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Constipation in the older adult

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INTRODUCTION

Constipation is a common complaint in older adults. It has a major impact on healthcare costs in the United States because it results in several office visits, specialty referrals, hospital admissions, and surgical procedures [1]. It also affects health-related quality of life [2,3].

This topic will review the clinical approach to the diagnosis and management of constipation in the older adult. The approach to diagnosis and management of constipation in children and adults in general are presented separately. (See ["Constipation in infants and children: Evaluation"](#) and ["Chronic functional constipation and fecal incontinence in infants, children, and adolescents: Treatment"](#) and ["Etiology and evaluation of chronic constipation in adults"](#) and ["Management of chronic constipation in adults"](#).)

DEFINITION OF CONSTIPATION

The term constipation is variably defined by patients and physicians [4].

According to the Rome IV criteria, functional constipation is defined as any two of the following features: straining, lumpy hard stools, sensation of incomplete evacuation, use of digital maneuvers, sensation of anorectal obstruction or blockage with 25 percent of bowel movements, and decrease in stool frequency (less than three bowel movements per week) [5]. The above criteria must be

fulfilled for the last three months with symptom onset six months prior to diagnosis, loose stools should rarely be present without the use of laxatives, and there must be insufficient criteria for a diagnosis of irritable bowel syndrome.

EPIDEMIOLOGY AND RISK FACTORS

Studies have reported that the prevalence of constipation in the older adult ranges from 24 to 50 percent [6-14]. Laxatives are used daily by 10 and 18 percent of community dwelling older adults and 74 percent of nursing home residents [11,15-18].

In addition to age, risk factors for chronic constipation include female gender, physical inactivity, low education and income, concurrent medication use, and depression [10,19]. One study showed that older adults who consume fewer calories and meals are also more likely to suffer from constipation [20]. Comorbid illnesses and nursing home residence are other risk factors for constipation.

PATHOPHYSIOLOGY

Constipation in the older adult may be due to primary colorectal dysfunction or secondary to several etiologic factors ([table 1](#)). The etiology of constipation in older patients is often multifactorial.

Primary colorectal dysfunction — Primary colorectal dysfunction can be further categorized into three broad subtypes:

Slow transit constipation — Slow transit constipation (STC) is characterized by prolonged delay in stool transit throughout the colon. This could be due to a primary dysfunction of colonic smooth muscle (myopathy) or neuronal innervation (neuropathy) or secondary to dyssynergic defecation [21].

Dyssynergic defecation — Dyssynergic defecation (DD) is caused by difficulty with bowel movement or inability to expel stool from the anorectum. Many of these patients may also have prolonged colonic transit time ([table 2](#)) [22].

Irritable bowel syndrome — Irritable bowel syndrome with predominant constipation (IBS-C) is characterized by abdominal pain with altered bowel habits. These patients may or may not have slow colonic transit or dyssynergia, and many

have visceral hypersensitivity [20]. (See "[Clinical manifestations and diagnosis of irritable bowel syndrome in adults](#)".)

Secondary causes for constipation — Conditions associated with constipation include endocrine or metabolic disorders, neurologic disorders such as Parkinson's disease and stroke, myogenic disorders, and medications ([table 1](#)). Opioid induced constipation is common in those suffering from chronic or cancer-related pain [23].

Chronic idiopathic constipation — Chronic idiopathic constipation or functional constipation is a common condition affecting the GI tract with an estimated global prevalence of 14 percent [24]. This functional disorder is defined as the infrequent, persistently difficult passage of stools or seemingly incomplete defecation, which does not meet IBS criteria [25]. These patients usually do not have any physiological abnormality. (See "[Etiology and evaluation of chronic constipation in adults](#)", [section on 'Definition of constipation'](#).)

CLINICAL MANIFESTATIONS

Constipation is characterized either by unsatisfactory defecation, infrequent stools, or difficulty with stool passage. In older adults, constipation may be associated with fecal impaction and overflow fecal incontinence. Fecal impaction can cause stercoral ulceration, bleeding, and anemia.

