

## Bowel Function Disorders:

A normal stool is formed, soft and eliminated every 1-2 days. Symptoms of disorders of bowel function include chronic constipation, periodic diarrhea or both. These disorders in bowel function may occur occasionally or be a daily pattern. They may be a symptom of another disease, an allergy to something ingested, or a habit. Frequently, a sensitivity to gluten is acquired. The congenital version is celiac disease or sprue. Rectal bleeding and pain may be present and can be due to hemorrhoids, anal fissures, or inflammation or tumors of the bowel. Accidental loss of stool (fecal incontinence) can have a significant impact on quality of life. A brief summary of these conditions follows with web links for further information.

### Constipation & Diarrhea

**Constipation** occurs when the stool remains in the rectum longer than normal and becomes dehydrated and hard.

Trying to pass a large amount of hard stool can cause abdominal cramping, nausea, gas pains, pelvic pain, and anal bleeding. Constipation is frequently due to not taking time to have regular bowel movements, inadequate intake of fluids and dietary fiber. Medical disorders such as hypothyroidism may be the cause.

**Diarrhea** is an increase in the frequency, volume, and liquidity of stool and may be associated with abdominal cramping. Acute diarrhea may last up to 2-3 weeks, while chronic diarrhea lasts more than 4 weeks. Physical examination and laboratory testing will help categorize and narrow the possible causes of diarrhea. Acute diarrhea is usually due to infection from contaminated water or food. Chronic diarrhea may have the same origins as the acute form.

### General Dietary Treatment of Constipation and Diarrhea:

Drinking plenty of fluids to keep the color of your urine pale yellow, eating foods that contain 30–35 grams of fiber, and regular exercise are the mainstays to avoiding constipation and will also help correct chronic diarrhea. Taking time on a regular basis to have a bowel movement should be an important part of our daily routine. Eating foods that are rich sources of fiber is a natural way to create bulk in your stool.

### Foods that are high in fiber, expressed in grams of fiber per serving, include:

Prunes, canned, 1 cup	13.8
Almonds, roasted, ½ cup	8.0
Blackberries, 1 cup	7.2
Boysenberries, 1 cup	7.2
Peanuts, roasted, ½ cup	6.3
Pinto Beans, ½ cup	5.9
Kidney Beans, ½ cup	5.5
Brown Rice, ½ cup	5.3
Grapefruit, 1 medium	3.6
Brussels Sprouts, ½ cup	3.5
Apple, with peel, medium	2.8
Spaghetti, 2 ounces	2.6
Oatmeal, 1 ounce	2.5
Carrots, ½ cup	2.4
Whole Wheat Bread, 1 slice	2.1
Potato, baked, with skin	2.0
Green Beans, canned, ½ cup	1.9
White Rice, ½ cup	1.4
Bran Cereal, 1 ounce	0.7
French Bread, 1 slice	0.7

## Medical Treatment of Constipation:

When these mainstay dietary lifestyle measures (adequate fluid and soluble fiber intake) and are not enough to prevent constipation or control episodes of diarrhea, use the dietary recommendations listed below. If the stool is not soft enough to pass comfortably, then increase the morning fiber and/or the evening stool softeners until you have found the correct dosage.

In the morning with breakfast use one of the following bulk stool softeners DAILY. Follow the directions on the package:

- Benefiber Powder, Tablets or Wafers
- Metamucil Powder or Wafers
- Fibercon Tablets
- Citrucel Powder

If you are unable to move your bowels each day, use one of the following in the evening:

- Miralax Powder
- Senokot-S
- Colace 200 mg
- Amitiza 24umg twice daily

**KEY Point:** Take time on a daily basis to go to the bathroom (usually after morning breakfast). Your colon is trainable, but you have to be the trainer.

## Medical Treatment of Acute Diarrhea:

- Pepto-Bismol 2 tablets or 2 tbsp every 30 minutes; Total: 8 doses
- Kaopectate 30 ml (1 oz.) after each loose stool; may repeat up to 7 doses in 24 hours
- Imodium 4 mg tab or liquid initially, then 2 mg after each loose stool

## Irritable Bowel Syndrome

Approximately 20 percent of the U.S. adult population report symptoms of irritable bowel syndrome, commonly referred to as 'IBS'. The ratio of women to men is 3:1. It is the most common functional bowel disorder, and one of the top 10 reasons for patient visits to their primary care provider. Symptoms typically include periodic diarrhea, frequently alternating with constipation, bloating, abdominal cramping and nausea. The diarrhea symptoms frequently follow the ingestion of certain foods, such as milk (lactose) or gluten (wheat) products. Often eliminating lactose or gluten from the diet for 2 weeks will provide significant relief (see recommendations listed below).

