DEFINING CONSTIPATION
- Unsatisfactory defecation due to infrequent stools ± difficult or incomplete stool passage. It is subjective & symptom based. U2
- Health care providers often define constipation as the number of stools/week. Patients often use symptoms; top 3 most bothersome symptoms: straining, hard stools & bloating. U2
- What is “normal” varies amongst individuals. U2

**Rome III Diagnostic Criteria in Adults:**
When 2 or more of the following symptoms occur, in the previous 3 months with an onset of symptoms >6 months:
- Straining
- Hard or lumpy stools
- A sense of incomplete evacuation
- A sense of anorectal obstruction
- The need for manual maneuvers
- Fewer than 3 defecations per week
- Loose stools rarely present without the use of laxatives
- Insufficient criteria for irritable bowel syndrome

**Rome Criteria in Pediatrics (development age of ≥4 yrs):**
- When ≥2 of the following occur at least once per week for at least 2 months prior to the diagnosis:
  - ≤2 defecations in the toilet per week
  - At least 1 episode of fecal incontinence per week
  - History of retentive posturing or excessive volitional stool retention
  - History of painful or hard bowel movements
  - Presence of a large fecal mass in the rectum
  - Hx of large diameter stools that may obstruct the toilet
- Insufficient criteria for irritable bowel syndrome

**IBS-C often presents with recurrent abdominal pain &/or discomfort.** See the RxFiles IBS Chart, page 43.

**The Bristol Stool Chart:** a validated tool to correlate stool consistency with colonic transit time. Use with patients for assessment & monitoring. Refer to the RxFiles Constipation Chart On-Line Extras.

### TYPES OF CONSTIPATION

**1) PRIMARY OR IDIOPATHIC:**
- Management: lifestyle & laxative(s) **AGA 2013**

**2) Pelvic floor dysfunction:** ~25%: pelvic floor or external anal sphincter cannot relax. May occur with anal fissures or hemorrhoids.
- Management: pelvic floor retraining with biofeedback & relaxation training is recommended but is not readily available; suppositories or enemas may be preferred over oral laxatives. **AGA 2013**

**3) Slow transit:** ~15%: infrequent bowel movements.
- Management: lifestyle & laxative(s) **AGA 2013**
A pt may have both pelvic floor dysfunction & slow transit.

**SECONDARY:** due to medications, diseases or conditions
- Management: when possible:
  - Medications: ↓ dose or switch to another agent
  - Disease/Conditions: manage reversible causes

### EXAMPLES OF DRUGS THAT CAN CAUSE CONSTIPATION
- **ANALGESICS:** NSAIDs, opioids 25-40% in non-cancer & 60% in cancer patients
- **ANTICHOLINERGICS:** antispasms, benzotropine, oxybutynin
- **ANTI-PARKINSON:** amantadine, bromocriptine, pramipexole
- **ANTI-VOLUNTARS:** gabapentin, phenytoin, pregabaline
- **ANTI-DEPRESSANTS:** tricyclic antidepressants
- **ANTI-DIARRHEALS:** diphenoxylate, loperamide
- **ANTI-METRICS:** dimenhydrinate, ondansetron, prochlorazepine, promethazine, scopolamine
- **ANTIHISTAMINES:** diphenhydramine, hydroxyzine
- **ANTI-HYPERTENSIVES:** β-adrenergic agonists (e.g. clonidine), β-blockers, calcium channel blockers especially verapamil, diuretics
- **ANTISAPSODICS:** dicyclomine
- **CATION AGENTS:** Al⁺³, bismuth, barium, Ca⁺², Fe⁺²
- **CHEMOTHERAPY:** vincristine, cyclophosphamide
- **RESINS:** cholestyramine, sodium polystyrene sulfonate

### DISEASES/CONDITIONS THAT CAN CAUSE CONSTIPATION
- **CANCER/CANCER RELATED:** colorectal cancer, dehydratation, intestinal radiation, tumour compression of large intestine
- **ENDOCRINE:** hormonal changes, hypothyroidism, diabetes, hyperparathyroidism
- **GI DISORDERS:** diverticulosis, Hirschsprung’s dx, IBS, mega colon, pelvic floor dysfunction, rectoceles, strictures
- **METABOLIC:** hypercalcemia, hypocalcemia, hypokalemia, hepatic failure, hypomagnesemia, nephrotic syndrome, uriaemia
- **NEUROLOGIC:** autonomic neuropathy, dementia, multiple sclerosis, muscular dystrophies, pain 2nd to anal fissures or hemorrhoids, Parkinson’s dx, spinal cord lesions, stroke
- **PSYCHOLOGICAL:** anxiety, depression, eating disorders
- **OTHER:** ↑ age, CKD, pregnancy, systemic sclerosis, sexual abuse

### MONITORING
**Chronic Constipation:** goal is regular bowel movement patterns after 1 month of therapy.

**Opioid Use:** goal is a bowel movement at least 3 days.

**Bloating & cramping due to constipation should resolve after full bowel movement.**

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**Chronic Constipation:** goal is regular bowel movement patterns after 1 month of therapy.

