury
- scar from a previous abdominal surgery

Some hernias do not cause any symptoms. Common symptoms may include:

- a visible bulge in the abdomen that gets worse with coughing or straining
- pain or pressure at the hernia site

The best way to diagnose a hernia is by having a physical exam by a surgeon and a CT scan.

Most hernias are not life threatening and do not require immediate treatment or surgery. They often take months or even years to develop. They grow larger as pressure inside the body builds. Hernias can even develop 10 years after a previous abdominal surgery. Hernia surgery is the most effective way to repair hernias and can be done in one of two ways:

- Open surgery – where the surgeon makes an incision in the abdominal wall.
- Laparoscopic Surgery – where the surgeon makes a few small incisions and inserts long thin tools, including a camera, through them. The surgeon uses the tools to repair the hernia with mesh.

What is obesity?

The terms "overweight" and "obesity" refer to body weight that's greater than what is considered healthy for a certain height. The easiest way to find out whether you are overweight or obese is by calculating your body mass index (BMI). BMI is an estimate of your body fat relative to your height and weight. Your health care provider can determine your BMI or you can calculate it yourself with the online BMI calculator: http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm

BMI is a good tool to estimate your risk for diseases that occur with more body fat. People with a BMI greater than 25 are considered overweight and those with a BMI greater than 30 are considered obese. A BMI greater than 35 is considered morbidly obese.

What is the link between obesity and formation of a hernia?

Obesity increases the risk for developing abdominal wall hernias. Being overweight increases the strain and pressure on your abdominal muscles and makes them weaker and more prone to developing a hernia. Over time, this additional weight contributes to a growth in the size of the hernia. In some cases, this can lead to a loop of intestine becoming trapped in the muscle tissue, causing severe pain and requiring immediate treatment. Obesity can also lead to the development of multiple hernias in the muscle wall.

What are the risks of hernia surgery in people who are overweight or obese?

Every surgery has risks and complications but people with a high BMI have much higher risks for complications after hernia repair surgery, including:

- A higher risk for the hernia to recur after surgical repair. This may require a second surgery.
- Higher rates of infection and poor wound healing.
- Longer operating room time and length of stay in the hospital.
- Less successful results including less improvement in pain.
- Development of a blood clot. Obese people have a higher risk for developing a blood clot or clots after surgery. This condition is called a

deep venous thrombosis (DVT). The clots usually form in the legs, but they may travel to the lungs and become life threatening. A blood clot in the lungs is called a pulmonary embolism (PE).

Additional factors such as diabetes, lung disease, and smoking can further delay and impair wound healing and add to complications.

What are the risks of hernia surgery in people who are current smokers?

Smoking significantly increases your risk for infection after surgery. It may lead to an infection of the mesh and require treatment by IV antibiotics, drainage, and an additional surgery to remove the mesh.

Smoking can also lead to breathing problems during and after surgery. Patients who have very large hernias and a history of smoking or emphysema have an increased risk for lung complications. During surgery, manipulation of the intestines back into the abdominal wall may cause additional pressure on the diaphragm and lungs, making breathing difficult. People who smoke also have an increased risk for pneumonia.

Smoking also increases the risk for developing a blood clot.

How can I reduce my risk for complications and increase my chances for a successful surgery?

You can greatly reduce your risk for complications and improve your outcome after hernia surgery by losing weight and reducing your BMI prior to surgery. Weight loss alone may decrease your pain and reduce the size of the bulge from your hernia to the point where surgery will no longer be needed, or may be delayed for many years. We recommend reaching a BMI of less than 35 prior to hernia repair.

Typically, after adequate weight loss is achieved, either through weight loss surgery or diet and exercise, repair of the hernia can be performed. This is the ideal order because:

- it will be easier to do the hernia repair
- the risk for complications will be lower
- the wound will heal faster and better
- the surgery will result in better mobility and well-being.

Another advantage for losing weight months to years prior to hernia repair is that it may be possible to do a surgery to remove excess skin (abdominoplasty) at the same time as the hernia repair.

Combining both weight loss surgery and hernia repair at the same time is not recommended. A recent study has shown that doing bariatric surgery and hernia repair at the same time greatly increases the risks for infection of the mesh and hernia recurrence. Patients who had hernia repair 1.3 years following weight loss surgery had much better outcomes. Their BMI decreased and there were no recurrences even 20 months after the hernia repair.

What is the likelihood that my hernia would reoccur?

Based on studies from the past 10 years in patients that had hernia repair with mesh, there were 41 recurrences per 1000 surgeries. Among patients that had open surgery and repair without mesh, there were 430 recurrences per 1000 surgeries. These results demonstrate that repair with mesh reduces the risk that your hernia will reoccur. Mesh can be tacked, stapled, or sutured and all techniques have the same recurrence rate. Recurrence is much higher for a complex or infected hernia and for those who have had previous hernia repair or repairs, or abdominal surgery.

What are the best methods for losing weight?

Diet and exercise

The key elements to losing weight are diet and exercise. It is important to eat fewer calories than the amount of calories your body uses for energy. Adjusting the amount and type of food you eat to be less than the amount of calories your body uses is the only way to reduce body fat. Exercise is helpful because being more active means that you use more calories for energy and your body stores less calories as fat.

Here are some resources to get you started:

- **Your primary care healthcare provider** can help you choose a healthy weight loss program that fits your personal needs and preferences.
- **Registered dietitians** are food and nutrition experts who develop personalized nutrition plans for weight-loss. The University of Michigan Health System has registered dietitians in all of our Primary Care Centers. To schedule an appointment call 1-800-211-8181.
- **The Weight-control Information Network** Website at: http://win.niddk.nih.gov/index.htm has a wealth of information about losing weight with diet and exercise.

Weight loss surgery

Bariatric surgery, also called weight-loss surgery, is very effective for people who are not able to lose weight or maintain weight loss with diet and exercise alone. Most people can expect to lose between 35%-70% of their excess body weight one year after having bariatric surgery.

There are several types of bariatric surgery, but they all reduce appetite and restrict the amount of food that you can eat.

- Gastric bypass surgery creates a small stomach pouch and re-routes the small intestine. In addition to limiting the amount of food, this surgery also changes the way your body absorbs calories from the foods you eat and contributes to hormonal changes which affect eating behavior.
- Sleeve gastrectomy is a surgery that removes about 85% of the stomach and contributes to hormonal changes which affect eating behavior. This is often the preferred surgery for patients planning to undergo hernia repair, as it does not involve manipulation of the intestine.
- Gastric banding is the placement of a silicone band around the top of the stomach to reduce appetite.

Who is a good candidate for Bariatric Surgery?

The U.S. National Institutes of Health recommends bariatric surgery for obese people with a body mass index (BMI) of at least 40, and for people with a BMI of

35 and serious other medical conditions such as diabetes, high blood pressure, high cholesterol and sleep apnea.

To qualify for bariatric surgery, patients must have tried to lose weight under medical supervision with a program that included diet, exercise, and a behavior modification plan, with or without medications. Patients who were not able to lose weight with this program may be considered for bariatric surgery.

Bariatric surgery has some short and long term complications, such as:

- Having a leak or obstruction. This may cause a need for a second surgery or other procedure.
- Developing gallstones. Gallstones are hard particles that develop in the gallbladder and can cause painful attacks.
- Inability to absorb nutrients from food. You will need to take vitamin and mineral supplements for the rest of your life.

Your bariatric surgeon will review the surgical options and potential side effects in detail before the surgery. For more information about the University of Michigan Adult Bariatric Surgery Program, please give us a call at (734) 647-6685.

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