Learn about ileal pouch anal anastomosis (IPAA) surgery
Information for patients and families

- About the surgery
- What to expect
- Common questions
- Risks
Illustrations: Medical Media Centre, St. Michael's Hospital.
Normal gastrointestinal tract

- Stomach
- Duodenum
- Colon (large bowel)
- Small bowel
- Terminal Ileum
- Rectum
- Anus
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**What is ileal pouch anal anastomosis (IPAA) surgery?**

Ileal pouch anal anastomosis (IPAA) is also called **ileo-anal reservoir procedure, j-pouch procedure** or the **pelvic pouch procedure**.

- Ileal pouch anal anastomosis surgery allows people who have had their colon and rectum removed to have bowel movements through the anus rather than through an ostomy. The surgery creates a new reservoir, or pouch, inside the lower abdomen (pelvis) that will hold stool and gas until you are ready to have a bowel movement.

- Making the pouch can involve many surgeries. You will need some time to adjust to the new way the pouch works. You may need to make some changes to your usual routines to help adjust to the pouch. Adjusting to the usual function of the pouch can take 6 to 12 months.

**Who can have this type of surgery?**

- This surgery is an option for most people with ulcerative colitis (UC) or familial adenomatous polyposis (FAP).

- The IPAA is not usually an option for patients with Crohn’s disease or people with anal sphincters that work poorly (poor control of bowels).

- People with indeterminate colitis (where a definite diagnosis of either Crohn’s disease or ulcerative colitis cannot be made) can have the IPAA, but there is a higher chance of problems.

- Some older patients may also have the surgery, but there may be problems such as incontinence (unwanted leakage of stool) or other problems.
Are there other options?

There are 2 options for surgery. These include:

1. **Ileal pouch anal anastomosis:**
   - Remove the entire large bowel (colon) and rectum. The terminal ileum (last part of the small bowel) is used to create the ileal pouch and the pouch is attached to the anus

2. **Total proctocolectomy with permanent ileostomy:**
   - Remove the entire large bowel (colon), rectum and anus with a permanent ileostomy
The tables below detail the 2 options, including the pros and cons of each.

Option 1: ileal pouch anal anastomosis

- Remove entire colon and rectum
- Terminal ileum used to create ileal pouch
- Ileal pouch attached to anus

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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<tbody>
<tr>
<td>- No permanent ileostomy</td>
<td>- Often needs more than one operation</td>
</tr>
<tr>
<td>- Continence usually good</td>
<td>- Low risk of sexual dysfunction</td>
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<tr>
<td>- Good function (for 9 out of 10 patients)</td>
<td>- Risk of infertility for women</td>
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<td>- Low failure rate (less than 1 out of 20 patients)</td>
<td>- Often needs temporary stoma with an external pouching system</td>
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<td>- You will have frequent bowel movements (usually 4 to 8 per day, including night-time bowel movements)</td>
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<td>- Possible perianal skin irritation (itchy and sore) due to many bowel movements</td>
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<td></td>
<td>- Risk of cancer extremely low, and regular checks needed</td>
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<td></td>
<td>- about 1 out of 10 patients have incontinence, especially night-time seepage</td>
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<td></td>
<td>- about 5 out of 10 patients with ulcerative colitis and indeterminate colitis get pouchitis</td>
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<td></td>
<td>- May need some diet changes and/or anti-diarrhea medicine (such as Imodium)</td>
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Option 2: Total proctocolectomy with permanent ileostomy

- Remove the entire large bowel, rectum and anus
- End of the small intestine (terminal ileum) is brought to the surface of the abdomen as an end ileostomy

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
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</thead>
<tbody>
<tr>
<td>• No remaining disease</td>
<td>• Low risk of sexual dysfunction</td>
</tr>
<tr>
<td>• No longer at risk for developing rectal cancer (for ulcerative colitis patients)</td>
<td>• Permanent stoma and external pouching with long term costs (pay for pouching products)</td>
</tr>
<tr>
<td>• Only 1 surgery for most patients</td>
<td>• Risk of stomal or peristomal complications, but most can be prevented or easily treated</td>
</tr>
<tr>
<td>• Known short and long term results</td>
<td>• Perineal wound</td>
</tr>
<tr>
<td>• Able to resume active lifestyle with ileostomy</td>
<td>• Further surgery to remove stoma not an option</td>
</tr>
<tr>
<td></td>
<td>• May need some diet changes and/or anti-diarrhea medicine (such as Imodium)</td>
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</table>
Which surgery option is best for me?