EVALUATION

The first step in evaluation of constipation in older adults is to exclude secondary causes of constipation. This can often be accomplished with a thorough history and physical examination followed by undertaking the tests outlined below.

History — It is important to elicit a thorough history noting the onset and duration of constipation. (See "[Etiology and evaluation of chronic constipation in adults](#)", [section on 'History'](#).)

Alarm symptoms (hematochezia, positive fecal occult blood test, obstructive symptoms, acute onset of constipation, severe persistent constipation that is unresponsive to treatment, weight loss ≥ 10 pounds, a change in stool caliber,

family history of colon cancer or inflammatory bowel disease) should be specifically noted as these will indicate the need for more extensive evaluation.

Comorbid issues such as immobility, chronic medical problems, and a medication list should be reviewed [26]. Concurrent psychosocial problems such as social isolation, decreased mobility, poor nutrition, and lack of independence should also be addressed as they can contribute to constipation [27,28].

Physical examination — A comprehensive physical examination should be performed that includes a rectal exam to palpate for hard stool, assess for masses, anal fissures, hemorrhoids, sphincter tone, push effort during attempted defecation, prostatic hypertrophy in males, and posterior vaginal masses in females ([table 3](#)). This is described in detail separately. (See "[Etiology and evaluation of chronic constipation in adults](#)", [section on 'Physical examination'](#).)

Laboratory testing — A comprehensive metabolic panel, complete blood count, and thyroid function tests can identify metabolic conditions that may be causative as well as secondary anemia that will indicate further evaluation. We recommend routine laboratory testing in older adults with constipation. However, American College of Gastroenterology guidelines state that in patients with chronic constipation without alarm symptoms or signs (hematochezia, weight loss ≥ 10 pounds, family history of colon cancer or inflammatory bowel disease, anemia, positive fecal occult blood tests, acute onset of constipation in older adults, and severe persistent constipation that is unresponsive to treatment), there are inadequate data to make a recommendation about the routine use of laboratory tests [29].

Imaging — There are limited data to support the role of imaging in the evaluation of constipation in the older adult [29,30].

Endoscopy — A colonoscopy allows for direct visualization of the colon to exclude mucosal lesions (eg, solitary rectal ulcer syndrome, inflammation, malignancy) and should be performed in patients if they have alarm symptoms and also as indicated for colorectal cancer screening. (See "[Etiology and evaluation of chronic constipation in adults](#)", [section on 'Endoscopy'](#) and "[Tests for screening for colorectal cancer](#)", [section on 'Colonoscopy'](#).)

Physiologic testing — Specialized tests of colorectal function described below may prove useful in defining pathophysiology [23,31]. These tests are generally reserved for patients with chronic constipation who do not respond to therapy with lifestyle

and dietary modifications and a trial of bulk forming and osmotic laxatives. (See ["Etiology and evaluation of chronic constipation in adults", section on 'Motility studies'](#) and ["Etiology and evaluation of chronic constipation in adults", section on 'Colon transit studies'](#) and ["Etiology and evaluation of chronic constipation in adults", section on 'Defecography'](#).)

MANAGEMENT

The first step in the treatment of chronic functional constipation is lifestyle and dietary modification. Bulk laxatives are recommended in patients who do not respond to lifestyle and dietary modification. A trial of osmotic laxatives should be considered in patients not responding to bulk laxatives. In patients who fail a trial of osmotic laxatives, colon secretagogues ([lubiprostone](#)) should be considered. Stimulant laxatives are efficacious, but chronic use should be avoided as the long-term safety in older adults is not known. Stool softeners and suppositories ([glycerin](#) or [bisacodyl](#)) have limited clinical efficacy. Enemas should only be used to prevent fecal impaction in patients with several days of constipation. Opioid antagonists may have a role in treatment of narcotic-induced constipation and paralytic ileus. In patients with dyssynergic defecation, biofeedback therapy may be helpful.

Lifestyle modification — General measures such as increased fluid intake and exercise are suggested to treat constipation, but there is little evidence to support this [32]. In a small study of healthy volunteers, consumption of extra fluid was not associated with an increase in stool output [33].

