

## **Constipation**

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### **Overview**

Constipation is a very common complaint affecting upwards of 15% of all Americans. Fortunately, constipation usually is simple to avoid and easy to treat when it occurs. However, symptoms of constipation may be a sign of a more serious problem requiring medical attention. This information was prepared to help patients understand constipation, specifically its symptoms, evaluation and treatment options. It may also be useful to the friends, families, and caregivers of patients dealing with significant constipation.

This educational piece is intended to address:

The basics of good intestinal health and function and how to avoid constipation;  
What constipation is and what might be at its cause;  
Review how to evaluate constipation and how a colon rectal surgeon may be of help;  
The medical treatment of constipation – conservative measures, role of laxative therapy and other medications;  
Identify the limited role of surgery for constipation and the specific indications for when it might be the best treatment available.

### **What is normal bowel function?**

After eating, food is transported through the small intestine, where it is broken down and the nutrients are absorbed. The remaining liquid waste then passes into the colon. The colon removes water and certain electrolytes, turning the liquid waste into a more solid form. It then passes into the rectum, where it is stored until it is time to have a bowel movement. Discussion of bowel function can be broken down into four main components:

1. Frequency (how often you move your bowels);
2. Ease of evacuation of stool (need to strain);
3. Firmness of stool (how hard the stool is);
4. Sense of complete evacuation of stool.

There is a wide range of what are considered “normal” bowel habits. In general, bowel movements should occur at least every third day or no more than three per day; stool should pass easily and not require excessive straining; and lastly, one should experience a sense of completeness of elimination. The belief that one must have a bowel movement every day simply is not accurate and can lead to unnecessary concern and even abuse of laxatives. In fact, if one’s daily bowel movement is hard, requires great effort to expel, or does not satisfactorily empty, the individual would still be considered to have constipation in spite of having a “normal frequency.” On the other hand, if one has a movement every third day but it is not hard, does not require straining and completely evacuates, then one may very well consider this normal bowel movement, in spite of the fact it is not a daily event.

Bowel movements require that the colon move stool towards the rectum in a coordinated and predictable fashion. A bulkier stool better stimulates contraction of the muscles within the wall of the colon, explaining why a high fiber diet produces larger, bulkier stool and improves bowel

movements. As the stool passes into the rectum, one experiences stretch of the rectal wall, indicating the need to evacuate. If a person is not in an appropriate place to have a bowel movement, contraction of sphincter muscles stops evacuation and the sensation to go ceases. When in the appropriate place (bathroom), squatting and abdominal pressure initiates evacuation of the stool from the rectum. It is important to understand that coordinated reflex relaxation of pelvic and sphincter muscles is required to allow elimination; certain muscles need to contract while others relax at the same time in order for the stool to pass easily. The stretch sensation caused by the stool in the rectum should then be relieved with a sense of complete evacuation.

### **Defining constipation**

Given the four main components of bowel function described above, constipation may mean different things to different persons. For some, constipation may mean infrequent bowel movements. To others, it is a hard stool which may be difficult to pass and requires excessive straining. Lastly, constipation may mean a bowel movement which does not completely evacuate and leaves the person with a sense that they still “need to go.” Some patients have combinations of these symptoms. As one can see, based on the various combinations of symptoms, it can be somewhat difficult to specifically define what constipation is.

In an effort to better define constipation, specific criteria were established by the ROME Multinational Consensus in 2000, and subsequently updated last in 2006:

Less than three bowel movements per week;  
Straining more than 25% of the time;  
Hard stools more than 25% of the time;  
Incomplete evacuation more than 25% of the time.

The purpose of these criteria was to develop a more specific definition, to enhance research, and to help evaluate treatment outcomes.

It is important to keep in mind that constipation must be differentiated from Irritable Bowel Syndrome, Constipation subtype (IBS-C) which is associated with abdominal pain, irregular bowel habits (intermittent loose stools not associated with laxatives), and pain relieved by defecation. One can find more information regarding Irritable Bowel Syndrome at [www.fascrs.org](http://www.fascrs.org).

