

# ILEO-POUCH ANAL ANASTOMOSIS GUIDEBOOK

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## Introduction

### THE DIGESTIVE SYSTEM

To understand the ileoanal procedure, you must first understand the digestive system.

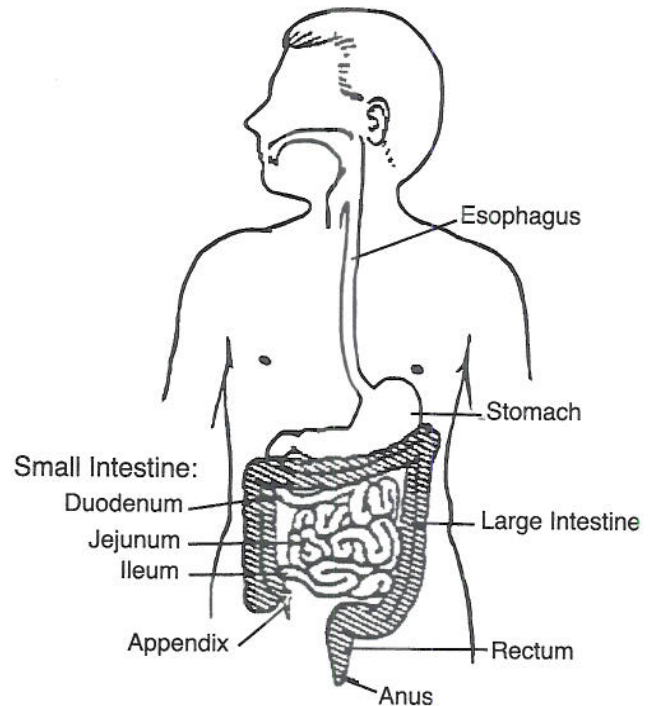
The digestive system starts at the mouth where food is ingested and breakdown begins. Muscle contractions propel the food down the esophagus into the stomach where it is mixed with various digestive enzymes.

By the time the food leaves the stomach, it is a ground-up slurry. Once out of the stomach, the food mixes with other enzymes from the liver and pancreas, all of which continue to break the food down into its molecular components. These substances are then absorbed through the **small intestine**, or **small bowel**.

A normal individual has about 15 feet of small bowel, but can get by with substantially less. Food is absorbed as it travels through the small bowel in about four hours. The food then passes into the large intestine, also known as the colon. By now, all of the nutritional substances have been absorbed.

The primary function of the **colon** is to absorb water and store the waste, called stool. The average person has about eight feet of colon. Stool enters the right colon in a liquid state and then travels to the left colon where most of the water is absorbed. This may take one or two days, during which time most of the water is removed. The stool is then pushed into the rectum causing the urge to have a bowel movement.

The function of the **rectum** is primarily storage. To be an adequate storage area, the rectum must have capacity and it also must be flexible. This means



that as the rectum distends (stretches), there should be very little increase in pressure—much like an old balloon that inflates easily. If the rectum is rigid and does not expand easily (as with inflammatory bowel disease), it does not have good capacity, generates high pressure in the rectum, and the patient is plagued by stool urgency and frequency.

The **anus** is essentially a plug that offers resistance so that stool can be stored in the rectum until there is a socially convenient time to eliminate it.

### DIGESTIVE SYSTEM DISORDERS

Sometimes the digestive system does not work perfectly. Genetic disorders may cause patients to develop cancers or precancerous polyps. This is known as *familial polyposis* or *multiple polyposis syndromes*. There is no way to prevent or cure these disorders. The only treatment is removal of the colon to prevent polyp formation.

Other patients have inflammatory conditions of the colon. Traditionally, inflammations that are caused by a particular organism are called *specific colitis*. If a specific organism cannot be found then the inflammation is termed non-specific colitis.

Non-specific colitis can be divided into *Crohn's disease* and *ulcerative colitis*. About 30% of Crohn's disease cases involve only the large intestine, about 30% involve the small intestine and another 30% involve both the large and small intestines. This disease is characterized by areas of normal and abnormal tissue. In those areas of abnormal tissue, the disease will extend throughout the entire thickness of the bowel wall. This full thickness involvement can result in breakdown of the bowel, abscesses and fistulas.

Ulcerative colitis is limited to the colon. It begins at the anus and progresses upward. It involves varying lengths of the colon, but is usually superficial and only involves the bowel lining. Abscess or fistula formation is rare. However, there is an increased cancer risk in patients with ulcerative colitis. This risk is usually only significant when the entire colon is involved. The risk increases after seven or eight years of total colonic involvement, and may increase by as much as 2% per year thereafter. Both diseases may have life-threatening complications including bowel perforation, severe infection and massive hemorrhage, which are easily diagnosed.

## SURGICAL OPTIONS

There are two decisions that a patient with inflammatory bowel disease will need to make. The first is whether to have an operation, and the second is which operation to have.

There are only three reasons why one should decide to have surgery. These are: the risk of malignancy, life-threatening complications, and medical intractability. Only you can make the decision as to whether surgery is appropriate.

