

Constipation

Constipation is the most common digestive complaint in the general population. The definition, cause, and evaluation of chronic constipation will be reviewed along with treatment guidelines.

Definition:

Constipation refers to a disturbance in bowel habits, but has varied meanings. Stools may be:

- too hard or too small
- difficult to pass
- infrequent (fewer than three bowel movements a week)

Having to strain to have a bowel movement is also seen with constipation. Some people with constipation also have the sense that the bowels do not completely empty after a bowel movement.

Causes:

There are many factors that contribute to or cause constipation.

The most common causes include:

- eating a diet too low in fiber
- eating too few calories
- not drinking enough fluids
- a low activity level
- medications

Medical conditions that contribute to developing constipation include:

1. Neurological disorders:
 - Multiple sclerosis
 - spinal cord injury, paraplegia, cerebral palsy
 - Parkinson's disease
2. Metabolic disorders:
 - hypothyroidism
 - pituitary problems
 - chronic kidney disease
 - diabetes mellitus
3. Colon dysfunction such as irritable bowel syndrome
4. Colon cancer or other masses pressing on the colon
5. Anal fissures or strictures
6. Inflammatory bowel disease

Medications that can contribute to constipation include:

1. Pain medications (narcotics)
2. Antihistamines
3. Antidepressant and antipsychotic medications
4. Some seizure medications
5. Iron supplements
6. Sucralfate and some antacids such as TUMS
7. Some blood pressure medications

Evaluation:

The evaluation by a physician includes a careful history and examination. The examination may include a rectal examination to look for hemorrhoids, fissures, or an abnormal anal opening. Laboratory studies may include thyroid testing, checking for anemia, and checking levels of sugar, calcium, kidney function, etc.

Diagnostic testing may be ordered especially if there is a recent change in bowel habits, blood in the stool, weight loss, or a family history of colon cancer. Testing can include a flexible sigmoidoscopy or colonoscopy. X-rays of the abdomen to detect significant stool retention or show megacolon, or barium enemas to detect structural causes may be ordered. Colonic transit studies and motility studies may also be of use.

Complications:

Constipation is uncomfortable and can interfere with quality of life. Chronic constipation can be associated with:

- Aggravation of hemorrhoids
- Fecal impaction which can cause abdominal pain, nausea, vomiting, urinary retention and ulcers in the rectum.
- Anal fissures which are painful tears in the anal canal caused by passing hard stool.

Treatment:

If specific treatable causes of constipation are not found, general management includes:

1. Behavior changes: It is best to establish a regular pattern of bowel movement. People who have a normal bowel pattern usually defecate at approximately the same time every day. Since the bowels are most active after awakening and after meals, the most optimal time for a bowel movement is usually within the first two hours after waking and after breakfast. When the signals to defecate are ignored, these signals become weaker and weaker over time. Encouraging and allowing persons to pay attention to these signals can help decrease constipation.

2. Diet: Fiber increases stool bulk, which help stools move through the colon. The recommended amount of fiber is 20 to 35 grams daily. Breakfast cereals can be an excellent source of fiber. The product information panel on the box shows the grams of fiber per serving. Many different fruits and vegetables are also very high in fiber and helpful in treating constipation. Citrus fruits, prunes and prune juice are especially helpful. However bloating and flatulence is a common problem with increased fiber so it is best to start slowly and increase gradually. The accompanying table shows the amount of fiber in various foods.

Products such as Senna tea, a natural laxative and caffeine-containing beverages that may stimulate bowel action may be useful.

Fluids and activity were once thought to be important in treating constipation but studies have not supported this. However fluids are still important and can help to prevent constipation.

- 2 liters (over 2 quarts) of fluids are generally needed by the average adult daily.
- Over half of the fluid consumed daily comes from food
- Fluid requirements increase with sweating, illnesses, diarrhea, fever, activities, and heat.
- Heat: water requirements increase by 3 to 5 ounces/day for each degree of body temperature elevation over 98.6°F.
- Some fluids such as coffee or alcohol can act as diuretics and cause dehydration.

3. Laxatives

- a. Bulk forming laxatives are natural or synthetic products that have a laxative effect by absorbing water and increasing fecal mass.
 - They may be effective by softening the stool and increasing the frequency of bowel movements.
 - The effectiveness of use of bulk forming laxatives is inconsistent. Though some studies found Psyllium to be the most effective for increasing stool frequency.
 - Bulk forming laxatives include:
 - Psyllium – Konsyl, Metamucil, Perdiem
 - Methylcellulose – Citrucel
 - Calcium polycarbophil – Fibercon, Fiber-lax
 - Guar gum – Benefiber
- b. Osmotic laxatives reduce water absorption from the colon, therefore there is more water in the stool to soften it and make passing easier.

- Polyethylene glycol (17 grams/day) is well tolerated.
 - Miralax®, GlycoLax®, PEGyLAX®, Gavilax®, HealthyLax®
 - Lactulose and sorbitol increase stool frequency and reduce the need for other laxatives but have a higher incidence of flatus and are less effective than polyethylene glycol.
- c. Saline laxatives act similarly to hyperosmolar laxatives by drawing water into the colon. For older adults especially, these could lead to high magnesium levels so need to be used with caution.
- Magnesium hydroxide (Milk of Magnesia®)
 - Magnesium citrate (Evac-Q-Mag®)
- d. Stimulant laxatives are quite effective but this can lead to overuse. They affect electrolyte transport across intestinal mucosa and increase colonic transport and motility. Overuse can cause low potassium levels.
- Senna (Ex-Lax®, Senokot XTRA®, SennaCon®, Senna-Lax®)
 - Bisacodyl (Bisacodyl EC®, Correct®, Dulcolax®, Bisc lax®)
- e. Stool softeners, suppositories, and enemas, although widely used, have limited efficacy.
- Stool softeners containing docusate (Colace®) were thought to increase the fluid content of the stool, making it easier to pass.
 - Glycerin suppositories can be useful in those who have difficulty emptying the rectum.
 - Enemas should be used only after several days of constipation in order to prevent fecal impaction.
- f. Other newer medications are generally reserved for those with severe constipation who have not responded to other treatments. These include:
- Lubiprostone (Amitiza®)
 - Linaclotide (Linzess®) – long-term risks and benefits are still being studied. The most common side effect was diarrhea.
- g. Tegaserod (Zelnorm) is a medication that was taken off the market in March 2007 due to concerns about increased risks of heart attack or stroke.

