

# Surgery for Crohn's Disease

- Medication can be very effective in treating CD, but sometimes complications arise that require surgery. Between 70 and 90 percent of patients with Crohn's disease will eventually require surgery.<sup>1</sup>



## When should surgery be considered?

- There are two main reasons for surgery, *failure of medical management* and *complications of disease*. Failure of medical management means that despite the best medications symptoms remain severe, inflammation has not responded, or else the patient has intolerable side effects from the medication. Patients with skin, eye, mouth, or joint problems relating to CD will sometimes have bowel surgery to reduce those problems.<sup>2</sup> Surgery can fix complications but does not cure the disease and up to 70 percent of patients may require further surgery.<sup>3</sup>

## What kind of complications might need surgery?

- Many people with CD develop a bowel blockage at some point. Symptoms include increased crampy abdominal pain particularly after meals, nausea and vomiting, and absence of bowel movements. Blockages that develop rapidly are usually due to swelling and inflammation and may be successfully treated with medication. In areas of long-term inflammation, scar tissue can narrow the bowel and may completely block it off (Figure 1). In this case, a *bowel resection* is often required, removing the diseased portion and reconnecting the two healthy ends (Figure 2). Sometimes the narrow portion will be widened without removing it, a procedure called *strictureplasty*. Strictureplasty is safe, effective, has a low chance of recurrent blockage and doesn't shorten the small intestine.<sup>4</sup> This may be an option in individuals with short

<sup>1</sup> Gardiner KR, Dasari BV. Operative management of small bowel Crohn's disease. *Surg Clin North Am* 2007; 87: 587-610

<sup>2</sup> Hwang JM, Varma MG. Surgery for inflammatory bowel disease. *World J Gastroenterol* 2008; 14(17): 2678-2690

<sup>3</sup> Bernell O, Lapidus A, Hellers G. Risk factors for surgery and postoperative recurrence in Crohn's disease. *Ann Surg* 2000; 231: 38-45

<sup>4</sup> Yamamoto T, Fazio V, Tekkis P. Safety and Efficacy of Strictureplasty for Crohn's Disease: A Systematic Review and Meta-Analysis. *Dis Colon Rectum* 2007; 50: 1968-1986

Figure 1. Graphic representation of inflammatory and stricturing complications of Crohn's disease