If you decide that surgery is appropriate, the next decision is which operation to have. There are four different operations to consider; all four are acceptable, however, each one has advantages and disadvantages. You must weigh those and decide which surgery is right for you.

### Brooke Ileostomy

The first option is the **Brooke ileostomy**. The word ileostomy comes from *ileum*, the lowest part of the small intestine (bowel), and *stoma*, or opening. An ileostomy creates an opening at the end of the small bowel. The bowel is then brought out through a small hole in the abdominal wall where the liquid intestinal contents can flow out of the body at any time. An external bag must be worn over the opening at all times to collect the stool.

An ileostomy is a simple procedure that has been around for more than 50 years and its complications are well known. It allows for a high quality of life and will not limit your lifestyle any more than you choose to let it. Nevertheless, it does require an external appliance and, for either social or psychological reasons, many patients seek to avoid it.

### Continent Ileostomy

The second option is a continent ileostomy, also known as a **Kock pouch**, **T-pouch**, or **Barnett pouch**. These are internal reservoirs surgically created from the small bowel. The end of the small bowel is brought out through the abdomen. The opening is generally flush with the abdominal wall and an

external appliance is not routinely needed. The advantage to this option is that it avoids the use of a permanent external bag.

The disadvantage is that it still requires an opening in the abdominal wall. The internal reservoir must be emptied of stool at least three times per day. This is done by inserting a tube through the abdominal opening into the internal reservoir. In about 20% of cases, stool begins to leak out of the opening. If it does leak, another major operation will be necessary to correct the problem. Although it was a common procedure 30 years ago, it is now rarely performed in patients who are having their colon removed.

### **Abdominal Colectomy and Ileorectal Anastomosis.**

The third option is to remove the colon but leave the rectum alone, attaching it directly to the small bowel. This is called an **abdominal colectomy and ileorectal anastomosis**. This option is not available to many. In most patients the rectum is too severely diseased to allow it to remain in place. However, in about 10% of patients, the rectum can be salvaged. This option offers the advantage of a one-stage operation that eliminates most of the disease.

The disadvantage is that the remaining rectum can become diseased or develop cancer. Some surgeons argue that the results are so good with the ileoanal procedure, ileorectal anastomosis should no longer be used. However, this option is attractive in that it does not burn any bridges. If the remaining rectum does show signs of disease or cancer, which happens in about half of the cases, it can be removed and one of the other alternatives can then be performed.

The fourth and final option, and the focus of this booklet, is the pull-through, or **ileoanal procedure**. This is the most commonly performed procedure today for patients with ulcerative colitis or familial polyposis.

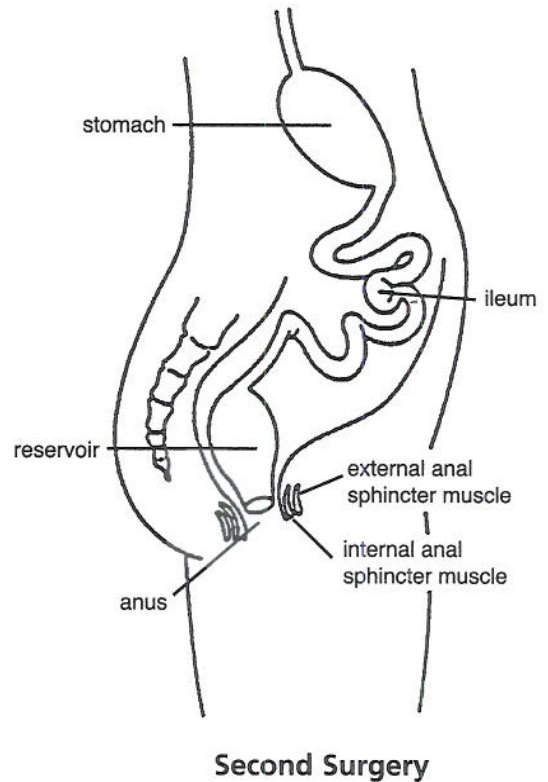
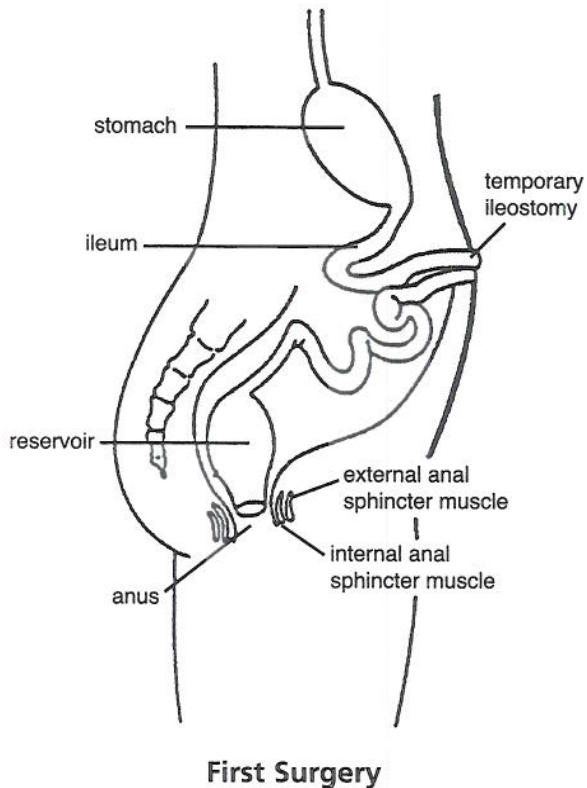
### **Ileoanal Procedure**

With the **ileoanal procedure**, the entire colon and rectum is removed, but the anus is preserved. A small segment of the lowest part of the rectum also may be preserved to facilitate putting the bowel back together. If it is possible to save these one or two centimeters of rectum, bowel sensitivity and control seems to be improved.

