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Medications for constipation

J. Allen

Joseph A. Woelfel

University of the Pacific, jwoelfel@pacific.edu

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Medications for Constipation

(Based on U.S. Product Information)

Generic name	Common brands (OTC/Rx status)	Adult dosage ^{2,7,11-14,16,17}	Side effects ^{2,7,11-14,16,17}	Onset ^{2,7,11-14,16,17}	Comments ^{2,7,11-14,16,17}	Cost*
Class: mechanism						
Fiber/Bulk laxatives, oral: Increases stool bulk and GI motility, decreases colonic transit time. Bulk agents not helpful in managing opiate-induced constipation. Fiber contraindicated if obstructive symptoms, or megacolon/megarectum. Must take at least 8 oz of fluid with each dose. Patients with esophageal narrowing shouldn't take bulk laxatives.						
Bran		1 cup/day	Gas and bloating, iron & calcium malabsorption.	Up to 3 days		
Psyllium ¹³	<i>Metamucil</i> and others (OTC)	1 dose (volume varies by formulation) up to tid. Mix with fluids.	Side effects same as bran. Psyllium can cause allergic reactions. Do not use sugar-free formulations with aspartame in phenylketonuria. Granular psyllium products (<i>Perdiem</i> , etc) are deemed unsafe and ineffective due to reports of esophageal obstruction. Granular psyllium will be no longer be marketed effective October 1, 2007.		Psyllium decreases total & LDL cholesterol, & blood glucose. Give 2 h before/after other drugs.	<i>Metamucil:</i> \$8-17
Methylcellulose	<i>Citrucel</i> and others (OTC)	1 dose (volume varies with formulation) up to tid	Less bloating. Do not use sugar-free formulations with aspartame in phenylketonuria. Can swell and cause choking if taken dry or with inadequate fluids.			\$30
Calcium polycarbophil ¹⁴	<i>FiberCon</i> tabs, powder, and others (OTC)	2 tablets daily-qid	Side effects same as bran. Tablets can swell and cause choking if taken with inadequate fluids.		Has calcium 244 mg/2 tabs. Take 1 hour before/ 2 hours after tetracycline.	\$18
Stool softeners, oral: Decreased surface tension allows stool to absorb more water.						
Docusate sodium (formerly dioctyl sodium sulfosuccinate)	<i>Colace</i> and others (OTC)	100-300 mg/day given daily or in divided doses	Liquid tastes bad.	Up to 3 days	Efficacy is marginal when used alone for treatment; role is primarily prevention. Do not take with mineral oil.	\$36 brand \$8 generic
Docusate calcium	<i>Kaopectate Stool Softener Liqui-Gel</i> (OTC)	240 mg daily				\$6

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Hyperosmolar agents, oral: Increased intraluminal fluid. Sorbitol & lactulose are nonabsorbed disaccharides that are metabolized by colonic bacteria into organic acids.						
Sorbitol 70%	Generic (OTC)	15-30 mL daily-bid	Sweet taste, transient abdominal cramps, flatulence.	1-2 days		\$43
Lactulose	<i>Chronulac</i> (RX)	15-30 mL daily-bid	Same as sorbitol; well-tolerated long-term.	1-2 days	Agent of choice in hepatic failure.	\$19-\$73 generic
Polyethylene glycol (PEG)	<i>Golytely, Colyte</i> , (RX)	8-32 oz daily. Chill to improve taste.	Incontinence due to potency.	30-60 minutes for large doses before GI procedures	<i>Golytely</i> , etc are indicated for bowel cleansing prior to colonoscopy and barium enema X-ray exams.	\$45-\$116
	<i>MiraLax</i> ¹⁵ (OTC) <i>GlycoLax</i> (RX)	Fill bottle cap to white line (17 g) or use 1 heaping tablespoonful daily. Mix with 4-8 oz liquid.	High doses can cause diarrhea, excessive stool frequency, nausea, bloating, cramping, flatulence.	1-3 days	Do not use in kidney disease unless under supervision of a physician (per OTC product labeling). ¹⁵	\$25