**Opioid Use:** goal is a bowel movement at least 3 days.

**Bloating & cramping due to constipation should resolve after full bowel movement.**

### LONG-TERM LAXATIVE USE
- May result in malabsorption, dehydration, & fecal incontinence. Chronic laxative use may alter electrolytes, but limited data. Risk may be ↑ in pts predisposed to electrolyte imbalances:
  - MOM (↑ Mg⁺²): e.g. Mg⁺² antacid use, CKD
  - Stimulants (K⁺): e.g. diarrhea use, disorders
  - PEG without electrolytes: abuse/overuse of high volumes
  - Myenteric plexus/smooth muscle damage due to stimulus is rare. Unclear if damage due to constipation or laxative use.

### FEAL IMPACTION
- **Inability to pass an accumulation of hard stool.**
- May result from untreated or chronic constipation, or an intestinal blockade (e.g. a tumour pressing/growing into the lumen of the intestine).
- Can lead to fecal incontinence, & bowel obstruction - which, in severe cases, may result in bowel perforation.
- Symptoms include: constipation, rectal &/or abdominal pain, anorexia, vomiting, urinary &/or fecal incontinence.

**Management:** fecal mass must be removed before preventative or maintenance measures are implemented.

**Pediatries** – see Pediatric Fecal Disimpaction on next page.

**Adults** – options include:
- **Manual Disimpaction** using 2% lidocaine gel to anesthetize & lubricate the rectum/anus.
- **Enemas** daily for up to 3 days (e.g. tap water 500-800mL pr, **FLEET MINERAL OIL** 120mL pr). Onset: 5-15 minutes.
- **PEG 3350** (e.g. with electrolytes 2L po x 1-2 days or 1L po x 3 days).
- **Combination** of the above, along with laxatives (oral &/or suppositories), may be required.
- **AVOID:** soapsuds enemas due to colonic mucosa irritation & bulk-forming laxatives.
**MANAGEMENT OF CONSTIPATION** – Refer to the RxFiles Laxative Comparison Chart for doses & regimens

**TREATMENT APPROACH BY PATIENT POPULATION**

There are no studies assessing a step-wise approach. The following is based on guidelines, available data & clinical practice. Identify & treat reversible causes.

### PEDIATRICS

**INFANTS <1 year old**
- Glycerin suppository, lactulose or PEG 3350 are preferred
- **AVOID:** mineral oil (↑risk of aspiration → lipid pneumonia)
- **CAUTION:** ↑risk of Mg ++ toxicity with Mg ++ laxatives
- Cow’s milk introduced at ≥9 months may cause constipation. Limit cow’s milk to 24 oz per day & assess for improvement. Soy, almond & rice milk are not recommended as alternatives due to nutritional inadequacy. Hydrolyzed formulas may be used.
- May try apple, pear or prune juice (contains sorbitol) if ≥6 mos

**CHILDREN ≥1 year old & ADOLESCENTS**
Try oral agents 1[1] as rectal therapies may be negatively perceived.

**LIFESTYLE:** Ensure adequate dietary fibre, fluid intake & physical activity. Give apple, pear or prune juice (contains sorbitol).
- Dietary may cause constipation, or child/teen may be consuming too much dairy & not enough dietary fibre. Limit dairy intake & assess for improvement (8hrs: 2 servings/day, 9-18yrs: 3-4 servings/day).
- **Behavioural modifications** once pootty trained: schedule routine toilet sitting for 3-10 minutes daily-BID (ideally, within 1 hour after breakfast). Prep feet with stool. Positive reinforcement.

**1) FECAL DISIMPANCE** if large & hard abdominal mass, rectum filled with stool ↓ flow incontinence
- **Step 1** PEG 3500 LAX-A-DAY 1.5-5g/kg/day x 3d (max 100g/d)
  - No indication in ≤18yrs. Minimal absorption (<0.3%).
- **Step 2** Try another osmotic (e.g. lactulose, MOM) or add a stimulant (e.g. senna, bisacodyl) laxative
- **Step 3** Switch to enemas (e.g. MICROLAX, FLEET MINERAL OIL) doused every 2-3 days until distal impaction resolved usually ≤5 days.
  - As effective as PEG 3500, but oral route usually preferred.
- **AVOID:** manual disimpance when possible.

