LAXATIVES

Bulk forming (1st line) | Hyperosmotic (2nd line) | Stimulant lax (3rd line)

Bulk-forming Laxatives

- Natural or synthetic polysacc. or cellulose deerivatives → absorb H_2O to soften stool → ↑se bulk of stool → Stimulate peristalsis
- given ē 8oz of water (approx 240ml) to prevent choking
- ONSET: 12–24 → 72 hrs
- ADR: Bloating, cramping and flatulence
- CI: -Obstructing bowel lesion -Crohn's disease (Type of IBD) → due to risk of perforation.
- In pt ē fluid restriction → HF / renal impair.
- Sugar-free formula
  - Diabetics
  - Avoid in phenylketonuria
- ★ For treatment
  - use must be limited to 1 week.
- For prevention can be use for long-term.

HYPEROSMOTIC LAX.

Create osmotic gradient → that pulls water in intestine → peristalasis & motility

Glycerin

(Fleet Gly Supp., Fleet pedia-lax)

- effective when used rectaly.

DOSING

- 6yr → adult: 2g regular suppos. | 5.4g liquid supp
- 2–5yrs: 1g reg. suppo. | 2.8g liq. suppo.

- ONSET: 15min → 1hr
- ADR: rectal burning

PEG 3350

(Miralax, ~~Dulcolax~~ Balance)

- approv. for self-care use in age 17≤ age
- Dose: 17g stirred into 4–8 oz of fluid, OD
- ONSET: 1–3 days
- ADR: N/D, bloating etc

⚠ Kidney Ds | IBS | PG | BF

↳ for short-term it can allow

SALINE LAXATIVES

Non-absorbable salts & sugars.

Works by drawing water into colon

- ONSET: 30min–3hr (orally) / 2–5 min (rectally).
- ADRs: N/V/Dehydration
  - excessive diuresis
  - abdom. cramping

⇒ 20% mag res. absorbed from these products → HYPERmagnesemia in pt. ē pre-existing renal impair.

⇒ Excessive dose = Diarrhea of mg.

WARNING/counselling

- Mg-citrate = adult dose = one full bottle
  - ↳ refrigration ↑se palatibi & Prevent cry stalli
- Na-salt – HF, edema, RF
- mg-salt (6hr onset) – kidney Ds
- OSP – oral sod. phosph. → Non-prescip med. for constip.
  - Some pt. report AKI
  - Thus FDA removed it from market due to non-efficacy
  - For constipt as well as potential for AKI

LUBRICANT LAX.

(Mineral oil) — paraffin and petrolatum

↓

work at colon to ↑se water retention in stool

Availability

- oral / rectal

DOSE

- ADULT
  - oral: 15-45ml orally
  - rectal: 118 ml r
- child (≤12yr)
  - 6-11yrs
    - oral: 10-15ml
    - rectal: 59ml.

Kinetics

- ONSET: 6-8 hr (oral)
  5-15min (rectal)
- ADR: anal seepage
  ↓
  Itching & perianal discomfort

Warnings

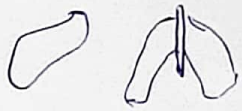
- can ↓se absorp. of fat-soluble vitamin so DON'T use on chronic basis
- can be Taken on EMPTY stomach
- NOT TO BE Taken → AT BED-TIME
  ⇓
  Due to risk of lipoid pneumonitis
- Elders, debilitated pt or pt ē dysphagia → at hig risk
- NOT TO BE co-Adm ē Emollients (Docusate) → as absor. of mineral oil ↑ses
  Hepatotoxicity

Swallowing difficulties

Rectal bleeding

Appendicitis

age < 6yr



CHLORIDE-CHANNEL ACTIVATOR

Lubiprostone

(Prostanoid acid derivative)

- Chronic constip
- IBS

MOA: Stimulate Type-2 Cl-channel (ClC-2) → ↑se Cl⁻ rich fluid in intestine
↓
Stimulate intestinal motility

DOSE: 24mcg PO BD — chronic constip.

ONSET: within 24hrs

Recurrence of constip. — after discontinu.

- minimal sys. absorption.

Pg — category-C

- Nausea in 30% pt ē due to delayed gastric empty.

Category C → Pg

Linaclotide

(minimaley absorb. 14 A.A peptide).

- Chronic constip
- IBS.