- Your surgeon will discuss with you the best option for you. The surgeon will consider your age, health, medicine use, and diagnosis.
- You may want to have family members present when you talk with the surgeon to provide you with support.

What to expect from IPAA surgery

IPAA surgery is most often done in 3 stages, but some people have it done in 2 stages. During these stages the large bowel and the rectum are removed, and a new ileal pouch is made and attached to the anal sphincters. Whether your IPAA surgery can be done in 2 or 3 stages depends on:

- How healthy you are at the time of your operation,
- Whether you have been on any medicines (like steroids) that may increase your risk for problems
- Your underlying disease (UC, indeterminate colitis, or FAP).

For most people, the IPAA is done in three stages.

What happens at each stage?

- The chart below briefly describes what happens at each stage of surgery. Again, whether you are a candidate for a 2 or 3 stage procedure depends on many factors that you and your surgeon will talk about.
Stages of ileal pouch anal anastomosis surgery

2 STAGE: Type I
Stage 1
- Your large bowel and rectum are removed
- Ileal pouch is made and attached to anal sphincters
- Temporary loop ileostomy

Stage 2
- Loop ileostomy closure

3 months

2 STAGE: Type II
Stage 1
- Most of your large bowel is removed
- Rectum remains
- End ileostomy

Stage 2
- End ileostomy closure and rectum removed
- Ileal pouch is made and attached to anal sphincters
- Temporary loop ileostomy

3 months

3 STAGE
Stage 1
- Most of your large bowel is removed
- Rectum remains
- End ileostomy

Stage 2
- End ileostomy closure and rectum removed
- Ileal pouch is made and attached to anal sphincters
- Temporary loop ileostomy

3 months

Stage 3
Loop ileostomy closure

Functioning ileal pouch anal anastomosis
Functioning ileal pouch anal anastomosis

- No matter how many stages are used to make your ileal pouch or reservoir, the IPAA does mean your entire colon and rectum will be removed.

- An ileal pouch (or “new” rectum) is made from the last 40 centimetres of the small bowel called the terminal ileum. This ileal pouch is attached (called anastomosis) to the anus.

- While many types of pouches have been developed, the most popular reservoir design is the “J” pouch. Part of the terminal ileum is looped onto itself into the shape of a “J” to create the ileal pouch (see diagram page 14). Once the pouch is made, it is attached to the anus.

- The differences between a 2 or 3 stage surgery depends on when the ileal pouch is made, and on whether the pouch needs to be protected for a period of time while healing occurs. Being protected means having a temporary ileostomy (ask your Enterostomal Therapy Nurse for a teaching booklet on ileostomies). An ileostomy will divert the stool away from the ileal pouch to an outside adhesive pouch. This allows the ileal pouch to heal.

- This temporary ileostomy is usually “taken-down” or closed about 3 months after the pouch is made.
Ileal pouch anal anastomosis

Lower back

Loop Ileostomy (temporary)

Ileal Pouch (J-Pouch) made and attached to anal sphincters
What an ileal pouch (J-Pouch) looks like

Will I need a stoma?

- If you are having the IPAA done over more than one stage, then you will need a temporary stoma (ileostomy). The ileostomy will either allow you to be well enough to have the other surgeries (an end ileostomy), or will prevent stool from going into your ileal pouch while it is healing (a loop ileostomy). See the diagrams for the difference between an end and a loop ileostomy.

The making of an end ileostomy

- One opening for stool
- The ileostomy is red, moist and warm
A loop ileostomy with a possible temporary rod

- two openings, one for stool, the other for mucus
- the rod is removed after 3 to 7 days

**How long will I need to have the stoma?**

- If the IPAA is being made over two stages, the usual time between each stage is 3 to 6 months.

- If the IPAA is being made over three stages, then you will need a temporary ileostomy between each stage. The interval between colectomy (Stage I → removal of the large colon and rectum) and the IPAA surgery (Stage II) is at least 4 to 6 months. This time will allow you to be in the best health before having the surgery for the IPAA. The closure of the ileostomy (Stage III) is usually 3 months later.

**Will I be able to return to work/school between each stage of the surgery?**

- Being able to return to work or school will depend on three factors:
  - How ill you were before your first surgery
  - How well you recovered from your surgery
  - The type of work or schooling that you are doing
- If you would like to return to work or school before your next surgery, speak to your surgeon
What can I expect after all of the stages are complete?

