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# Cleveland Clinic

## Clinical Rx Forum

From the Department of Pharmacy

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### Can the Contents of Rivastigmine Capsules Be Given through a Feeding Tube?

By: Alec Wisner, Pharm.D.

**Introduction:** Rivastigmine is available as an immediate-release oral capsule in 1.5 mg, 3 mg, 4.5 mg, and 6 mg strengths as well as a transdermal patch in strengths of 4.6 mg/24 hr, 9.5 mg/24 hr, and 13.3 mg/24 hr. Rivastigmine capsules are on the “Do Not Crush List” maintained by UpToDate® Lexidrug™, as per the Canadian manufacturer’s recommendation; however, a liquid formulation of rivastigmine is available in Canada. The Cleveland Clinic Health-System’s Antidote List states that rivastigmine capsules may be opened and administered through a nasogastric (NG) tube.

**Factors Supporting NG Tube Administration:** The capsules are immediate-release and contain a fine crystalline powder that is soluble in water. This medication is not on the National Institute of Occupational Safety and Health (NIOSH) list as a hazardous drug. There is no statement within the package insert or Lexicomp™ monograph stating that the capsules must be swallowed whole.

**Case Reports:** A case report of amitriptyline toxicity demonstrated resolution of anticholinergic symptoms following administration of two rivastigmine capsules. The contents of the capsule were dissolved with 20 mL of water and administered via nasogastric tube. Another case report was identified describing rivastigmine administration via nasogastric tube for anti-

cholinergic delirium. The patient received two doses of rivastigmine 3 mg immediate-release capsules, with the contents being diluted prior to nasogastric tube administration. Following administration of the second dose, the patient was alert and oriented. The toxicology team recommended that a rivastigmine 13.3 mg/24 hr patch be placed until resolution of symptoms.

**Final Considerations:** It is recommended to consider changing the dosage form of rivastigmine capsules to patches if clinically indicated. If the patch formulation is not a suitable alternative, rivastigmine capsules may be opened and diluted with water for administration via an NG tube.

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# Can Dapagliflozin Be Prepared as a Pediatric Liquid Formulation?

By: Ben Meola, Pharm.D.

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**Introduction:** Dapagliflozin (Farxiga®) is approved by the Food and Drug Administration for the treatment of Type 2 diabetes mellitus in pediatric patients. However, it has an off-label indication for heart failure.

**Dosing for Heart Failure:** Pediatric dosing for heart failure is 0.1 to 0.2 mg/kg (max: 10 mg) once daily in the morning, with the dose rounded to the nearest one-quarter of a tablet (1.25 mg increments) when using a 5 mg tablet. Therefore, a 3-year-old weighing 15 kg would require a dose of 1.25 mg to 2.5 mg.

**Liquid Formulation Rationale:** The following information supports the administration of dapagliflozin as a liquid formulation for pediatric patients who are unable to swallow a tablet whole or for its use through a nasogastric (NG) tube:

1. The tablets are water-soluble.
2. This medication is not on the National Institute of Occupational Safety and Health (NIOSH) list as a hazardous drug.
3. The tablets are not included in the CCHS Do-Not-Crush List.
4. There is no statement within the package insert or the UpToDate® Lexicomp™ monograph stating that the tablets must be swallowed whole.

**Preparation of Liquid Formulation:** To prepare dapagliflozin tablets as a pediatric liquid formulation containing 1.25 mg in 3 mL of water, the following supplies and steps are needed: pill splitter, empty amber bottle, 3 mL syringe, and water.

1. Take one dapagliflozin 5 mg tablet and place it in the pill splitter
2. Close the pill splitter to cut the tablet in half
3. Turn the half tablet 90 degrees to the initial cut to split the tablet into quarters
4. Take a 3 mL syringe and remove the plunger
5. Place one quarter of a tablet into the syringe
6. Put the plunger back into the syringe
7. Attach the syringe to an amber medication bottle filled with water
8. Flip the bottle and draw up 3 mL of water into the syringe
9. Remove the syringe from the medication bottle
10. Ensure that the medication is fully dissolved before administering to the patient
11. If administering via NG tube, flush the tube with water after administration

**Stability:** Since no stability studies are currently available for preparing this pediatric formulation, it is recommended to administer it immediately after preparation and not to prepare it in advance for administration hours or days later.

**Final Considerations:** Dapagliflozin is available as round, film-coated tablets in both 5 mg and 10 mg strengths. Notably, dapagliflozin 10 mg tablets are not typically used to prepare a liquid formulation, as they are diamond-shaped and difficult to split in half. For a 2.5 mg dose of dapagliflozin, half of a 5 mg tablet may be dissolved in 3 mL of water and administered immediately after preparation.

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