### **What causes constipation?**

Causes of constipation include:

Lack of fiber in diet  
Sedentary lifestyle  
Dehydration  
Medical conditions – e.g., hypothyroidism, diabetes, scleroderma, lupus, depression  
Medications – e.g., narcotics, blood pressure, psychiatric,  
Abnormal function – colonic inertia, pelvic floor muscle dyssynergia, Hirschsprung's disease  
Colon or rectal cancer  
Anal cancer  
Anatomic reasons - enterocele, sigmoidocele, rectocele, rectal Intussusception (prolapse),  
Colonic stricture or narrowing (diverticulitis, Crohn's disease, radiation, ischemia)  
Anal disease – stricture (Crohn's disease, post-surgical scarring, radiation induced), severe anal pain (anal fissures, anal infection)

As previously noted constipation is common and probably represents the most common intestinal complaint. Constipation is often due to one of, or a combination of, three factors: low fiber diet; poor fluid intake; or lack of physical activity or exercise. All of these are important to intestinal health and normal function, and simply addressing them will often improve bowel movements and relieve constipation.

However, other causes must be considered. Specific medical conditions can cause constipation, including diabetes, low thyroid hormone (hypothyroidism), and depression, or other less common diseases such as scleroderma, Parkinson's disease or multiple sclerosis. Another contributing factor is medications. This may include those commonly prescribed for pain-relief, high blood pressure, depression, psychiatric problems and acid stomach. It is critical to know what medications you are currently taking and discuss their possible side effects with your medical provider or pharmacist.

Some specific types of constipation are rare, but occasionally must be taken into consideration when chronic constipation remains unresponsive to simple measures. These include slow transit constipation (motility disorder where the colon doesn't move stool through as it should), irritable bowel syndrome (IBS) and dyssynergic defecation (the rectum doesn't evacuate stool the way it should), or a combination of the above or "mixed disorder." We address these disorders, with the exception of irritable bowel syndrome, which is the subject of a separate educational piece.

Lastly, some serious causes of constipation are more mechanical in nature. Diseases which cause inflammation like diverticulitis or Crohn's disease can cause excessive scarring and narrowing. In addition, tumors or growths in the colon can physically block the bowel. The less common causes should be kept in mind, as they are often more serious.

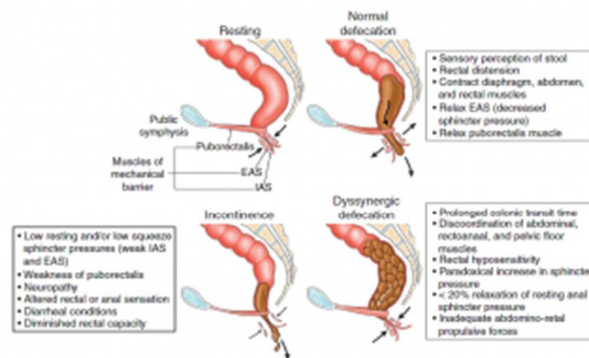


Figure 1. A series of schematic diagrams that reveal the normal anatomy and physiology of the pelvic floor in the sagittal plane at rest, during defecation, and the key pathophysiologic changes in subjects with fecal incontinence and dysynergic defecation. EAS, external anal sphincter; IAS, internal anal sphincter. (reprinted from Rao SS (85), with permission from Elsevier).

Figure 1 R Schey, J Cromwell, and S Rao Am J Gastroenterol 2012; 107:1624–1633; doi:0.1038/ajg.2012.247; published online 21 August 2012

### How do you treat constipation?

Generally, constipation is avoided by following the basics of good intestinal health. Diet, fluid intake and physical activity should always represent the initial step when an individual experiences constipation. Twenty five grams of fiber per day is the recommended daily amount of dietary fiber. Eating a diet rich in whole grain breads, cereals and fiber bars, in addition to fresh fruits and vegetables, often will improve bowel habits by adding bulk to the stool. Fiber and fiber supplements, however, are not an antidote for poor dietary habits, such

as eating fried or fatty foods and frequent red meat. Healthy dietary choices are the foundation of intestinal health and bowel function; what goes in affects how it is eliminated.

