

## Can This Tablet Be Crushed?

Many people cannot take solid forms of medications. Some simply cannot swallow whole tablets or capsules, some have feeding tubes, some may be too ill to swallow large tablets, some may be too young.

### Certain medication products should not be crushed:

- **Enteric coated products**

Do not crush, break or chew. These medications are formulated to dissolve in the intestine to lessen gastric irritation, to prevent irritation of mouth, to prevent staining of teeth and oral mucosa or to prevent stomach acid from destroying the drug. Look for products ending in **EC**. (1,2,3)

- **Sustained release products**

Watch for product names that end with **CD** (controlled delivery), **CR** (controlled release), **DA** (delayed action), **ER** (extended release), **LA** (long acting), **MR** (modified release), **PA** (prolonged action), **SA** (sustained action), **Spansule**, **SR** (sustained release), **XR** (extended release), or **XL** (extended release). These are formulated to deliver the medication over time eg 24 hours. Crushing these may lead to initial overdose then insufficient drug levels to maintain desired effect.(1,2,3) It is important to note that the absence of such a suffix does not guarantee the product is immediate release.(4) Aggrenox® is such an example; the pellets within the capsule are extended release.(5) It is always best to check with published lists of drugs that should not be crushed (below).

- **Cytotoxic, Teratogenic or Hormonal products**

Crushing these medications can lead to patients or caregivers inhaling airborne particles during administration. This is particularly a concern for women of child-bearing age. Examples include tamoxifen, hydroxyurea, finasteride, dutasteride. If liquids are not available or not an option, caregivers should be wearing masks and gloves. (1,3)

- **Lists of products which should not be crushed:**

- "DO NOT CRUSH" List - Institute of Safe Medication Practices. Available at <http://www.ismp.org/Tools/default.asp> (free access)
- Do Not Crush! - Davis's Drug Guide. Available at <http://www.drugguide.com/ddo/ub/view/Davis-Drug-Guide/109642/all/> (free access)
- Meds That Should Not Be Crushed. - PL Detail-Document. Pharmacist's Letter/Prescriber's Letter. July 2012. Available at [www.canadianpharmacistsletter.com](http://www.canadianpharmacistsletter.com) (by subscription)
- Oral medications that should not be crushed or altered - Lexi-Comp . Available at [http://online.lexi.com/lco/action/doc/retrieve/docid/patch\\_f/4227](http://online.lexi.com/lco/action/doc/retrieve/docid/patch_f/4227) (by subscription)

**If the medication cannot be crushed, another dosage form must then be used.**

Liquids, suppositories, immediate release tablets, orally dissolving tablets, sublingual tablets, parenteral injections, and topicals are all alternative ways to administer the medication. Always keep in mind that if you are changing from a long-acting medication to a short acting medication the dosage will likely need to be divided and given an appropriate number of times during the day; for example, Seroquel XR® 75mg od would become Seroquel IR® 25mg tid.(6) Also, make sure the other dosage form uses the same form of the medication, for example, Dilantin® extended release capsules contain 100mg of phenytoin sodium. The liquid preparation contains the free acid form of phenytoin which is approximately 8% stronger than phenytoin sodium. The liquid must be administered as multiple doses and the total daily dose may need to be reduced. (6)

**What to do if medications are not available in other commercially available forms?**

1. If appropriate, encourage the patient to try swallowing the medication. Here are some tips you can give to patients who struggle with swallowing solid forms of medication.(7,8,9)
  - Mix with yogurt, jello, applesauce, banana or peanut butter.
  - Put pill or capsule inside a gummy candy or mandarin orange slice.
  - For bad-tasting medications, put inside an empty gel capsule.
  - Try taking the medication standing up.
  - Put medication under the tongue and take a drink with a straw.
  - Use a special cup, for example, the 'Oralflo' cup. The liquid sits in a cup and the lid holds the medication in a specially designed spout. When you drink from it, the medication and liquid are swallowed together.
  - Take a drink before you try swallowing the medication. A dry mouth or throat can prevent swallowing. Practice swallowing. Start with small things like edible cake decorations, increasing in size up to larger candies such as M&M's or whatever is about the same size as the medication needed.
  - For people with dysphagia such as stroke patients, a speech or swallowing specialist may be of benefit.
2. Check drug information databases. For example, Lexi-Comp™ suggests that omeprazole capsules can be emptied and mixed with applesauce or pudding and taken this way as long as the granules are not crushed or chewed.
3. Check with drug manufacturers. For example, the manufacturer's monograph for Avelox® states the tablet should not be crushed or chewed. However when queried, Bayer Medical Information was able to provide data from an unpublished study which reported no loss of bioavailability when the tablet was crushed and administered immediately.
4. Check with a compounding pharmacy. They may be able to make liquids, suppositories, transdermal creams, etc. as alternatives to tablets and capsules.
5. Check with your medicine information service. medSask consultants will search for compounding formulas and evidence-based bioavailability and stability information for alternate dosage forms.

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#### References:

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