Colectomy

Surgical Removal of the Colon

American College of Surgeons
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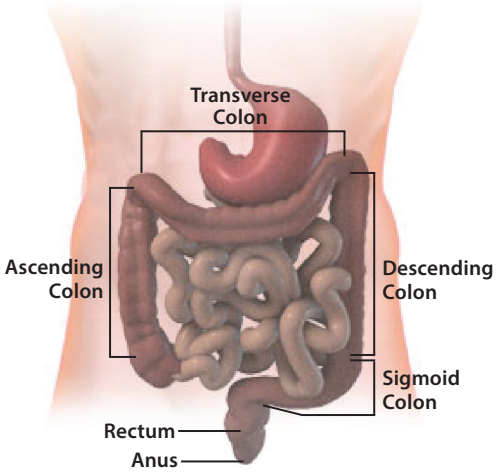
Digestive System



Patient Education

This educational information is to help you be better informed about your operation and empower you with the skills and knowledge needed to actively participate in your care.

Keeping You Informed

Information that will help you further understand your operation and your role in healing.

Education is provided on:

The Condition

A **colectomy** is the removal of a section of the large intestine (colon) or bowel. This operation is done to treat diseases of the bowel, including Crohn's disease and ulcerative colitis; and colon cancer.

Common Symptoms

- Symptoms may include diarrhea, constipation, abdominal cramps, nausea, fever, chills, weakness, or loss of appetite and/or weight loss, or bleeding.
- There may be no symptoms. This is why screening is essential.*

Treatment Options

Surgical Procedure

Open colectomy—An incision is made in the abdomen and the section of the diseased colon is removed. The two divided ends of the colon are sutured (sewn) or stapled together in an **anastomosis**. If the colon cannot be sewn back together, it is brought up through the abdomen to form a colostomy.

Laparoscopic colectomy—A light, camera, and instruments are inserted through small holes in the abdomen to remove the diseased colon or tumor.

Nonsurgical Procedure

Some diseases of the colon are treated with antibiotics, steroids, or drugs that affect the immune system.

Benefits and Risks of Your Operation

Benefits—Removal of diseased or cancerous sections of the intestine will relieve your symptoms and can reduce your risk of dying from cancer.

Possible surgical risks include temporary problems with the intestine that may require a stoma; leakage from the colon into the abdomen; lung problems including pneumonia; infection of the wound, blood, or urinary system; blood clots in the veins or lung; bleeding; fistula; or death.

Risk of not having an operation—Your symptoms may continue or worsen, and your disease or cancer may spread.

Expectations

Before your operation— Evaluation may include a colonoscopy, blood work, urinalysis, chest X-ray, or CAT Scan (CT) of the abdomen.[1] Your surgeon and anesthesia provider will discuss your health history, home medications, and postoperative pain control options.

The day of your operation—You will not eat for 4 hours but may drink clear liquids up to 2 hours before the operation. Medication to clean out your intestines and an antibiotic may be started the day before. Most often you will take your normal medication with a sip of water.

Your recovery—The average length of stay is 3 to 4 days for a laparoscopic or open colectomy.[2] The time from your first bowel movement to eating normally is also about 3 to 4 days.

Call your surgeon if you have continued nausea, vomiting, leakage from the wound, blood in the stool, severe pain, stomach cramping, chills, or a high fever (over 101°F or 38.3°C), odor or increased drainage from your incision, a swollen abdomen or no bowel movements for 3 days.

