



ILEAL POUCH OWNER'S MANUAL

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WHAT IS ILEAL POUCH RECONSTRUCTION?

Ileal pouch reconstruction has allowed patients with conditions such as ulcerative colitis, familial polyposis and certain types of colon cancer to avoid living with a permanent ileostomy and external appliance after colectomy. The procedure involves removing the colon, rectum and anal canal lining and using the end of the small bowel (ileum) to create a new rectum. Developed in the late 1970s by British and Japanese surgeons, ileal pouch reconstruction has become the new “gold standard” for patients undergoing colon removal. Since the first procedures, surgeons have improved both the pouch and the technique, eliminating many complications. The most recent change has been the addition of minimally invasive techniques in colectomy and pouch reconstruction procedures.

At UW Hospital and Clinics, we began doing ileal pouch reconstructions in 1984. Since then, we’ve helped more than 800 individuals from ages 10 to 70. We have also watched our ileal pouch patients go on to lead normal lives. Along with graduating from college, working, getting married and enjoying social activities their disease had kept them from in the past, some have participated in marathons, cross-country ski races, wrestled in the Badger State Games, bungee jumped and competed in rodeos.

This booklet will give you an overview of ileal pouch reconstruction and the prognosis after surgery. We hope it will answer many of your questions regarding the procedure.

ANATOMY AND TERMINOLOGY

The following are brief descriptions of some terms used in describing reconstructive colon surgery:

Anastomosis

The surgical connections between the loops of small intestine that make up the pouch. This also refers to the connections between the ileum and anal canal.

Colon

The portion of the large intestine that extends from the cecum to the rectum (bottom section). The colon's primary function is to absorb water and serve as a reservoir for stool.

Ileal pouch reconstruction

This is the technical term for the procedure that combines complete removal of the colon and creation of a new rectum using the ileum. This procedure may also be referred to as ileal reservoir reconstruction, ileal pouch-anal anastomosis, restorative proctocolectomy, or S- or J-pouch reconstruction.

Loop ileostomy

A loop of bowel brought to the skin's surface to divert bowel contents away from the newly created ileal pouch. The ileostomy empties into an external appliance that must be changed regularly. Ileal pouch reconstruction patients may live with a temporary ileostomy for about two months or until the internal pouch has adequately healed. Ileostomy takedown refers to the removal of the temporary ileostomy.

Neorectum

A new rectum created from the end of the small bowel.

The small bowel

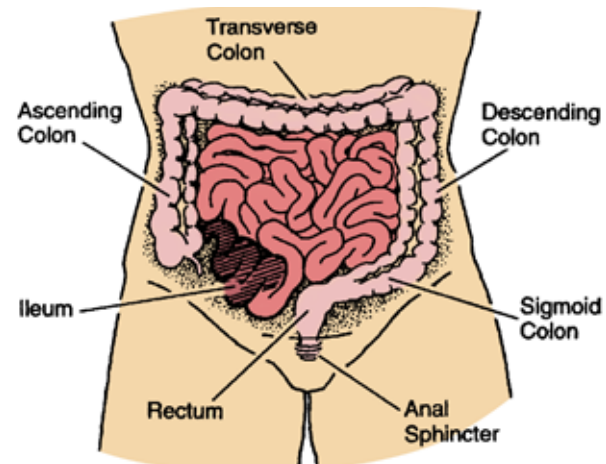
The small bowel consists of two parts: the upper portion, called the jejunum and the lower portion, called the ileum. We use approximately 12 to 15 inches of the ileum for pouch reconstruction.

Sub-total colectomy

Removal of the colon but not the rectum.

Total abdominal colectomy or proctocolectomy

Complete removal of the colon and rectum.



Location of small intestine, large intestine, ileum and colon.

INDICATIONS FOR ILEAL POUCH RECONSTRUCTION

Most ileal pouch recipients have a history of familial polyposis or ulcerative colitis that has failed to respond to more conservative treatments. Additionally, some have hereditary cancers that require colon removal.

Ulcerative colitis

Ulcerative colitis is an inflammatory bowel disease that causes ulceration of the colon (large intestine). Because ulcerative colitis involves only the colon, we can use the lower part of the ileum to create an internal pouch.

If you have:

- Severe or fulminant disease that does not respond to medication;
- Chronically active disease that requires long-term treatment with immune suppressant drugs or steroids;
- Recurrent or persistent flare-ups or disease that compromises your quality of life;
- Secondary complications such as skin disorders (i.e. pyoderma gangrenosum); or
- Evidence of cancer or dysplasia (abnormal cells), you may be a candidate for total abdominal colectomy and ileal pouch reconstruction unless you have specific health problems prohibiting surgery.

