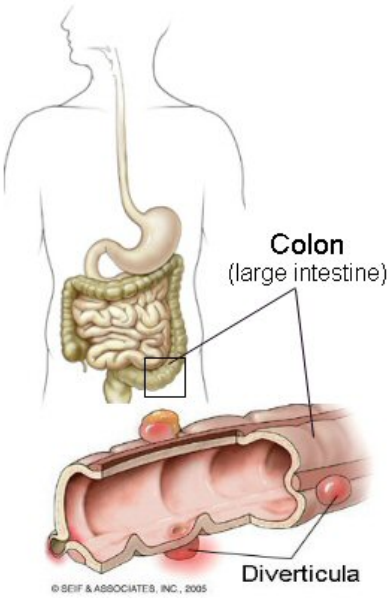
Diverticulosis and Diverticulitis, Including Pre & Post Surgical Guidelines

Many people have small pouches in their colons that bulge outward through weak spots. This is like an inner tube that pokes through weak places in a tire. Each pouch is called a diverticulum. Pouches (plural or more than one) are called diverticuli. The condition of having diverticuli is called diverticulosis. About 10 percent of Americans over the age of 40 have diverticulosis. The condition becomes more common as we age. About half of all people over the age of 60 have diverticulosis. When the pouches become infected or inflamed, the condition is called diverticulitis. This happens in 10 to 25 percent of people with diverticuli. Diverticulosis and diverticulitis are also called diverticular disease.



CAUSES OF DIVERTICULAR DISEASE

A low-fiber diet may be the main cause of diverticular disease. Many processed foods contain refined, low-fiber flour. Unlike whole-wheat flour, refined flour has no wheat bran. Diverticulitis is more common in developed countries and less common in countries where people eat high-fiber vegetable diets. Fiber is the part of fruits, vegetables, and grains that the body cannot digest. Some fiber dissolves easily in water (soluble fiber). It takes on a soft, jelly-like texture in the intestines. Some fiber passes almost unchanged through the intestines (insoluble fiber). Both kinds of fiber help make stools soft and easy to pass. Fiber also prevents *constipation* (hardening of the stools).

Constipation makes the muscles strain to move stool that is too hard. This causes increased pressure in the colon. Increased pressure in the colon may cause weak spots to bulge out and become diverticula. Diverticulitis occurs when diverticula become infected or inflamed. Doctors are not certain what causes the infection. It may begin when stool or bacteria are caught in the diverticula. An attack of diverticulitis can develop suddenly and without warning.

SYMPTOMS

Diverticulosis

- Most people with diverticulosis do not have any discomfort or problems. If symptoms develop, they may include:
  - Mild cramps.
  - Bloating.
  - Constipation.
- Other diseases such as irritable bowel syndrome (IBS) and stomach ulcers cause similar problems, so these symptoms do not always mean a person has diverticulosis. You should visit your caregiver if you have these troubling and unexplained symptoms.

Diverticulitis

- The most common symptom of diverticulitis is abdominal pain which occurs primarily around the left side of the lower abdomen. The severity of symptoms depends on the extent of the infection and complications. If infection is the cause these symptoms may occur:
  - Fever.
  - Nausea.
  - Vomiting.

- Chills.
- Cramping.
- Constipation.

COMPLICATIONS OF DIVERTICULITIS

Complications from diverticulitis usually need further treatment. Complications include:

Bleeding

- Bleeding from diverticula is a rare complication. When diverticula bleed, blood may appear in the toilet or in your stool. Bleeding can be severe, but it may stop by itself and not require treatment. It is thought that bleeding diverticula are caused by a small blood vessel in a diverticulum that weakens and finally bursts. If you have bleeding from the rectum, you should see your doctor. If the bleeding does not stop, surgery may be necessary.