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Stimulants, oral: Alter electrolyte transport; stimulate myenteric plexus; increase motility.						
Bisacodyl	<i>Dulcolax, Correctol</i> (OTC) 5 mg enteric-coated tablets	1-3 tabs daily	Incontinence, hyperkalemia, abdominal cramps.	6 hours	Do not take po bisacodyl until 1 hour after milk, antacids, cimetidine.	\$11.50
Senna (sennosides A and B) ¹⁶	<i>Senokot, Senokot S</i> (with docusate), others (OTC)	2 tabs daily up to 4 tabs bid	Malabsorption. 'Cathartic colon' with loss of myenteric plexus neurons and muscularis propria atrophy has been reported with chronic use.	6-12 hours		\$32
	<i>Ex-lax</i> (OTC)	2 tabs/pieces daily-bid				\$23
Saline laxatives, oral: Osmotic gradient draws fluid into gut; cholecystokinin stimulated; decreased colon transit time.						
Magnesium citrate ¹⁷	Generic (OTC)	10 oz daily or divided into two 5 oz doses/day Drink a full glass (8 oz) of water with each dose.	Hypermagnesemia in renal insufficiency; abdominal cramps; diarrhea; gas.	0.5-3 hours	Do not use longer than one week without consulting a physician.	\$60
Magnesium hydroxide	<i>Milk of Magnesia, Haley's M-O</i> (with mineral oil) (OTC; liquid 400 mg/tsp)	15-30 mL daily-bid	Hypermagnesemia in renal insufficiency; hyperphosphatemia leading to hypocalcemia; dehydration, abdominal cramps, incontinence.	0.5-6 hours		\$10
	<i>Phillips Milk of Magnesia</i> tablets (OTC; 311 mg/tab)	See labeling				\$7
Sodium phosphate ¹⁸	<i>Fleet Phospho-Soda</i> (OTC)	Mix one tablespoonful in 4 oz of cool water (per 24 hours) Drink at least an additional full glass (8 oz) of clear liquid after each dose.	Hyperphosphatemia; hypocalcemia; hypernatremia, calcium phosphate precipitation; nausea; vomiting; diarrhea; hypotension; edema. Acute phosphate nephropathy has been associated with use. Elderly, individuals with kidney disease or decreased intravascular volume, and those using medications that affect renal perfusion or functions (e.g., ACE inhibitors, ARBs, diuretics, and possibly NSAIDs) are at higher risk of acute phosphate nephropathy. ¹⁹	0.5-3 hours	Avoid in kidney disease or congestive heart failure. Do not exceed dose unless advised by physician.	\$40

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Lubricant laxatives, oral						
Mineral oil (OTC)	Generic (OTC)	15-45 mL/day	Lipid pneumonia; malabsorption of fat-soluble vitamins including vitamin K in patients taking warfarin (theoretical concern), dehydration, incontinence.	6-8 hours	Do not take with docusate; take on an empty stomach.	\$4-8
Suppositories: Induce evacuation by local rectal stimulation.						
Glycerin	Generic (OTC)	1 supp pr prn; can take up to daily	Rectal irritation.	15-60 minutes	Avoid in neutropenia/thrombocytopenia.	\$6
Bisacodyl	<i>Dulcolax</i> (OTC)	1 supp pr prn; can take up to daily	Rectal irritation.	15-60 minutes		\$36
Enemas: Evacuation induced by distended colon; mechanical lavage.						
Mineral oil retention	(OTC)	100-250 mL/day pr	Incontinence, mechanical trauma.	6-8 hours	Avoid in neutropenia/thrombocytopenia.	\$84
Tap water		500 mL pr	Mechanical trauma.	5-15 minutes		--
Phosphate	<i>Fleet</i> (OTC)	1 unit/day pr	Accumulated damage to rectal mucosa, hyperphosphatemia, mechanical trauma.	5-15 minutes	Do not exceed recommended dose.	\$36
Soap suds		1500 mL pr	Accumulated damage to rectal mucosa, mechanical trauma.	2-15 minutes		--
Chloride Channel Activator: Enhance chloride-rich intestinal fluid secretion without altering sodium and potassium concentrations in the serum. ¹¹						
Lubiprostone ²⁰	<i>Amitiza</i> (RX)	24 mcg BID	Nausea, diarrhea, abdominal distension, abdominal pain, flatulence, vomiting, loose stools.	Within 24 hours	FDA approved for treatment of chronic idiopathic constipation in adults. Avoid in patients with history of mechanical gastrointestinal obstruction and those with severe diarrhea.	\$197**

*Cost per 1 month supply at usual dose at <http://www.drugstore.com>. ***Amitiza* cost is AWP per McKesson.