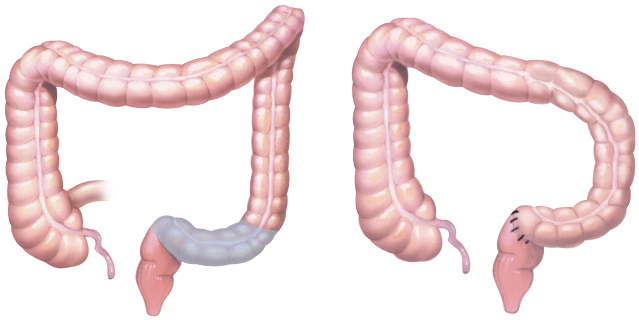
SURGICAL PATIENT EDUCATION PROGRAM
Prepare for the Best Recovery

*See ACS colonoscopy resource: *facs.org/~/media/files/education/patient%20ed/colonoscopy.ashx*

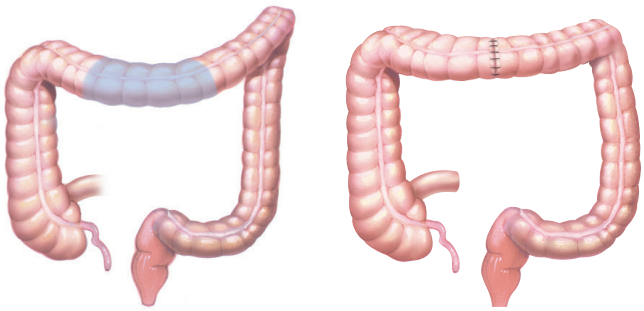
This first page is an overview. For more detailed information, review the entire document.

The Condition, Symptoms, and Diagnostic Tests

Sigmoid Colectomy (Sigmoidectomy)
Part or all of the sigmoid colon is removed.
The descending colon is then reconnected to the rectum.



Segmental Resection
One or more short segments of the colon are removed.
The remaining ends of the colon are reconnected.

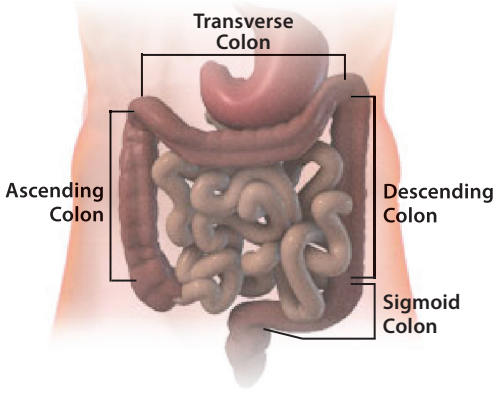


The Condition

There are different types of conditions and diseases that may affect the intestines:

- **Inflammatory bowel diseases** include ulcerative colitis and Crohn's disease.
- **Ulcerative colitis** presents as ulcers (tiny open sores) in the inner layer of the colon and includes bloody diarrhea and abdominal pain.[3]
- **Crohn's disease** is the inflammation of the entire lining of the digestive tract, with 15% of cases in the colon only.[4] This usually presents with continual diarrhea and abdominal pain.[5]
- **Diverticulitis** is an inflammation or infection of small, bulging pouches (diverticula) located in the colon.
- **Colorectal polyp** is any growth on the lining of the colon or rectum.
- **Colorectal cancer** is a malignant (cancerous) tumor in the colon or rectum.

Parts of the Colon



The Procedure

There are different procedures to treat diseases of the bowel and intestines:

- A **colectomy** is an operation to remove a part of the intestine (bowel) that is diseased. The name of the procedure depends on what section of the intestine is removed.
- **Right hemicolectomy** is the removal of the ascending (right) colon.
- **Left hemicolectomy** is the removal of the descending (left) colon.
- **Sigmoidectomy** is the removal of the lower part of the colon which is connected to the rectum.
- **Low anterior resection** is the removal of the upper part of the rectum.
- **Segmental resection** is the removal of only a short piece of the colon.
- **Abdominal perineal resection** is the removal of the sigmoid colon, rectum and anus and construction of a permanent colostomy.
- **Total colectomy** is when the entire colon is removed and the small intestine is connected to the rectum.
- **Total proctocolectomy** is the removal of the rectum and all or part of the colon.