Up to 75 percent of women presenting with chronic pelvic pain are diagnosed with IBS. Patients frequently experience pain with intercourse and/or cyclical pain related to their menstrual cycles. Women with IBS will frequently have had a laparoscopy procedure to diagnose the cause of their pelvic pain. In addition, IBS patients are more likely to experience fibromyalgia and irritable bladder disorders, such as interstitial cystitis. Psychosocial stress and conflict can alter the motor function of the colon for both healthy women as well as those with IBS.

## Diagnosis of IBS:

The diagnosis is usually based on the patients' history and symptoms, including dietary habits, changes in bowel patterns and psychosocial stressors. The thorough history and physical examination, blood tests and stool tests for blood and infection should be obtained when indicated. A flexible sigmoidoscopy or a colonoscopy should be reserved for patients with additional symptoms suggestive of cancer or microscopic colitis. Important symptoms include unexplained weight loss, nocturnal fecal loss, blood in stool, recent antibiotic use, and family history of colon diseases.

## Treatment of IBS:

- Treatment of IBS varies with treatment of any specific contributing cause. Dietary changes, including increasing dietary fiber, fluid intake, and changing the size and timing of meals. A trial of avoiding the ingestion of certain substances is often beneficial, including caffeine, artificial sweeteners, dairy products, alcohol, and gas-forming vegetables (broccoli and cauliflower). Medications to relax the colon are frequently beneficial. Stress management programs and acupuncture may also improve symptoms.
- **Diet:**
  - ❑ **Eliminate Certain Sugars**
    - Poorly absorbed sugars have an osmotic effect in the colon that ferment with colon bacteria (creating gas) and draws fluid into the lumen of the colon (creating loose stools). This combination of increasing fluid and gas can lead to bloating, abdominal discomfort and diarrhea. Therefore, eliminating these sugars can have a benefit and improve the symptoms of IBS-D. Such a diet is referred to as a:
      - **Low FODMAP Diet** (Low Fermentable Oligo-, Di-, Mono-saccharides And Polyols Diet) are foods containing certain sugars to avoid include:
        - Fructose and/or lactose
        - Polyols (eg, artificial sweeteners)
        - Stone fruits (eg. apples, pears, apricots, peaches, plums, cherries)
        - Fructans (wheat, onions, leeks, asparagus, garlic, chicory, burdock, barley, rye, bananas, lettuce)
        - Galactans (legumes, beans, lentils, cabbage, chickpeas, Brussels sprouts)
  - ❑ **Eliminate Glutein Containing Foods**
    - Gluten may induce symptoms in patients with IBS-D who do not have celiac disease.
    - A 3 week trial of eliminating ALL glutein containing foods (read the labels carefully) will indicate, if glutein is one of the main culprits in causing the IBS-D symptoms.
  - ❑ **Fiber**
    - There are 2 broad categories, soluble and insoluble.
      - *Insoluble fiber* is minimally changed as it passes through the GI tract. It is found in the skin of fruits and vegetables, in seeds, nuts, and whole grains, as well as in supplements such as corn fiber and wheat bran. Insoluble fiber does not appear to be effective in IBS and can worsen bloating and abdominal discomfort.
      - *Soluble fiber* dissolves in water to form a viscous gel. It is found in barley, flax, oats, and certain fruits and vegetables, as well as supplements such as psyllium, calcium polycarbophil, and methylcellulose. *Soluble fiber* appears to be modestly effective for treating IBS (all types), but it is not clear if the benefits extend to patients with IBS-D.
- **Probiotics:**
  - ❑ A meta-analysis of 35 randomized controlled trials determined that probiotics effectively reduce IBS global symptoms, including pain, gas, and bloating and diarrhea.
  - ❑ Recommended Probiotic: **Super Bifido Plus (Flora: Udo's Choice)**, 102 Billion Cells, daily
- **Medication:**
  - ❑ Doxepin 10 mg 1 q hs.
  - ❑ Eluxadoline (Viberzi) reduces abdominal pain and diarrhea and prevents constipation.
  - ❑ Rifaximin (Rifagut) 550 mg tid for 14 days in non-constipation IBS. Relief of symptoms can persist for up to 3 months.