Familial polyposis

This genetically transmitted disorder manifests itself as a large number of polyps in the colon. The disease often begins in adolescence. If untreated, the chance of developing colon cancer is 100 percent, with the majority of cancers occurring by age 40. If you have few or no polyps in the rectal region, one option is to remove the colon and leave the rectum. Patients who have this condition may be candidates for ileo-rectal anastomosis (joining of the ileum and rectum). If you have a significant number of rectal polyps, total colectomy with ileal pouch reconstruction is preferred.

Hereditary non-polyposis colon cancer

Recent research has identified patients and families who are genetically susceptible to this type of colon cancer. If hereditary non-polyposis colon cancer runs in the family, total abdominal colectomy with ileal pouch reconstruction is an option for decreasing your risk of colon cancer.

Unsuitable candidates

Patients who are not good candidates for total abdominal colectomy and ileal pouch reconstruction include those who:

- have Crohn's disease;
- are incontinent and have poor sphincter muscle tone;
- have had a previous sphincter injury;
- have undergone partial removal of the small bowel.

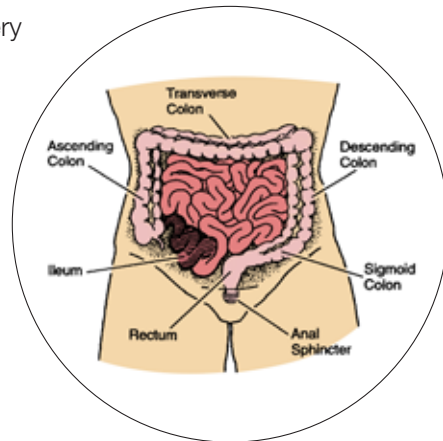
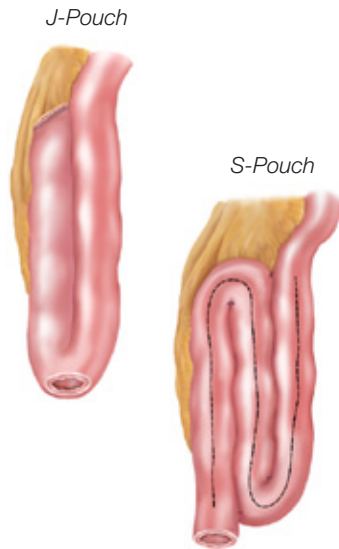
Some patients who are obese or who have significant heart and/or lung disease may not be candidates.

TYPES OF POUCHES

The J- and S- reservoirs are the most common types of pouches used. The number of limbs and the amount of small bowel used to create them distinguishes the various types of pouches and reconstruction procedures.

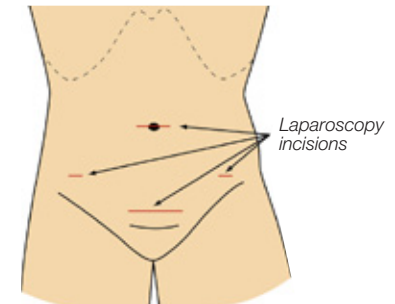
The J-reservoir is made from two side-by-side limbs stapled together to create a J-loop. An S-reservoir has three limbs, with one serving as the ileal reservoir's outlet. Function, capacity and elasticity vary with design.

All reservoir types have similar functional results and stool frequency and are all viable options. Only during surgery can we determine which type of reservoir will work best.



THE POUCH RECONSTRUCTION PROCEDURE

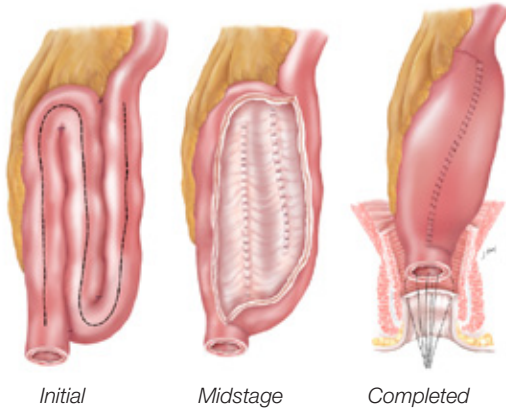
Ileal pouch reconstruction is one of the most technically demanding and complex procedures done in colon and rectal surgery. It requires the surgeon to be very comfortable with the anatomy of the entire abdomen and pelvis. The first part of the operation involves mobilization of colon and division of its blood supply. Upon completion, the surgeon then mobilizes the rectum down to the top of the anal canal. Once this is completed, the diseased colon and rectum are removed from the patient. Next the blood supply to the terminal ileum is very carefully mobilized and its ability to reach to the anal canal is determined. Most patients' terminal ileum will easily reach to the anal canal and an ileal reservoir can be fashioned. However, in the rare patient the ileum cannot reach to the anus and a permanent ileostomy is required. Once it is clear the terminal ileum will comfortably reach to the anus an ileal reservoir is fashioned. The type of reservoir created is dependent upon a number of factors including surgeon preference, body habitus, and pelvic anatomy. In general, functional outcomes are the same with all reservoirs created.



