

# Patient Education Series

## Patient Education

The information presented in this leaflet will equip you with the knowledge to participate in your care and make informed decisions about your operation



# COLON SURGERY

## Using Fluorescence Guided Surgery (FGS) Techniques

### THE CONDITION

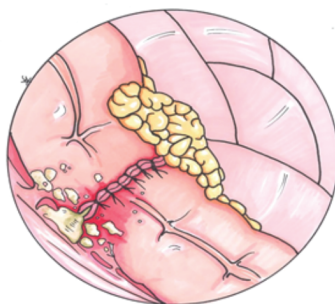
Colon surgery or colectomy is a surgical procedure to remove all or part of your colon. Your colon, part of your large intestine, is a long tubelike organ at the end of your digestive tract. A colectomy may be necessary to treat or prevent diseases and conditions that affect your colon.

### TREATMENT OPTIONS

Colon surgery may be performed in two ways: Open colectomy, where the surgeon makes a long incision in your abdomen to access your colon or laparoscopic colectomy, also called minimally invasive colectomy, which involves several small incisions in your abdomen. The type of operation you undergo depends on your situation and your surgeon's expertise. Laparoscopic colectomy may reduce the pain and recovery time after surgery. But not everyone is a candidate for this procedure. Also, in some situations your operation may begin as a laparoscopic colectomy, but circumstances may force your surgeon to convert to an open colectomy.

### THE PROBLEM

When undergoing colon surgery, a surgeon will remove the portion of your colon that's blocked or diseased in a procedure called a resection. The colon will then be joined together, and sewn or stapled. Each year over 300,000 Americans undergo colon surgery. For most patients the surgery and recovery are complication-free. Unfortunately, approximately 25,000 of these patients will develop a serious complication called an anastomotic leak. Anastomotic leaks occur where the bowel is reconnected/joined together after the diseased portion is removed because there is not adequate blood supply to the sections being rejoined. With standard operating-room light, the surgeon may find it difficult to differentiate between what area has diminished blood supply to the colon and what is healthy tissue with good blood supply. By reconnecting the colon with inadequate blood supply, the re-connected section is susceptible to anastomotic leaks.



Anastomotic leaks is a serious complication of colon surgery

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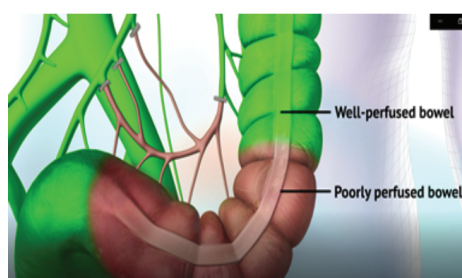
"Fluorescence Guided Surgical techniques in colon surgeries is associated with a lower occurrence of surgical complications, reduced adverse events, reduction of re-interventions, and a positive impact on the patient's recovery time"

*Dr Raul J Rosenthal,  
Cleveland Clinic, Florida*

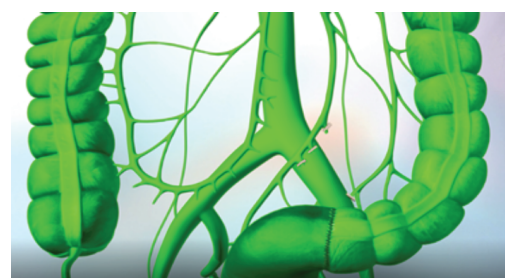
## THE SOLUTION

By using a fluorescence guided technique, the surgeon can more readily identify healthy tissue which has good blood flow. By connecting well perfused sections that have good blood flow, the risk of leaks are reduced. If poorly perfused colon segments are connected, then the risk of anastomosis is much increased. Studies have shown that by undertaking the procedure using FGS, the surgeon may be able to better see the colon, and the diseased or unhealthy tissue. That way, patient outcomes may be improved with the chances of a leak at the site where the colon is re-joined, reduced. Recent studies have shown that by adopting a FGS approach in colon surgeries, re-do surgeries because of anastomotic leaks were reduced by between 12-17%.<sup>1,2</sup>

By using FGS approach,



healthy tissue can be differentiated from unhealthy tissue...



and perfused (healthy) colon segments are connected.

## HOW IT WORKS

FGS involves the use of a special US FDA approved dye, called Indocyanine Green (ICG) and a special Near Infra-Red (NIR) light camera systems to illuminate the anatomy of the colon. By visualizing the colon, the surgeon can more clearly identify diseased poorly perfused bowel from health well-perfused bowel and make better decisions during your procedure.

### DISCLAIMER

This information is intended to educate you about your specific surgical procedure. It is not intended to take the place of a discussion with a qualified surgeon who is familiar with your situation. It is important to remember that each individual is different, and the reasons and outcomes of any operation depend upon the patient's individual condition. The International Society for Fluorescence Guided Surgery (ISFGS) has endeavored to present information for prospective surgical patients based upon current scientific information.

#### References:

1. Khan AA, Wheeler JM, Cunningham C et al. The management and outcome of anastomotic leaks in colorectal surgery. *Colorectal Dis.* 2008;10(6):587-592. doi:10.1111/j.1463-1318.2007.01417.x
2. Alekseev M, Rybakov E, Shelygin Y, Chernyshov S, Zarodnyuk I. A study investigating the perfusion of colorectal anastomoses using fluorescence angiography: results of the FLAG randomized trial *Colorectal Dis.* 2020;10.1111/codi.15037. doi:10.1111/codi.15037