It is advisable to encourage patients to establish a regular pattern of bowel movement. Most patients who have a normal bowel pattern usually empty stools at approximately the same time every day [34]. This fact suggests that the initiation of defecation is in part a conditioned reflex. Colonic motor activity is more active after waking and after a meal [35]. Thus, the optimal time for bowel movement is usually within the first two hours after waking and after breakfast. Other general measures include timed toilet training that consists of educating patients to attempt a bowel movement at least twice a day, usually 30 minutes after meals, and to strain for no more than five minutes [23]. Diaphragmatic breathing and posture may also impact defecation dynamics and ease of defecation. Measures include sitting up, leaning forward and raising the feet 8 to 12 inches above the ground.

Diet and fiber — Fiber increases stool bulk, which causes colonic distention and promotes stool propulsion. A daily fiber intake of 20 to 25 g/day is generally recommended. The effects of fiber on bowel movements may take several weeks. Bloating and flatulence is a common problem with increased fiber intake [36]. (See "[Management of chronic constipation in adults](#)", section on 'Fiber'.)

Laxatives — Laxative usage in the older adults should be individualized keeping in mind the patient's history (cardiac and renal comorbidities), drug interactions, cost, and side effects ([table 4](#)) [37].

Bulk forming laxatives — Bulk forming laxatives include [psyllium](#) husk (eg, Metamucil), [methylcellulose](#) (eg, Citrucel), calcium [polycarbophil](#) (eg, FiberCon), and [wheat dextrin](#) (eg, Benefiber) ([table 4](#)). They are natural or synthetic polysaccharides or cellulose derivatives that primarily exert their laxative effect by absorbing water and increasing fecal mass. These laxatives are effective in increasing the frequency and softening the consistency of stool with a minimum of adverse effects. They may be used alone or in combination with an increase in dietary fiber.

Despite substantial anecdotal clinical experience indicating benefit for bulk forming laxatives, objective evidence regarding the effectiveness is inconsistent. A systematic review found evidence that [psyllium](#) increases stool frequency in patients with chronic constipation but found insufficient evidence for other forms of fiber including calcium [polycarbophil](#), [methylcellulose](#), and bran [29]. Another review found evidence supporting the efficacy and safety of calcium polycarbophil, but poor evidence supporting the use of psyllium and methylcellulose [38]. One study showed that dried plums (prunes) were more effective than psyllium as first line therapy in the treatment of mild to moderate constipation [39].

A study showed that a fruit-based mixed soluble fiber (eg, Suprafiber) was as effective as [psyllium](#), more palatable and caused less bloating [40].

Osmotic laxatives — A trial of osmotic laxatives should be considered in patients not responding to bulking agents [37].

Low-dose polyethylene glycol (PEG) (17 g/day) has been demonstrated to be efficacious and well tolerated in older patients [41,42]. However, high-dose PEG (34 g/day) is associated with abdominal bloating, cramping, and flatulence, and older adults may be more susceptible to these side effects [43].

[Lactulose](#) increases stool frequency, decreases the severity of constipation symptoms, and reduces the need for other laxatives in older adult patients compared with placebo. However, in one study, lactulose was less effective than low-dose PEG and also had a higher incidence of flatus [41].

[Sorbitol](#) was shown to be as efficacious as [lactulose](#) in a four-week study of constipated older adult patients and was less expensive and better tolerated [44].

[Saline](#) laxatives such as [magnesium hydroxide](#) have not been examined in older adults, and should be used with caution because of the risk of hypermagnesemia.

Stimulant laxatives — Stimulant laxatives affect electrolyte transport across the intestinal mucosa and enhance colonic transport and motility. In one study, [senna](#), the stimulant laxative, in combination with fiber was associated with improved stool consistency, frequency, and ease of stool passage when compared with [lactulose](#) in older nursing home residents, and appeared equally well tolerated [45].