When this operation is performed, a temporary diverting ileostomy is usually done. This ileostomy will remain in place until the patient is off all medications, is feeling well, and has regained preoperative strength. It can be closed no sooner than six weeks after the initial operation. After stoma closure, the patient should anticipate an adjustment period of several months. Later, when the pouch is mature, the patient can expect five to seven bowel movements per day. However, it is not the number of bowel movements that is most important, but the fact that there should be minimal urgency associated with the bowel movements.

For some patients, the stool frequency is a problem. If your lifestyle involves spending extended time in areas where a bathroom is not available, then perhaps the ileoanal approach is not a good option.

## ILEOANAL PROCEDURE



Rolstad, B and Rothberger, D. Ileoanal Reservoir: Current Management. 1992  
Permission granted to use drawings with appropriate credit given. Bonnie Rolstad (October 7, 1996)

### FIRST SURGERY (Creation of the pouch)

A temporary ileostomy is created to divert the small bowel contents away from the newly created reservoir so it may heal.

### SECOND SURGERY (Closure of the ileostomy)

1. Approximately six weeks after the first surgery, the ileostomy is closed.
2. Food now enters the mouth, moves into the stomach, then through the small intestine into the reservoir.
3. Waste is stored in the reservoir until the need to have a bowel movement. Stool is then passed through the anus.

## First Surgery (creation of the pouch)

### PREPARING FOR SURGERY

During the surgery, your entire colon and rectum is removed, but your anus is preserved. If possible, a very short segment of the lowest part of the rectum may be preserved to facilitate putting the bowel back together.

Usually, you will begin your **bowel preparation** one day prior to surgery. We have learned that cleansing the bowel helps reduce the risks of infection and surgical complications.

The bowel preparation generally involves two parts. The first is a brief **restriction of the diet** to liquids, while at the same time taking some form of **oral laxative**. There is a large selection of laxative solutions, such as “Go Lightly” or “New Lightly,” that will wash the bowel and colon clean of all debris. Smaller volume laxatives such as “Phosphosoda” or “Magnesium Citrate” will cause increased colon activity, and similarly clean the colon. Patients will have their individual preferences, and we are happy to work with you to identify the preparation that is most tolerable to you.

The second stage of the bowel preparation uses **antibiotics** to help minimize the risk of infection. These include antibiotics that are not absorbed and help decrease the bacterial count in the colon, and those that are absorbed by virtue of being present in the tissue at the time of surgery. These bowel preparations have been developed carefully over the last 30 years. Although some patients find them to be unpleasant, they are worth the time and effort to prepare the bowel for surgery.

In addition to the bowel preparation, you will also be instructed in the use of an **incentive spirometer**. This is a device that helps to keep the lungs inflated and minimize the risks of pneumonia after surgery. You should make every effort to practice with this so that you will be effective with it following surgery.

Prior to surgery, you will visit with an **enterostomal therapist** (ET nurse). The ET nurse will discuss the management of your ileostomy with you, give you materials to help you understand the role of an ileostomy, and mark the best location for the placement of the ileostomy. Although this operation can be done with or without a temporary diverting ileostomy, all patients are marked for an ileostomy in the event that one is necessary.

The location of the **ileostomy mark** will be selected based on several criteria that are specific to you. First, the location is limited to an area approximately halfway between your right hip and your navel. Second, it must be on the muscle running up and down the abdomen. Third, the ET nurse will discuss with you any personal or physical needs you may have, such as wheelchairs, work requirements or other physical limitations. The ileostomy should not be located where you wear a belt or in a crease or fold of the skin where it would make appliance placement difficult.

## ILEO-POUCH ANAL ANASTOMOSIS (IPAA)

In this operation, the surgeon will make an incision in the middle of your abdomen through which the diseased colon and upper rectum are removed. The lining of the lower rectum is removed to prevent disease recurrence. The anal sphincter muscles will remain in place to provide control of bowel movements.

The internal pouch, which is J shaped, is made from the end portion of the small intestine, called the ileum. (figure 1) The pouch is pulled down and sutured to what remains of the rectum. (figure 2) Eventually, this pouch will take the place of the removed rectum by storing stool between bowel movements.