**2) MAINTENANCE THERAPY** following fecal disimpance. Goal is 1-2 BM/day. May trial ½ of the fecal disimpance dose.
- **Step 1** osmotic laxative (e.g. LAX-A-DAY 0.4-1g/kg/d max 17g/d)
  - PEG 3500 more effective than lactulose & MOM
  - Flatulence with PEG 3500 or lactulose may ↓ compliance
- **Step 2** Use stimulant laxatives as rescue PRN (e.g. senna, bisacodyl)
- Treatment will likely be required for ≥6 months. Reassess after ≥3 Months. Gradually ↓ over several months when discontinuing.

### PREGNANCY & LACTATION

**INCIDENCE:** 30% of ↑ in late pregnancy & up to 3 months postpartum

**CAUSES:** Ca ++ & Fe ++ supplements, ↑progesterone/□ molitin hormones & levels expanding uterus pushing on the colon
- **Step 1** ↑ dietary fibre, fluid intake & physical activity
- **Step 2** start a bulk-forming laxative (e.g. psyllium)
- **Step 3** add an osmotic laxative (i.e. PEG 3350, lactulose) or short-term magnesium hydroxide
- **Step 4** add a short-term stimulant laxative (e.g. senna, bisacodyl); more effective than bulk-forming laxatives, but ↑ AE (e.g. diarrhea, abdominal pain)
- **AVOID:** cascara & castor oil during pregnancy, and long-term mineral oil use during pregnancy & lactation
- **POSTPARTUM:** stool softeners (e.g. docusate) may help prevent constipation &/or straining

### CHRONIC CONSTIPATION = present for ≥3 months

<table>
<thead>
<tr>
<th>INCIDENCE: up to 25% of the general population</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong> ↑ dietary fibre, fluid intake &amp; physical activity</td>
</tr>
<tr>
<td><strong>Step 2</strong> start a bulk-forming laxative (e.g. psyllium)</td>
</tr>
<tr>
<td><strong>Step 3</strong> add an osmotic laxative (e.g. PEG 3350, lactulose, MOM)</td>
</tr>
<tr>
<td><strong>Step 4</strong> add PRN glycerin suppository, stimulant (e.g. senna, bisacodyl) laxative or enema (e.g. MICROLAX, FLEET MINERAL OIL)</td>
</tr>
<tr>
<td><strong>Step 5</strong> prucalopride RESORATAN 6 1-2mg po daily (currently only indicated in ♀), 582-12/month</td>
</tr>
</tbody>
</table>

### ELDERLY

**INCIDENCE:** ≥65 yrs: ♀ 26%, ♂ 16%; ≥84 yrs: ♀ 34%, ♂ 26%; long-term care residents: up to 80%

**CAUSES:** greater number of medications, diseases & conditions which cause constipation, along with lifestyle see previous page.

**LIFESTYLE:** ↑ dietary fibre, fluid intake & physical activity based on the patient’s ability to mobilize, eat & drink, his/her height (e.g. renal or heart failure) & cognitive status. Give apple, pear or prune juice (contains sorbitol). Some LTC homes use dried fruit spreads (e.g. FRUITRITE, 2g fibre/25g).

- Daily regimented bowel routine: e.g. within 1 hour of waking do mild physical activity (e.g. walking, swimming, yoga, Thai Chi), have a hot beverage (preferably caffeinated) & a fibre cereal. End the day with a fibre supplement.
- **Exercises if bedridden:** pelvic tilt, trunk rotation & leg lifts.
- Refer to Chronic Constipation for tx, & consider the following:
  - **STRAINING** predominant symptom in the elderly & INCOMPLETE EVACUATION: lifestyle & bulk-forming agent (e.g. psyllium; ensure patient can drink ≥250mL with each dose)
  - **INFREQUENT BOWEL MOVEMENTS:** osmotic laxative (e.g. PEG 3350, lactulose, MOM)
  - **NEUROGENIC BOWEL:** stimulant (e.g. senna, bisacodyl)
  - **SLOW-TRANSIT OR SEVERE PELVIC FLOOR DYSFUNCTION:** avoid fibre supplements & high fibre diets
  - **CAUTION:** mineral oil (lipid pneumonia), and magnesium or sodium based laxatives if renal or cardiac disease

### OPIOID-INDUCED CONSTIPATION continued

**Step 1:** **PREVENTION** continued - LIFESTYLE:
- Dietary Fibre: may ↑ dietary fibre if deficient. Caution as excessive amounts ↑ risk of bowel obstruction due to opioid-induced ↓ GI peristalsis.
- Fluid: ↑ fluid intake if dehydrated &/or not fluid restricted.
- Physical Activity: impact of ↑ physical activity on opioid-induced constipation is unknown.
- **CANCER/PALLIATIVE CARE:** Lifestyle measures may not be feasible depending on the patient’s status. Encourage as tolerated. Ensure adequate privacy & easy access to a toilet/commode.