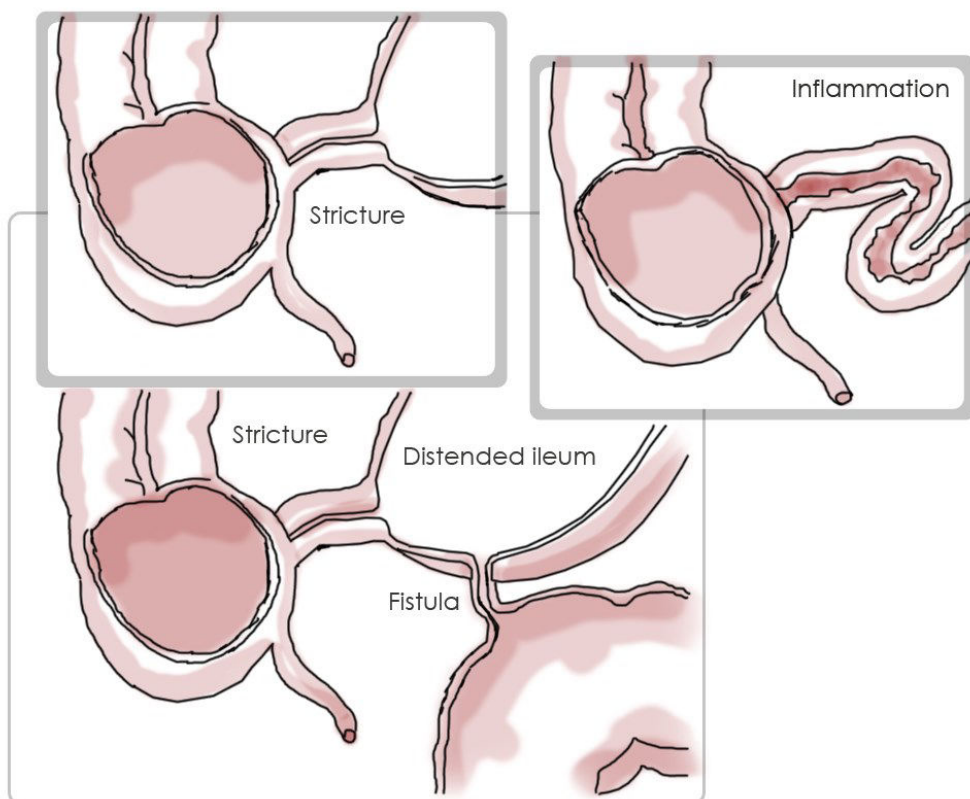
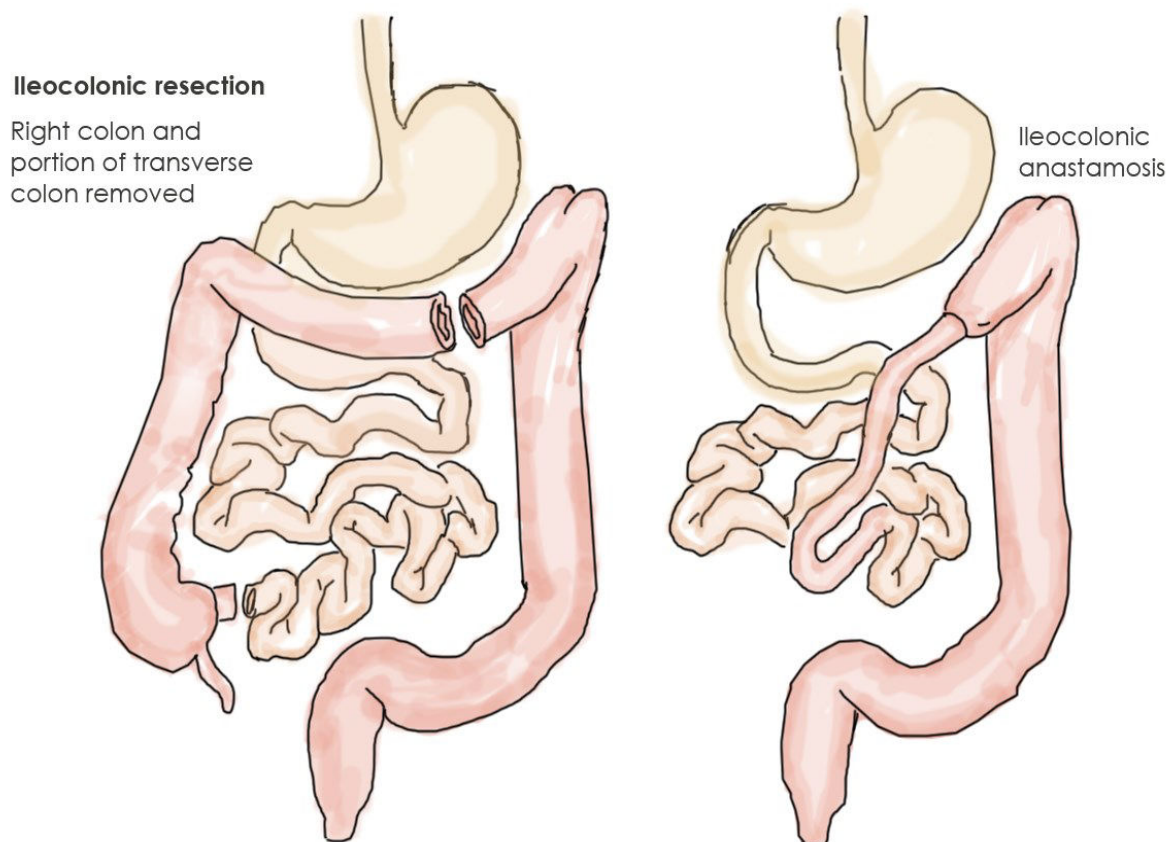


Figure 2. Graphic representation of an ileocolonic resection



- An *abscess* is an infected pocket of pus within the abdomen. This may occur in approximately 25 percent of patients during their lifetime.<sup>5</sup> A small, microscopic leak in the bowel allows bacteria to enter the abdominal cavity. Antibiotics may be used to treat abscesses, but usually they need to be drained. The best treatment of an abscess is drainage performed by a radiologist who directs a needle into the collection, sucks out the pus, and leaves a small catheter in place to allow the infection to drain. Surgery is often required to remove the diseased portion of bowel to prevent recurrence. They are less likely to recur if surgically treated.<sup>6</sup>
- A *fistula* (Figure 1) is an abnormal connection between the intestine and another organ. Fistulas can form between two sections of bowel, between the bowel and bladder or bowel and vagina, or from bowel to skin. Stool can drain from the bowel to the skin surface through the fistula. After ten years with CD, 33 percent of patients will have fistulas, and after 20 years this rises to 50 percent.<sup>7</sup> Antibiotics and immune-modulating medications are tried to help the fistula heal, but in 40 percent of patients, surgery will eventually be required to close the fistula.<sup>3</sup>
- Very rarely, surgery may be required for bleeding, perforation, or cancer of the small or large bowel.

