

# The Principles of Drug Administration via Enteral Feeding Tubes (EFT)

## This is an overview of

- Drug administration principles
- Consideration for dosage form selection
- Methods to minimize tube occlusion

## Drug Administration Principles

- Patient should be in a semi-recumbent position (at an angle of 30 degrees or greater) to reduce reflux of medication and flushes.
- Use only ORAL syringes to administer liquid medications through EFT (30-50ml oral syringe)- DO NOT use I.V. syringes
- Do NOT mix a number of medications into a single oral syringe. Each medication is given separately with flushing before and after.
- Do not add medication to the enteral formula. If enteral formula is interrupted you will not know how much medication was given.
- Must know:
  - Can the tablet be crushed?
  - Can the capsule be opened?
  - Is the medication available in liquid?
  - If the medication is available in liquid, is it suitable for EFT?
  - Should the medication be taken on an empty stomach?
- Type of water use for flushing:
  - For gastric tube cared for in the patient home, use fresh drawn tap water (usually boiled and cooled)
  - For gastric tube care for in institution, use sterile water
  - For small bowel enteral tubes beyond the stomach, use only sterile water in any setting (home or institution)

FORMULATIONS	CONSIDERATIONS
Liquid : Elixir and Suspension	Generally favored over syrups
Liquid : Syrup	More likely to cause clumping when exposed to Enteral Nutrition (EN)
Liquid: Elixir, suspension and syrup	Large amount of sorbitol or cumulative amount of sorbitol from different liquid preparations ( >10g/day) may cause GI intolerance.
Liquid : Elixir, suspension and syrup	Slowly administer hypertonic medications in the stomach to avoid dumping into the small bowel resulting in osmotic diarrhea and dilute hypertonic liquid preparation with 10-30ml of water when administered in the small intestine
Buccal or sublingual tablet (ex.:Suboxone (sl) or Nitroglycerine SL tablet)	Do not alter- NOT designed for absorption in the GI tract and crushing tablet may result in lack of efficacy
Rapid Dissolve Tablet( ex.: Prevacid Fast-Tab or Antipsychotic 2 <sup>nd</sup> generation (Risperdal M-tab, Zyprexa Zydis, some medications for migraine : Zomig Rapimelt, Maxalt RPD)	Appropriate to crush and make a slurry with water
Simple, compressed tablets including these that are sugar or film-coated, are immediate-release and may be crushed	Crushing some preparations could cause bitter taste if taken orally, but this is not an issue for administration via feeding tube. Tablets should be crushed to a fine powder and then mixed with 15-30ml of water before delivery through the feeding tube.
Enteric Coated tablets (EC) (Refer to List of Medications that can't be crushed updated yearly by Josee Lemay Pharmacist)	Do NOT crush as it is not suitable for NG and gastrostomy. EC tablets allow medication to be released in the small intestine not in the stomach. And crushing the tablets to administer in the intestine may result in crushed clumps which most likely will occlude the feeding tube.
Hard gelatin capsules that contain a powdered drug	Open capsule and the powder is diluted with 10-15ml of water to form a slurry before administration in the feeding tube
Liquid-filled soft gelatin capsules	The entire soft gelatin capsule may be dissolved in a container of warm water and all the content given. Do not administer the undissolved gelatin portion into the tube because this may cause occlusion
Extended-Release capsules that contain beads, pellets or enteric- coated granules	Empty the capsules into the feeding tube. Do not crush the beads, pellets or granules.

## What to Recommend for Clogged Feeding Tubes

Flushing a tube with warm water and gentle pressure from a large syringe can be attempted when a tube is clogged. For example, 5 mL of warm water can be instilled and allowed to dwell for one minute, followed by the use of a back-and-forth motion with a 30 to 60 mL catheter tip syringe. (Note that smaller syringes may create too much pressure, damaging the tube.) Longer dwell times, such as up to 20 minutes, may be necessary for stubborn clogs.

Secondary options for unclogging a tube occluded by drug residue include flushing with an alkalinized enzyme solution. Here is one example protocol: Crush one sodium bicarbonate 650 mg tablet or use ¼ teaspoon of baking soda) and dissolve in 5 to 10 mL of warm water. Empty the contents of one Creon capsule (12,000 units lipase, 38,000 units protease, 60,000 units amylase) into the sodium bicarbonate/water mixture and allow to dissolve (~5 minutes). Instill the solution into the tube and clamp for 5 to 15 minutes.

Juices and sodas are acidic and might contribute to tube occlusion. These are not recommended for unclogging feeding tubes.

Clog Zapper, a premixed enzyme kit, is more expensive than the pancreatic enzyme/sodium bicarbonate mixture, and no more effective. Mechanical devices such as Bard Brush are typically meant for use with specific types of tubes and require special training.

*For a more specific drug interactions and enteral nutrition list, do not hesitate to contact the Pharmacist at Medical Arts Pharmacy.*

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**Medical Arts Pharmacy** 173 Montreal Road & 30 13th Street East, Cornwall, Ontario Phone: 613-932-6501 or 613-933-0670