Scientific study has shown that drinking 6 to 8 glasses per day of water per day (1.5 – 2L) will help keep the stool from being hard and makes easier to eliminate. Regular exercise - as simple as brisk walking for 30 minutes per day – will likely improve bowel function.

### **Role of laxatives**

There are many different types of laxatives available over the counter in grocery stores and pharmacies. The way in which laxatives work varies and can be very effective for acute relief of constipation and, in rare cases, may be part of a regular routine. Before one resorts to routine laxative use, it is important to discuss your symptoms with your medical provider, as a more serious medical condition may need to be ruled out.

Irritant type laxatives (cathartics) stimulate bowel wall contraction. Examples of this class of laxative include senna, cascara or bisacodyl-based medications. The long term use of such stimulant laxatives may result in tolerance and over time bowel function may become ineffective. Chronic use is generally discouraged.

Another class of laxatives are the osmotic type which promotes water retention in the bowel. These laxatives may be based on salts or sugars as the active molecules creating the osmotic effect (pulling water into the colon). Sugars such as lactulose or sucrose are available. Elements such as magnesium (Milk of Magnesia®) and phosphate-based products (Fleets® Phosphosoda) also can act as osmotic laxatives, although care must be exercised in the case of patients with kidney problems, as such types of laxatives may cause electrolyte problems in patients with kidney disease. Polyethylene glycol 3350 (MiraLAX®) is an over the counter osmotic laxative which increases bowel frequency and is commonly recommended as a result of its safety.

Other laxatives improve passage of stool by affecting the character of the fecal material. Mineral oil prevents fluid loss by coating the stool and docusate sodium (Colace®) enhances water penetration into the stool, making it softer.

Enemas and suppositories also have been used to treat constipation. Enema and suppository therapy stimulates defecation through distension of the rectum (saline) or by irritation (soap suds, Fleets®, bisacodyl) or by softening the stool (glycerine suppository). Unfortunately, a downside of such a strategy is that it can be habit forming, and tolerance to such stimulation may diminish effectiveness long term.

Again, it must be stressed that while laxatives, enemas and suppositories may all play a role in the treatment of constipation, their chronic use should be discouraged without first consulting your medical provider to ensure that a more serious condition (i.e., cancer) is not overlooked.

### **Specific medications to treat constipation**

Specific medical therapies exist to treat constipation. These therapies are prescribed by your medical provider only in certain circumstances, and cost may be an issue. One available medication is lubiprostone (Amitizia®). This works by increasing intestinal secretion. While this medication is safe, Amitizia® side effects include diarrhea, nausea, and headaches, and these may limit its effectiveness. Linaclotide (Linzess®) recently was approved by the U.S. Food and Drug Administration as medical therapy for constipation. This drug works by increasing both motility and by increasing intestinal secretion. Another medication approved

in Europe and Canada for the treatment of constipation in females, pruclopride (Resolor®, Resotran®), works by increasing bowel motility. Unfortunately, the number of males studied was insufficient to demonstrate benefit in this group. Currently pruclopride has not yet been approved for use by the U.S. FDA but offers a possible future treatment.

Another medication treats constipation specific to individuals taking chronic narcotic medications due to chronic pain resulting from advanced illness. Methylnaltrexone bromide (Relistor®) has been approved for this specific indication and works by counteracting the effects of narcotic medication on the bowel motility. This again requires medical evaluation and prescription. Cost will be an issue for those whose medication benefit plan does not cover this relatively new drug.

Associated symptoms and when to seek help from your medical provider or a specialist

Knowing when constipation requires professional evaluation is key. In general, if constipation becomes progressive either in frequency or severity and not manageable with the simple measures described above, you should seek medical attention. Constipation often is accompanied by other symptoms which can be very important in terms of determining the nature of the problem and knowing when you should see a medical provider. Not infrequently, constipation is associated with a bloating sensation, mild nausea and perhaps mild cramping pain all of which are generally relieved by bowel movements. Clearly, if one has worsening nausea and repeated vomiting or if abdominal pain becomes severe and constant one should seek immediate help. Also, if constipation is associated with a change in stool size – narrow like a pencil or ribbon-- change in frequency, or if any blood is seen from the rectum, one should see a medical provider.