Abscess, Perforation, and Peritonitis

- The infection causing diverticulitis often clears up after a few days of treatment with antibiotics. If the condition gets worse, complications such as an abscess may form. An abscess is a collection of pus that may cause swelling and destroy tissue. Sometimes the infected diverticuli may develop small holes, called perforations. These small holes allow pus to leak out of the colon into the belly *(abdomen*). If the abscess is small and remains in the colon, it may clear up after treatment with antibiotics. If the abscess does not clear up with antibiotics, the doctor may need to drain it. To drain the abscess, the doctor uses a needle and a small tube called a catheter. The doctor inserts the needle through the skin and drains the fluid through the catheter. This procedure is called percutaneous catheter drainage. Sometimes surgery is needed to clean the abscess and, if necessary, remove part of the colon. A large abscess can become a serious problem if the infection leaks out into the abdomen. Infection that spreads into the abdominal cavity is called peritonitis. Peritonitis requires immediate surgery to clean the abdominal cavity and remove the damaged part of the colon. Without surgery, peritonitis can be fatal.

Fistula

- A fistula is an opening between two organs or between an organ and the skin. When damaged tissues come into contact with each other during infection, they sometimes stick together. If they heal that way, a fistula may form. In diverticulitis, if the infection spreads outside the colon, the entire abdomen can become infected and inflamed. The colon's tissue may stick to nearby tissues. The organs usually involved are the:
  - Bladder.
  - Small intestine.
  - Skin.
- The most common type of fistula occurs between the bladder and the colon. It affects men more than women. This type of fistula can result in a severe, long-lasting infection of the urinary tract. The problem can be corrected with surgery to remove the fistula and the affected part of the colon.

Intestinal Obstruction

- The scarring caused by infection may cause partial or total blockage of the large intestine. When this happens, the colon is unable to move bowel contents normally. When the obstruction totally blocks the intestine, emergency surgery is necessary. Partial blockage is not an emergency, so the surgery to correct it can be planned.

DIAGNOSIS OF DIVERTICULAR DISEASE

To diagnose diverticular disease, the doctor:

- Asks about medical history.
- Will do a physical exam.
- May perform one or more diagnostic tests.

Because most people do not have symptoms, diverticulosis is often found through tests ordered for another ailment.

When taking a medical history, the doctor may ask about:

- Bowel habits.
- Symptoms.
- Pain.
- Diet.
- Medications.

The physical exam usually involves a digital rectal exam. To perform this test, the doctor inserts a gloved, lubricated finger into the rectum to detect tenderness, blockage, or blood. The doctor may check stool for signs of bleeding and do a blood test to look for signs of infection. The doctor may also order x rays or other tests.

TREATMENT

A high-fiber diet and, occasionally, mild pain medications will help relieve symptoms in most cases. Sometimes an attack of diverticulitis is serious enough to require a hospital stay and possibly surgery.

DIVERTICULOSIS

Increasing the amount of fiber in the diet may reduce symptoms of diverticulosis and prevent complications such as diverticulitis. Fiber keeps stool soft and lowers pressure inside the colon so that bowel contents can move through easily. The American Dietetic Association recommends 20 to 35 grams of fiber each day. The table below shows the amount of fiber in some foods that you can easily add to your diet. Adding fiber slowly may decrease the bloating and fullness sometimes felt with an immediate high fiber diet.

