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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.

At UW Hospital and Clinics, we began doing ileal pouch reconstructions in 1984. Since then, we've helped more than 500 individuals from age 11 to 68 and from as far away as Alaska and the Middle East. 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 a variety of athletic activities, including football, basketball, skiing, and other strenuous sports.

The information provided here 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 & Terminology

View pictures of [intestinal anatomy and incision location](#).

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 W-, 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.

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.

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.

Unless you have specific health problems prohibiting surgery, you may be a candidate for total abdominal colectomy and ileal pouch reconstruction if you have:

- severe or fulminant disease that does not respond to medication;
- chronically active disease that requires long-term treatment with immunosuppressant 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)

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 your family, total abdominal colectomy with ileal pouch reconstruction is an option for decreasing your risk of colon cancer.

Factors for 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 previous sphincter injury; or
- have undergone partial removal of the small bowel.

In addition, some patients who are obese or who have heart and/or lung disease may not be candidates.

Ileal Pouch Types

The [J-, S-, and W-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 and a short nipple that serves as the ileal reservoir's outlet. The W-pouch has four limbs and looks like two J-loops placed side by side. Function, capacity and elasticity vary with design.

During surgery we determine which type of reservoir will work best. Most of our patients receive an S- or W-reservoir; however, selection of pouch design depends on a variety of factors, including age, patient size, and individual anatomy.

Ileal Pouch Reconstruction Procedure

Ileal pouch reconstruction is one of the most extensive and

complex gastrointestinal procedures used today. The first part involves removal of the colon and rectum. Next, we mobilize the small bowel's blood supply and mesentery (membranous tissue attaching the ileum to the body wall) to determine whether the ileum will reach the anal canal. Most patients' small bowel will extend the necessary length, and we employ a variety of techniques to make the ileum reach the anal canal. In the unusual event that the small bowel does not reach, we may have to create a permanent ileostomy.

Prior to pouch construction, we remove the anal canal lining, taking care to prevent injury to the anal sphincter. The pouch is then created using the design most appropriate for you.

[View stages in W-pouch construction](#)

After construction of the pouch, the reservoir outlet is sutured to the anal canal, and a temporary ileostomy is placed to protect the extensive anastomoses and allow the newly created pouch to heal. It is usually positioned slightly below and to the right or left of the navel. The enterostomal therapy nurse will work with you before the procedure to determine the best place for the ileostomy.

[Ileostomy takedown](#)

After approximately two 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.

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 90 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 colectomy 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 infrequent. 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 table below indicates the percentages of postoperative and long-term complications for 200 patients with ulcerative colitis and familial polyposis. You may want to discuss these more with the surgical staff.

Ulcerative Colitis Patients (176 patients)

Postoperative Complications

Small bowel obstruction: 7.9%
Prolonged ileus: 7.9%
Adrenal insufficiency: 5.6%
Anastomotic problems (dehiscence, stricture): 12.3%
Bleeding (anastomotic, other bleeding problems): 3.4%
Wound infection: 3.4%
Dehydration: 3.4%
Other: 4.4%

Long-term Complications (>30 days)

Small bowel obstruction: 7.9%
Anastomotic problems: 6.7%
Pancreatitis: 2.2%
Incisional hernia: 2.2%

Familial Polyposis Patients (24 patients)

Postoperative Complications

Small bowel obstruction: 5.0%
Anastomotic problems: 5.0%
Dehydration: 5.0%

Long-term Complications (>30 days)

Small bowel obstruction: 10%

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 20 to 30 percent experience at least one episode. Among patients experiencing pouchitis symptoms, 5 to 7 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.

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.

For Additional Information / To Make An Appointment

If you would like more information about ileal pouch reconstruction, or would like to make an appointment, contact Dr. Bruce Harms, MD and/or Dr. Charles Heise at (608) 263-7502 or (800) 323-8942.

This web page contains the contents of our publication, "Ileal Pouch Owner's Manual." To request a copy of the printed booklet, please write to:

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