

Constipation + Diarrhea - Classes of medication

Bulk-forming agents
Psyllium, polycarbophil
 Ferment in the colon → gas formation, increased osmotic load, water retention and wall stress → stimulates motility
 Swell in intestinal fluid → creates gel → facilitate passage

Osmotic agents
glycerin (suppository), lactulose, polyethylene glycol (PEG) 3350, magnesium citrate, sodium phosphate, magnesium hydroxide (milk of magnesia), sorbitol
 Contain poorly absorbed ions or molecules that create an osmotic gradient to retain water within the intestinal lumen – the ↑ pressure on the intestinal wall induces gastric motility
 Used for bowel evacuations before procedures (if high, frequent dosing) or for daily maintenance/-prevention (if low, daily dosing)
 BM within 30 mins (high, frequent doses) -> 3 days (low daily doses)

Stimulants
Senna/sennosides (Senokot®, Senokot-S®) Bisacodyl (Dulcolax®) Sodium picosulfate (Pico-Salex®) Castor oil
 Stimulate the smooth muscle to produce rhythmic contractions
 May be recommended if osmotic laxatives fail or not tolerated
 Sometimes referred to as a “rescue agent”
 A dose effective in one individual may cause painful cramping in the next
 BM within 6-12 hours (often overnight use)

Constipation + Diarrhea - Classes of medication (cont)

Stool softeners
Docusate sodium or docusate calcium
 Act as a surfactant → better mixing of aqueous and fatty substances to soften the fecal mass
 A preventative measure rather than a “rescue”
 Sometimes added to other laxatives (for the “gentle” touch)
 Most recent evidence suggests not better than placebo
 What to expect: BM in 1 - 5 days

Lubricants
 Lubricates contents of GI tract and keeps water in GI tract
 Limited use -> after myocardial infarction or rectal surgery
 Mineral oil (heavy) – only one suitable for consumption
 Not recommended due to risk of aspiration → lipid pneumonia, binding of fat soluble vitamins/meds, and anal seepage
 What to expect: BM in 6-8 hours – avoid lying down or bedtime dosing



By **kjaniskevich**

Published 13th April, 2021.

Last updated 13th April, 2021.

Page 1 of 7.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

Constipation + Diarrhea - Classes of medication (cont)

Suppositories & Enemas <i>Mineral oil retention enema, Phosphate enema, Tap water enema</i> <i>Microlax® Enema (sodium citrate, sodium laurel sulfoacetate)</i>	For acute relief or bowel prep for procedure Not for management of chronic constipation Presence of object in rectum stimulates defecation reflex This is in addition to any benefits provided by specific ingredient (i.e. glycerin – osmotic; mineral oil – lubricant) Patient should try to retain (hold in) product as long as possible (generally a few minutes) What to Expect: Cleansing of bowel within 1 hour; if no BM – call physician Not pleasant, therefore not the preferred route
---	---

Antidiarrheals

Adsorbant agents <i>attapulgit (Kaopectate®), Fowler's®)</i>	Absorbs fluid in intestine, reducing stool liquidity May give some relief, very safe (can use in kids)
---	---

Antimotility agents <i>loperamide (Imodium®), belladonna, diphenoxylate</i>	Opioid agonists that do not cross blood-brain barrier Dependence and tolerance with long-term use? NOPE
--	--

Antisecretory agents <i>bismuth subsalicylate (Pepto-Bismol®)</i>	Stimulates absorption of fluid and electrolytes across intestinal wall; also bactericidal (e. coli) and anti-inflammatory Not for children (related to ASA Reye's) Good option for traveller's diarrhea
--	---

Bulk-Forming agents <i>psyllium (Metamucil®)</i>	Identical mechanism as with constipation Creates "gel" using excess fluid in GI tract
---	--

Constipation + Diarrhea - Classes of medication (cont)

<i>Loperamide (Imodium®)</i>	Slows intestinal motility by stimulating opioid receptor, which reduces fecal volume and increases viscosity Very high first-pass effect and poor penetration of blood-brain barrier No dependence or tolerance with long-term use Also useful for radio- or chemo-induced diarrhea
------------------------------	--