### **How do you evaluate constipation?**

There are several tests that could be considered when constipation persists in spite of basic measures or if the constipation is associated with other symptoms.

Considering the normal function of the colon and rectum, constipation can be understood as failure of the colon to adequately push the stool forward; failure to sense distension or fullness of the rectum; or failure of the coordinated reflex relaxation of the pelvic muscles to allow for evacuation of stool. Also, rare anatomic abnormalities (rectocele, enterocele, sigmoidocele) can inhibit normal evacuation. Lastly, constipation could be a result of mechanical blockage of the bowel by scarring and constriction of the bowel channel or by narrowing of the channel due to growth of a tumor or mass.

Diagnostic studies to evaluate constipation include:

- Colonoscopy
- Barium enema
- CT colonography (virtual colonoscopy)
- Colonic transit study (Sitzmarks® study)
- Anorectal manometry
- Defecography – fluoroscopic (traditional) or dynamic MRI

Colonoscopy is a test where a lighted flexible tube with a video-camera at its tip is passed through the anus, rectum and colon, allowing for visualization of the channel of the bowel and inspection for growths such as polyps or tumors and cancer. Colon cancer is common in the U.S. and should always be high on the list for possible causes of blockage of the colon and a cause for constipation. Colonoscopy has the advantage of patient sedation and is generally better tolerated as a result. Colonoscopy should not be performed when acute diverticulitis is

suspected due to the risk of perforation. Colonoscopy has a very small risk (~1 in 1000) of perforating the colon or causing bleeding bad enough to require a blood transfusion and/or surgery. It is the most sensitive test, however, for detecting polyps (precancerous growths), allows for removal of such polyps, and allows for biopsy of any other lesions detected.

Barium enema is an X-ray test involving passage of an enema with radiologic contrast into the rectum and colon with multiple abdominal x-rays performed, providing information related to the bowel and the presence of tumors or constriction of the channel. It is less commonly performed than colonoscopy, but may be complementary to colonoscopy when evaluating narrowing of the bowel due to scarring. Disadvantages of a barium enema is that it again requires bowel cleansing, is performed in the awake patient, is not as sensitive at detecting polyps and, if abnormal, requires subsequent colonoscopy to be performed.

A special CT scan of the abdomen and pelvis (CT colonography) or “virtual colonoscopy” may also be considered as an alternative radiology study, but just as in the case of an abnormal barium enema, a colonoscopy would then be necessary if abnormalities were found. So, while there are options, diagnostic colonoscopy generally is considered the initial test of choice in a person with symptoms of constipation.

Rarely, severe constipation occurs due to lack of colonic muscular activity and failure to push stool to the rectum. This condition, known as colonic inertia, results in profound constipation where patients often may fail to have a bowel movement for weeks. Such constipation often develops in childhood, although not always. This may represent as few as ten percent of all patients presenting to medical attention for the evaluation of constipation. The cause of colonic inertia is unknown. Evaluation involves colonoscopy or barium enema to assess for mechanical blockage.



Figure 2

If no blockage is found, the colon’s ability to propel stool can be determined by a colonic transit study where a patient swallows a capsule (Sitzmarks ®) with small rings (Figure 2) which can be seen on x ray and followed by serial x-rays to assess the progress of the rings passing through the intestinal tract. In the simplified method, one capsule is ingested on Sunday and X-rays of the abdomen are performed on Monday, Wednesday and Friday. Usually, all the rings are expelled by the fifth day. An abnormal study is identified by 6 of 24 rings (>20%) remaining within the intestinal tract and there are two particular patterns which may be present. If more than 20% (6 or more) of the markers remain and are distributed throughout the colon, the study suggests colonic inertia or poor muscular activity of the colon and the failure to propel the stool (Figure 3).