Symptoms

The most common symptoms are:

- Diarrhea, constipation, abdominal cramps, nausea, loss of appetite, or weight loss
- Fever, chills, or weakness

Common Tests

History and Physical Exam

You will be given a physical exam and asked about you and your family's complete medical history, including symptoms, pain, and stomach problems.

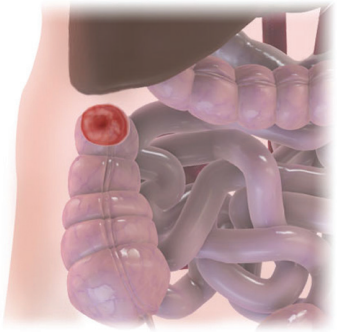
Additional Tests (see Glossary)

Other tests may include:

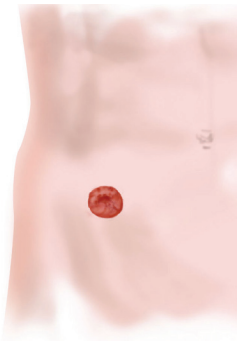
- Blood tests
- Urinalysis
- Digital rectal exam
- Abdominal X-ray
- Abdominal ultrasound
- Colonoscopy
- Computerized tomography (CT) scan
- Electrocardiogram (ECG)—for patients over 45 or if high risk of heart problems

Surgical and Nonsurgical Treatment

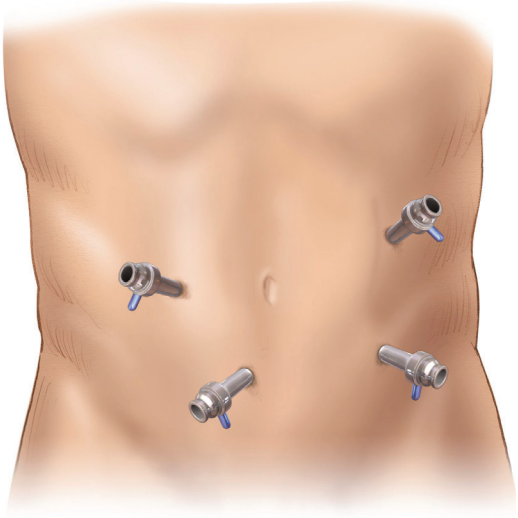
Stoma Interior



Abdominal Stoma Surface



Laparoscopic Repair



Surgical Treatment

A colectomy can be done by open or laparoscopic repair. The type of operation will depend on the condition, size of the diseased area or tumor, and location. Your health, age, anesthesia risk, and the surgeon's expertise are also important.

Open Colectomy

An incision is made in the abdomen and the diseased section of the colon is removed. The healthy parts of the colon are then stitched or stapled together (anastomosis). If the colon cannot be sutured back together, the colon is brought up through an opening on the abdominal wall (stoma) to form an ostomy. Waste will empty through the ostomy into a pouch that is fixed around the stoma on the abdomen.

Laparoscopic Colectomy

Several small incisions are made in the abdomen. Ports or hollow tubes are inserted into the openings. Surgical tools and a lighted scope are placed through the ports. The abdomen is then inflated with carbon dioxide, which allows the surgeon to see the intestines and organs clearly. Small instruments inserted through the ports are used to remove diseased colon or a tumor. If the colon cannot be sewn back together, the ends of the intestine are joined together or a stoma is created.

Benefits of Laparoscopic Colectomy

Benefits include less scarring, earlier return of colon function, less pain, and shorter hospital stays.[6] There has been no difference between laparoscopic and open colectomy for 5-year cancer survival rates.[7] New studies using enhanced recovery protocols with the laparoscopic approach are showing decreasing complications, hospital stay, and decreasing readmissions.[8]

Nonsurgical Treatment

Some diseases of the intestines may be treated with medication. Depending on the stage of cancer, radiation and chemotherapy may also be part of the treatment plan.

