

APPENDIX A: ZSFG DO NOT CRUSH MEDICATIONS

Active Ingredient	Drug Product	Dosage Form	Reasons/ Comments
Abacavir	Ziagen	Tablet	Teratogen, carcinogen ^b
Abacavir/lamivudine	Epzicom	Tablet	Teratogen, carcinogen ^b
Abacavir/lamivudine/zidovudine	Trizivir	Tablet	Teratogen, carcinogen ^b
Abacavir/lamivudine/dolutegravir	Triumeq	Tablet	Teratogen, carcinogen ^b
Acitretin	Soriatane	Capsule	Teratogen ⁱ
Alendronate	Fosamax	Tablet	Mucous membrane irritant
Anastrozole	Arimidex	Tablet	Teratogen ⁱ
Aspirin EC ^h	Bayer EC, Ecotrin	Tablet/Caplet	Enteric coated, non EC tabs available
Aspirin/dipyridamole	Aggrenox	Capsule	Slow-release
Azathioprine	Imuran, Azasan	Tablet	Teratogen, carcinogen ^j
Bicalutamide	Casodex	Tablet	Teratogen ⁱ
Bisacodyl	Dulcolax	Tablet	Enteric coated ^c
Bupropion SR/XL ^h	Wellbutrin SR, Wellbutrin XL	Tablet	Slow-release ^b
Cabergoline	Dostinex	Tablet	Reproductive harm, carcinogen ⁱ
Capecitabine	Xeloda	Tablet	Antineoplastic, cytotoxic, teratogen, change order to IV fluorouracil
Carbamazepine XR ^h	Tegretol XR	Tablet	Slow-release, reproductive harm, teratogen, carcinogen ^b
Chloral hydrate	Somnote	Capsule	Liquid filled
Chlorambucil	Leukeran	Tablet	Antineoplastic agent, cytotoxic ⁱ
Chloramphenicol	Chloromycetin, Diochloram, Pentamycetin	Capsule	Teratogen, carcinogen ⁱ
Cinacalcet	Sensipar	Tablet	Note: tablets are not scored and cutting may cause variable dosage accuracy
Clomiphene	Clomid, Serophene	Tablet	Reproductive harm ⁱ
Clonazepam	Klonopin	Tablet	Reproductive harm ⁱ
Colchicine	Colcryns	Tablet	Reproductive harm ^j
Cyclophosphamide	Cytoxan	Tablet	Antineoplastic, cytotoxic, change order to IV formulation/route
Cyclosporine	Sandimmune, Neoral, Gengraf	Capsule	Immunosuppressive, teratogen, carcinogen ^b
Diclofenac	Voltaren	Tablet	Delayed-release
Didanosine	Videx EC	Capsule	Delayed-release
Diltiazem ER ^h	Cartia XT, Dilacor XR, Taztia XT	Capsule	Extended-release ^b
Diltiazem SR ^h	Cardizem CD	Capsule	Extended-release ^b
Divalproex ^h	Depakote, Depakote ER	Tablet	Delayed-release, extended-release, teratogen, teratogen, carcinogen ^b
Docusate	Colace	Capsule	Taste ^e , liquid formulation available
Dronedarone	Multaq	Tablet	Reproductive harm ⁱ
Duloxetine	Cymbalta	Capsule	Extended-release ^a Note: may add contents of capsule to apple juice or applesauce but NOT chocolate
Dutasteride	Avodart	Capsule	Reproductive harm ⁱ
Entecavir	Baraclude	Tablet	Teratogenic in animal studies ^b
Ergocalciferol	Drisdol	Capsule	Liquid filled ^d
Erlotinib	Tarceva	Tablet	Teratogen ⁱ
Erythromycin	Erythrocin	Tablet	Enteric-coated, change order to IV formulation