[Bisacodyl](#) was evaluated in a randomized, double-blind, placebo-controlled, parallel-group study in which patients were randomized to bisacodyl (10 mg) or placebo for four weeks. The mean number of complete spontaneous bowel movements (CSBMs) per week, the number of spontaneous bowel movements (SBMs), constipation-associated symptoms, and quality of life were significantly improved in the bisacodyl group compared to placebo [46]. Treatment with bisacodyl was also well tolerated. However, the long-term safety of stimulant laxatives has not been established.

Stool softeners, suppositories, and enemas — Stool softeners ([docusate](#)), suppositories ([glycerin](#) or [bisacodyl](#)), and enemas, although widely used, have limited clinical efficacy [27,38]. Glycerin or bisacodyl suppositories can be used in institutionalized older adults with dyssynergic defecation to help with rectal evacuation.

Enemas (tap water, soapsuds) should be used only as needed for constipation in the older adult, ie, after several days of constipation in order to prevent fecal impaction. Adverse effects include rectal mucosal damage with soapsuds enemas.

It is advisable not to use [sodium phosphate](#) enemas for the treatment of constipation in older adults. In a retrospective series, the use of sodium phosphate enemas in older adults (mean age 80 years, only one of whom was younger than age 70 years) was associated with complications including hypotension and volume

depletion, hyperphosphatemia, hypo- or hyperkalemia, metabolic acidosis, severe hypocalcemia, renal failure, and EKG changes (prolonged QT interval) [47]. In January 2014, the US Food and Drug Administration (FDA) issued a safety announcement regarding electrolyte abnormalities and severe dehydration with the use of a single dose of over the counter sodium phosphate that was larger than recommended or with more than one dose in 24 hours [48]. The FDA stated that individuals at higher risk for potential adverse effects when the recommended dose is exceeded include individuals older than 55 years, patients with dehydration, bowel obstruction, or inflammation, and patients with kidney disease or on medication that may affect renal function [49].

Other therapies for chronic constipation — Several agents have been studied or are undergoing further studies for the treatment of chronic constipation. These include colonic secretagogues, opioid antagonists, and 5HT₄ receptor agonists.

Colonic secretagogues — [Lubiprostone](#) is an oral bicyclic fatty acid that activates the type 2 chloride channels on the intestinal epithelial cells, thus secreting chloride and water into the gut lumen [23]. In two phase III studies of four weeks duration, lubiprostone 24 mcg twice daily significantly enhanced bowel movement frequency and relieved other constipation-related symptoms compared with placebo [50,51]. In a subgroup analysis, lubiprostone also demonstrated efficacy in older patients. It is best reserved for patients with severe constipation in whom other approaches have been unsuccessful.

[Linaclotide](#) and [plecanatide](#) are guanylate cyclase C receptor (GCC) agonists that stimulates intestinal fluid secretion and transit [52,53]. In two large phase 3 trials of patients with chronic constipation, the linaclotide treated groups (both 145 micrograms and 290 micrograms) had significantly higher rates of three or more complete spontaneous bowel movements (CSBM) per week and an increase in one or more CSBMs from baseline during at least 9 out of 12 weeks as compared with placebo (145 micrograms: 21 and 16 percent, 290 micrograms: 19 and 21 percent, versus placebo: 3 and 6 percent). The most common and dose-related adverse event was diarrhea that led to discontinuation of treatment in 4 percent of patients in both linaclotide-treated groups [54]. In a subsequent randomized trial that included older adult patients, lower dose of linaclotide (72 micrograms daily) were also effective in improving constipation [55]. (See "[Management of chronic constipation in adults](#)", section on '[Guanylate cyclase-C receptor agonists](#)'.)

Opioid antagonists — Peripherally acting mu opioid receptor antagonists, [alvimopan](#) and [methylnaltrexone](#), or [naloxegol](#) or [naldemedine](#), may have a role in treatment of opioid-induced constipation and alvimopan for paralytic ileus [56]. [57,58]. As these opioid receptor antagonists act peripherally and do not cross the blood brain barrier, they do not impair the analgesic effects of opioids.