Summary

There are a number of ways to treat chronic constipation. It is up to the medical provider to decide when to treat and which method to use. There are studies showing that fiber and laxatives modestly increase bowel movement frequency. They also improve symptoms of constipation such as stool consistency and abdominal pain. There is inadequate evidence to establish whether fiber is superior to laxatives or one laxative class is superior to another in treating constipation. Data is limited, but thus

far there is no evidence that laxatives are unduly harmful. Whether fiber or laxative therapy for chronic constipation improves general well-being is not known.

Dietary Fiber Table

Food **Fiber, grams /serving**

Fruits

<u>Apple (with skin)</u>	<u>3.5/1 medium sized apple</u>
<u>Apricot (fresh)</u>	<u>1.8/3 apricots</u>
<u>Banana</u>	<u>2.5/1 banana</u>
<u>Cantaloupe</u>	<u>2.7/half edible portion</u>
<u>Dates</u>	<u>13.5/1 cup (chopped)</u>
<u>Grapefruit</u>	<u>1.6/half edible portion</u>
<u>Grapes</u>	<u>2.6/10 grapes</u>
<u>Oranges</u>	<u>2.6/1 orange</u>
<u>Peach (with skin)</u>	<u>2.1/1 peach</u>
<u>Pear (with skin)</u>	<u>4.6/1 pear</u>
<u>Pineapple</u>	<u>2.2/1 cup (diced)</u>
<u>Prunes</u>	<u>11.9/11 dried prunes</u>
<u>Raisins</u>	<u>2.2/packet</u>
<u>Strawberries</u>	<u>3.0/1 cup</u>

Juices

<u>Apple</u>	<u>0.74/1 cup</u>
<u>Grapefruit</u>	<u>1.0/1 cup</u>
<u>Grape</u>	<u>1.3/1 cup</u>
<u>Orange</u>	<u>1.0/1 cup</u>

Vegetables	Fiber, grams /serving
Cooked	
<u>Asparagus</u>	<u>1.5/7 spears</u>
<u>Beans, string, green</u>	<u>3.4/1 cup</u>
<u>Broccoli</u>	<u>5.0/1 stalk</u>
<u>Brussel sprouts</u>	<u>4.6/7-8 sprouts</u>
<u>Cabbage</u>	<u>2.9/1 cup (cooked)</u>
<u>Carrots</u>	<u>4.6/1 cup</u>
<u>Cauliflower</u>	<u>2.1/1 cup</u>
<u>Peas</u>	<u>7.2/1 cup (cooked)</u>
<u>Potato (with skin)</u>	<u>2.3/1 boiled</u>
<u>Spinach</u>	<u>4.1/1 cup (raw)</u>
<u>Squash, summer</u>	<u>3.4/1 cup (cooked, diced)</u>
<u>Sweet potatoes</u>	<u>2.7/1 baked</u>
<u>Zucchini</u>	<u>4.2/1 cup (cooked, diced)</u>
Raw	
<u>Cucumber</u>	<u>0.2/6-8 slices with skin</u>
<u>Lettuce</u>	<u>2.0/1 wedge iceberg</u>
<u>Mushrooms</u>	<u>0.8/half cup (sliced)</u>
<u>Onions</u>	<u>1.3/1 cup</u>
<u>Peppers, green</u>	<u>1.0/1 pepper</u>
<u>Tomato</u>	<u>1.8/ 1 tomato</u>
<u>Spinach</u>	<u>8.0/1 cup (chopped)</u>

Legumes **Fiber, grams /serving**

<u>Baked beans</u>	<u>18.6/1 cup</u>
<u>Dried peas</u>	<u>4.7/half cup (cooked)</u>
<u>Kidney beans</u>	<u>7.4/half cup (cooked)</u>
<u>Lima beans</u>	<u>2.6/half cup (cooked)</u>
<u>Lentils</u>	<u>1.9/half cup (cooked)</u>

Breads, pastas, and flours

<u>Bagels</u>	<u>1.1/half bagel</u>
<u>Bran muffins</u>	<u>6.3/muffin</u>
<u>Cracked wheat</u>	<u>4.1/slice</u>
<u>Oatmeal</u>	<u>5.3/1 cup</u>
<u>White bread</u>	<u>0.55/slice</u>
<u>Whole-wheat bread</u>	<u>1.66/slice</u>

Pasta and rice cooked

<u>Macaroni</u>	<u>1.0/1 cup (cooked)</u>
<u>Rice, brown</u>	<u>2.4/1 cup (cooked)</u>
<u>Rice, polished</u>	<u>0.6/1 cup (cooked)</u>
<u>Spaghetti (regular)</u>	<u>1.0/1 cup (cooked)</u>

Flours and grains

<u>Bran, oat</u>	<u>8.3/oz</u>
<u>Bran, wheat</u>	<u>12.4/oz</u>
<u>Rolled oats</u>	<u>13.7/1 cup (cooked)</u>

Nuts

<u>Almonds</u>	<u>3.6/half cup (slivered)</u>
<u>Peanuts</u>	<u>11.7/1 cup</u>