

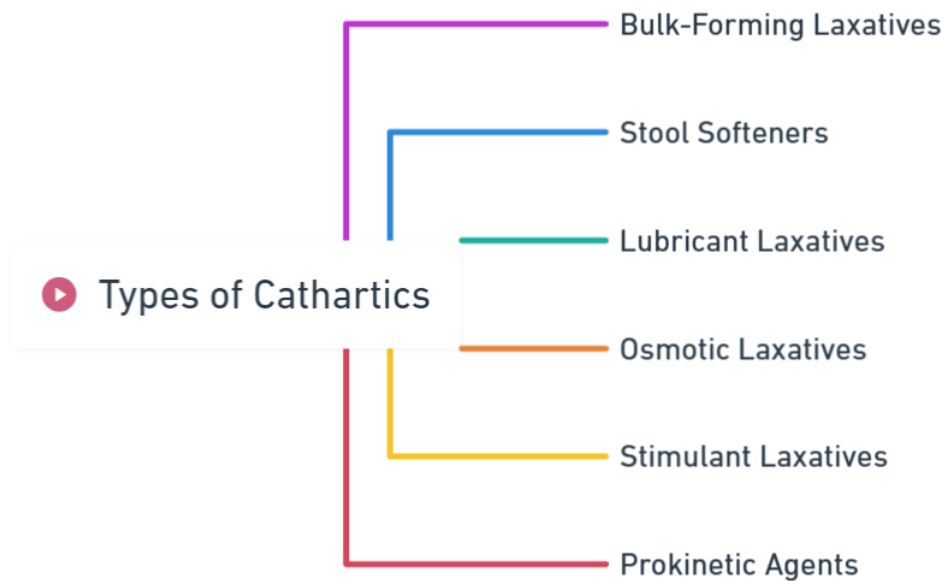
Cathartics

Cathartics

Introduction:

- Cathartics, also known as laxatives, are substances that promote bowel movements and relieve constipation.
- They are used in treating various gastrointestinal disorders, including constipation, irritable bowel syndrome (IBS), and for bowel preparation before diagnostic procedures or surgeries.

Types of Cathartics:



1. Bulk-Forming Laxatives:

- **Mechanism:** Increase the bulk and water content of the stool, making it easier to pass.
- **Examples:** Psyllium husk, methylcellulose, calcium polycarbophil.
- **Uses:** Treat constipation, especially in individuals with low-fiber diets or those who need to avoid straining during bowel movements.

2. Stool Softeners:

- **Mechanism:** Soften the stool by increasing its water content, facilitating easier passage.
- **Examples:** Docusate sodium, docusate calcium.
- **Uses:** Suitable for individuals recovering from surgery, childbirth, or those with hemorrhoids or anal fissures.

3. Lubricant Laxatives:

- **Mechanism:** Coat the stool and intestinal lining, reducing friction and allowing for easier passage.
- **Examples:** Mineral oil, liquid paraffin.

- **Uses:** Provide short-term relief of constipation, particularly for those with difficulty passing hard stools.

4. Osmotic Laxatives:

- **Mechanism:** Draw water into the intestines, softening the stool and increasing intestinal motility.
- **Examples:** Magnesium hydroxide, magnesium sulfate, lactulose, polyethylene glycol (PEG).
- **Uses:** Treat constipation, prepare the bowel for diagnostic procedures or surgeries, and manage hepatic encephalopathy (lactulose).

5. Stimulant Laxatives:

- **Mechanism:** Stimulate the intestinal muscles to contract, promoting bowel movements.
- **Examples:** Senna, bisacodyl, castor oil.
- **Uses:** Provide short-term relief of constipation, bowel preparation for procedures, and occasional use for constipation not responding to other treatments.

6. Prokinetic Agents:

- **Mechanism:** Increase gastrointestinal tract motility by acting on smooth muscles or nerves.
- **Examples:** Metoclopramide, tegaserod.
- **Uses:** Treat constipation associated with certain medical conditions (e.g., Parkinson's disease), gastroparesis, and irritable bowel syndrome with constipation (IBS-C).

This categorization helps in understanding the different mechanisms and appropriate uses of cathartics for various conditions.

Magnesium Sulphate (MgSO_4)

Preparation:

- Prepared by reacting magnesium carbonate with sulfuric acid:



Properties:

- White, crystalline powder
- Odorless
- Soluble in water
- Bitter, saline taste
- Chemical formula: MgSO_4

Uses:

- As an osmotic laxative to treat constipation
- As a bath additive to soothe muscle aches and pains
- In agriculture as a magnesium source for plants

Storage:

- Store in a cool, dry place in a tightly closed container, away from moisture and heat.

Sodium Orthophosphate (Na_3PO_4)

Preparation:

- Prepared by reacting phosphoric acid with sodium hydroxide:



Properties:

- White, crystalline powder
- Odorless
- Soluble in water
- Chemical formula: Na_3PO_4

Uses:

- As a saline laxative to treat constipation
- As a food additive to regulate acidity
- As a water treatment agent to prevent corrosion

Storage:

- Store in a cool, dry place in a tightly closed container, away from moisture and heat.

Kaolin

Preparation:

- Kaolin is a naturally occurring clay mineral, primarily composed of kaolinite ($\text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4$).
- Obtained through mining and purification processes such as washing, sedimentation, and centrifugation to remove impurities and achieve the desired particle size.

Properties:

- White or off-white, fine powder

- Odorless
- Insoluble in water
- Chemically inert

Uses:

- As an adsorbent in antidiarrheal medications
- As an ingredient in cosmetics and skincare products
- As a suspending agent in pharmaceutical formulations

Storage:

- Store in a cool, dry place in a tightly closed container, away from moisture and heat.

Bentonite

Preparation:

- Bentonite is a naturally occurring clay, mainly composed of montmorillonite (a type of smectite).
- Obtained through mining and purification processes like washing, sedimentation, and centrifugation to remove impurities and achieve the desired properties.

Properties:

- Light gray or cream-colored fine powder
- Odorless
- Insoluble in water but forms a colloidal suspension
- High swelling capacity

Uses:

- As a suspending agent in pharmaceutical formulations
- As an adsorbent in antidiarrheal medications
- As a binding agent in the production of tablets

Storage:

- Store in a cool, dry place in a tightly closed container, away from moisture and heat.



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