### Making the Internal Pouch

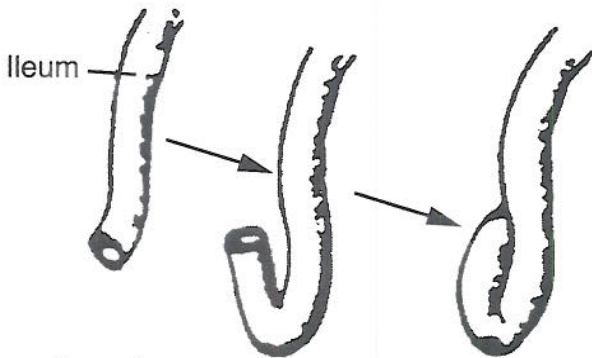


Figure 1

### Ileo-Pouch Anal Anastomosis

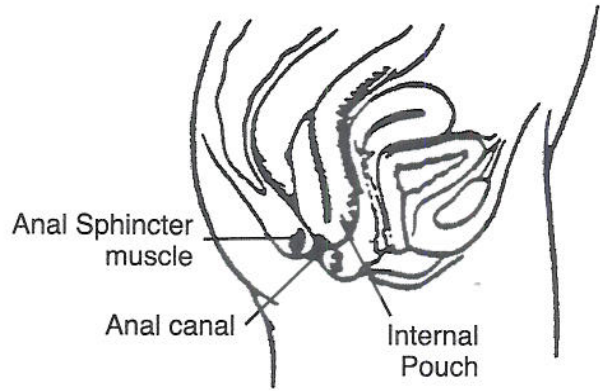


Figure 2

In most cases, a temporary ileostomy is made to divert the stool so that the internal pouch can heal. A small portion of the ileum is brought out through the abdominal wall. (figure 3) The opening, or stoma, is usually on the right side of the abdomen. The stoma will protrude slightly—about 1/2 inch. If you are having a two-stage procedure, you will have the temporary ileostomy for about six to eight weeks.

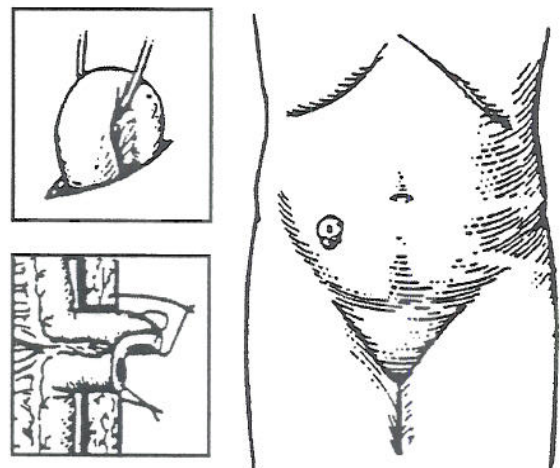


Figure 3

## AFTER THE FIRST SURGERY

After your operation, you will spend two to three hours in the recovery room. You will start your **cough and deep breathing exercises** there. You will find that a **catheter** has been inserted into your bladder. This catheter drains your urine and will usually be removed within three to four days. In addition, you will have two **wound drains** called Jackson-Pratts inserted in your abdomen to remove excess fluid from the surgical area. These will be removed once the drainage decreases, usually in about five days. After you are in your room you will begin using your **incentive spirometer** about ten times per hour. This is important because it will help inflate your lungs and decrease your risk of pneumonia.

### Post-Operative Pain Control

There are various methods for controlling pain. One very effective method is called an **epidural**. This is the pain control that is commonly used during childbirth. Although not every patient is a candidate for an epidural, it seems to be the best way to control pain when it can be used.

To administer the epidural, an anesthesiologist will insert a small needle into your lower back along your spine. A tiny tube is then threaded through the needle and left in place next to the spinal nerves. These nerves are then bathed with pain medication. Because a small amount can be used to obtain good pain control, generally less medication is necessary and there are fewer side effects. Occasionally, there is weakness or numbness in one leg. This is temporary and can be corrected by reducing the medication dosage.

The next most common method of pain control is a PCA pump, or **patient controlled analgesia pump**. This allows you to give yourself an intravenous dose of morphine or Demerol on demand. You will have a button to push that delivers the medication. Controls exist in the machine so that you cannot give yourself too much. You must caution relatives that they are not to push this button—only you should push it.

There are various types of **injectable medications** that can be used if you are allergic to morphine or Demerol, or find their side effects unacceptable. As soon as possible, we will switch you to **oral medications**. These will be given for the first week or two when you are home. After that, it is unlikely that you will need to continue taking narcotic pain medications.

### Diet

The first few days after your operation, you will get your nourishment intravenously. When your intestines begin to work again, and gas and stool are able to pass through, you will be started on clear liquids. You will advance to a normal diet by the time of your discharge.

### Activity

Activity is very important for your recovery. It helps speed up the return of normal body functions and helps you avoid complications like pneumonia and blood clots. The day after your surgery, your nurse will help you to walk. At first, you will walk only a few steps, gradually increasing daily.



## DISCHARGE TO HOME

Remember, you just had major surgery. When you get home, you will continue to experience a moderate amount of pain and you will be surprised at how easily you will tire. Fatigue, in fact, is the most common complaint by recovering patients.

### **Your Incision** (*yes, you may shower*)

After you return home, you may experience slight drainage from the incision. Do not worry about this drainage; just protect your clothing. It is very difficult to cause infections at this time, so you can shower or bathe as you choose—even though the wound may be draining.