Adverse effects of medication for the GI tract

Bulk-forming Agents	flatulence, bloating are common
Osmotic Agents	nausea, abdominal bloating, cramping, diarrhea, flatulence, skin rashes/hives
Stimulants	: bloating, abdominal discomfort, flatulence, diarrhea Highest incidence of cramping/pain (due to muscle contractions) Caution: Avoid in pregnancy if possible (do not stimulate!) Avoid if sensitive to electrolyte or fluid abnormalities
Stool softeners	bloating, abdominal discomfort, flatulence
Lubricants	allergic reactions, anal seepage, alteration of vitamins/minerals/drugs
Suppositories & Enemas	discomfort, bloating, cramping, allergic reactions
Loperamide (Imodium®)	cramping, discomfort, skin rash, dry mouth; Possible CNS usually only if compromised BBB = drowsiness, dizziness, confusion (rare)
Dimenhydrinate (Gravol®)	drowsiness + anticholinergic effects
Doxylamine + Pyridoxine (Diclectin®)	drowsiness, fatigue



By kjaniskevich

Published 13th April, 2021.

Last updated 13th April, 2021.

Page 2 of 7.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

Adverse effects of medication for the GI tract (cont)

Domperidone	headache, menstrual irregularities, dry mouth, diarrhea, abdominal discomfort
Ondansetron (Zofran®)	headache, dizziness, drowsiness, constipation, diarrhea (all rare)
H2-Antagonists	headache, dizziness, drowsiness Difficult to differentiate between heartburn symptoms and some adverse effects (nausea, vomiting, constipation, diarrhea) Very rare – reduction in RBC, WBC, and platelets; bradycardia, allergic reactions Because of reduction in acidity, it can potentially interact with absorption of drugs or vitamins (like B12) that need an acidic environment to absorb Separate as much as possible, while also understanding that we want prolonged reduction in acidity
Proton Pump Inhibitors (PPIs)	very well tolerated; limited to headache, diarrhea, flatulence, nausea, abdominal pain Long-term (years): decrease in bone mineral density + others via post-marketing surveillance

Adverse effects of medication for the GI tract (cont)

Sucralfate	constipation or diarrhea, nausea, headache, indigestion, dry mouth Bezoars have been reported in people treated with sucralfate (most had comorbidities that contributed such as low gastric motility) May increase blood glucose due to high carbohydrate content
Antacids	Calcium – constipating Magnesium & aluminum – diarrhea, and can make stool a whiter colour
Misoprostol	headache, abdominal cramps, diarrhea, vaginal bleeding, uterine cramping
Aminosalicylates 5-ASA (Asacol®)	nausea, diarrhea, abdominal pain, headache, rash, rhinitis, photosensitivity Meds are well tolerated; can be difficult to discern adverse effects from condition
Immuno-suppressants <i>Methotrexate (MTX)</i>	ulcerative stomatitis, leukopenia, nausea, abdominal distress, malaise, fatigue, chills & fever, dizziness, decreased resistance to infection
Pancreatin (Creon®)	Rare - nausea, vomiting, diarrhea
Local anesthetics (dibucaine, pramoxine)	Use > 7 days: possible CNS effects (restlessness, excitement, nervousness, paresthesias, dizziness, tinnitus, blurred vision, nausea and vomiting, muscle twitching and tremors, convulsions) and cardiovascular effects (hypotension, bradycardia)
Corticosteroids (hydrocortisone)	Use > 14 days, mucosal atrophy



By **kjaniskevich**

[cheatography.com/kjaniskevich/](https://www.cheatography.com/kjaniskevich/)

Published 13th April, 2021.

Last updated 13th April, 2021.

Page 3 of 7.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

Nausea, & Vomiting - Classes of medication

Dimenhydrinate (Gravol®) An antihistamine (with anticholinergic activity) Only effective for nausea & vomiting caused by motion sickness (vestibular apparatus)
Used for all types of nausea (like a virus.....) inappropriately (sedation may provide benefit)

Doxylamine + Pyridoxine (Diclectin®) Prescription product specifically for nausea and vomiting during pregnancy
Mechanism of action largely unknown

Doxylamine + Pyridoxine (Diclectin®) Doxylamine = antihistamine; pyridoxine = vitamin B6
Safe for baby
Used when concerned about proper nutrition
Effect ~ 8 hours after dose

