

### Introduction

Colon cancer is a life threatening condition that affects thousands of people. Health care providers usually recommend surgery to remove colon cancer. If your health care provider recommends surgery, the decision whether or not to have this surgery is yours. This reference summary will help you understand the benefits and risks of the different colon operations.

### Anatomy

The colon is the last part of the intestines, and is also known as the large intestine. Swallowed food goes through the esophagus, or the feeding tube. Food then passes through the stomach, where it is digested. Digested food goes from the stomach to the small intestine, where nutrients are digested and partially absorbed.

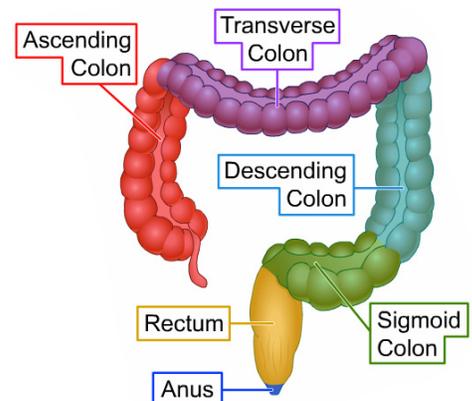
Fibers and digested food finally reach the colon. In the colon, the rest of the nutrients get absorbed, and stool is formed. Stool is then stored in the last part of the colon, the sigmoid and rectum, before leaving the body.

Arteries provide blood to the colon, and veins take the blood back toward the heart.

Lymphatic tissue and lymph nodes drain the excess fluid into the bloodstream. Lymph nodes help fight infections. But cancer may spread to the liver, small intestine and other organs through the lymph nodes. The liver, small intestine and other organs could develop cancer this way.

The colon has multiple components:

- The ascending colon.
- The transverse colon.
- The descending colon.
- The sigmoid colon.
- The rectum and the anus.



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## Symptoms and Their Causes

Colon cancer is fairly common. It happens in approximately 1 in every 14 to 15 people. There are several ways colon cancer can be found. It can be discovered during a routine medical exam, such as a rectal exam or during a scope exam through the rectum.

Blood in your stool can be an indication of colon cancer. Abdominal pain, weight loss, general discomfort and fatigue can also be symptoms of colon cancer.



When colon cancer is found, surgery is usually needed to remove the cancer and check the lymph nodes in the abdomen for evidence that the cancer has spread.

## Other Treatments

Once colon cancer is diagnosed, the best chance of a cure is through surgery. Radiation therapy and chemotherapy may be needed afterwards to help prevent the cancer from spreading or coming back.

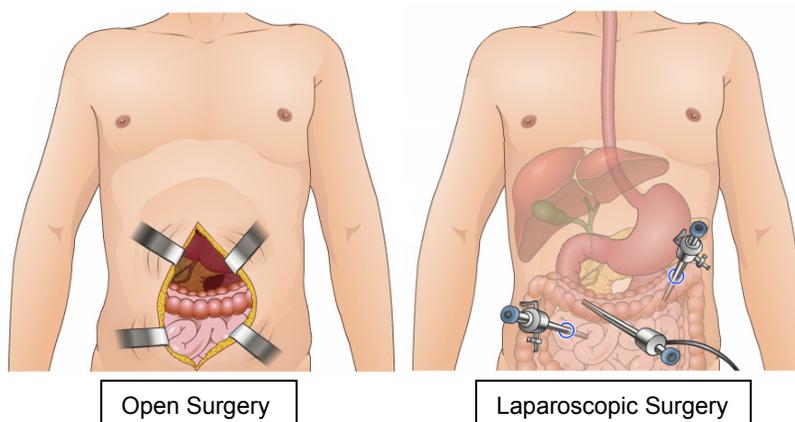
## Surgical Treatment

Prior to the surgery, the colon will need to be cleaned to reduce the risk of infection. This can be done using strong laxatives and enemas. The patient may need to drink a gallon of cleansing solution the night before the surgery to flush out their colon.

The surgery is done under general anesthesia while you are asleep.

The operation could either be done as an open surgery, through a single large incision, or through multiple smaller incisions using a scope. If the surgeon uses a scope, it is called laparoscopy.

At times, a laparoscopic surgery may need to become an open surgery depending on what is found during the surgery and whether there is scar tissue that makes laparoscopy dangerous.



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The part of the colon that has cancer is taken out surgically, and the colon is reconnected, or anastomosed.

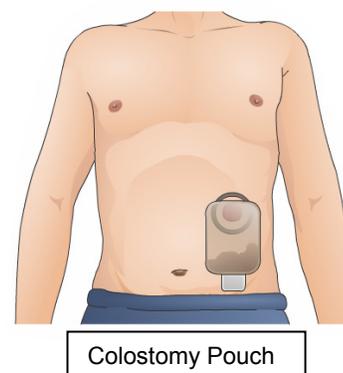
There are many different operations to take care of colon cancer, depending on the location of the cancer. The following are some examples of what part of the colon is taken out and how the colon is put back together.