### **Prescription Refills**

The quickest way to obtain a new supply of your medications is to have your pharmacist call our office at (323) 865-3690. Allow at least one full day to process refills. Don't wait until you are out of your medications to call.

### **Diet**

Once you are home, you may eat or drink anything you like. You may find that some foods, such as raw vegetables or greasy foods, will cause you to have excessive gas. This is because the antibiotics that were given to you may have changed the bacteria in your body. If you do experience excessive gas from certain foods, wait a week or two and try these foods again.

### **Activity**

Do not do any heavy lifting (more than 10 pounds) for the first few weeks following surgery. You are encouraged to develop a modest exercise program of walking. This will improve your circulation, help speed your recovery and generally make you feel better. You may walk as much or as often as you like, but when you are tired, rest or take a nap.

### **Driving**

You may ride in a car following your surgery, but do not drive until you are off all narcotic pain medication and you are sure that you can drive safely. In particular, your mobility must have returned to the point where you can hit the brake quickly.

### **Post-Operative Appointments**

To simplify your recovery period, we try to avoid unnecessary trips to our office immediately following your surgery. If there are any problems, we will want to see you promptly. If you are doing well, we want to see you about six weeks following surgery. At this time, we will see you in the office and review your final dismissal instructions with you.

### **Problems**

If you are feeling well, and believe you are making satisfactory progress, you most likely are. If you are having a problem, it will not be subtle. At that point we want you to call promptly rather than waiting until the next appointment or call from our office.

## PELVIC FLOOR MUSCLE (ANAL SPHINCTER) EXERCISE

You may begin pelvic floor muscle exercises in the hospital after the bladder catheter has been removed. A pelvic floor muscle exercise (also called a Kegel exercise) is a contraction and relaxation of the pelvic floor muscles. These muscles work with the sphincter muscles, which surround the urethra, rectum and vaginal opening (in women). When you contract these muscles, the urethra and the anus close to hold in urine, gas and stool.

You will need to strengthen your pelvic floor muscles through regular exercise. The abdomen, buttock and thigh muscles are not part of the pelvic muscles and must remain relaxed when you do your pelvic floor exercises. Initially, the thigh or buttock muscles may be involved, but it is important that the abdominal muscles remain relaxed.

Your exercises should be done six times every day—twice each in the morning, afternoon and night. Do five to six repetitions each set. Then wait at least an hour between sets to avoid muscle fatigue. For the first few weeks, do the exercises on your back. Later, you can progress to the sitting and standing positions.

### To find the pelvic floor muscles:

1. Think about your anus and squeeze. Pretend you are trying to keep from passing gas. Feel the entire pelvic floor lift up with the contraction.
2. For women: Insert one finger into the vagina and contract the pelvic muscles. You should feel pressure high in the vagina as well as in the vaginal opening.
3. For men: Stand and do a contraction of your pelvic floor muscles. You should feel your penis move upwards slightly if you are doing the contraction correctly.

4. When urinating, slow or stop the stream for a second or two—this is a pelvic floor contraction. Then finish urinating—this is the relaxation. Notice that not a lot of force is needed. Do this once a week to check progress.

**Lying down:** Take a deep breath. As you exhale, contract your pelvic floor, drawing your tailbone toward your pubic bone. Think about trying to keep from passing gas. Hold the contraction for as long as you can while you are exhaling. If you cannot feel the contraction, bring your knees up and try squeezing a pillow between your knees while contracting the pelvic floor. Do not hold your breath. Remember, the contraction does not require a lot of force—just enough to turn the muscles on and keep them on for five to 10 seconds.

**Sitting:** Assume a normal sitting position—feet and shoulders relaxed. Take a deep breath. As you exhale, squeeze the pelvic floor muscles. You should feel a lift as the muscles contract and your tailbone is drawn toward your pubic bone. If you cannot feel the muscles contract, place a pillow between your knees and try again, squeezing the pillow as you squeeze your pelvic floor muscles. Keep exhaling during the contraction.

**Standing:** Take a deep breath. As you exhale, contract the pelvic floor. Think about being in a crowded elevator and trying to keep from passing gas. Hold the contraction as long as you exhale without holding your breath. If you cannot feel the contraction, turn your legs out and try squeezing from your heels up while exhaling. Relax your abdominal wall as much as possible as it is most active in this position.

## Managing a Temporary Stoma

### STOMA MANAGEMENT

When you are admitted to the hospital, there will be many new things for you to learn about and do. An Enterostomal Therapy (ET) nurse will introduce you to some of these and assist you as you learn.

The stoma will be created at or near the site mark. You will find that the end of the intestine coming out from the stoma protrudes slightly from the abdomen, about a half an inch.

The stool that is secreted from your bowels through the stoma is a loose liquid mixture of digested food. To collect the stool and protect the skin from its acidity, a specially made **appliance bag** is used. The bag may be designed in one or two pieces. There are other assistive devices that may also be used to enhance the bag's function.

After the surgery, the ET nurse will teach you how to care for your stoma. Your personal appliance bag size and additional material will also be determined.