Stool texture

- To start, your stool will be quite liquid. As you start to eat a normal diet, your stool will become thicker and more pasty. The time between liquid to pasty stool can be days to a few weeks.

- Your stool should be soft/pasty, but you may notice times when it is more liquid due to certain foods or drinks that you have had. Some patients may always have more liquid stools. You will likely never have a formed, solid stool.

- Many people need medicines (such as Imodium) to help thicken the stool, either for a short time, or for a longer period of time.

Stool frequency

- At first, the space in the pouch can be quite small (less than a cup) and the stool tends to be more liquid. Liquid stool is harder to retain, or to hold on to. As a result, you may have many bowel movements in a 24 hour period, sometimes as many as 10 to 15. This includes night-time bowel movements.

- As your stool gets thicker, you will be able to comfortably delay bowel movements and hold on to a larger amount of stool. Most people will end up having between 4 to 8 bowel movements per day, including 1 to 2 during the night.

- Pouch function continues to improve over 6 to 12 months.
Perianal skin protection

- Since you will have many bowel movements, especially at the beginning, the skin around your anus (called ‘perianal skin’) can get itchy and sore.

- You will be taught how to protect your perianal skin, to prevent itching and soreness.

- After your surgery, start protecting your perianal skin with your first bowel movement after surgery. Do not wait for itching or soreness to start.

- You will be given some cream and a pamphlet describing ways that to help to prevent skin itching and soreness.

Knowing if you have gas or stool in your ileal pouch

- At the start, most people with an IPAA find it difficult to tell if the pouch is filled with gas or with stool. Until you can tell, for the first few months after your final surgery, always assume that the pouch is filled with stool.

- Sit on the toilet to empty your pouch. Over time you will likely be able to tell the difference between gas and stool.

Ileal Pouch gas

- Once you have returned to a normal diet, you may notice a lot of gas in the ileal pouch. Large amounts of gas can cause bloating and sometimes explosive gas when sitting on the toilet.

- To help control this, make a note which food cause more gas, and either limit or avoid those foods that cause gas.

- You can also try over-the-counter products such as Beano™ or Gas-Ex™, which may decrease the amount of gas caused by certain foods.
Emptying your ileal pouch

- You may have a sense of fullness or pressure in your lower abdomen when your pouch needs to be emptied. At the start, you may not get much warning that you need to go to the bathroom. This is because your pouch is small and the stool is liquid.

- Over time, your stool will thicken and your pouch will stretch. You will be able to delay bowel movements and comfortably get to a bathroom without urgency.

- When you do sit on the toilet to empty your pouch, you may find that it will not empty completely right away. You may need to sit for a few minutes to allow it to empty. You may want to rock from side to side while sitting on the toilet, or stand briefly to “shift” the contents of the pouch.

- Gently bearing down or pushing will also help to empty the pouch.

Night-time stools

- Many patients with an IPAA will need to get up during the night at least once to empty their pouch.

- Getting up at night tends to happen more during the early months of pouch after surgery.

- If you find that you are waking up a lot at night because you need to empty your pouch, try making some changes to your diet:
  - Eat your largest meal at lunch (not at dinner time)
  - Avoid eating large amounts of food 4 to 6 hours before you go to bed
  - Avoid drinking large amounts of fluid (especially caffeinated or carbonated drinks) in the evening

- Remember to empty your pouch just before you go to bed. You can discuss plans and tips to manage night-time stools with your Dietitian.
Diet

- You will be able to return to a normal diet after your IPAA.

- Certain foods or drinks may cause looser or thicker stools, more gas, or more perianal skin itching or soreness. The table below lists some common responses to different foods and drinks.

- You may also notice changes to your bowel function with foods not listed in the table. You can keep track of those foods.

- Having increased gas or looser stools does not mean that you have to avoid these foods. Just be aware of the possible change in bowel function when you eat or drink these items.
### Foods that *may* cause **looser** stools:
- wheat bran
- beer
- prune or grape juice
- • cafffeinated drinks (coffee, tea)
- • chocolate
- • leafy green vegetables
- • raw fruits
- • raw vegetables
- • spicy foods

### Foods that *may* cause **thicker** stools:
- applesauce
- cheese
- oats/oat bran
- • bananas
- • creamy peanut butter
- • pretzels
- • boiled rice
- • tapioca pudding
- • potato chips

### Foods that *may* cause **gas**:
- dried peas and beans
- brussel sprouts
- carbonated drinks
- • onions
- • broccoli
- • Asian vegetables (bok choy)
- • cabbage
- • beer