An example is if the cancer affects the ascending colon. In this case, part or all of it is removed and reattached to the transverse colon or small intestine. If the cancer affects the transverse colon, part or all of it is removed and the colon is reattached. If the cancer affects the descending colon, part or all of it is removed and reattached to the transverse colon and rectum.

When the cancer involves the lower rectum or anus, another incision may be done near the rectum. There may be no colon left to attach the remaining colon to, after taking out the cancer. At that point, the colon is rerouted to the outside of the abdomen through another incision. This surgery is called colostomy.

Sometimes a colostomy is necessary if the surgeon thinks that an anastomosis reconnecting the colon will not be successful. This may be the case if the colon is not clean enough at the time of surgery.

If you have a colostomy, a bag is then placed over the opening of the colon to the outside to collect the stool. Bowel control is lost. If it is feasible, the colon could be put back together 3 - 6 months later. Your surgeon will let you know if this is a possibility.



The lymph nodes are then dissected to determine whether or not the cancer has spread beyond the colon. The rest of the organs in the abdomen are carefully examined. If suspicious lumps are found, they could also be taken out from surrounding structures such as the liver, small intestine, kidneys or uterus to determine if they are cancerous.

## Risks and Complications

This surgery is safe. But there are several possible risks and complications. These are unlikely. But they are possible. You need to know about them just in case they happen. By being informed, you may be able to help your health care provider detect complications early.

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The risks and complications include those related to anesthesia and those related to any type of surgery.

Anesthesia is safe. But the older you are and the more medical problems you have, the higher the risks. You should tell your anesthesiologist about any medical problems you have had in the past, such as strokes or lung problems.

Risks of general anesthesia include:

- Cut lips and chipped teeth.
- Headache.
- Nausea or vomiting.
- Problems urinating
- Sore throat.

More serious risks of general anesthesia include:

- Heart attacks.
- Lung infections.
- Strokes.

Your anesthesiologist will discuss these risks with you and ask if you are allergic to certain medications.

Blood clots in the legs can happen due to inactivity during and after the surgery. These usually show up a few days after surgery. They cause the leg to swell and hurt. Blood clots can become dislodged from the leg and go to the lungs where they will cause shortness of breath, chest pain and possibly death.

It is important to let your health care providers know if any of these symptoms happen. Sometimes the shortness of breath can happen without warning. Getting out of bed shortly after surgery may help decrease the risks of blood clots.

Some of the risks are seen in any type of surgery. These include:

1. Infection, deep or at the skin level. Infections can involve the abdominal incision. Deep infections may involve the abdominal cavity itself. This is known as peritonitis. Treating deep infections may require long-term antibiotics and possibly surgery.



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2. Bleeding, either during or after the operation. This may require a blood transfusion or another operation.
3. Skin scars.

Other risks and complications are related specifically to this surgery. Again, these are rare. But it is important to know about them.

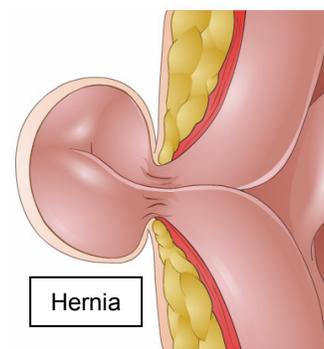
Structures in the abdomen could be damaged, especially if they have cancer on them. Such problems can include the following: The spleen could be injured. The stomach and intestines could be perforated. The urinary bladder and the connecting tubes could be injured.

Internal female organs, such as the uterus and ovaries, could be injured. The blood vessels going to the legs could be affected.

Unexpected problems may require an unplanned, temporary or permanent colostomy.

Damage to these structures could lead to permanent damage and the need for other operations. Again, this is rare.

Hernias through the incision or incisions are possible. This happens when the internal wall of the abdomen is weak and the intestines push under the skin. This may require another operation.



Another possible complication is the breakdown of the anastomosis, or the area where the two ends of the colon are attached. This usually leads to an infection inside the abdomen, requiring another operation and a colostomy to reroute the colon.

## After the Surgery

After the operation, you will be transferred to the recovery room and then to a regular room. You will not be allowed to eat or drink for a few days to allow the anastomosis to heal.

A tube going to the stomach through the nose may be placed for a few days. It sucks out the air and the juices of the stomach. This is to prevent you from getting bloated and nauseated while the anastomosis heals. You will gradually be allowed to eat food again.

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You will go home in a few days, depending on how you are doing. Depending on the pathology reports from the surgery, as well as other tests, further treatment may be needed. Further treatment could include radiation therapy. Treatment could also include chemotherapy.

Make sure to contact your health care provider in case of any new symptoms, such as:

- Fever.
- Wound drainage.
- Severe pain.
- Weakness.
- Swelling or infection.



## Summary

Colon cancer is a life threatening condition that affects thousands of people.

Blood in your stool can be an indication of colon cancer. Abdominal pain, weight loss, general discomfort and fatigue can also be symptoms of colon cancer.

Health care providers usually recommend surgery to remove colon cancer. Prior to the surgery, the colon will need to be cleaned to reduce the risk of infection. This can be done using strong laxatives and enemas.

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