**Step 2:** **TREATMENT** if no BM after 3 days, treat the constipation
  - ↑ dose of preventative laxative until maximum dose achieved or administration is no longer practical, OR
  - Add an osmotic laxative (e.g. PEG 3350, lactulose, MOM)
- **CANCER/PALLIATIVE CARE** Avoid bulk-forming laxatives if fluid intake is low, & rectal manipulation if thrombocytopenic or neutropenic due to ↑ risk of bleeding or infection, respectively.

**Step 3** If patient becomes constipated despite the above:
  - Rule out fecal impaction & bowel obstruction.
  - Reassess potential causes, & treat if reversible. The cause is often multi-factorial.
  - Treat the constipation with rectal therapies (i.e. suppository, enema or manual disimpaction) AND adjust the scheduled laxative regimen by ↑ dose(s) ± adding a scheduled laxative with a different mechanism of action.
  - ↑ efficacy of bulk-forming laxatives for opioid-induced constipation & osmotic laxatives in dehydrated patients.
- **CANCER/PALLIATIVE CARE** Avoid bulk-forming laxatives if fluid intake is low, & rectal manipulation if thrombocytopenic or neutropenic due to ↑ risk of bleeding or infection, respectively.

**Step 4** If moderate to severe constipation persists despite optimal laxative regimens:
  - **PALLIATIVE CARE:** add methylnaltrexone RELISTOR. May be considered earlier in select patients e.g. if incident pain on movement & repositioning for rectal therapies results in considerable pain.
  - Consider switching opioid. Insufficient evidence to support this, but it may be trialed.

- **Prevention & treatment of opioid-induced nausea:** consider a prokinetic (e.g. metoclopramide) which may offset ↓ peristalsis caused by opioids & lessen constipation.

- **PALLIATIVE CARE:** up to 90% of palliative care pts are on opioids
  - **CAUSES:** ↓ GI motility (e.g. opioids → try metoclopramide), tumour compression on the intestine (→ dexamethasone), or interference with colonic neural innervations
  - Continue laxatives until end of life. The body produces 1-2 ounces of stool/day even without oral intake.
- **SK Palliative Care Drug Plan:** covers most commonly used OTC laxatives, but only if the patient has a prescription.
**LAXATIVES FOR CONSTIPATION: Drug Comparison Chart**

<table>
<thead>
<tr>
<th>GENERIC/TRADE</th>
<th>ONSET OF ACTION/COMMENTS</th>
<th>CONTRAINdications (CI)/ADVERSE EVENTS (AE)</th>
<th>DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psyllium METAMUCIL, g powder (original, smooth, sugar-free, flavoured)</td>
<td>• Onset of Action: 12-72 hours <strong>MODERATE</strong> quality evidence.</td>
<td>CI: fluid restricted, dehydrated, dysphagia, esophageal strictures</td>
<td>3.4g = product dependent e.g. 1 tsp, 1 tbsp, 2 wafers, or 5 capsules. Refer to dosing instructions on package.</td>
</tr>
<tr>
<td>Inulin X BENEFIBRE, METAMUCIL Simply Clear Powder - may be sprinkled onto soft food (hot or cold).</td>
<td>• Similar efficacy as lactulose, better efficacy than dietary fibre.</td>
<td>AE: transient, dose-dependent flatulence, bloating; titrate slowly to minimize. Rare: anaphylaxis, asthma &amp; allergic reactions; esophageal obstruction &amp; fecal impaction.</td>
<td>6-12yrs: 1.7-3.4g po daily-TID. Max 15g/day. Adults &amp; 12yrs: 3.4-6.8g po daily-TID. Max 30g/day.</td>
</tr>
<tr>
<td>Guar Gum BENEFIBRE chewable tablets X</td>
<td>• May not aid patients with constipation due to slow transit, pelvic floor dysfunction or medication-induced.</td>
<td>Natural fibre (psyllium, inulin, guar gum) ↑ risk of flatulence &amp; abdominal bloating vs synthetic (polycarbophil).</td>
<td>3g = 1 heaping teaspoon</td>
</tr>
<tr>
<td>Calcium Polycarbophil PRODIEM 6.25mg caplet</td>
<td>• Administration: must be taken with ≥250mL of water/juice to prevent fecal impaction &amp; esophageal obstruction.</td>
<td>Dis: suggested to space by 2 hours from all other medications.</td>
<td>6-11yrs: 3g po daily-TID Adults &amp; 12yrs: 6-3g po daily-TID</td>
</tr>
</tbody>
</table>

