

# Pills to powder: A clinician's reference for crushable psychotropic medications

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Many patients experience difficulty swallowing pills, for various reasons:

- discomfort (particularly pediatric and geriatric patients)
- postsurgical need for an alternate route of enteral intake (nasogastric tube, gastrostomy, jejunostomy)
- dysphagia due to a neurologic disorder (multiple sclerosis, impaired gag reflex, dementing processes)
- odynophagia (pain upon swallowing) due to gastroesophageal reflux or a structural abnormality
- a structural abnormality of the head or neck that impairs swallowing.<sup>1</sup>

If these difficulties are not addressed, they can interfere with medication adherence. In those instances, using an alternative dosage form or manipulating an available formulation might be required.

## Crushing guidelines

There are limited data on crushed-form products and their impact on efficacy. Therefore, when patients have difficulty taking pills, switching to liquid solution or orally disintegrating forms is recommended. However, most psychotropics are available only as tablets or capsules. Patients can crush their pills immediately before administration for easier intake. The following are some general guidelines for doing so:<sup>2</sup>

- Scored tablets typically can be crushed.
- Crushing sublingual and buccal tablets can alter their effectiveness.
- Crushing sustained-release medications can eliminate the sustained-release action.<sup>3</sup>

### Box

## Useful resources for clinicians

Because new dosage forms and products are constantly becoming available, refer to the following resources, which are updated frequently, for additional information:

- To search for a list of updated dosage forms available, including availability of generic products, search the FDA Orange Book: [www.accessdata.fda.gov/scripts/cder/ob/default.cfm](http://www.accessdata.fda.gov/scripts/cder/ob/default.cfm)
- For information on specific products, refer to DailyMed for product labeling: [www.dailymed.nlm.nih.gov/dailymed/about.cfm](http://www.dailymed.nlm.nih.gov/dailymed/about.cfm)
- Institute for Safe Medication Practices' "Oral Dosage Forms That Should Not Be Crushed," also known as the "Do Not Crush List": [www.ismp.org/tools/donotcrush.pdf](http://www.ismp.org/tools/donotcrush.pdf)

- Enteric-coated medications should not be crushed, because this can alter drug absorption.
- Capsules can generally be opened to administer powdered contents, unless the capsule has time-release properties or an enteric coating.

The accompanying *Table*, organized by drug class, indicates whether a drug can be crushed to a powdered form, which usually is mixed with food or liquid for easier intake. The *Table* also lists liquid and orally disintegrating forms available, and other routes, including injectable immediate and long-acting formulations. Helping patients find a medication formulation that suits their needs strengthens adherence and the therapeutic relationship.

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### Disclosure

The authors report no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.

### References

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2. PLDetail-Document, Meds That Should Not Be Crushed. Pharmacist's Letter/Prescriber's Letter. July 2012.
3. Mitchell JF. Oral dosage forms that should not be crushed. <http://www.ismp.org/tools/donotcrush.pdf>. Updated January 2014. Accessed March 13, 2014.

Table

### Psychotropic product manipulations and formulations available

Drug	Crushable? Yes <sup>a</sup> or No <sup>b</sup>	Alternative formulation	Comment
<b>ANTIDEPRESSANT</b>			
Amitriptyline	Yes		
Bupropion			
Aplenzin	No		
Forfivo XL	No		
Wellbutrin	Yes		
Wellbutrin SR	No		
Wellbutrin XL	No		
Zyban	No		
Citalopram (Celexa)	Yes	Oral liquid	
Clomipramine (Anafranil)	No <sup>c</sup>		
Escitalopram (Lexapro)	Yes	Oral liquid	
Desvenlafaxine			
Khedeza	No		
Pristiq	No		
Duloxetine (Cymbalta)	No		Label states that capsule should not be opened
Fluoxetine			
Prozac	Yes	Oral liquid	
Prozac Weekly	No		Label states that capsule should not be opened
Fluvoxamine			
Luvox	Yes		
Luvox CR	No		
Levomilnacipran (Fetzima)	No		Label states that capsule should not be opened
Mirtazapine (Remeron)	Yes	Oral disintegrating tablet	
Nortriptyline (Pamelor)	No <sup>c</sup>	Oral liquid	
Paroxetine			
Brisdelle	No <sup>c</sup>		
Paxil	Yes	Oral liquid	
Paxil CR	No		
Pexeva	No		
Phenelzine (Nardil)	Yes		
Selegiline	Yes	Oral disintegrating tablet	
Eldepryl	No <sup>c</sup>		
Emsam	No	Patch	
Zelapar	No	Oral disintegrating tablet	
Sertraline (Zoloft)	Yes	Oral liquid	Oral concentrate contains 12% alcohol
Tranylcypromine (Parnate)	Yes		
Venlafaxine			
Effexor	Yes		
Effexor XR	No		
Venlafaxine ER	No		
Vilazodone (Viibryd)	Yes		