Keeping You Informed

Conversion

Your surgeon may need to convert from a laparoscopic colectomy to an open colectomy. This may be needed due to:[9]

- Adhesions from prior surgery
- Bleeding
- Obesity
- Inability to see important structures
- Presence of a large tumor
- Inability to complete the operation

Patients whose operations were converted from laparoscopic to an open colectomy did not have adverse short- or long-term effects.[9] In a large study with over 41,585 patients having a colectomy, Laparoscopy was successfully performed while 2,508 (5.8%) patients required conversion to an open procedure.[10]

Risks of These Procedures

Risks Based on the ACS Risk Calculator*

Partial Colectomy with Anastomosis Procedure from the ACS Risk Calculator – March 5, 2019

Risks	Average Patient Percentage	Keeping You Informed
Pneumonia: Infection in the lungs	2.6%	Stopping smoking before your operation and taking deep breaths plus getting up and walking after can help prevent pneumonia.
Heart complication: Heart attack or sudden stopping of the heart	1.1%	Problems with your heart or lungs can sometimes be worsened by general anesthesia. Your anesthesia provider will take your history and suggest the best option for you.
Wound Infection	10.7%	Antibiotics are generally given before the surgery. You may be asked to use special soap before and after your surgery.
Urinary tract infection: Infection of the bladder or kidneys	1.9%	A Foley catheter may remain in the bladder a few days after surgery to drain the urine. Adequate fluid intake and catheter care decrease the risk of bladder infection.
Blood clot: A clot in the legs that can travel to the lung	2%	Longer surgery and bed rest increase the risk. Getting up, walking 5 to 6 times/day, and wearing support stockings reduce the risk.
Renal (kidney) failure: Kidneys no longer function in making urine and/or cleaning the blood of toxins	1.2%	Pre-existing renal insufficiency, fluid imbalance, Type 1 diabetes, over 65 years of age, antibiotics, and other medications may increase the risk.
Return to surgery	6.1%	Bleeding or a bowel leakage may cause a return to surgery. Your surgical and anesthesia team is prepared to reduce all risks of return to surgery.
Death	1.5%	Your surgical team will review for possible complications and be prepared to decrease all risks.
Discharge to nursing or rehabilitation facility	8.4%	
Risk of anastomotic leak: A leak from the connection that is made between two ends of the intestine	4.1%	Increased age, emergency surgery, obesity, the use of steroids for inflammation and chemotherapy, and radiation as well as smoking and alcohol before surgery may increase the risk.[11] **Ask your surgeon about risks for people like me.**

**1% means that 1 of 100 people will have this complication*

The ACS Surgical Risk Calculator estimates the risk of an unfavorable outcome. Data is from a large number of patients who had a surgical procedure similar to this one. If you are healthy with no health problems, your risks may be below average. If you smoke, are obese, or have other health conditions, then your risk may be higher. This information is not intended to replace the advice of a doctor or health care provider. To check your risks, go to the ACS Risk Calculator at *riskcalculator.facs.org.*

Expectations: Preparation and Expectations

Preparing for Your Operation

Home Medication

Bring a list of all of the medications, vitamins, and nutritional supplements that you are taking. Your medication may have to be adjusted before your operation. Some medications can affect your recovery, blood clotting, and response to the anesthesia. Most often you will take your morning medication with a sip of water.

Anesthesia

Let your anesthesia provider know if you have allergies, neurologic disease (epilepsy, stroke), heart disease, stomach problems, lung disease (asthma, emphysema), endocrine disease (diabetes, thyroid conditions), or loose teeth; if you smoke, drink alcohol, use drugs, or take any herbs or vitamins; or if you have a history of nausea and vomiting with anesthesia.

If you smoke, you should let your surgical team know. You should plan to quit. Quitting before your surgery can decrease your rate of respiratory and wound complications and increase your chances of staying smoke-free for life. Resources to help you quit may be found online at *facs.org/quitsmoking* or *lungusa.org/stop-smoking*.

Length of Stay

You may stay in the hospital for about 2 nights after a laparoscopic repair or longer after an open colectomy.[12] You may have a catheter in place in your bladder to measure and drain your urine for a few days. Severe nausea, vomiting, or the inability to pass urine may result in a longer stay.