**LUBRICANTS:** lubricates the gastrointestinal tract to aid stool passage & slows reabsorption of water from the gastrointestinal tract

| Mineral Oil (Heavy USP) enema FLEET MINERAL OIL, g oral liquid | • Onset of Action: PO: 6-8 hours PR: 2-15 minutes | Infants, bedridden or dysphagic pts risk of aspiration, appendicitis; undiagnosed rectal bleeding. | 6-12yrs: 10-25mL po HS while sitting up. Disimpaction: 15-30mL/year of age orally (max 240mL) Adults & 12yrs: 15-45mL po HS while sitting up ENEMA 2-12yrs: 30-60mL daily pr PRN Adults & >12yrs: 60-150mL OD pr PRN, usual dose: 120mL |

**OSMOTICS: poorly absorbed sugars which are broken down by colonic bacteria, osmotically draw fluid into the lumen & stimulate peristalsis**

| Polyethylene Glycerol (PEG 3350) powder for oral solution | • Onset of Action: 48-96 hours | CI: known or suspected bowel obstruction | 17g = 1 sachet/ 1 heaping tablespoon/ 1 capful Not approved for ≤18 yrs age but clinical trials support safety & efficacy: <2yrs: 0.8 g/kg/day, 2-18yrs: 0.4-1 g/kg/day (max 17g) |
| LAX-A-DAY, RESTORALAX, PEGALAX, g (MIRALAX USA) | Disimpaction dose onset: 0.5-1 hour | Disp: transient-dose-dependent nausea, abdominal bloating, cramping, diarrhea (esp. elderly), & flatulence. Rare: pulmonary edema, Mallory-Weiss tears. Is not fermented into hydrogen or methane by microflora ➔ ↓ flatulence & bloating vs lactulose. | Disimpaction: 1-1.5 g/kg/day x 3 days (max 100g/day) Adults: 17g po once daily |
| Lactulose, g | • Onset of Action: 24-48 hours | CI: no known significant DI's | $24 |
| 667mg/mL oral soln | • MODERATE quality evidence. NNT=4. | AE: transient, dose-dependent abdominal cramps, flatulence, nausea, diarrhea. | 17g = 1 sachet/ 1 heaping tablespoon/ 1 capful Not approved for ≤18 yrs age but clinical trials support safety & efficacy: <2yrs: 0.8 g/kg/day, 2-18yrs: 0.4-1 g/kg/day (max 17g) |
| | • Administration: sweetness can be unpalatable. Mask taste by diluting in water, fruit juice, milk or desserts. Certain brands may be more palatable. | DI: antacids (lactulose ⊳ colonic pH). May interact with anti-infectives (↑ the colonic bacteria that degrade lactulose) & warfarin (↑ INR due to ↓ intestinal absorption of vitamin K). | Disimpaction: 1-1.5 g/kg/day x 3 days (max 100g/day) Adults: 17g po once daily |
| Sorbitol 70% solution, g | • Onset of Action: PO: 24-48 hours PR: 5-15 minutes | CI: galactose free diet | $7-36 |
| | • Less sweet than lactulose, ‘‘less nausea’’ | AE: transient, dose-dependent abdominal cramps, flatulence, nausea, diarrhea. | 1yr: 1-3mL/kg/day divided BID 1-5yrs: 5mL po BID 6-12yrs: 10mL po BID Adults & >12yrs: 15-30mL po daily up to TID. Max 90mL/day for constipation. |
| | • Administration: sweet but should be given with meals for effective results. | DI: antacids (lactulose ⊳ colonic pH). May interact with anti-infectives (↑ the colonic bacteria that degrade lactulose) & warfarin (↑ INR due to ↓ intestinal absorption of vitamin K). | Children: 1-3mL/kg/day 70% soln po daily-BID, 30-60mL pr as 25-50% soln (dilute 70% soln with water) Adults: 15-30mL 70% soln po daily-BID, 120mL pr as 25-30% soln (dilute 70% soln with water) |
| Glycerin, g | • Onset of Action: 15-60 minutes | CI: anal fissures, fistula, hemorrhoids, proctitis | $<1/ supp |
| Suppositories: | • Less effective if stool is dry & hard. | AE: rectal irritation | Children: 1-3mL/kg/day 70% soln po daily-BID, 30-60mL pr as 25-50% soln (dilute 70% soln with water) Adults: 15-30mL 70% soln po daily-BID, 120mL pr as 25-30% soln (dilute 70% soln with water) |
| Adult 2.6g/supp | • Administration: Moistens suppository in lukewarm water prior to insertion. Retain suppos in rectum until dissolved. | DI: no significant DI's | $<1/supp |
| Infant/Child: 1.8g/supp | Magnesium Hydroxide MILK OF MAGNESIA, g | • Onset of Action: 0.5-6 hours | CI: severe cardiopulmonary or renal impairment | $4-22 |
| susp 400 mg/5 mL 800 mg/5 mL | • Less effective if stool is dry & hard. | AE: abdominal cramping, bloating, flatulence, sodium polystyrene sulfonate (↑ risk of intestinal necrosis) | Children: 1-3mL/kg/day 400mg/5mL Adults: 2400-4800mg po HS or divided up to TID (e.g. 30-60mL of the 400mg/5mL strength) |
| Combination Products: MAGNOLAX liquid see above | • Administration: | DI: may ↓ digoxin or tetracyclines absorption | Children: 1-3mL/kg/day 400mg/5mL Adults: 2400-4800mg po HS or divided up to TID (e.g. 30-60mL of the 400mg/5mL strength) |