Drug	Crushable? Yes <sup>a</sup> or No <sup>b</sup>	Alternative formulation	Comment
<b>MOOD STABILIZER</b>			
<b>Carbamazepine</b> Carbatrol Epiol Equetro Tegretol Tegretol-XR	No Yes No Yes No	Oral liquid; chewable tablet Chewable tablet	
<b>Lamotrigine</b> Lamictal Lamictal XR	Yes No	Oral disintegrating tablet; chewable tablet	
<b>Lithium</b> Lithium carbonate IR Lithium carbonate XR Lithium citrate Lithobid	Yes No N/A No	Oral liquid	
<b>Oxcarbazepine</b> Oxtellar XR Trileptal	No Yes	Oral liquid	
<b>Topiramate</b> Qudexy XR Topamax Trokendi XR	No <sup>d</sup> Yes No		Crushing might result in poor taste. Label states that capsule should not be opened
<b>Valproic acid</b> Depakote Depakote ER Depakote Sprinkles Stavzor	No No No <sup>d</sup> No	Oral liquid	
<b>ANTIPSYCHOTIC</b>			
Aripiprazole (Abilify)	Yes	Oral liquid; oral disintegrating tablet; immediate-acting/long-acting intramuscular injection	
Asenapine (Saphris)	N/A	Sublingual	
Clozapine (Clozaril)	Yes	Oral liquid; oral disintegrating tablet	
Fluphenazine (Prolixin)	Yes	Oral liquid; immediate-acting/long-acting intramuscular injection	
Haloperidol (Haldol)	Yes	Oral liquid; immediate-acting/long-acting intramuscular injection	
Iloperidone (Fanapt)	Yes		
Lurasidone (Latuda)	Yes		
Olanzapine (Zyprexa)	Yes	Oral disintegrating tablet; immediate-acting/long-acting intramuscular injection	
Paliperidone ER (Invega)	No	Long-acting intramuscular injection	
Perphenazine (Trilafon)	Yes		
<b>Quetiapine</b> Seroquel Seroquel XR	Yes No		
Risperidone (Risperdal)	Yes	Oral liquid; oral disintegrating tablet; long-acting intramuscular injection	
Ziprasidone (Geodon)	No	Oral liquid, Immediate-acting intramuscular injection	Label states capsule should be swallowed whole

Psychotropic product manipulations and formulations available continued

Drug	Crushable? Yes <sup>a</sup> or No <sup>b</sup>	Alternative formulation	Comment
<b>STIMULANT</b>			
<b>Dextroamphetamine/ amphetamine</b> Adderall Adderall XR	Yes No <sup>d</sup>		
<b>Dextroamphetamine</b> Dexedrine	Yes No	Oral liquid	
<b>Dexmethylphenidate</b> Focalin Focalin XR	Yes No <sup>d</sup>		
<b>Lisdexamfetamine</b> (Vyvanse)	No		May open capsule and mix contents with water
<b>Methylphenidate</b> Concerta Daytrana Metadate CD Metadate ER Methylin Methylin ER Quillivant XR Ritalin Ritalin LA Ritalin SR	Yes No N/A No <sup>d</sup> No N/A No N/A Yes No <sup>d</sup> No	Oral liquid; chewable tablet  Patch  Chewable tablet  Oral liquid	
<b>NONSTIMULANT USED FOR ATTENTION-DEFICIT/HYPERACTIVITY DISORDER</b>			
<b>Atomoxetine (Strattera)</b>	No		Label states that capsule should not be opened
<b>Clonidine</b> Kapvay	Yes No	Patch	
<b>Guanfacine</b> Intuniv Tenex	No Yes		
<b>BENZODIAZEPINE</b>			
<b>Lorazepam (Ativan)</b>	Yes	Oral liquid; immediate-acting intramuscular injection	
<b>Clonazepam (Klonopin)</b>	Yes	Oral disintegrating tablet	
<b>Temazepam (Restoril)</b>	No <sup>c</sup>		
<b>SEDATIVE/HYPNOTIC</b>			
<b>Eszopiclone (Lunesta)</b>	Yes		
<b>Ramelteon (Rozerem)</b>	Yes		
<b>Trazodone</b> Olepto	Yes No		Crushing might result in poor taste
<b>Zaleplon (Sonata)</b>	No <sup>c</sup>		
<b>Zolpidem</b> Ambien Ambien CR Eduar Intermezzo Zolpimist	Yes No N/A N/A No	Sublingual Sublingual Oral spray	
<sup>a</sup> Can crush immediate-release (IR) tablet; crush immediately before administering. Use an alternative dosage form when available <sup>b</sup> Do not crush extended-release or sustained-release dosage forms (eg, ER, XL, SR, CD, CR); for more information, see Reference 3 <sup>c</sup> Information on opening capsule is not listed in product labeling <sup>d</sup> Capsule can be opened and consumed intact with soft food			