When attaching the bag, first a **barrier** is applied to hold the bag to the skin. The barrier can be in the form of a spray or barrier wipes. The other important function of the barrier is to protect the skin from the enzymes and acidity of the stool. If the skin does come in contact with the stool, it will become red and painful and will eventually erode. Further skin protection is provided by pastes that are used as a type of caulking.

Because of the large volume of stool an ileostomy produces, the bag needs to be emptied several times a day. This large volume of stool also means that large amounts of fluid and electrolytes are lost. It is important to drink extra fluids each day, some of which are electrolyte rich. Other aspects of the diet are important in the function and care of an ileostomy as well. A list of foods and their varying effects are provided. It is important to become familiar with which foods can cause gas and odor or cause a change in stool thickness.

A few supplies will be provided upon your hospital release. Pharmacies as well as medical supply stores or mail order companies carry needed supplies. Some insurance companies will also assist with payment of these supplies. Names and addresses of these insurance companies will be provided to you.

## J-POUCH IRRIGATION

The purpose of pouch irrigation is to gradually expand the reservoir or pouch capacity, strengthen the anal sphincter muscles and cleanse mucus from the lower bowel. This irrigation should begin no sooner than 14 days after surgery and then performed daily until the ileostomy is closed by surgery.

The supplies needed for irrigation include an empty enema bottle, a water soluble lubricant, and warm water from the faucet.

The steps of irrigation are as follows:

1. Fill the enema bottle with 50cc (1/4 cup) of water.
2. Lubricate the tip of the enema bottle.
3. Carefully insert the tip approximately two inches into the anus.
4. Gently push the water from the bottle into the pouch. If the water drains at the tip, advance the tip a little more and continue to instill the water gently.
5. Remove the enema bottle from your anus.
6. Try to hold the water as long as you can, up to ten minutes if possible, while doing a pelvic floor muscle exercise, and then expel the water into the toilet.
7. If you are able to hold the water easily, increase the amount by 50cc each week until you reach a maximum of 250cc. Do not instill more than 250cc into your pouch at a single time.

Note that the water you expel may be only a small amount, since your body will absorb some of it.

Remember, each time you put water into the reservoir, keep it inside (up to ten minutes) by doing a pelvic floor muscle exercise. This will strengthen your sphincter muscle.

Also note that as the volume of water increases there will be a tendency for some of it to reach the stoma in your abdomen and be released through the stoma opening. Do not be alarmed, as this is normal.

## The Second Surgery (closure of the ileostomy)

### ILEOSTOMY CLOSURE

When you are feeling well and are off all medications, the temporary ileostomy can be closed. This is the second stage of the process. Usually it is done six to eight weeks after your first procedure.

### PREPARING FOR SURGERY

Several tests take place to determine your physical readiness for the closure of your ileostomy. First, you will have an X-ray of your new pouch, called a **pouch-o-gram**, to make sure it is well healed and has no leaks. This usually takes place the day before surgery. The pouch-o-gram is done in the hospital and takes about an hour. We will review it with you, answer any questions, and inform you as to whether you are ready for the ileostomy closure.

If you are ready for the closure, you will then undergo your preoperative lab tests, which include blood and urine tests, chest X-ray and an EKG. There is no preoperative bowel preparation required, but you will be instructed not to eat or drink after midnight.

The closure surgery will take place in the morning and takes about 45 minutes to complete. Usually, a small incision around the ileostomy is all that is necessary to free it up, oversew it and drop it back into the abdomen. In about one out of seven patients, however, there is extensive scarring in the abdomen that requires reopening of the main incision to free up adhesions before the ileostomy can be safely closed.

Following the surgery, you can anticipate good pain control during the first few days. As outlined earlier, there are various methods for controlling pain. These will be discussed with you prior to surgery.

As with the first surgery, you will have an I.V. in place to provide you with necessary calories, fluid, and electrolytes. You will also have a catheter to drain your urine. Both the I.V. and catheter help ensure that you are getting adequate fluid.

Your job will be to exercise your lungs with the spirometer and to walk as much as possible. Both of these activities will help to maintain your muscles and energy levels, and help prevent complications.

We will usually offer you a clear liquid diet on the second postoperative day. If you tolerate it, you will be advanced to a regular diet. After five to six days, when you are on a regular diet, you are passing stool and all drains are removed, you will be permitted to go home.

You will be given oral pain medicines to take home. You also may be given Lomotil or Imodium to slow your stool output, and a fiber supplement, i.e. Metamucil, to bulk your stool. If your hemoglobin level is low, you will go home with iron pills.

Once home, the best advice we can give you is to listen to your body. There are no diet restrictions, but you may find that some foods disturb your body. If some foods cause cramping or excessive gas, you should avoid them for several days and try them again later.

Activities should be limited. You should not drive a car until you are off of all pain medications and you can move about freely. You should avoid lifting anything weighing more than 10 pounds or any other activities that cause you discomfort. Generally, your body will tell you when you are ready to do more. We would hope that after six weeks you will return to normal activities, but many patients find they are able to do most of their activities well in advance of this time.