5HT(4) receptor agonists — Serotonin (5HT) is a key regulator of gastrointestinal motility. [Prucalopride](#) is a selective high affinity 5HT₄ receptor agonist. In a dose of 1 and 4 mg once daily, prucalopride has been shown to be superior to placebo in 4- and 12-week trials, and safe and well tolerated in patients age 65 years or older [59,60]. In clinical trials, prucalopride 2 mg provided comparable efficacy to 4 mg and it is therefore the widely used dosage in clinical practice. The dose of prucalopride can be titrated up based on clinical response.

Biofeedback — Biofeedback therapy is a painless, noninvasive means of cognitively retraining the pelvic floor and the abdominal wall musculature to facilitate evacuation. Patients are guided to improve control of these muscles by electromyographic surface electrodes on an anal plug and an abdominal wall surface electrode. For patients with pelvic floor dysfunction, especially dyssynergic defecation, rectal hyposensitivity, or rectal mucosal intussusception, biofeedback therapy should be considered.

Randomized controlled trials have evaluated the efficacy of biofeedback therapy in the treatment of dyssynergic defecation and concluded that biofeedback is consistently superior to laxatives, standard therapy, sham therapy, placebo, and [diazepam](#) [61-64]. Home biofeedback therapy was as effective as office biofeedback therapy [65]. (See "[Management of chronic constipation in adults](#)", section on '[Biofeedback](#)'.)

FECAL IMPACTION

Constipation plays an important role in the development of fecal impaction and incontinence in older and institutionalized adults. Fecal impaction results largely from the person's inability to sense and respond to the presence of stool in the rectum. Decreased mobility and lowered sensory perception are common causes of fecal impaction.

Diagnosis — The diagnosis of fecal impaction is confirmed by performing a digital rectal examination. The impacted stool is not necessarily hard, but the key to the

diagnosis of fecal impaction is in finding a copious amount of stool in the rectum. It is important to note that fecal impactions can occur in the proximal rectum or sigmoid colon, and a digital rectal examination will be nondiagnostic. If the clinical suspicion for a fecal impaction is high, an abdominal radiograph should be obtained to detect fecal loading in the absence of a rectal impaction.

Management — In the absence of a suspected perforation or massive bleeding, the management of fecal impactions involves disimpaction and colon evacuation, followed by the implementation of a maintenance bowel regimen to prevent recurrent impactions. We suggest digital disimpaction to fragment a large fecal bolus to facilitate its passage through the anal canal. Subsequently a warm-water enema with [mineral oil](#) may be administered to soften the impaction and assist emptying of stool from the rectum and distal colon. Once the distal colon has been partially emptied with disimpaction and enemas, polyethylene glycol (PEG) may be administered orally or by a nasogastric tube.

If the above measures fail, local anesthesia to relax the anal canal and pelvic floor muscles, together with abdominal massage, can help to pass the stool bolus. In rare cases, it may be necessary to use a colonoscope with a snare to fragment fecal material in the distal colon. In such cases, a [mineral oil](#) enema prior to the colonoscopy may help to soften the stool bolus. If such measures fail or if there is significant abdominal tenderness suggestive of an impending perforation or ischemia, surgery may be necessary.

Following management of an acute impaction, it is important to identify and eliminate potential causes of constipation. This includes discontinuing medications that cause or exacerbate constipation. For the institutionalized adult, improving availability of toileting and/or providing assistance is necessary to prevent constipation. Regular use of medications that treat constipation in the older adult is discussed above. (See '[Laxatives](#)' above.)

SOCIETY GUIDELINE LINKS

Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "[Society guideline links: Constipation](#)".)

SUMMARY AND RECOMMENDATIONS

- Constipation is defined as any two of the following features: straining, lumpy hard stools, sensation of incomplete evacuation, use of digital maneuvers, sensation of anorectal obstruction or blockage with 25 percent of bowel movements, and decrease in stool frequency (less than three bowel movements per week). (See '[Definition of constipation](#)' above.)
- Constipation in the older adult may be due to functional chronic constipation or secondary to other etiologic factors.

