

## Pills to powder: An updated clinician's reference for crushable psychotropics

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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 2015. Accessed January 17, 2017.

**M**any 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

**B**ecause 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 generally can 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.

Table

## Psychotropic product manipulations and formulations available

Drug	Crushable? Yes <sup>a</sup> or No <sup>b</sup>	Alternative formulation	Comment
<b>ANTIDEPRESSANTS</b>			
<b>Amitriptyline</b>	Yes		
<b>Bupropion</b>			
Aplenzin	No		
Forfivo XL	No		
Wellbutrin	Yes		
Wellbutrin SR	No		
Wellbutrin XL	No		
Zyban	No		
<b>Citalopram (Celexa)</b>	Yes	Oral liquid; capsules available <sup>c</sup>	
<b>Clomipramine (Anafranil)</b>	No <sup>c</sup>		
<b>Escitalopram (Lexapro)</b>	Yes	Oral liquid	
<b>Desvenlafaxine</b>			
Khedeza	No		
Pristiq	No		
<b>Duloxetine (Cymbalta)</b>	No		Label states that capsule should not be opened. Institute of Safe Medication Practices states capsule can be added to apple sauce or apple juice
<b>Fluoxetine</b>			
Prozac	Yes	Oral liquid	
Prozac Weekly	No <sup>c</sup>		
<b>Fluvoxamine</b>			
Luvox	Yes		
Luvox CR	No		
<b>Levomilnacipran (Fetzima)</b>	No		Label states that capsule should not be opened
<b>Mirtazapine (Remeron)</b>	Yes	Oral disintegrating tablet	
<b>Nortriptyline (Pamelor)</b>	No <sup>c</sup>	Oral liquid	
<b>Paroxetine</b>			
Brisdelle	No <sup>c</sup>		
Paxil	Yes	Oral liquid	
Paxil CR	No		
Pexeva	No		Label states film-coated tablet should not be crushed
<b>Phenelzine (Nardil)</b>	Yes		
<b>Selegiline</b>	Yes	Oral disintegrating tablet	
Eldepryl	No <sup>c</sup>		
EMSAM	No	Patch	
Zelapar	No	Oral disintegrating tablet	
<b>Sertraline (Zoloft)</b>	Yes	Oral liquid	Oral concentrate contains 12% alcohol
<b>Tranlycypromine (Parnate)</b>	Yes		
<b>Venlafaxine</b>			
Effexor	Yes		
Effexor XR	No		
Venlafaxine ER	No		
<b>Vilazodone (Viibryd)</b>	Yes		
<b>Vortioxetine (Trintellix)</b>	Yes		

continued

Psychotropic product manipulations and formulations available continued

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

Drug	Crushable? Yes <sup>a</sup> or No <sup>b</sup>	Alternative formulation	Comment
<b>STIMULANTS</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, yogurt, or orange juice
<b>Methylphenidate</b> Aptensio XR Concerta Daytrana Metadate CD Metadate ER Methylin Methylin ER Quillichew ER Quillivant XR Ritalin Ritalin LA Ritalin SR	Yes No No N/A No <sup>d</sup> No N/A No N/A N/A N/A Yes No <sup>d</sup> No	Oral liquid; chewable tablet  Patch  Oral liquid  Chewable tablet Oral liquid	
<b>NONSTIMULANTS used for attention-deficit/hyperactivity disorder</b>			
<b>Atomoxetine (Strattera)</b>	No		Label states that capsule should not be opened. May cause eye irritation
<b>Clonidine</b> Kapvay	Yes No	Patch	
<b>Guanfacine</b> Intuniv Tenex	No Yes		
<b>BENZODIAZEPINES</b>			
<b>Lorazepam (Ativan)</b>	Yes	Oral liquid; immediate-acting IM injection	
<b>Clonazepam (Klonopin)</b>	Yes	Oral disintegrating tablet	
<b>Temazepam (Restoril)</b>	No <sup>c</sup>		
<b>SEDATIVES/HYPNOTICS</b>			
<b>Eszopiclone (Lunesta)</b>	Yes		
<b>Ramelteon (Rozerem)</b>	Yes		
<b>Trazodone</b>	Yes		Crushing might result in poor taste
<b>Zaleplon (Sonata)</b>	No <sup>c</sup>		
<b>Zolpidem</b> Ambien Ambien CR Edluar 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