Dompri-done Mechanism of action: a peripheral dopamine antagonist, that blocks dopamine receptors in the GI tract; also has pro-kinetic properties, which increases peristalsis to improve gastric emptying rates
Also stimulates release of prolactin – used to enhance milk production while breastfeeding (see Module 8)
Primary use: antiemetic for multiple GI conditions, prevention of nausea & vomiting with concurrent medications (chemo), enhance milk production, GERD

Nausea, & Vomiting - Classes of medication (cont)

Ondansetron (Zofran®) Mechanism of action: serotonin receptor antagonist in chemoreceptor trigger zone and along GI tract (CTZ)
Primary use: chemotherapy induced nausea & vomiting
Occasionally used in severe nausea & vomiting in pregnancy (concerned about baby nutrition)

PUD + GERD - classes of medication

H2-Antagonists
-tidine Blocks H2 receptors which prevents acid secretion; reduces the volume and acidity of secretions allowing a lesion to heal
Can take up to 3 months to heal a lesion
Cimetidine was first drug lots of significant drug interactions via CYP450 enzymes and significant adverse effects (gynecomastia) not widely used anymore but still available

Ranitidine (Zantac®), famotidine, nizatidine Most effective if taken regularly (every day) to consistently reduce acid and allow lesion to heal
Can also be used as needed (PRN) for heartburn by anyone
Very safe, Smoking decreases the effectiveness of H2-antagonists (encourage smoking cessation)



By **kjaniskevich**

Published 13th April, 2021.

Last updated 13th April, 2021.

Page 4 of 7.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

PUD + GERD - classes of medication (cont)

Proton pump inhibitors (PPIs) -prazole

Proton pumps = cells that are present in the lining of the stomach; their job is to 'pump' protons (H⁺) into the stomach for acid secretion
PPIs inhibit this, preventing acid secretion, creating a less acidic environment for a lesion to heal
↓ acidity more than H₂-antagonists (more effective)
Also very safe; recently OTC
A longer duration of action than H₂-antagonists = less frequent dosing

Omeprazole, esomeprazole, lansoprazole, pantoprazole, rabeprazole

Have a longer onset of action than H₂-antagonists (don't work as quickly) – would not be effective to use PRN (as needed) for heartburn

Sucralfate

A cytoprotective agent that adheres to and then protects ulcerated gastric or duodenal mucosa
Product also contains aluminum, which lowers acidity of gastric contents

PUD + GERD - classes of medication (cont)

Antibiotics

Must be specific for *h. pylori* – breath tests confirm presence
We attempt to completely eradicate the bacteria, due to extremely high rate of recurrence
Eradication of *h. pylori* allows ulcers to heal more rapidly and remain in remission longer, often permanently
Otherwise, organism may survive for life
We always give at least 2 antibiotics to:
Increase effectiveness of therapy
Reduce chance of resistance
Also give with H₂-antagonist or a PPI to allow for healing

amoxicillin, clarithromycin, metronidazole, tetracycline

Specific for *h. pylori*
As with all antibiotic therapy, complete course must be finished – at least 1 week

Antacids

Neutralize acid that is already present – do NOT have an effect on future acid secretion – supportive role only
Most appropriately used as needed (PRN)
Very safe and can be used for long periods of time (years) with few consequences – Tums® are also used as a calcium supplement! – but long term use for recurring heartburn indicates underlying problem
Can interfere with absorption of many medications – separate by 2 hours



By [kjaniskevich](http://kjaniskevich.cheatography.com/)

Published 13th April, 2021.

Last updated 13th April, 2021.

Page 5 of 7.

Sponsored by CrosswordCheats.com

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

PUD + GERD - classes of medication (cont)

Misoprostol <i>Arthrotec®</i> = <i>diclofenac</i> + <i>misoprostol</i>	A mucosal protective agent, occasionally used to prevent GI adverse effects of long-term NSAID use A synthetic prostaglandin E analogue, increasing mucous production ALSO used for medically-induced abortions, and to evacuate uterus after miscarriage DO NOT USE FOR PREGNANT PATIENTS
--	---