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Treatment Options for Constipation

The first step to treat most cases of constipation is to provide more fiber, either as a high-fiber diet or as supplements.¹ Fiber laxatives increase the frequency of bowel movements by one to two per week.² Fiber intake should be increased gradually over seven to ten days, starting with twice daily administration. The Institute of Medicine recommends total daily fiber intake of 38 grams for men and 25 grams for women under the age of 50, and 30 grams for men and 21 grams for women over the age of 50.³ In most patients, the next step is to add an inexpensive saline laxative such as milk of magnesia. Stimulant laxatives, lactulose, and polyethylene glycol are recommended if these interventions fail. Sorbitol and lactulose have similar efficacy, but their use is limited because they cause gas.² Some experts are recommending polyethylene glycol, now available OTC, as an alternative to saline laxatives such as milk of magnesia or before stimulants such as senna or bisacodyl for its benign side-effect profile. Long-term use of milk of magnesia has been associated with electrolyte imbalances and should be avoided in patients with renal dysfunction. Stimulant laxatives are more likely to cause gas and abdominal cramps. Concern has been raised that long-term use of stimulant laxatives may cause neurologic damage, but this is unproven.¹ In clinical studies, plasma levels of polyethylene glycol in patients with end-stage renal failure is higher than in patients with normal renal function. Although still considered a safe plasma level, the OTC *Miralax* label warns against use in patients with kidney disease unless supervised by a physician.⁴

For chronic constipation, psyllium, polyethylene glycol, lactulose, or lubiprostone (*Amitiza*) are recommended.⁵ *Amitiza* should be reserved for individuals with chronic constipation who don't respond to or tolerate laxatives. There is not enough evidence to support the use of stool softeners, stimulant laxatives (e.g., senna, bisacodyl), milk of magnesia, calcium polycarbophil, methylcellulose, or bran in chronic constipation. Both polyethylene glycol and lactulose have sufficient evidence to support their use in chronic constipation. Polyethylene glycol

appears to be modestly more effective than lactulose with few side effects.⁵ Lubiprostone is the only prescription product approved by the FDA for the treatment of chronic constipation. Another prescription product, *Zelnorm* (tegaserod), also approved for chronic constipation, was recently removed from the U.S. market due to serious cardiovascular adverse events such as angina, stroke, and heart attack.⁶ The National Cancer Institute recommends a stimulant laxative in combination with a stool softener for opiate-related constipation. Fiber laxatives are not indicated in this situation.⁷ To prevent constipation, a bowel program should be started when opiate therapy begins, especially in the elderly.⁴

When evaluating constipation, it is important to consider drugs as contributors. Prescription medications that can cause constipation include opiates, anticholinergics, tricyclic antidepressants, calcium channel blockers (primarily verapamil), chemotherapy agents (vinca alkaloids), anti-Parkinsonian agents, sympathomimetics, antipsychotics, diuretics, and sedating antihistamines. Over-the-counter agents that may cause constipation include aluminum-containing antacids, calcium supplements, iron supplements, and antidiarrheal agents.^{1,2}

A guideline for the management of constipation in children is available from the North American Society for Pediatric Gastroenterology and Nutrition at <http://www.naspgan.org/user-assets/Documents/pdf/PositionPapers/constipation.guideline.2006.pdf>.

The different constipation treatment choices are summarized in the previous table. With over 700 products on the market, it is impossible to list them all. One must be careful when dealing with brand names for these products. Brand extensions mean that a product may not contain the active ingredient usually associated with that brand. For example, the *Correctol* brand name is used on laxatives containing bisacodyl or docusate. The *Fleet* brand name is used on bisacodyl tablets, glycerin suppositories, and mineral oil or phosphate enemas. The *Phillips* brand name is used on products containing milk of magnesia,

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docusate, and calcium polycarbophil.

The FDA recently ruled that granular formulations of psyllium (psyllium [hemicellulose], psyllium hydrophilic mucilloid, psyllium seed, psyllium seed [blond], psyllium seed husks, plantago ovata husks, and plantago seed) are not generally recognized as safe and effective and are misbranded. The ruling was based on reports of esophageal obstruction related to the use of granular psyllium laxatives despite efforts promoting safe use through label warnings and directions. The ruling is effective October 1, 2007 and does not apply to psyllium containing laxatives in other dosage forms, including powders, tablets, or wafers.⁸

Conclusion

Approximately 4 million Americans have frequent constipation.⁹ Lifestyle modifications such as increasing dietary fiber and fluid intake, and regular physical activity are generally recommended before drug treatment to relieve temporary constipation.⁹ When lifestyle modifications fail to relieve constipation, over-the-counter laxatives can be used. Most over-the-counter laxatives are recommended not to be used for longer than one week without consulting a healthcare professional. A work up for secondary causes of constipation should be done in patients whose constipation is not relieved by over-the-counter laxatives, and who present with concomitant symptoms such as nausea, vomiting, weight loss, rectal pain, fever, cramping, abdominal pain, anorexia, or family history of inflammatory bowel disease or colon cancer.¹⁰

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