## Gluten Intolerance (Celiac Disease or 'Sprue')

Celiac Disease is a genetic condition whereby the absorption of food nutrients through the small intestine is impaired because of an immune or allergic reaction to *gluten*. Gluten is a protein found in wheat, rye, barley, and oats, or related grains, and is present in many foods that we eat. It is the gluten in the flour that helps bread and other baked goods bind and prevent crumbling. This feature has made gluten widely used in the production of many processed and packaged foods. There are blood tests developed specifically for the detection of celiac patients. A definitive diagnosis can only be made by an endoscopy procedure with a small bowel biopsy.

### **Common Symptoms Celiac Disease include:**

- Anemia
- Chronic diarrhea
- Weight loss
- Fatigue
- Cramps and bloating
- Irritability

At present, there is no cure for Celiac Disease. However, once it is diagnosed celiac disease can be readily treated by following a gluten-free diet. The symptoms are generally reversible once the offending grains or products of grains are removed from the diet.

### **Fecal Incontinence**

Fecal *continence* is the ability to retain stool in the rectum, while perceiving the need to defecate until a voluntary excretion can occur. Fecal continence disorders are dysfunctions in retention, perception and excretion.

Fecal *incontinence* is the inability to control the stool with or without the perception of the need to defecate. It can be a complex and devastating condition. The inability to control one's stool can severely affect the quality of one's life and the emotional, social, and psychological impact can be overwhelming. Most women and many healthcare providers are often reluctant to inquire about fecal incontinence; therefore, the exact prevalence of this disorder is unknown.

### **Many factors play a part in maintaining fecal continence:**

- The consistency and volume of the stool
- Transit time of stool through the colon
- Nerve supply to the pelvic floor muscles and pelvic sphincters
- The interplay between the pubo-rectalis muscle, rectum, and anal sphincters

### **Causes of Fecal Incontinence include:**

- Nonspecific conditions, such as episodes of diarrhea, fecal impaction, and irritable bowel syndrome
- Anatomical disorders, such as protruding hemorrhoids, rectal prolapse, and rectal fistula
- Injury, such as prior hemorrhoidectomy, traumatic vaginal delivery and accidental trauma
- Rectal diseases, such as colitis, infectious diseases, and rectal or anal cancer
- Neurological disease, such as multiple sclerosis, stroke, diabetes, and nerve tumors

### **Evaluation:**

A detailed history will help differentiate fecal incontinence due to passing excessive gas, stool consistency, and the degree to which symptoms impact a person's life. The history should reflect the possibility of Crohn's disease, ulcerative colitis, previous ano-rectal surgeries, and obstetrical history. Physical exam can determine the appropriate tone and ability of the rectal sphincters to function appropriately. Further evaluation by radiologic tests, ultrasound, and neurophysiologic testing may be indicated.

### **Treatment:**

- Behavioral modification, including dietary changes, use of bulking agents, changing bowel habits
- Drug therapy to slow the motility of the colon and treat any diagnosed bowel disease
- Treatment of associated medical causes
- Biofeedback
- Surgery

**For further information about these disorders of bowel function click on the following web links:**

**Constipation:**

- <http://www.digestive.niddk.nih.gov/ddiseases/pubs/constipation/Constipation.pdf>

**Diarrhea:**

- <http://www.digestive.niddk.nih.gov/ddiseases/pubs/diarrhea/Diarrhea.pdf>

**Irritable Bowel Syndrome:**

- <http://www.digestive.niddk.nih.gov/ddiseases/pubs/ibs/ibs.pdf>
- **Effective Management of Chronic Symptoms of IBS-Diarrhea.** Spencer D. Dorn, MD, MPH, MHA, CME Released: 10/21/2015.

**Celiac Disease (Sprue):**

- <http://digestive.niddk.nih.gov/ddiseases/pubs/celiac/>
- [www.celiac.com](http://www.celiac.com)

**Fecal Incontinence:**

- <http://www.digestive.niddk.nih.gov/ddiseases/pubs/fecalincontinence/fecalincontinence.pdf>

**By: Gordon C. Gunn, M.D.**

**Revised 11.02.2015**