The Day of Your Operation

- Do not eat for 4 hours or drink anything but clear liquids for at least 2 hours before the operation.
- Shower and clean your abdomen and groin area with a mild antibacterial soap.
- Brush your teeth and rinse your mouth out with mouthwash.
- Do not shave the surgical site; your surgical team will clip the hair nearest the incision site.

What to Bring

- Insurance card and identification
- Advance directive
- List of medicines
- Loose-fitting, comfortable clothes
- Slip-on shoes that don't require you to bend over
- Leave jewelry and valuables at home

What You Can Expect

An identification (ID) bracelet and allergy bracelet with your name and hospital/clinic number will be placed on your wrist. These should be checked by all health team members before they perform any procedures or give you medication. Your surgeon will mark and initial the operation site.

Fluids and Anesthesia

An intravenous line (IV) will be started to give your fluids and medication. For general anesthesia, you will be asleep and pain-free. A tube will be placed down your throat to help you breathe during the operation.

After Your Operation

You will be moved to a recovery room where your heart rate, breathing rate, oxygen saturation, blood pressure, and urine output will be closely watched. Be sure that all visitors wash their hands.

Preventing Pneumonia and Blood Clots

Movement and deep breathing after your operation can help prevent postoperative complications such as blood clots, fluid in your lungs, and pneumonia. Every hour, take 5 to 10 deep breaths and hold each breath for 3 to 5 seconds.

When you have an operation, you are at risk of getting blood clots because of not moving during anesthesia. The longer and more complicated your surgery, the greater the risk. This risk is decreased by getting up and walking 5 to 6 times per day, wearing special support stockings or compression boots on your legs, and, for high-risk patients, taking a medication that thins your blood.

Questions to Ask

About My Home Medications

- What medications should I stop taking before my operation?
- Should I take any medicines on the day of my operation?

About My Operation

- What are the risks and side effects of general anesthesia?
- What procedure will be used to repair the colon? Laparoscopic or open?
- Will the colon be sutured or do I need to be trained how to care for an ostomy?
- What are the risks of this procedure?
- Will you be performing the entire procedure yourself?
- What level of pain should I expect and how will it be managed?
- How long will it be before I can return to my normal activities—work, driving, and lifting?

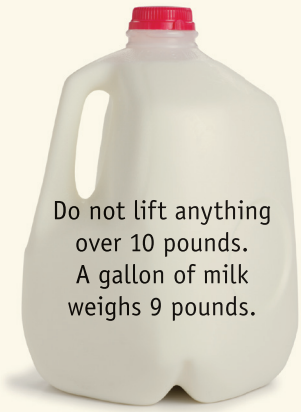
Your Recovery and Discharge

Keeping You Informed

If You Have a Stoma

If you have a stoma constructed, your stool will pass through it into a special pouch that is attached to the skin around the stoma. The pouch will have an opening at the end for the stool to drain through. It will need to be changed daily. Before you leave the hospital, you will be shown how to care for your stoma and supplies. Some stomas may be temporary and closed at a later date, while others may be permanent, depending on your diagnosis and surgery.

You can learn more about how to care for your stoma by reviewing the American College of Surgeons Ostomy Home Skills Kit available online at *facs.org/adultostomy*. You will continue to have support in the care of your stoma once you're home and caring for it will become part of your routine if it is permanent.



Your Recovery and Discharge

Thinking Clearly

If general anesthesia is given or if you need to take narcotics for pain, it may cause you to feel different for 2 or 3 days, have difficulty with memory, or feel more tired. You should not drive, drink alcohol, or make any big decisions for at least 2 days.