## PERIANAL SKIN CARE

Following ileoanal reservoir surgery or ileostomy closure, you may experience an increase in bowel frequency. Irritation may occur from frequent wiping of the skin around the anus (perianal area). Additional irritation may occur from stool leakage and frequent contact with the perianal skin. You will therefore need to pay special attention to the skin around the anus.

### Recommendations to Decrease Skin Irritation and Prevent Skin Breakdown:

1. **Cleanse** the skin after each bowel movement using a periwash bottle or syringe filled with warm tap water and gently pat dry with soft toilet paper (Charmin Ultra).
2. Apply a **protective barrier cream** after every bowel movement.
3. Wear **cotton underwear** and a peri-pad (if needed) in order to absorb excess moisture and stool leakage.
4. Perform **Kegel exercises** as instructed (refer to instructions provided).
5. Your doctor may prescribe a **stool bulking agent**, such as Metamucil, to increase water absorption and increase stool bulk. You may also be prescribed Imodium, Lomotil or Tylenol with codeine to decrease bowel activity.

### What to Avoid:

1. Scratching or scrubbing perianal skin.
2. Scented tissues and soaps.
3. Foods that cause diarrhea or anal irritation (see reference).

### Protective Barriers for Perianal Skin:

Bag Balm, Baza Cream (by Sween), Calmoseptine (by Calmoseptine), Citric Aid (by Sween), Double Guard (by Bard), Proshield Plus (by Health Point), Tripe Care EPB (by Smith Nephew), zinc oxide.

Try any one of these protective barriers for a minimum of seven days before changing to a new one.

### Treatment for Broken Perianal Skin:

1. Mix Mycostatin powder (prescription needed) with Maalox.
2. Using a cotton ball, apply mixture to broken skin and allow to dry. You may use a blow dryer on low setting.
3. Apply protective barrier as listed above, or apply an incontinence spray such as Bard or Sween. Allow to dry.
4. Reapply after each bowel movement. Continue protective barrier or spray until skin is healed.
5. Discontinue Mycostatin and Maalox after three days.

## MEDICATIONS

Following your ileostomy closure surgery, you will be sent home with several types of medications to help you transition while your body adjusts to your new pouch.

### Fiber Products

These products are taken to increase water absorption and to increase stool bulk, which can help to reduce skin irritation.

If you are using fiber to bulk up the stool and decrease loose stools, you should take the fiber with a small amount of liquid (e.g. 4-6 ounces).

We recommend that you use one of these products:

1. Metamucil – mix 2-3 teaspoons in 4-6 ounces of water or juice and drink once or twice a day, or as directed by your physician.
2. Citrucel – mix 2-3 teaspoons in 4-6 ounces of water.
3. Fibercon tablets – take 1-2 tablets by mouth followed by 4-6 ounces of water once or twice a day or as directed by your physician.

Try one product for at least one week as a trial period before changing to another. The dosage of these medications may vary for each patient.

Avoid taking other medication within one hour before or two hours after taking a fiber product.

### Anti-Diarrheals

These medications reduce stools by decreasing bowel activity. Examples of these medications include:

1. Imodium (non-prescription);
2. Lomotil (prescription); or
3. Tylenol #3 (prescription).

Be aware that these medications may cause drowsiness.

### Antibiotics

These oral medications may be prescribed by your doctor if you have signs of pouchitis—an inflammation or irritation of your new pouch. They include medications such as Cipro or Flagyl.

## DIET

### General Instructions

1. Eat meals at regular times, three or more times daily.
2. Chew foods especially well to avoid blockage. (Refer to list of foods that cannot be completely digested)
3. Drink plenty of fluids daily.
4. Use the food lists as a guideline; test the listed foods one at a time to see how they agree with you.
5. If you have any questions, please ask your physician.

### “Thinning Foods”

#### that may produce loose stools:

apple juice	excessive coffee	red wine
beans	grape juice	spicy foods
beer	licorice	spinach
broccoli	prune juice	large meals
chocolate	hot beverages/soup	

### “Thickening Foods”

#### that may produce firm stools:

applesauce	corn	rice
bananas	nuts	starchy foods
bran	oatmeal	wheat
bread	pasta	
cheeses	peanut butter (creamy)	

### Foods that cannot be completely digested:

celery	mushrooms	raisins
coconut	nuts	salad greens
cabbage	olives	seeds
corn	peas	skins
cucumbers	pickles/relish	spinach
dried fruit	pineapple	green peppers
popcorn		

### Foods that may cause odors:

asparagus	fish	onions
beans	garlic	spicy foods
cabbage	green peppers	eggs
mustard		

### Foods that may produce gas:

apples	cauliflower	onion
avocados	corn	pimentos
beans	cucumber	radishes
beer	dried peas	sauerkraut
broccoli	green peppers	scallions
Brussels sprouts	leeks	shallots
cabbage	lentils	soybeans
carbonated drinks		turnips



## TRANSITION OR "ADJUSTMENT PERIOD"

Whether you have a one- or two-stage procedure, you will experience an **adjustment period**. This is the time needed by your new rectum (J-pouch) to expand and soften and increase in capacity. This is often likened to a new balloon, which is initially difficult to inflate, but after each inflation becomes more pliable and easier to blow up.