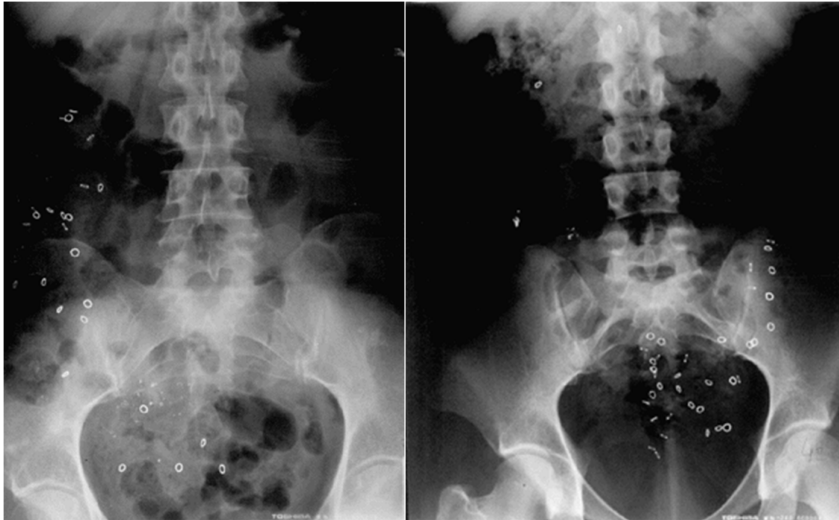


Figure 3 & 4

If more than 20% of the markers remain, but are pushed to the rectum and not expelled, this would suggest normal muscular activity of the colon, but indicate that there is a problem with the muscles of the pelvic floor (Figure 4). This would be referred to as dyssynergic defecation or pelvic outlet dysfunction syndrome (ODS). The pelvic floor muscles may fail to relax in a coordinated fashion (aka pelvic floor dysfunction, pelvic dyssynergia, non-relaxing puborectalis muscle) to allow for evacuation. There may be an anatomic abnormality which inhibits or blocks normal evacuation such as an enterocele, sigmoidocele, rectocele or rectal prolapse.

Pelvic floor function can be assessed on physical exam by assessing the ability of the anal sphincter and pelvic floor muscles to squeeze and relax normally. To confirm possible disorders of the anal sphincter muscles or pelvic floor function, a study called “anal manometry” can be performed to measure the pressures of the muscles at rest and when functioning. Anal manometry should be considered to evaluate for outlet obstruction when a patient feels that the rectum is distended and the desire to eliminate is present, but upon attempts to evacuate, the patient fails to do so. This suggests possible pelvic or anal outlet obstruction as the cause of constipation.

Manometry is done by inserting a thin tube just larger than a spaghetti noodle into the anal canal and rectum and measuring pressures. The test measures pressures at rest, upon voluntary squeeze and with attempt to evacuate.

In addition, a small balloon on the tip of the catheter can be inflated to assess sensation of rectal filling. Again, normal bowel function requires the ability to sense when the rectum is filling and stretching out. Balloon inflation also tests an important reflex of the anal sphincter muscles. Typically, during rectal filling and distension – simulated by the inflation of the balloon– we normally expect that measured pressures will briefly decrease in the anal canal. This reflex is known as the recto-anal inhibitory reflex and absence of this reflex may indicate failure of relaxation of sphincter muscles to allow for evacuation. Both Chagas’ disease (caused by a parasite, usually found in Brazil) and Hirschsprung’s disease (a developmental absence of nerve endings in the anal sphincter muscle) result in failure of the anal sphincter muscles to relax and, thus, not allow for normal passage of stool out of the rectum.

Additionally, anal manometry may find contraction instead of relaxation of the pelvic floor during an attempt to evacuate – basically this represents loss of the normal coordinated

reflex. This failure of relaxation of the pelvic floor again results in an inability to eliminate stool. During anal manometry, a balloon expulsion test can be performed. The catheter balloon is filled to 60 milliliters and the patient is instructed to evacuate the balloon. If the patient is unable to eliminate the balloon within one minute, the test is abnormal and suggests an anal or pelvic floor outlet dysfunction as cause for constipation.



Figure 5

Defecography is an additional x-ray test to evaluate the patient's ability to eliminate stool properly. This involves taking barium by mouth to fill the small intestine and taking an enema of thick barium or paste (consistency of oatmeal) into the rectum. The patient then sits on a special commode and fluoroscopy (dynamic x-rays) is performed during a patient's attempt to evacuate the paste. This enables evaluation of the coordinated movement of the rectum and pelvic floor muscles to allow for evacuation of the rectum as well as to evaluate for possible anatomic abnormalities which may inhibit or block elimination. A variant of this test is a dynamic MRI.