AMOUNT OF FIBER IN SOME FOODS

Fruits	
Apple, raw, with skin	1 medium = 3.3 grams
Peach, raw	1 medium = 1.5 grams
Pear, raw	1 medium = 5.1 grams
Tangerine, raw	1 medium = 1.9 grams
Vegetables	
Asparagus, fresh, cooked	4 spears = 1.2 grams
Broccoli, fresh, cooked	1/2 cup = 2.6 grams
Brussels sprouts, fresh, cooked	1/2 cup = 2 grams
Cabbage, fresh, cooked	1/2 cup = 1.5 grams
Carrot, fresh, cooked	1/2 cup = 2.3 grams
Cauliflower, fresh, cooked	1/2 cup = 1.7 grams
Romaine lettuce	1 cup = 1.2 grams
Spinach, fresh, cooked	1/2 cup = 2.2 grams
Summer squash, cooked	1 cup = 2.5 grams
Tomato, raw	1 = 1 gram
Winter squash, cooked	1 cup = 5.7 grams
Starchy Vegetables	
Baked beans, canned, plain	1/2 cup = 6.3 grams
Kidney beans, fresh, cooked	1/2 cup = 5.7 grams
Lima beans, fresh, cooked	1/2 cup = 6.6 grams
Potato, fresh, cooked	1 = 2.3 grams
Grains	
Bread, whole-wheat	1 slice = 1.9 grams
Brown rice, cooked	1 cup = 3.5 grams
Cereal, bran flake	3/4 cup = 5.3 grams
Oatmeal, plain, cooked	3/4 cup = 3 grams
White rice, cooked	1 cup = 0.6 grams

Source: United States Department of Agriculture (USDA).

The doctor may also recommend taking a fiber product such as Citrucel or Metamucil once a day. These products are mixed with water and provide about 2 to 3.5 grams of fiber per tablespoon, mixed with 8 ounces of water.

If cramps, bloating, and constipation are problems, the doctor may prescribe a short course of pain medication. However, many medications affect emptying of the colon, an undesirable side effect for people with diverticulosis.

DIVERTICULITIS

Treatment for diverticulitis focuses on clearing up the infection and inflammation, resting the colon, and preventing or minimizing complications. An attack of diverticulitis without complications may respond to antibiotics within a few days if treated early.

To help the colon rest, the doctor may recommend bed rest and a liquid diet, along with a pain reliever. An *acute* (sudden and sharp) attack with severe pain or severe infection may require a hospital stay. Most acute cases of diverticulitis are treated with antibiotics and a liquid diet. The antibiotics are given by injection into a vein (through an IV). In some cases, however, surgery may be necessary.

WHEN IS SURGERY NECESSARY?

If attacks are severe or frequent, the doctor may advise surgery. The surgeon removes the affected part of the colon and joins the remaining sections. This type of surgery, called colon resection, aims to keep attacks from coming back and to prevent complications. The doctor may also recommend surgery for complications of a fistula or intestinal obstruction.

If antibiotics do not correct an attack, emergency surgery may be required. Other reasons for emergency surgery include:

- A large abscess.
- Perforation.
- Peritonitis.
- Continued bleeding.

Emergency surgery usually involves two operations. The first surgery will clear the infected abdominal cavity and remove part of the colon. Because of infection and sometimes obstruction, it is not safe to rejoin the colon during the first operation. Instead, the surgeon creates a temporary hole, or stoma, in the abdomen. The end of the colon is connected to the hole, a procedure called a colostomy, to allow normal eating and bowel movements. The stool goes into a bag attached to the opening in the abdomen. In the second operation, the surgeon rejoins the ends of the colon.

PRE-SURGICAL & POST-SURGICAL GUIDELINES FOR PATIENTS

These are general sets of instructions and of course some guidelines do not apply when there is an emergency present and an operation must be performed immediately. During such times, surgery is often performed under less than desirable circumstances and the best must be made of this.

PREPARING FOR ELECTIVE (PLANNED & NON EMERGENCY SURGERY)

- Stop herbal supplements two weeks Prior To Surgery (PTS).
- Stop smoking at least two weeks PTS. This lowers risk during surgery. Ask your caregiver for help with this if needed. The benefits are well worth it and this is a good time for a healthy lifestyle change.
- Do not take aspirin within one week PTS unless instructed otherwise. Only take over-the-counter or prescription medicines for pain, discomfort, or fever as directed by your caregiver.
- Do not take anti-inflammatory medications (such as Advil® or Motrin® for example) for forty-eight hours PTS.

- **Notify your caregiver** if you have been on steroids within the past seven days whether taken by mouth or applied to the skin. **THIS IS CRITICAL.**

Your caregiver will discuss possible risks and complications with you before surgery. In addition to the usual risks of anesthesia, other common risks and complications include: blood loss and replacement (usually not applicable to minor surgical procedures); temporary increase in pain due to surgery; uncorrected pain or problems the surgery was meant to correct; infection; or new damage.