Primary colorectal dysfunction consists of three overlapping subtypes: slow transit constipation, dyssynergic defecation, and irritable bowel syndrome with constipation. Secondary causes of constipation should be excluded with a thorough history and physical examination followed by diagnostic testing. (See '[Pathophysiology](#)' above and '[Evaluation](#)' above.)

- The first step in the treatment of chronic functional constipation is with lifestyle and dietary modification. A daily fiber intake of 20 to 25 g/day is generally recommended. (See '[Lifestyle modification](#)' above and '[Diet and fiber](#)' above.)
- Laxative usage in the older adults should be individualized based on the patient's history, comorbidities, drug interactions, and side effects.

We suggest bulk laxatives as the first line of therapy in older patients with chronic constipation who do not respond to dietary and lifestyle modification (**Grade 2B**).

Osmotic laxatives can be used in patients not responding satisfactorily to bulking agents. We suggest a trial of low-dose polyethylene glycol (PEG) as it has been demonstrated to be efficacious and well tolerated in older adults. [Lactulose](#) is less effective than low-dose PEG and also had a higher incidence of flatus. [Sorbitol](#) has shown to be as efficacious as lactulose, less expensive, and better tolerated. [Saline](#) laxatives such as [magnesium hydroxide](#) have not been examined in older adults, and should be used with caution because of the risk of hypermagnesemia. (See '[Laxatives](#)' above.)

- Stool softeners ([docusate](#)), suppositories ([glycerin](#) or [bisacodyl](#)), and enemas have limited clinical efficacy. Suppositories (glycerin or bisacodyl) and enemas

should only be used in specific clinical scenarios. (See '[Stool softeners, suppositories, and enemas](#)' above.)

- In patients over the age of 70 years being treated with enemas for constipation, we suggest that patients receive warm water enemas rather than [sodium phosphate](#) enemas (**Grade 2C**). The use of sodium phosphate enemas in older adults has been associated with complications including hypotension and volume depletion, hyperphosphatemia, hypo- or hyperkalemia, metabolic acidosis, severe hypocalcemia, renal failure, and EKG changes (prolonged QT interval).
- [Lubiprostone](#), a type 2 chloride channels activator, and both [linaclotide](#), and [plecanatide](#) guanylate cyclase agonists, significantly enhance bowel movement frequency and relieve other constipation-related symptoms. (See '[Other therapies for chronic constipation](#)' above.)
- Peripherally acting mu opioid receptor antagonists, [methylnaltrexone](#), [naloxegol](#), and [naldemedine](#) may have a role in treatment of opioid-induced constipation. (See '[Other therapies for chronic constipation](#)' above.)
- Biofeedback therapy is a painless, noninvasive means of cognitively retraining the pelvic floor and the abdominal wall musculature. Randomized controlled trials have established the efficacy of biofeedback therapy in the treatment of dyssynergic defecation. (See '[Biofeedback](#)' above.)

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GRAPHICS**Causes of secondary constipation**

Cause	Example
Organic	Colorectal cancer, extraintestinal mass, postinflammatory, ischemic, or surgical stenosis
Endocrine or metabolic	Diabetes mellitus, hypothyroidism, hypercalcemia, porphyria, chronic renal insufficiency, panhypopituitarism, pregnancy
Neurologic	Spinal cord injury, Parkinson disease, paraplegia, multiple sclerosis, autonomic neuropathy, Hirschsprung disease, chronic intestinal pseudo-obstruction
Myogenic	Myotonic dystrophy, dermatomyositis, scleroderma, amyloidosis, chronic intestinal pseudo-obstruction
Anorectal	Anal fissure, anal strictures, inflammatory bowel disease, proctitis
Drugs	Opiates, antihypertensive agents, tricyclic antidepressants, iron preparations, antiseizure medications, anti-Parkinsonian agents (anticholinergic or dopaminergic), barium
Diet or lifestyle	Low-fiber diet, dehydration, inactive lifestyle

Graphic 74971 Version 4.0