**CONTRAINDICATIONS (CI)/ADVERSE EVENTS (AE) | DRUG INTERACTIONS (DI)/MONITORING (M) | DOSE | M/$MONTH**
<table>
<thead>
<tr>
<th>GENDER/TRADE</th>
<th>ONSET OF ACTION/COMMENTS</th>
<th>CONTRAINDICATIONS (CI) / ADVERSE EVENTS (AE) / DRUG INTERACTIONS (DI)</th>
<th>DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisacodyl DULCOLAX, g</td>
<td>Onset of Action: PO: 6-12 hours</td>
<td>- Onset: PR: 15-60 minutes &lt;br&gt; - MODERATE quality evidence. NNT=3. &lt;br&gt; - Stronger stimulant vs senna or cascara. &lt;br&gt; - Administration: do not crush, chew or break EC tablets. Space milk, antacids, H2-blockers &amp; PPIs by 1 hour. Suppositories: insert 30 mins after a meal to align with gastrocolonic response.</td>
<td></td>
</tr>
<tr>
<td>MAGIC BULLET suppository 10mg $ BL (sacral cord injury)</td>
<td>CI: abdominal pain with nausea &amp; vomiting, acute IBD, appendicitis, ileus, galactose or fructose intolerance, GI obstruction, severe dehydration, tinnitus allergy. &lt;br&gt; AE: Oral: abdominal pain, cramps, diarrhea, hypokalemia. Suppository: rectal irritation or burning. &lt;br&gt; DI: Diuretics - may up risk of electrolyte disturbances. EC tabs: milk, antacids, PPIs, or H2-blockers → acidity causes early disintegration → GI irritation.</td>
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<tr>
<td>&gt;1 month - 2yr5: 5mg suppository OD or PRN &lt;br&gt; 3-12yr: 5-20mg po HS or 5-10mg supp OD pr &lt;br&gt; Adults &amp; &gt;12yr: 1-2 tabs po HS or 10mg supp daily pr. Max 30mg/day. Palliative Care: up to 4 tablets po TID.</td>
<td>MAGIC BULLET: 6-12yr: 5mg (½ supp) OD pr PRN &lt;br&gt; Adults &amp; &gt;12yr: 10mg OD pr PRN</td>
<td></td>
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</tr>
<tr>
<td>PO: $4 &lt;br&gt; PR: $17-33</td>
<td></td>
<td></td>
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<tr>
<td>2013</td>
<td></td>
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</tr>
<tr>
<td>Sennosides SENOKOT, EX-LAX, PRODIEM OVERNIGHT RELIEF THERAPY, g</td>
<td>Onset of Action: 6-12 hours</td>
<td>- Onset: Low quality evidence. &lt;br&gt; - Mildest stimulant laxative. &lt;br&gt; - Often found in herbs, cleanses or teas. &lt;br&gt; - May discolor urine, feces &amp; breast milk yellow-brown or red-violet. Urine discoloration may interfere with labs: phenolsulphonphalein, estrogen, urobilinogen.</td>
<td></td>
</tr>
<tr>
<td>Combination Product SENOKOT-S, g tablet (docusate Na 50mg + sennosides 8.6mg)</td>
<td>CI: GI obstruction, stenosis, atony, appendicitis, IBD, abdominal pain of unknown origin, severe dehydration with water &amp; electrolyte depletion. &lt;br&gt; AE: dose-dependent abdominal pain, diarrhea, hypokalemia, dehydration: Rare allergy reactions, proctitis, idiopathic hypertensive, benign melanosis coli. &lt;br&gt; DI: no known clinical significant DIs. May up risk of electrolyte disturbances with drugs that ≤ electrolytes (e.g. diuretics).</td>
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<tr>
<td>&gt;2-yr5: 2.5-7.5mL po HS. Max 5mL po BID. &lt;br&gt; 6-12yr &amp; Pregnancy: 5-10mL or 1-2 tablets po HS. Max 10mL or 2 tablets BID. &lt;br&gt; Adults &amp; &gt;12yr: 10-15mL or 2-4 tablets po HS. Max 15mL or 4 tablets BID. Palliative Care: up to 4 tablets po TID.</td>
<td>SENOKOT-S: Same dosing as above. The docusate component likely only effective at higher doses &amp; with regular use.</td>
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<tr>
<td>Tabs: $3.35 &lt;br&gt; Syrup: $13-40</td>
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</tr>
<tr>
<td>STOOL SOFTENERS: reduces stool surface tension → fluid penetration into stool</td>
<td>Docusate Sodium COLACE, g</td>
<td>Onset of Action: 12-72 hours</td>
<td>- Onset: Low quality evidence. &lt;br&gt; - May help to prevent constipation or straining if recent rectal surgery or myocardial infarction, anorectal disorders, postpartum &amp; unstable angina. &lt;br&gt; - Lacks evidence for the tx of constipation.</td>
</tr>
<tr>
<td>Combination Product SENOKOT, g tablet</td>
<td>CI: acute abdominal pain, nausea, vomiting &lt;br&gt; AE: well tolerated; occasional mild, transient nausea, GI cramping or rash. Throat irritation with docusate sodium solutions.</td>
<td></td>
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</tr>
<tr>
<td>GI mineral oil (up absorption of mineral oil), ASA (up risk of mucosal damage). Theoretically may up absorption of other medications; may space narrow therapeutic agents by 2 hours.</td>
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</tr>
<tr>
<td>&lt;3yr: 10-40mg po daily or BID &lt;br&gt; 3-6yr: 20-60mg po daily or BID &lt;br&gt; 6-12yr: 40-150mg po daily or BID &lt;br&gt; Adults &amp; &gt;12yr: 100mg po BID.</td>
<td>ENEMAS (use drops, 10mg/mL): Retention: 5-90mL daily pr PRN Flushing: 1-100mL daily pr PRN</td>
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<tr>
<td>Capsule: $2 &lt;br&gt; Drops: $10-107</td>
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<tr>
<td>Syrup: $3-535</td>
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<tr>
<td>Docusate Calcium SOFLAX 240mg capsule, g</td>
<td>Onset of Action: 2-3 hours</td>
<td>- Onset: Low quality evidence.</td>
<td></td>