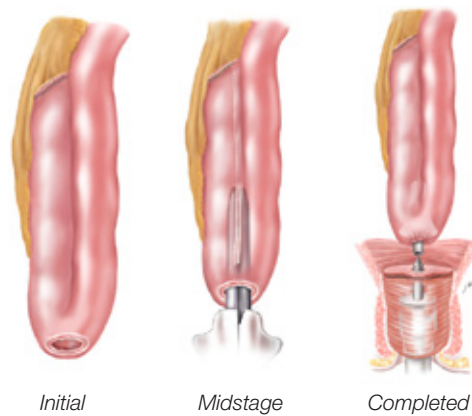
After the ileal pouch is created it is attached to the top of anal canal using sutures or a stapling device. The type of anastomosis created, sewn or stapled, is dependent upon a number of factors including: surgeon preference, anatomy, disease involving the anal canal, and reach of the reservoir. In general we prefer to use a stapling technique as studies have shown there are no significant differences in outcomes between patients who have had stapled or hand-sewn anastomoses. After completion of the anastomosis, a suction drain is placed into the pelvis and a temporary loop ileostomy is fashioned.

Historically, this operation has required a large incision extending from above the umbilicus to the top of the pubic bone. The use of the laparoscope and minimally invasive techniques has revolutionized

S POUCH



J POUCH



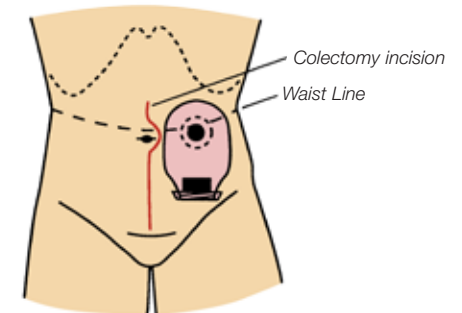
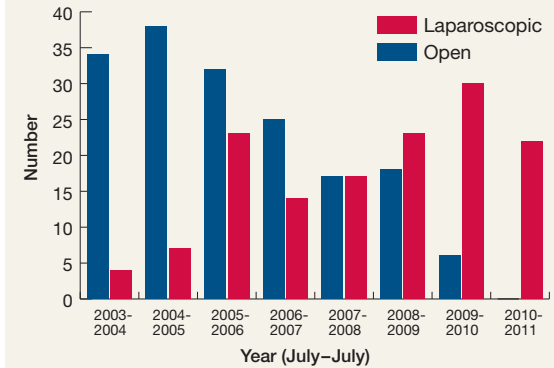
the practice of colon and rectal surgery. This is especially true for patients who undergo a restorative proctocolectomy. Today, the entire operation can be done using a minimally invasive approach. We performed our first laparoscopic-assisted restorative proctocolectomy in 2003 and since have done over 150 such operations. Furthermore, we now utilize the laparoscopic approach in almost all patients (see graph on next page). We now prefer the laparoscopic operation to the open procedure as we and others have shown that short-term outcomes are better in patients who undergo a laparoscopic operation. However, the laparoscopic operation is

not for everyone. Reason to not utilize the laparoscopic approach include: multiple prior abdominal operations, obesity, inability to tolerate prolonged operation secondary to multiple medical problems, or other technical issues perceived by the surgeon.

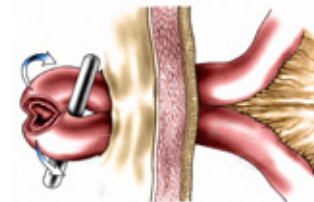
Ileostomy takedown

After approximately two or more months, you will return for ileostomy takedown. We remove the ileostomy, allowing the pouch to begin functioning on its own. Following the ileostomy takedown, normal ileal pouch function and bowel movements will begin. You will also have a small scar where the ileostomy used to be.

