

Information about the Do Not Crush List

Hard Copy Version

- \$60 charge including GST
- Plastic display folder
- 44 pages
- Information about crushing medications, followed by
- Do Not Crush List (in generic order lists what should not be crushed, brand names, reason for not crushing, alternatives if any)
- Disperse/Dissolve/Chew List (in generic order lists what is made to be dispersed, dissolved or chewed).
- \$60 includes updates for 3 calendar years (billed December for payment Jan).
- Updates mailed out automatically as they become available
- Protected by copyright

Email Version

- \$30 charge including GST
- Emailed as an Adobe Acrobat file
- Fully searchable on the computer
- Information about crushing medications, followed by
- Do Not Crush List (in generic order lists what should not be crushed, brand names, reason for not crushing, alternatives if any)
- Disperse/Dissolve/Chew List (in generic order lists what is made to be dispersed, dissolved or chewed).
- \$30 includes updates for 3 calendar years (billed December for payment Jan).
- Updates emailed out automatically as they become available
- Protected by copyright
- \$30 entitles you to print as many copies as are reasonably needed for your facility, but may not be sold or distributed outside your facility

To obtain the list, contact Marianne Vincent at Wollongong Hospital Pharmacy 02 42225340 or Marianne.Vincent@sesiahs.health.nsw.gov.au . An invoice can be posted out to you, if required, but this will cause a delay in receiving the list as the invoice has to be issued by the Area Health Service Finance Department, which may take some time. Once your cheque has been received, the list will be posted/emailed to you. If you want to speed up the process, you can post a cheque (without waiting for an invoice), made out to "Pharmacy Department, Wollongong Hospital", to Attention: Marianne Vincent, Pharmacy Department, Wollongong Hospital, 348 Crown St, Wollongong, NSW 2500. The list will be posted/emailed to you with a receipt when your cheque has been received. Please make sure you include contact details (Name of Institution, contact person, address, phone/fax numbers, email address).

Sample pages of the list follow





Do Not Crush!!

How to use this list:

1. Read the Information at the front of the List
2. Check to see if the medication is on the Disperse/Dissolve/Chew List
[the yellow pages at the back] (as you may not need to crush it) No? then
3. Check if the Medication is on the Do Not Crush List
No? If all else fails.....
4. Read the Information at the front of the List

As a general guideline, the following tablets should not be crushed:

Summary of Drug Formulations that preclude crushing	
Type	Reason(s) for the Formulation
Enteric-coated	Designed to pass through the stomach intact with the drug being released in the intestines to:
	<ol style="list-style-type: none"> 1. Prevent destruction by stomach acids 2. Prevent stomach irritation 3. Delay onset of action
Extended-release	Designed to release the drug over an extended period of time. Such products include:
	<ol style="list-style-type: none"> 1. Multiple-layered tablets releasing drug as each layer is dissolved 2. Mixed-release pellets that dissolve at different time intervals 3. Special matrices that are themselves inert, but slowly release drug from the matrix
Sublingual	Designed to dissolve quickly in oral fluids for rapid absorption by the abundant blood supply of the mouth. Crushing and giving via the gastric route may render them ineffective.
Lozenge/Pastille	Designed to dissolve slowly in oral fluids and act on the oral mucosa or in the throat.
Miscellaneous	Drugs that:
	<ol style="list-style-type: none"> 1. Produce oral mucosal or oesophageal irritation 2. Are extremely bitter or unpalatable 3. Contain dyes or inherently could stain teeth and mucosal tissue 4. Are potentially carcinogenic/cytotoxic/mutagenic/teratogenic if handled without adequate protection or if aerosolised powder is inhaled. This is of concern for staff/carers handling the drug (Occupational Health & Safety Issues).

There are many different methods of manufacture and reasons for the special coatings of slow release tablets and capsules. For practical purposes, if tablets are not sustained release and are **uncoated or film or sugar coated**, it is reasonable to assume that they may be crushed unless it is stated otherwise on the manufacturer's label. Film or sugar coating usually serves to improve appearance or mask unpleasant taste e.g. amitriptyline. It should be kept in mind that crushing tablets usually increases the bioavailability of the medication and may shorten its length of action. However, this is usually not a significant factor. Some tablets disperse easily in water (e.g. diazepam and sucralfate). Similarly, in the case of **hard gelatin capsules** , unless they contain enteric-coated pellets, it would be reasonable to assume that they may be opened, unless stated otherwise on the manufacturer's label. The contents can then be administered as for crushed tablets. **Sustained-release capsules** filled with beads or granules are designed to release the drug over an extended period e.g. Kapanol. The beads or granules should not be crushed. **Soft gelatin capsules**  can be administered by piercing the end of the capsule with a needle and squeezing out the liquid e.g. calcitriol, ergocalciferol. Some of the drug will remain in the capsules. If the total dose is required, dissolve the capsule in 15-30ml warm water (this may take up to one hour).