</tr>
<tr>
<td>Prucalopride RESOTRAN X tablet: 1, 2mg</td>
<td>Mechanism of Action: peripheral selective μ-1 opioid antagonist. Does not reverse analgesia.</td>
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</tr>
<tr>
<td>Combination Product SENOKOT, g tablet</td>
<td>CI: known or suspected mechanical GI obstruction or acute surgical abdomen. &lt;br&gt; AE: abdominal pain, diarrhea, flatulence, nausea, dizziness. Risk of GI perforation in patients with cancer, GI malignancy, GI ulcer, Ogilvie’s syndrome, certain medications (see).</td>
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<tr>
<td>DI: ↑ risk of GI perforation: bevacinumab, NSAID, steroids</td>
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<tr>
<td>Adults: Administered subq q 48 hours PRN Dosed by body weight &amp; renal function: &lt;br&gt; ❄️: 38-61kg: 8mg (=0.4mL) &lt;br&gt; ❄️: 62-114kg: 12mg (=0.6mL) &lt;br&gt; ❄️: &lt;38 or ≈114: 0.15mg/kg &lt;br&gt; ❄️: CR3 &lt;0mL/min: dose by 50% Discontinue if no BM after 4 doses</td>
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<tr>
<td>$38/dose</td>
<td></td>
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<tr>
<td>Prucalopride RESOTRAN X tablet: 1, 2mg</td>
<td>Mechanism of Action: prokinetic; highly selective 5HT-4 agonist. Cisapride &amp; tegaserod are non-selective 5HT-4 agonists.</td>
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<tr>
<td>Onset of Action: 30 minutes – 4 hours</td>
<td>CI: renal dialysis patients, GI perforation or obstruction, severe inflammatory bowel disease, toxic megacolon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prucalopride RESOTRAN X tablet: 1, 2mg</td>
<td>CI: renal dialysis patients, GI perforation or obstruction, severe inflammatory bowel disease, toxic megacolon</td>
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<td></td>
</tr>
<tr>
<td>Elderly (&gt;65 years old): 1-2mg po daily PrC &lt;30mL/min: 1mg po daily</td>
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<tr>
<td>$82-122</td>
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<tr>
<td>MECHANISMS WITH A UNIQUE MECHANISM OF ACTION FOR TREATING CONSTIPATION</td>
<td>Methylnaltrexone RELISTOR X</td>
<td>Onset of Action: 30 minutes – 4 hours</td>
<td>- Onset: Low quality evidence.</td>
</tr>
<tr>
<td>Mechanism of Action: peripheral selective μ-1 opioid antagonist. Does not reverse analgesia.</td>
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<tr>
<td>Indication: adjunct for opioid-induced constipation in palliative care patients who have failed other laxatives.</td>
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<tr>
<td>NNT=3/16weeks, versus placebo.</td>
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<tr>
<td>Adults: Administered subq q 48 hours PRN Dosed by body weight &amp; renal function: &lt;br&gt; ❄️: 38-61kg: 8mg (=0.4mL) &lt;br&gt; ❄️: 62-114kg: 12mg (=0.6mL) &lt;br&gt; ❄️: &lt;38 or ≈114: 0.15mg/kg &lt;br&gt; ❄️: CR3 &lt;0mL/min: dose by 50%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discontinue if no BM after 4 doses</td>
<td></td>
<td></td>
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<tr>
<td>$38/dose</td>
<td></td>
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<tr>
<td>NOT AVAILABLE IN CANADA</td>
<td>Intestinal Secretagogues (lubiprostone, linaclootide): accelerate transit &amp; facilitate ease of stool passage</td>
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</tr>
<tr>
<td>Lubiprostone AMITIZA 8 &amp; 24mcg caps: Dose – chronic constipation or opioid-induced constipation 24mcg po BID (↗ daily if +++ nausea). 3 po HS with IBS-C 8mg po BID. NNT=4 for constipation, vs placebo. AE: nausea 30%, diarrhea 12%, dypsnea 3%, occurs 30-60 minutes after dose.</td>
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<tr>
<td>Linaclootide LUNINEX 1.25 &amp; 250mcg caps: Dose – chronic constipation 145mcg daily, IBS-C 290mcg daily. AE: diarrhea 20%, abdominal pain 7%.</td>
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<tr>
<td>OTHER PRODUCTS MICROLAX enema (borbitrol, glycerin, Na+ citrate/lauryl sulfacetate, sorbic acid). Dose for child/adult: 1 bottle pr $9. FLEET PHOSPHO-SODA, g oral soln Do not use as a purgative due to serious electrolyte, kidney, CV &amp; neurological problems. CI: Na+ restricted pts. Caution in renal/cardiac dx. Laxative doses: 5-12yr: 7.5-15 mL po OD. 3-6yr &amp; &gt;12yr: 5-15mL po OD-BID (duoce in 250mL of H2O, &amp; follow w/250mL of H2O).</td>
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<tr>
<td>NATURAL PRODUCTS Insufficient evidence to support the use of probiotics. Cascara 2-5mL (325mg/mL) or 0.3-1g po HS (320-485mg tabs/caps). Onset: 6-12 hours. Do not use in pediatrics or pregnancy. If used, ensure product has a Natural Product Number (NPN).</td>
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<tr>
<td>LAXATIVES FOR CONSTIPATION: Drug Comparison Chart continued</td>
<td>L Kosar MSc, B Schuster Pharm D <a href="http://www.RxFiles.ca">www.RxFiles.ca</a> Aug 2013</td>
<td>S/month</td>
<td></td>
</tr>
</tbody>
</table>
The Bristol Stool Chart: a validated tool to correlate stool consistency with colonic transit time. Use with patients for assessment & monitoring.