If you have had a one-stage procedure, your adjustment period is usually about six to eight months. For a two-stage procedure, you will experience an adjustment period of three to six months after your ileostomy closure.

During the time when the pouch is small, your stools will be more frequent and slightly more urgent than they will be when the pouch is stretched to its final capacity.

While your pouch is small, you must empty it more often. In order to stretch the pouch, we would encourage you to hold on to your bowel movements as long as you can. This builds up a back pressure and causes the pouch to stretch.

During the transition period you will be instructed to take an anti-diarrhea medication (Lomotil, a prescription drug, or Imodium, which can be purchased over the counter). This medication reduces loose stools by decreasing the activity of the gut.

You will also be instructed to take a fiber supplement such as Metamucil or Citrucel. This will assist in increasing water absorption and increase the bulk of the stool. If you are taking fiber supplements, you do not need to take a large amount of water, as the instructions on the package may suggest. There is already enough water in the stool, and the fiber sup-

plement is meant to absorb some of this extra moisture and make the stool thicker.

We would expect continued improvement over at least the first year, although the improvement is more dramatic in the first three to six months. During this time the stool frequency and urgency should decrease. You may use medications such as Lomotil and fiber supplements to help thicken the stool.

Once you are discharged from the hospital, complications are rare. It is important that you contact us if you are having any concerns or symptoms that you do not understand.

Generally, if you are wondering if you are having a problem, you are not. Symptoms of significant problems after a major surgery are not subtle, and you will know that there is something abnormal occurring.

## RETURNING TO WORK

Most likely, you will be able to return to work approximately six weeks following surgery. You may need to transition back to full-time work by starting out working fewer days per week or fewer hours per day. If you have a job that does not require a lot of activity or require long hours, you may find you can return to work as early as three to four weeks following surgery.

Overall, let your body be your guide. If you feel worn out or tired, you are doing too much too soon.

## POTENTIAL COMPLICATIONS

### **Pouchitis**

As time passes, about 50% of patients with an ileoanal procedure have something called pouchitis. It can happen at any time, even months or years following your surgery.

Pouchitis is characterized by an increase in stool frequency, perhaps feeling much like you have the flu with muscle aches. The stool may be somewhat bloody and it will be looser. You may even have the return of symptoms of arthritis or skin abnormalities, if you had them prior to your initial operation.

Pouchitis is something that we feel comfortable in identifying over the phone and will recommend an oral antibiotic to correct the problem. If our diagnosis is accurate, the symptoms should go away in 72 to 96 hours.

### **Dehydration**

Dehydration is the loss of too much fluid from the body (more output of fluid than intake). It is important that you carefully balance fluid intake so as not to become dehydrated.

When the colon has been removed, less water and electrolytes will be absorbed and more will pass through the body. Gradually, your small intestine will take over more of the function of absorption. You will notice stool thickening as absorption increases.

Loose, liquid stools can be the result of certain foods, viruses, medications or even emotional stress. Dehydration occurs when you have increased stool output and do not adequately replace the lost fluids.

Signs of dehydration:

- Feeling thirsty
- Dry skin and/or dry mouth
- Decreased urination and dark-colored urine
- Feeling lightheaded when sitting or standing

If you are dehydrated, you need to drink extra fluid and replace lost electrolytes, sodium and potassium. Electrolyte drinks, broth and bananas are good sources for replenishment.

### **Blockage**

Blockage of the bowels is rare, but does occur. None of the signs of blockage are subtle, and they are often described as miserable. Those signs and symptoms include nausea and vomiting (for more than 24 hours), abdominal cramping, pain, bloating, and decrease in bowel activity.

You will need to stop eating and drinking immediately. Call our office and/or go to your nearest emergency room. Although you may feel miserable, these blockages usually resolve themselves within 72 hours.

## LONG-TERM COMPLICATIONS

You should not be concerned with long-term complications. We have not experienced any significant long-term complications in our patient population. As previously mentioned, there is a small risk that the small section of rectum left in place could develop cancer. The ultimate risk here is unknown, but it would seem that it would be less than the normal population risks of developing colorectal cancer. Therefore, the risks are small and acceptable.

Nevertheless, you should be checked at regular intervals (every six months or as directed) by your physician. This would require a brief office visit with a digital examination and small scope examination.

We are always concerned about long-term complications that have not yet been recognized. You should be reassured, however, that we have had more than 20 years of experience with this procedure and have not identified any major complications.

## CONCLUSION

In conclusion, ileoanal surgery is an excellent option for many patients with one of the digestive system disorders discussed in this booklet. Although no operation is going to make you normal, you should be able to live a high quality of life and resume most, if not all, of the activities that you enjoy in your day-to-day life.

## RESOURCE LIST

### **Crohn's and Colitis Foundation of America (CCFA)**

www.ccfa.org  
386 Park Ave South  
17th Floor  
NY, NY 10016-8804  
(800) 932-2423

### **Irritable Bowel Disease Support Group** (323) 865-3150

### **J-Pouchers Support Group** (323) 865-3150