Do not crush, break, cut, divide, chew, open or suck: Swallow whole					
Drug	Brand Name	Strength	Reason	Comment	Alternative/s where known/available
Methylphenidate HCl	Ritalin LA	20mg, 30mg, 40mg	Long Acting: Capsule contains immediate release and enteric coated delayed-release beads	Do not crush, chew or divide	May be administered by sprinkling the capsule contents on a small amount of soft food such as applesauce. The food should not be warm because it could affect the modified-release properties of the formulation. All of the mixture of drug and food should be immediately swallowed, unchewed. The drug and food mixture should not be stored for future use.
Methylphenidate HCl	Concerta	18mg, 36mg, 54mg	Extended Release tablets	Swallow whole, do not chew, divide or crush	Use immediate release methylphenidate (adjust the dose and frequency), or use Ritalin LA capsules (adjust the dose) and administer as above.
Metoprolol	Toprol-XL	23.75mg, 47.5mg, 95mg, 190mg	Controlled release tablets	Tablets should be swallowed with liquid. Tablets should not be chewed or crushed, but may be broken in half. Tablets should not be dispersed or dissolved.	Use immediate-release metoprolol tablets to achieve the same total daily dose in divided doses; IV (adjust dose & frequency)
Metronidazole	Metrogyl, Flagyl, Metronide	200mg, 400mg	Unpleasant taste; May upset stomach	Tablets should be swallowed whole, not chewed,	Use suspension (to be taken on an empty stomach); IV infusion.
Minocycline	Minomycin, Akamin	50mg tablet	Irritant	Potential oesophageal irritation	
Mirtazapine	Avanza	30mg	NRG	Tablets should be swallowed whole, not chewed,	Avanza Soltabs can be placed it on the tongue, where they will rapidly disintegrate and can be swallowed with or without water.
Mirtazapine	Mirtazan, Axit	30mg	Bitter taste	Tablets should be swallowed without chewing	Tablets may be crushed for immediate administration via PEG tube, according to manufacturer.
Morphine Sulphate	MSContin	5mg, 10mg, 15mg, 30mg, 60mg, 100mg, 200mg	Sustained release	Swallow whole:do not chew, crush or dissolve	Use Morphine Sulphate Liquid (Ordine) or MSContin Suspension or open and sprinkle Kapanol or MS Mono as below; IV; SC; IM.

Oral Dose Forms which may be dispersed, dissolved or chewed for administration			
When dispersing/dissolving a solid dose form, if there is sediment in the resulting mixture, the vessel used will need to be rinsed twice & this also administered if the full dose is to be ingested. Where only a portion of the dose is required, it will be more accurate to break the tablet (but only if it is deeply scored) and disperse/dissolve this. Dispersing/dissolving a full tablet/capsule and taking a portion of the mixture will only be accurate if the mixture is uniform i.e. without sediment.			
Drug	Brand Name	Strength	Comment
Fluoxetine	Prozac, Lovan Tablets	20mg	May be dispersed in 100ml water
Folic Acid	Megafol	0.5mg	Will disperse in 20ml of water in < 1 minute
Folic Acid	Abbott/Sigma	5mg	Will disperse in 20ml water in <5 minutes
Frusemide	Lasix	40mg	Will disperse in 20ml of water in < 1 minute
Frusemide	Urex	40mg	Will disperse in 20ml water in <5 minutes
Frusemide	Urex	500mg	Will disperse in 20ml water in <5 minutes (halve tablet first)
Gefitinib	Iressa	250mg	Can be dispersed in half a glass of drinking water (non-carbonated). No other liquids should be used. Drop tablet in water, without crushing, stir until tablet is dispersed (approx 10 mins) and drink liquid immediately. Rinse glass with half a glass of water and drink. Liquid can also be administered through a naso-gastric tube. Drug has reproductive toxicity and appropriate precautions should be taken by women of child-bearing potential.
Glibenclamide	Daonil	5mg	Will disperse in 20ml water in <5 minutes
Glibenclamide	Glimel	5mg	Will disperse in 20ml water in 1-2 minutes
Glipizide	Minidiab	5mg	Will disperse in 20ml of water in < 1 minute
Hydrocortisone		5mg, 20mg	Will disperse in 20ml of water in < 1 minute
Hydroxurea	Hydrea	500mg	If the patient prefers, or is unable to swallow capsules, the contents of the capsules may be emptied into a glass of water and taken immediately. Some inert material used as a vehicle in the capsule may not dissolve, and may float to the surface.
Imatinib mesylate	Glivec	100mg, 400mg	May be dispersed in a glass of water or apple juice (approx 50 ml for a 100 mg tablet, 200 ml for a 400 mg tablet), & stirred with a spoon. Suspension should be administered immediately after complete disintegration of the tablet(s). Drug has reproductive toxicity and appropriate precautions should be taken by women of child-bearing potential.
Indapamide	Natrilix	2.5mg,	Will disperse in 20ml water in <5 minutes