### Foods that *may* cause **anal irritation**:
- cafffeinated drinks (coffee, tea, colas)
- red wine
- coconut
- popcorn
- corn
- chocolate
- • cola drinks
- • nuts
- • oranges
- • coleslaw
- • spicy foods
- • beer
- • citrus fruit juices
- • Oriental vegetables
- • celery
- • grapefruit
- • tomato products

### What are the risks of IPAA surgery?
- There are risks with **any abdominal surgery**. There are also risks that are more specific to the IPAA operation. The risks may depend on certain things like your overall health prior to the surgery, medication use (steroids), and nutrition.
- We cannot predict if you will have a problem. However, the care we provide is designed to help prevent problems.
Some of the risks after abdominal surgery include:

- a **blockage** in the bowel, which prevents fluids and solids from passing through
- a delay in the return of normal bowel function (called **paralytic ileus**)
- an **infection** to the incision (cut) and tissues around it. An infection sometimes causes an **open wound**, or a deeper collection of infected fluid in the abdomen (**abscess**)
- a blood clot in the lower leg (**thrombosis**) which can travel to the lung (**pulmonary embolus**)
- a **urinary tract infection**
- lung problems, including collapse of lung tissue (**atelectasis**) or infection (**pneumonia**) in the lungs
- **hernias** (a weakness in the abdominal wall, usually where the incision is, that allows the bowel to protrude or stick out)

Your surgeon will be able to discuss these with you before the operation. Ask your surgeon if you have any questions or concerns.

**Risks specific to the IPAA procedure**

The risks of this type of surgery can be divided into 2 types:

- short term risks (soon after surgery)
- long term risks (months or years after surgery)

Talk about these risks with your surgeon. While no one can predict if you will or will not have a problem, your surgeon can tell you how often these problems tend to happen in people who have the IPAA procedure.
Short term risks/problems
- losing too much fluid and electrolytes (dehydration) with the temporary loop ileostomy
- a leak at the connection of the new pouch to the anus, causing a pelvic abscess (a collection of infected fluid) or infection in the abdomen (peritonitis)
- sexual dysfunction (for women, painful intercourse or vaginal dryness; for men, problems with erection or ejaculation, or impotence)

Long term risks/problems
- irritation of the ileal pouch causing diarrhea, cramps, bloating (pouchitis)
- a narrowing of the connection between the pouch and the anus (stricture), making it hard to empty the reservoir
- leakage of the stool from the reservoir, either at night or during the day (incontinence)
- diarrhea or ongoing frequent bowel movements
- Crohn’s disease (some patients, especially those with indeterminate colitis may turn out to have Crohn’s disease which can affect the anus, the pouch, or other parts of the gastrointestinal tract)
- sexual dysfunction (for men – erectile dysfunction, problems with ejaculation may become long-term issues; for women – infertility)
Can these long term risks/problems be treated?

Pouchitis

- Pouchitis is when the pouch is inflamed. An inflamed pouch causes diarrhea, cramps and bloating. Pouchitis tends to happen only in patients who have the IPAA for ulcerative colitis or indeterminate colitis.

- Your chance of getting pouchitis at some point depends upon how long you have had your pouch. The longer you have your pouch, the more likely you are to get pouchitis. After 10 years, the chance of having pouchitis may be as high as 1 in 2 patients. The cause of pouchitis is not known.

- Pouchitis is often treated with antibiotic medicine. The most common antibiotics used are metronidazole (Flagyl™) and ciprofloxacin. Often, after 7 to 10 days of taking these antibiotics, the symptoms of pouchitis will be gone.

- Some people may want to try probiotics (“good” bacteria in the form of pills) to help manage their pouchitis. Probiotics may help to prevent pouchitis from coming back after finishing antibiotics. However, it does not help to treat an active episode of pouchitis.

- If you suspect that you have pouchitis, contact your surgeon to discuss your concerns.

Stricture

- A stricture is a narrowing at the connection between your ileal pouch and the anus. The narrowing is caused by scar tissue.

- If a stricture is developing, you will notice that it is more difficult to empty the pouch. It will take longer and you must use more force (or bear down more) in order to empty the pouch.

- If you notice these symptoms, contact your surgeon. The narrowing can be stretched (or dilated) to open the connection.
Incontinence

- Unwanted leakage of stool from your ileal pouch can happen. It is usually a small amount.

- Most often, leakage of stool happens at night when you are sleeping (when your anal sphincters are relaxed). Some medicines, like sleeping pills, may make it easier to leak stool.