Nutrition

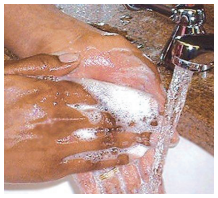
If you follow an enhanced recovery protocol, the aim is to return to a normal diet as soon as possible. Right after surgery, you will be able to drink water and be provided with anti-nausea medication if you need it. On postoperative day 1, you can eat a normal diet. IV fluids will continue for 1 to 2 days after the surgery. For up to 4 weeks, a low-residue/low-fiber diet is recommended to reduce the amount and frequency of stools. This reduces trauma to the healing intestinal reconnection.[13] Continue to drink about 8 to 10 glasses of fluid per day. A dietician can help you understand your diet.

Activity

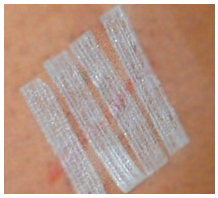
- After surgery, you will sit in a chair. The next day, you should be up and walking the hallway. Your pain should be managed with pain medication. Get up and walk every hour or so to prevent blood clot formation.
- You may be able to resume most normal activities in 1 or 2 weeks. These activities include showering, driving, walking up stairs, working, and engaging in sexual activity.[14]

Work and Return to School

- You may return to work after you feel healthy, usually 1 to 2 weeks after laparoscopic repair and 2 to 3 weeks for open procedures.
- You will not be able to lift anything over 10 pounds, climb, or do strenuous activity for 4 to 6 weeks following surgery.



Handwashing



Steri-Strips®

Wound Care

To learn more about how to care for your wound, go to *facs.org/woundcare*.

- Always wash your hands before and after touching near your incision site.
- Do not soak in a bathtub until your stitches, Steri-Strips®, or staples are removed. You can usually shower within 2 days unless you are told not to.
- A small amount of drainage from the incision is normal. If the dressing is soaked with blood, call your surgeon.
- If you have Steri-Strips in place, they will fall off in 7 to 10 days.
- If you have a glue-like covering over the incision, allow the glue to flake off on its own.
- Avoid wearing tight or rough clothing. It may rub your incisions and make it harder for them to heal.
- Protect your new skin, especially from sun. The sun can burn and cause darker scarring.
- Your scar will heal in about 4 to 6 weeks and will become softer and continue to fade over the next year.

Bowel Movements

In the first 2 weeks, your bowel movements may be more frequent and looser than usual until you fully resume eating solid food. Avoid straining with bowel movements. Be sure you are drinking 8 to 10 glasses of fluid each day.

Pain

The amount of pain is different for each person. The new medicine you will need after your operation is for pain control, and your doctor will advise how much you should take. You can use throat lozenges if you have sore throat pain from the tube placed in your throat during your anesthesia.

When to Contact Your Surgeon

Contact your surgeon if you have:

- Pain that will not go away
- Pain that gets worse
- A fever of more than 101°F (38.3°C)
- Repeated vomiting
- Swelling, redness, bleeding, or bad-smelling drainage from your wound site
- Strong or continuous abdominal pain or swelling of your abdomen
- No bowel movement 2 to 3 days after the operation

Pain Control

The amount of pain you have after a colectomy will depend on your other health factors and how much of your colon was removed. After your surgery, you may have a patient-controlled anesthesia pump (PCA). You will have a button that you push when you start to feel it's time for pain medicine. The pump is set so that you cannot get too much medicine. You may have this pump until you are able to eat and take pain medicine by mouth.

Everyone reacts to pain in a different way. A scale from 0 to 10 is used to measure pain. At a "0," you do not feel any pain. A "10" is the worst pain you have ever felt. Following a laparoscopic procedure, pain is sometimes felt in the shoulder. This is due to the gas inserted into your abdomen during the procedure. Moving and walking help to decrease the gas and the shoulder pain.

Non-Narcotic Pain Medication

Most non-opioid analgesics are classified as non-steroidal anti-inflammatory drugs (NSAIDs). They are used to treat mild pain and inflammation or are combined with narcotics to treat severe pain. Possible side effects of NSAIDs are stomach upset, bleeding in the digestive tract, and fluid retention. These side effects usually are not seen with short-term use. Let your doctor know if you have heart, kidney, or liver problems. Examples of NSAIDs include ibuprofen, Motrin®, Aleve®, and Toradol® (given as a shot).