IBD, IBS, pancreatitis + Hemorrhoids - Meds

Inflammatory Bowel Disease (IBD)	key treatment includes anti-inflammatories + also an auto-immune component
Aminosalicylates <i>5-aminosalicylic acid (5-ASA)</i> , <i>sulfasalazine</i> , <i>mesalamine</i>	Anti-inflammatories (a GI topical effect) Inhibit production of inflammatory mediators prostaglandins and leukotrienes For mild symptoms, would not treat an exacerbation Used to lengthen times between exacerbations Can be given orally (formulated for minimal systemic absorption) or rectally (if lesions are more present in lower tract) – all work topically
Corticosteroids	Useful because of both anti-inflammatory and immunosuppressant activity Auto-immune & inflammatory components to IBD Used to treat exacerbations to send disease into remission Short term therapy, at high doses (pulse therapy) To minimize adverse effects

IBD, IBS, pancreatitis + Hemorrhoids - Meds (cont)

<i>Budesonide</i> <i>(Entocort®)</i>	A unique corticosteroid used specifically for IBD Encapsulated to avoid significant absorption in stomach or duodenum, then released slowly in lower tract In direct (topical) contact with lesions (ulcers) Any absorption that does occur is almost entirely removed by first-pass metabolism Avoids most long-term corticosteroid adverse effects (would still monitor)
Immuno-suppressants <i>Methotrexate</i> , <i>azathioprine</i> , <i>mercaptopurine</i>	Suppresses auto-immune component of disease only For more severe disease, where aminosaliclates are not enough to prevent exacerbations Takes ~3 months for onset of action Can increase time between exacerbations
<i>Methotrexate</i> <i>(MTX)</i>	Folate antagonist, interfering with DNA synthesis, repair, and cellular replication – most active against rapidly dividing cells Used in many auto-immune diseases (rheumatoid arthritis, IBD) Due to the mechanism of action, we must replace folic acid that is being inhibited
Biologics	
<i>Infliximab</i> <i>(Remicade®)</i>	tumour necrosis factor (TNF)- α inhibitor (a cell signaling protein involved in inflammation and immune response)
<i>Adalimumab</i> <i>(Humira®)</i>	also TNF-inhibitor



By **kjaniskevich**

Published 13th April, 2021.

Last updated 13th April, 2021.

Page 6 of 7.

Sponsored by **CrosswordCheats.com**

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>

IBD, IBS, pancreatitis + Hemorrhoids - Meds (cont)

Irritable Bowel Syndrome Abdominal pain or discomfort with altered bowel habits which occur over a period of at least 3 months
"Altered bowel habits" = bloating, cramping, mucous in stool, constipation, diarrhea

Antispasmodics
dicyclomine & hyoscine reduce muscle spasms of GI tract by blocking muscarinic receptors (anticholinergic effects!)

Calcium channel blockers (CCB)
pinaverium very specific for GI smooth muscle, reduces muscle contractions by inhibiting calcium influx (hypotension!)

Opioid agonists
loperamide doesn't cross blood-brain barrier; trimebutine – also has anti-serotonin activity

Antidepressants
TCAs & SSRIs address neurological connection (serotonin receptors in CNS and GI) and overlap of neurological conditions with IBS
~55% patients given TCA or SSRI saw benefit compared to ~35% placebo

Osmotics & stool softeners used for prevention or as needed

Pancreatitis Acute or chronic inflammation of the pancreas (very painful)
Usually caused by gallstones, heavy alcohol use, or cystic fibrosis (CF)

Pancreatin (Creon®) Enzymes are not absorbed
Capsules formulated to release in duodenum

IBD, IBS, pancreatitis + Hemorrhoids - Meds (cont)

Hemorrhoids Commonly seen with constipation, diarrhea, pregnancy, advancing age and possibly physical exertion
Symptom relief only – no meds are curative
Products can provide short-term relief of pain, burning, itch, discomfort and irritation while swelling subsides and healing occurs

Local anesthetics
dibucaine, pramoxine to relieve pain
Safe if < 7 days of continued use

Corticosteroids
hydrocortisone to reduce itch and inflammation
Safe if < 14 days of continued use

Astringents
hamamelis dries out skin to relieve burning, itching, and pain

Anti-infectives
framycetin if concerned about infection

Protectants
glycerin, petrolatum to provide barrier for healing

Vasoconstrictors
phenylephrine to relieve inflammation and limit bleeding; short term only



By [kjaniskevich](https://www.cheatography.com/kjaniskevich/)

Published 13th April, 2021.

Last updated 13th April, 2021.

Page 7 of 7.

Sponsored by [CrosswordCheats.com](https://www.crosswordcheats.com)

Learn to solve cryptic crosswords!

<http://crosswordcheats.com>