- You may find that wearing a small pad in your underwear is enough to help manage the leakage of stool.

- Leakage may also happen during the day. You may find that thickening the stool with certain foods or medicines may help to decrease the leakage (pasty or semi-formed stool is easier to hold on to than liquid stool).

- You may also want to try and strengthen your pelvic muscles with Kegel exercises.

- You can discuss diet changes with your dietitian and Kegel exercises with your Enterostomal Therapy Nurse.

Diarrhea

- Some patients may have ongoing loose stools (more than 8 stools per day).

- At the beginning, changes to your diet can help control the looser stools. Your dietitian can help you with these changes.

- Try to remove foods and drinks from your diet that may cause looser stools. Try to add foods that will thicken stools.

- If changes to your diet don't work, you may need to use some medicines to help control the diarrhea such as Imodium™.

- If you are having ongoing problems with loose stool, contact your Enterostomal Therapy Nurse or surgeon to discuss other methods.
Will I still have a risk of cancer after I have the surgery?

- The risk of getting cancer in the pouch or the anus is very low.
- You may need to have occasional checks of your pouch and anus.
- Your surgeon will discuss with you how often you should return to have your pouch checked.

Does the IPAA have an impact on my fertility and childbirth?

- Any abdominal surgery can have a possible impact on a woman’s fertility, either due to the surgery itself (scar tissue called adhesions) or because of problems from the surgery (infections or abscesses in the abdomen). Research suggests that infertility (not being able to have a baby) can be a problem for women with an IPAA.
- Surgery may result in scar tissue that causes problems when trying to become pregnant. While having an IPAA does not mean you can not get pregnant, you may want to discuss with your surgeon the timing of your Staged surgeries and plans for pregnancy.
- During pregnancy, some women may find that the ileal pouch functions more often during the first trimester as the uterus (with the baby) competes for space in the pelvis. The reservoir may not be able to fully expand with a normal amount of stool. This often gets better during the second and third trimesters, as the uterus (baby) moves up and out of the pelvis and the reservoir can once again expand normally.
- Talk about the risks and benefits of a vaginal delivery versus a caesarean section and the impact of each with your surgeon and obstetrician.
Who can I talk to if I have concerns about the IPAA?

- Having the IPAA surgery will require a period of adjustment. If you have questions or concerns about your pouch and its function, then contact your Enterostomal Therapy Nurse or surgeon to discuss.

Are there any resources in the community to help people with an IPAA?

- There are some resources for people with IPAA. Your Enterostomal Therapy Nurse can give you a list of web sites, booklets and support groups for people undergoing this surgery.

- The Patient and Family Learning Centre may have resources that can help you. Visit the centre in Room 6-004, or contact patientandfamilylearning@smh.ca
Your health care team

**Your surgeon**

Name:

Contact Information:

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**Your enterostomal therapy nurse**

Name:

Contact Information:

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**Your dietitian**

Name:

Contact Information:

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**Your social worker**

Name:

Contact Information:
**Glossary**

**Abscess:** a collection of pus enclosed by inflamed tissue

**Anastomosis:** surgical connection of parts (connecting the new reservoir to the anus)

**Colectomy:** removal of the entire large bowel (colon) and rectum; the anus is preserved

**Incontinence:** uncontrolled leakage of stool from the reservoir

**Inflammation:** a reaction to injury or damaged tissue

**Obstruction:** a blockage of the bowel, that prevents stool from passing through

**Paralytic ileus:** a blockage of the bowel due to the slowed or delayed return of normal bowel function (peristalsis)

**Peri-anal:** around the anus

**Peristalsis:** waves of bowel contraction and relaxation causing the bowel contents (stool) to move forward

**Pouchitis:** inflammation (swelling or irritation) of the reservoir causing diarrhea, cramps, bloating

**Proctocolectomy:** removal of the large intestine (colon) and rectum

**Pulmonary embolus:** a blood clot that has dislodged and traveled to a lung

**Reservoir:** the internal pouch formed from the last part (about 40 centimetres) of the small intestine
Sphincters: muscles that control the opening and closing of the anus

Stricture: a narrowing caused by scar tissue

Subtotal colectomy: removal of the large intestine (colon), but not the rectum

Terminal ileum: last part of the small intestine

Thrombosis: the formation or presence of a blood clot in a blood vessel
St. Michael's cares about your health. For reliable health information, visit our Patient and Family Learning Centre, room 6-004, 6th floor, Cardinal Carter Wing, or find us online at www.stmichaelshospital.com/learn

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