Narcotic (Opioid) Pain Medication

Narcotics or opioids are used when you cannot function due to severe pain. Possible side effects of narcotics are sleepiness, lowered blood pressure, heart rate, and breathing rate; skin rash and itching; constipation; nausea; and difficulty urinating. Some examples of narcotics include morphine, oxycodone (Percocet®/Percodan®), and hydromorphone (Dilaudid®). Medications can be given to control many of the side effects of narcotics.

To learn more about safe and effective pain control and how to dispose of all unused opioids, go to *facs.org/safepaincontrol*.

OTHER INSTRUCTIONS

FOLLOW-UP APPOINTMENTS

WHO:

DATE:

PHONE:

Keeping You Informed

Pain Control without Medicine

Distraction helps you focus on other activities instead of your pain. Listening to music, playing games, or other engaging activities can help you cope with mild pain and anxiety.

Guided imagery helps you direct and control your emotions. Close your eyes and gently inhale and exhale. Picture yourself in the center of somewhere beautiful. Feel the beauty surrounding you and your emotions coming back to your control. You should feel calmer.

Distraction

Guided imagery

More Information

For more information, please go to the American College of Surgeons Patient Education website at facs.org/patient education.
For a complete review of colectomy, consult Selected Readings in General Surgery, *"Colon, Rectum & Anus, Part II," 2015 Vol. 41 No. 5 at* facs.org/SRGS.

GLOSSARY

Advance directives: Documents signed by a competent person giving direction to health care providers about treatment choices.

Anastomosis: The connection of two structures, like two ends of the intestines.

Computerized tomography (CT) scan: A diagnostic test using X-ray and a computer to create a detailed, three-dimensional picture of your abdomen. A CT scan is commonly used to detect abnormalities or disease inside the abdomen.

Electrocardiogram (ECG): Measures the rate and regularity of heartbeats as well as any damage to the heart.

General anesthesia: A treatment with certain medicines that puts you into a deep sleep so you do not feel pain during surgery.

Hematoma: A collection of blood that has leaked into the tissues of the skin or in an organ, resulting from cutting in surgery or the blood's inability to form a clot.

Ileus: A decreased motor activity of the digestive tract due to nonmechanical causes.

Local anesthesia: The loss of sensation only in the area of the body where an anesthetic drug is applied or injected.

Nasogastric tube: A soft plastic tube inserted in the nose and down to the stomach. It is used to empty the stomach of contents and gases to the rest of the bowel.

Stoma: An artificial opening of the intestine or urinary tract onto the abdominal wall.

Ultrasound: Sound waves are used to determine the location of deep structures in the body. A hand roller is placed on top of clear gel and rolled across the abdomen.

Urinalysis: A visual and chemical examination of the urine, most often used to screen for urinary tract infections and kidney disease.

DISCLAIMER

This information is published to educate you about your specific surgical procedures. It is not intended to take the place of a discussion with a qualified surgeon who is familiar with your situation. It is important to remember that each individual is different, and the reasons and outcomes of any operation depend upon the patient's individual condition.

The American College of Surgeons (ACS) is a scientific and educational organization that is dedicated to the ethical and competent practice of surgery; it was founded to raise the standards of surgical practice and to improve the quality of care for the surgical patient. The ACS has endeavored to present information for prospective surgical patients based on current scientific information; there is no warranty on the timeliness, accuracy, or usefulness of this content.

Reviewed 2014 and 2015;
Revised 2019 by:
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SURGICAL PATIENT EDUCATION PROGRAM
Prepare for the Best Recovery

REFERENCES

The information provided in this report is chosen from recent articles based on relevant clinical research or trends. The research below does not represent all that is available for your surgery. Ask your doctor if he or she recommends that you read any additional research.

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