In addition to identifying cases where the pelvic floor does not relax normally during evacuation (pelvic dyssynergia), other anatomic abnormalities may also be discovered. An enterocele is a type of hernia at the pelvic floor where the intestine pushes between the vagina and the rectum thereby occluding the rectum during defecation. Similarly, a sigmoidocele occurs when the sigmoid colon descends into a pelvic floor defect and obstructs the rectum. Intussusception of the rectum or prolapse can cause occlusion by internally blocking the rectum. A rectocele is an outpouching of the rectum into the wall of the vagina which will "pocket stool" and prevent normal passage of stool downward and out. These abnormalities are visualized by defecography. Identification of such abnormalities leads to careful selection of patients who may benefit from surgical repair and correction.

### **Treatment of severe constipation and specific disorders**

In the case of pelvic floor non-relaxation (pelvic floor muscle dyssynergia), physical therapists effectively retrain patients using special techniques (biofeedback) to improve sensation of rectal fullness as well as pelvic muscle relaxation to allow for elimination. The objectives of biofeedback are two-fold: To correct the dyssynergia or incoordination of the abdominal, rectal, puborectalis and anal sphincter muscles in order to achieve a normal and complete evacuation and, secondly, enhance rectal sensory perception (rectal filling or distension) in patients with impaired rectal sensation. The regimens for therapy vary, but a training session typically takes one hour. Patients usually undergo therapy every 1-2 weeks and on average, 4 to 6 training sessions are required. Subsequent reinforcements at six weeks, three months, six months and twelve months may provide additional benefit, and also improve the long term outcome of these patients, but its efficacy has not been validated.



The results of biofeedback range depending upon the measured endpoints. Several randomized controlled trials of adults with dyssynergic defecation have been reported. While the studies differ in respect to their methods, all of these studies have concluded that biofeedback therapy is superior to controlled treatment approaches such as diet, exercise and laxatives, and other therapies. So, identifying the patient with dyssynergic defecation likely can lead to relief of constipation with biofeedback. Unfortunately, such therapy appears limited by the presence in medical communities of trained physical therapists dedicated to pelvic floor disorders.

**Table 1. Summary of the randomized controlled trials of biofeedback therapy for dyssynergic defecation**

	Rao et al. (35)	Chiarioni et al. (32)	Rao et al. (86)	Chiarioni et al. (34)	Heymen et al. (33)
Trial design	Biofeedback vs. standard	Biofeedback vs. polyethylene glycol, 14.6g	Biofeedback vs. standard vs. sham biofeedback	Biofeedback for slow transit vs. dyssynergia	Biofeedback vs. diazepam, 5 mg, vs. placebo
Subjects and randomization	26 (23 Women): 13 biofeedback, 13 standard	104 Women: 54 biofeedback, 55 polyethylene glycol	77 (69 Women), 1:1:1 distribution	52 (49 Women): 34 dyssynergia, 12 slow transit, 6 mixed	84 (71 Women): 30 biofeedback, 30 diazepam, 24 placebo
Duration and number of biofeedback sessions	3 Months, 6-, 9-, and 12-month reinforcement sessions	3 Months and 1 year, 5 weekly 30-min training sessions performed by physician investigator	3 Months, biweekly, 1h, maximum of six sessions over 3 months, performed by biofeedback nurse therapist	Five weekly 30-min training sessions, performed by physician investigator	Six biweekly 1-h sessions
Primary outcomes	Number of complete spontaneous bowel movements (CSBMs)	Global improvement of symptoms: Worse=0; No improvement =1; Mild=2; Fair=3; Major improvement=4	(i) Presence of dyssynergia; (ii) Balloon expulsion time; (iii) Number of CSBMs; (iv) Global satisfaction	Symptom improvement: None=1; Mild=2; Fair=3; Major=4	Global symptom relief
Dyssynergia corrected or symptoms improved	The number of CSBMs per week increased significantly ( $P<0.001$ ) in the biofeedback group	In all, 79.6% reported major improvement at 6 and 12 months, 81.5% reported major improvement at 24 months	Dyssynergia corrected at 3 months in 79% with biofeedback vs. 4% sham and 6% in standard group; CSBM=biofeedback group vs. sham or standard, $P<0.05$	In all, 71% with dyssynergia and 8% with slow transit alone reported fair improvement in symptoms	In all, 70% improved with biofeedback compared with 38% with placebo and 30% with diazepam
Conclusions	Biofeedback provided sustained improvement compared with standard therapy	Biofeedback was superior to laxatives	Biofeedback was superior to sham feedback and standard therapy	Biofeedback benefits dyssynergia and not slow transit constipation	Biofeedback is superior to placebo and diazepam