## What are the risks of surgery?

- Infection can occur after surgery. The surgical wound can become infected, although antibiotics are given before surgery to reduce the chance of this occurring. Those in hospital are more likely to develop pneumonia or bladder infections after surgery, which are usually easily treated with antibiotics but can rarely be serious.
- Blood clots can occur in the legs or arms that can potentially move to the lungs (pulmonary embolism). Blood thinners are usually given after surgery to prevent this from happening. It is important to walk as early and as much as possible after surgery to help prevent blood clots.
- When a portion of bowel is removed and the ends joined together, there is a possibility of the join, or *anastomosis*, leaking. A leak is very serious and if one occurs a second surgery may be necessary to repair it. This often requires the creation of a temporary ostomy (bowel brought out to the skin so that bowel content empty into a bag rather than through the bowel downstream from this) in order to allow the infection to settle down. A leak is the most feared complication of bowel surgery and one that is not taken lightly.
- Bleeding can occur during and after surgery. Depending on the amount of blood lost, a transfusion may be required.
- Making an incision in the abdomen weakens the tissues. A hernia, or bulging of the abdominal wall, can develop. If the hernia causes problems it may need to be surgically repaired.
- Scar tissue called *adhesions* can develop in the abdomen after the operation. Usually adhesions don't cause any problems, but can occasionally cause bowel blockages.

<sup>5</sup>Ribeiro MB, Greenstein AJ, Yamazaki Y, Aufses AH Jr. Intraabdominal abscess in regional enteritis. *Ann Surg* 1991; 213: 32-36

<sup>6</sup>Garcia JC, Persky SE, Bonis PA, Topazian M. Abscesses in Crohn's disease: outcome of medical versus surgical treatment. *J Clin Gastroenterol* 2001; 32: 409-412

<sup>7</sup>Felley, C. et al. *Fistulizing Crohn's Disease*. *Digestion* 2007;76:109-112.

- Disease recurrence is possible after any operation for CD. Surgery is not a cure for CD, and many patients will need more operations, particularly if they have had an ileal resection with ileo-colonic anastomosis. When a badly damaged segment of bowel is removed, the rejoined portions may become inflamed and develop any of the complications of CD. Unfortunately, twenty percent of people will have recurrent symptoms within two years, and up to 80 percent within 20 years. On average, 10 years go by before repeat surgery is needed.<sup>8</sup> In the case of ileal resections, most studies have shown that recurrent inflammation and ulceration occurs in 70 percent of patients within one year.
- Patients who need multiple surgeries to remove segments of small intestine are at risk of *short bowel syndrome*. The small intestine digests and absorbs nutrients and normally can absorb much more than necessary, so removing small segments doesn't have negative effects. If large portions are removed, this can compromise the gut's ability to digest and absorb, leading to diarrhea and malnutrition. Your body needs at least 200cm of small intestine in order to absorb nutrients and fluids properly. We each have approximately 15 to 20 feet of small intestine to begin with.

## When is the best time to have surgery?

- Most surgeries for CD are planned, so the best time can be chosen. Overall health should be optimized. Adequate nutrition for the weeks before surgery is very important. If patients are malnourished and unable to eat normally, intravenous nutrition may be given for a period of time. Stopping smoking several weeks before surgery makes the operation safer and greatly improves healing. Additionally, patients are often asked to stop taking the medications used to treat their Crohn's Disease because of the negative effects these medications may have on wound healing. This decision will be made through joint decision between your gastroenterologist and your surgeon.

## What happens after surgery?

- In most cases the patient will stay in hospital for several days, at least until they are able to eat, drink, and have bowel movements without difficulty. Follow up appointments are made with the surgeon a few weeks after discharge.

---

<sup>8</sup> Roses RE, Rombeau JL. Recent trends in the surgical management of inflammatory bowel disease. *World J Gastroenterol* 2008; 14(3): 408-412

<sup>9</sup> Silverstein P. Smoking and wound healing. *The American Journal of Medicine*, Vol 93, Issue 1, Supplement 1, 15 July 1992, S22-S24