Lina. binds to and activate Guanylyl cyclase-C on luminal epith. surface of intestine
⇓
↑se intra & extra cell cGMP
↓
Activate cFTR → ↑se Cl⁻ rich secretion & ↑se intest. transit

Cystic fibrosis transmembrane

145

DOSE: 145mcg OD → 1-2 bowel mov. per week.

upon discontinu. → bowel movem. ↓ become normal ē in 1 week

ADR: severe diarrhea in 20% pts

Paediar

★ STIMULANT LAXATIVES

- Works by allowing water & electrolyte transport by intestines → stimulate motility
- Also work by stimulation of enteric nervous syst. [Propulsive / peristaltic activity]
- Third line - for general constip. → 1st line for opiate - induce constip.

SENNA

(1) Single-entity → Senokot
- Ex-Lax
- Pevdiem
- Fletcher's Laxa.

(for kids.)

(2) Comb ē Stool-Soft. Frex
- Senokot-S
- Peri-colace

↓ avail as standardize conc. or as sennosides. → from senna leave

Dose: solid oral formul. 187–374mg stand. conc.
8.6 – 17.2mg sennosides

Avail as Tab, syrup or chocolate chew.

Bisacodyl

- (Dulcolax, correctol)
- avail as oral & rectal

Adult		Pediatric (age 6 & more)
oral	rectal	5mg OD (oral/rectal)
5–15mg	10mg OD	

Oral ONSET: 6–12hrs
Rectal: 15–60min (like glyco. supp)

★ - ADRs:- All stimulant Lax:- Abd. cramp., Electro. fluid deficient., enteric loss of protein, malabs., hypokalemia, Suppository → rectal burning.

WARNING & COUNCELLING

- Undiagnosed rectal bleeding
- Intestinal obs.
- Spastic constipation

Avoid chronic use of cathartic (stimulant) Lax.

Laxative = elimin. of soft, formed stool
Purgative/cathartic = produce more fluid evacuation

Sennosides
- Urine discolor (pink, yellow, red, brown) This is harmless.
- Bluish pigment of mucus (melanin)

Bisacodyl
- Tablets shouldn't be crushed or chewed due to enteric coating.

• Milk, H_2RA & antacids also erode this coating, so should be separated in dosing by atleast 1 hr.

★ - EMOLLIENT LAXAT./SURFACTANTS

- Works by allowing water to move more easily into stool. → soft stool
- useful for those who should avoid straining to pass hard stool. e.g (recent myocardial surgery, rectal surg). less effective than OT

- They're salts of surfactant docusate
- contain insignif amount of Ca^{2+}, Na^+ or K^+
- products includes:
  - ✓ docusate Na^+ (Colace)
  - ✓ Docusate Ca^{2+} (Kaopectate stool softner) or Surfak (OD) — some manufactures

- each dose should be taken ē 8oz of H_2O

Adult	paed/child <24yr
50–300mg/day	50–150mg/D

- ONSET: slow: 24–72hr (1 3days)
- ADR: Diarrhea, cramps.

- Avoid in N/V appendicitis
- Abd pain

(They have also marked Kaopectate - bismuth subsalicylate = Treat diarrhea)

OPOID Receptor Antagonist

- Acute or chronic therapy ē opoids → constipation.
(mu, (u) opoid · recep).

u-opoid recep. antagonists

methylnaltrexone

- Use for opoid-induce bowel in pt. who don't respond to other treatme.
- ADMINISTR.
  S/C injec (0.15mg/kg) q 2 days

These agents don't cross BBB → so inhibit peripheal u-recep ēout effecting analgesic effect.

Alvimopan

For short term treatmt to shorten the period of post-operat. ileus in hosp. patients

Dose:- 12mg capsule adm orally 2 in 5hrs before surgery & BD after surg until bowel function recovered — Don't use MI 7 days.

Due to risk of CV-toxic, It is currently restricted in short-term use.

Pospoperi.ileus = intolerance of food/oral intake due to disruption of (Propulsive motor activity (power to propel)

Specific population

Paediatrics

First use non-pharmaco. therapy
↳ ↑se fluid intake or sugar
↳ ↑se bulk content of diet (fruit, fiber, cereals, vege).

Age <2yrs — 90 medical provider
Age >2yr — Glycerin supp.

PGs

- may be by enlarged uterus, ingestion of pre-natal vitamins iron & calcium. & influence of progesterone (↓motility)
- ★ Bulk former and stool softener are recomm.

Geriatrics

may be due to ↓ fluid intake, concurrent disease (Hypothyroidism) or medication (opiates, anticholi.)

Major concern:- Fluid loss induce by aggressive laxa. Treatment (enemas, high-dose saline laxat.)

★ - Hyperosmotic or stimulant laxatives for treatm

★ Bulk-former lax ⇒ prevention depen on concomitant disease

★- Laxative Abuse: leads to cathartic colon (loss of tone of intestinal muscle)
- Most often ē taken ē lifestyle modifi of water & exercise (↑ bowel tone)