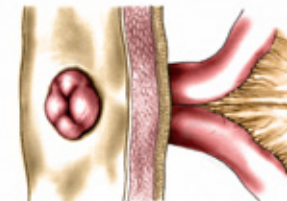
Use of Laparoscopy 2003–Current



Initial stage of loop ileostomy—placement onto abdominal wall



Completed loop ileostomy

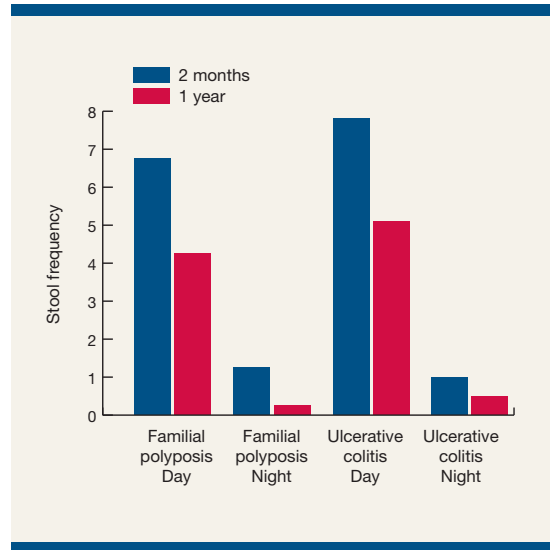


FUNCTIONAL RESULTS

Stool frequency and continence are the two main factors that determine optimal pouch function. Patients who have four to five bowel movements a day with nearly perfect continence are considered to have the best functional results.

Stool Frequency

A variety of factors including age, eating habits, type of reservoir reconstruction and quality of the anal sphincter muscles can affect stool frequency. At the time of the ileostomy takedown, the ileal reservoir has a fairly small capacity. Therefore, it's not uncommon to have 10 or more bowel movements a day. As the ileal reservoir adapts and stretches to its normal capacity, stool frequency will decrease.



Most patients experience a decline in stool frequency during the first six to 12 months after surgery. Younger patients usually have fewer bowel movements than older patients. Other factors that can affect frequency are the amount of fiber in your diet or use of products such as Metamucil®, Lomotil® or Imodium® that help decrease stool frequency.

Continence

During the early years of pouch reconstruction, continence was a major problem. However, current techniques give approximately 95 percent of patients near-perfect control during the day and 0 percent good to excellent control at night. Adjusting your eating habits and using certain medications can improve continence.

OPERATIVE RISKS/COMPLICATIONS

The vast nature of total abdominal and ileal pouch reconstruction predisposes you to complications that, if treated early, can be minimized. About one in five patients experiences problems, the most common of which include bowel obstruction (frequently treated non-surgically), infection, anastomotic or pouch healing problems and steroid withdrawal symptoms. Blood loss or anemia, poor nutrition, your age and previous surgery can increase your chance of post-operative problems.

Bleeding, infection, incontinence or inadequate reach between the pouch and the anal canal may cause the ileal reservoir to fail. Such occurrences are rare. Ulcerative colitis patients are at greatest risk for failure, as the steroid or immunosuppressive medications used to treat the condition can adversely affect healing. If the reservoir fails, a permanent ileostomy may be required. Everything will be done to recognize the early signs of such complications and treat them appropriately.

The following chart shows the percentages of postoperative and long-term complications for patients with ulcerative colitis and for patients with familial polyposis. You may wish to discuss these in more detail with the surgical staff.

ULCERATIVE COLITIS

Postoperative	%	Long term (>30 days)	%
Small bowel obstruction	7.9	Small bowel obstruction	7.9
Prolonged ileus	7.9	Anastomotic problems	6.7
Steroid withdrawal symptoms	5.6	Incisional hernia	2.2
Anastomotic problems (dehiscence, stricture)	12.3		
Bleeding (anastomotic, other bleeding problems)	3.4		
Postoperative	%		
Wound infection	3.4		
Dehydration	3.4		
Other	4.4		

FAMILIAL POLYPOSIS

<i>Postoperative</i>	<i>%</i>	<i>Long term (>30 days)</i>	<i>%</i>
Small bowel obstruction	5.0	Small bowel obstruction . . .	10.0
Anastomotic problems	5.0		
Dehydration	5.0		

PHYSICAL ACTIVITY AFTER SURGERY

Certain activities such as driving or lifting may be restricted initially after surgery. With time, we encourage normal physical activity, including participation in sports.

POUCHITIS

Pouchitis, a non-specific inflammation of the ileal reservoir, can be a long-term problem for some patients. This usually occurs during the first two years after pouch reconstruction. Most have symptoms, including steadily increasing stool frequency that may be accompanied by incontinence, bleeding, fever and/or a feeling of urgency. Most cases can be treated with a short course of antibiotics.

Patients who undergo total abdominal colectomy and ileal pouch reconstruction for familial polyposis rarely, if ever, develop pouchitis. Of those who have ulcerative colitis, approximately 30 percent may experience at least one episode. Among patients experiencing pouchitis symptoms, 4 to 5 percent may have chronic symptoms that require repeated antibiotic treatment. Even in severe cases, pouchitis rarely requires pouch removal.

If you have any or all of these symptoms, notify your surgeon, primary physician or gastroenterologist immediately.

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