For same day surgical patients arrange for someone to take you home from the hospital and to stay with you for twenty-four hours after the procedure. Medications given for your procedure may prevent you from driving a car or caring for yourself. If this has not been done surgery may have to be canceled. Surgery will also be canceled if you fail to follow instructions before surgery.

THE DAY BEFORE SURGERY

- Eat your usual meals and a light supper. Continue fluid intake. No alcohol intake.
- Do not eat or drink after midnight. Your surgery will be canceled if you eat or drink after midnight. Take your usual medications the morning of surgery with a sip of water unless instructed otherwise. Check with your caregiver if unsure.
- **Do not smoke.** The longer time smoking is stopped before surgery, the less likely you will be to have lung problems after surgery.
- Call your caregivers office the morning prior to surgery if you develop an illness or problem which may prevent you from safely having your procedure.

THE MORNING OF SURGERY

- Take medications as directed with a sip of water.
- Bathe or shower. Your caregiver may provide you with a special soap to use.
- Remove makeup, nail polish or jewelry.
- Bring glasses or contact case. Dentures will be removed before surgery.
- Wear loose fitting clothing and low or no heeled shoes.
- If you are a nursing mother ask the anesthetist how long you should wait before nursing again.
- Do not bring un-chaperoned children. Most medical centers are unable to provide for care and supervision of children.

BEFORE SURGERY

You should be present three hours prior to your procedure or as instructed. Check in at the admissions desk or outpatient registration desk for filling out necessary forms if not pre-registered. There will be consent forms to sign prior to the procedure. Bring your insurance information with you.

LET YOUR CAREGIVERS KNOW ABOUT THE FOLLOWING:

- Allergies.
- Medications taken including herbs, eye drops, over the counter medications, and creams.
- Use of steroids (by mouth or creams).
- Previous problems with anesthetics.
- Possibility of pregnancy, if this applies.
- History of blood clots (*thrombophlebitis*).
- History of bleeding or blood problems.
- Previous surgery.
- Other health problems.

There is a waiting area for your family or friends while you are having your surgery.

FOLLOWING SURGERY

- Same day surgery does not mean same day recovery. Healing will take some time. You will have tenderness at the operative site and there may be some swelling and bruising at the wound site or sites. You may have

some nausea. The responsible adult who will take you home should arrange to stay with you the first 24 hours.

- Do not drive for twenty-four hours or until feeling normal again or when instructed by your caregiver. Do not drive while taking prescription pain medications.
- Do not consume alcoholic beverages. Do not smoke and if you do this is a good time to quit permanently.
- Do not make important decisions or sign legal documents. You may resume normal diet and activities as directed.
- Change dressings as directed.
- Only take over-the-counter or prescription medicines for pain, discomfort, or fever as directed by your caregiver.
- Keep all appointments as scheduled and follow all instructions.
- Ask questions if you do not understand something.
- Make sure that you and your family fully understand everything about your operation.

AFTER YOUR SURGERY

- You will be taken to the recovery area where a nurse will monitor your progress.
- When you are awake, stable, and taking fluids well, if there are no other problems, you will be allowed to go home.
- Once home, an ice pack applied to your operative site for fifteen or twenty minutes four times per day may help with discomfort, and keep swelling down.

SEEK IMMEDIATE MEDICAL CARE IF:

- You have increased bleeding (more than a small spot) from wounds or biopsy sites.
- You see swelling or have increasing pain in wounds or biopsy sites.
- You have pus coming from wound.
- There is an unexplained temperature over 101° F (38.3° C).
- There is a bad smell coming from the wound or dressing.
- You develop lightheadedness or feel faint.

FOR MORE INFORMATION

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Most of this information courtesy of the NIH and National Digestive Diseases Information Clearinghouse
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Document Released: 12/13/2007 Document Re-Released: 03/16/2010
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