### The Bristol Stool Chart

<table>
<thead>
<tr>
<th>Type 1</th>
<th>Separate hard lumps, like nuts (hard to pass)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>Type 3</td>
<td>Like a sausage but with cracks on its surface</td>
</tr>
<tr>
<td>Type 4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>Type 5</td>
<td>Soft blobs with clear-cut edges (passed easily)</td>
</tr>
<tr>
<td>Type 6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>Type 7</td>
<td>Watery, no solid pieces. Entirely Liquid</td>
</tr>
</tbody>
</table>

---

**REFERENCES**

**GENERAL REFERENCES:**

**GUIDELINES, POSITION STATEMENTS, ETC:**
**Canadian Association of Gastroenterology:**
Gray JR. What is chronic constipation? Definition and diagnosis. Can J Gastroenterol. 2011 Oct;25 Suppl B:7B-10B.
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Storr M, Storr M. Chronic constipation: current management and challenges. Can J Gastroenterol. 2011 Oct;25 Suppl B:5B-6B.

**GERIATRICS:**
PALLIATIVE CARE:


Fraser Health Hospice Palliative Care Symptom Guidelines. Available at: http://www.fraserhealth.ca/professionals/hospice_palliative_care/


Hospital Pharmacists’ Special Interest Group in Palliative Care. Care Beyond Cure: Management of Pain and Other Symptoms, 4th ed. APES Quebec, Canada; 2009.


PEDIATRICS:


PREGNANCY:


OPIOID-INDUCED CONSTIPATION:


Rowland M. Opioid induced constipation. 2009. Canadian Council on Continuing Education.