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Constipation is a problem rarely treated with surgery, but removing the colon for slow transit constipation may be considered. Patients considered for surgical correction of constipation should be thoroughly evaluated (ensure no evidence of dyssynergic defecation and verify normal stomach emptying and small intestinal transit) by a physician and undergo appropriate testing. These patients should also have failed maximal medical management.

Colonic inertia or slow transit constipation refers to a lack of normal movement of stool through the colon and results in infrequent bowel movements. The operative procedure to treat slow transit constipation involves removal of the colon (total abdominal colectomy - TAC) with either reconnection of the small intestine to the rectum (ileorectal anastomosis- IRA) or, alternatively, creation of an end ileostomy (intestine brought out through the abdominal wall and skin to empty into a bag). The procedure often can be performed using laparoscopic technique - camera guided surgery, small instruments, and small incisions, less pain and faster recovery and return to regular activities of daily living. After TAC with IRA, the individual should expect to have multiple (3-5) loose stools per day. Although constipation is reliably relieved by TAC and IRA, significant issues remain regarding a patient's sense of the quality of life and satisfaction with this treatment.

TAC-IRA can be associated with abdominal pain, diarrhea, incontinence, and recurrence of constipation. Patients should be counseled that the abdominal pain and bloating may persist postoperatively even after normalization of bowel frequency. A specific group of patients vulnerable to poor outcomes following TAC-IRA are patients who suffered prior sexual abuse. These patients, in particular, require more post colectomy medical care for abdominal

complaints. Thus, prior to surgery for colonic inertia, patients should be extensively counseled about the risk of persistence of symptoms and the potential for development of new symptoms after surgery.

As previously discussed, pelvic floor hernias and rectocele of the rectum can be repaired when identified on defecography. Lastly, specific diseases which have narrowed the bowel due to inflammation (diverticulitis, Crohn's disease, ulcerative colitis, ischemic colitis) or due to colorectal cancer will require surgery.

It is very important to emphasize that the role of surgery in the treatment of constipation is for very specific diseases or disorders. The reality is that patients with constipation will rarely require an operation. Referral to a colon rectal surgeon should be viewed as an opportunity to have an expert evaluate you in the most efficient and logical manner, hopefully resulting in an effective and rational treatment of constipation.

### **Summary**

Constipation is a common complaint which is most often avoided or addressed by thoughtful dietary choices to increase fiber and fluid intake and by lifestyle changes to enjoy regular exercise. If these measures fail to improve your bowel habits, talk to your doctor or medical provider to be evaluated. Laxatives should not be regularly taken without first talking to your medical provider. Lastly, if constipation is associated with symptoms such as nausea and vomiting, acute abdominal pain or blood from the rectum, one should immediately seek medical attention to evaluate the cause of the complaints. Medical management is usually effective in relieving symptoms, while surgery is reserved for very specific situations and gives good results in the right patient.

### **What is a colon and rectal surgeon?**

Colon and rectal surgeons are experts in the surgical and non-surgical treatment of diseases of the colon, rectum and anus. They have completed advanced surgical training in the treatment of these diseases as well as full general surgical training. They are well-versed in the treatment of both benign and malignant diseases of the colon, rectum and anus and are able to perform routine screening examinations and surgically treat conditions if indicated to do so.