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Estradiol	Estrace	Tablet	Carcinogenic ^j
Estrogens (all meds containing estrogens)	Estrogens	Tablet/Capsule	Carcinogenic ⁱ
Etoposide	Toposar	Capsule	Antineoplastic, cytotoxic, change order to IV formulation
Etravirine	Intelence	Tablet	Note: tablet should be swallowed whole and not crushed; tablet may be dispersed in water and given PO or via feeding tube
Felodipine	Plendil	Tablet	Extended-release
Ferrous sulfate	Feosol	Tablet	Enteric coated ^b
Finasteride	Propecia, Proscar	Tablet	Reproductive harm ^j
Fingolimod	Gilenya	Capsule	Teratogen, carcinogen ⁱ
Fluconazole	Diflucan	Tablet	Reproductive harm in 1st trimester ^b
Fluoxymesterone	Androxy	Tablet	Teratogen, carcinogen ^j
Guaifenesin ^h	Mucinex	Tablet	Slow-release ^b
Hydroxyurea	Hydrea	Capsule	Antineoplastic, skin toxicity ^b
Ibuprofen	Motrin	Tablet	Taste ^e , liquid formulation available
Imatinib	Gleevec	Tablet	Teratogen ^b
Indinavir	Crixivan	Capsule	Taste; Note: capsule may be opened and mixed with fruit puree ^e
Indomethacin ^h	Indocin SR	Capsule	Extended-release ^{a,b}
Isosorbide mononitrate ^h	Imdur	Tablet	Extended-release ^{b,f}
Lansoprazole	Prevacid Solu-tab	Tablet	Note: orally disintegrating, do not swallow; dissolve in water only & dispense via dosing syringe or NG tube
Leflunomide	Arava	Tablet	Teratogen, carcinogen ^j
Letrozole	Femara	Tablet	Teratogen ^j
Levetiracetam	Keppra	Tablet	Taste ^e - liquid formulation available from pharmacy
Lithium ^h	Lithobid	Tablet	Extended-release ^b
Lomustine	CeeNU	Capsule	Antineoplastic, cytotoxic ⁱ
Lopinavir/ ritonavir	Kaletra	Tablet	Film-coated ^b
Lubiprostone	Amitiza	Capsule	Slow-release
Medroxyprogesterone	Provera	Tablet	Teratogen, carcinogen ^j
Megestrol	Megace	Tablet	Teratogen ^b
Melphalan	Alkeran	Tablet	Antineoplastic, cytotoxic, change order to IV formulation
Mercaptopurine	Purinethol	Tablet	Antineoplastic, cytotoxic, reproductive harm ⁱ
Mesalamine	Lialda	Tablet	Delayed-release
Mesalamine	Pentasa	Capsule	Slow-release
Methimazole	Tapazole	Tablet	Appears in human breast milk ⁱ
Methotrexate	Trexall, Rheumatrex	Tablet	Antineoplastic, cytotoxic, teratogen, reproductive harm ⁱ
Methylergonovine	Methergine	Tablet	Reproductive harm, oxytocic ^j
Metoprolol succinate	Toprol XL	Tablet	Slow-release ^{b,f}
Mifepristone	Mifeprex	Tablet	Reproductive harm, oxytocic ⁱ
Misoprostol	Cytotec	Tablet	Reproductive harm ⁱ
Morphine ^h	MS Contin	Tablet	Extended-release ^b
Mycophenolate	Cellcept	Capsule/ tablet	Teratogen ^b
Nevirapine	Viramune	Tablet	Carcinogen ^b
Nicotinic acid	Niaspan	Tablet	Extended-release
Nifedipine ^h	Adalat CC, Nifediac CC, Procardia XL	Tablet	Extended-release

Active Ingredient	Drug Product	Dosage Form	Reasons/ Comments
Nimodipine	Nimotop	Capsule	Liquid filled ^{b,d}
Oxcarbazepine	Trileptal	Tablet	Teratogen, carcinogen ^b
Pancrelipase	Zenpep, Pancrease	Capsule	Delayed-release ^a
Pantoprazole	Protonix	Tablet	Slow-release
Paroxetine	Paxil	Tablet	Teratogen, reproductive harm ^b
Pentoxifylline	Trental	Tablet	Extended-release
Phenoxybenzamine	Dibenzyline	Capsule	Carcinogen, mutagen ⁱ
Phenytoin	Dilantin	Tablet/Capsule	Teratogen, carcinogen ^b
Potassium	K-Dur	Tablet	Extended-release ^b
Procarbazine	Mayulane	Capsule	Antineoplastic, cytotoxic, carcinogen ⁱ
Propranolol ^h	Inderal LA	Capsule	Extended-release ^b
Propylthiouracil	Propylthiouracil	Tablet	Teratogen, carcinogen ⁱ
Pyridostigmine	Mestinon ER	Tablet	Extended-release ^b
Raloxifene	Evista	Tablet	Taste, teratogenic potential ^g
Ribavirin	Copegus, Rebetol, Ribasphere	Tablet/capsule	Reproductive harm ^b
Risperidone	Risperdal	Tablet	Teratogenic in rats, change order to disintegrating tablet or liquid ^b
Ritonavir	Norvir	Tablet	Note: crushing tablets has resulted in decreased bioavailability of drug ^b
Sevelamer	Renagel	Tablet	Note: tablets expand in liquid if broken or crushed—can clog feeding tube; can administer sevelamer carbonate (Renvela) packets via feeding tube
Spirolactone	Aldactone	Tablet	Carcinogen in lab studies ⁱ
Tacrolimus	Prograf	Capsule	Immunosuppressive, carcinogen, reproductive harm ^b
Tamoxifen	Soltamox	Tablet	Carcinogen ^b
Tamsulosin	Flomax	Capsule	Slow-release
Temazepam	Restoril	Capsule	Reproductive harm ⁱ
Tetracycline	Sumycin	Capsule	Teratogen
Theophylline	Theophylline CR, Uniphyll	Tablet/ capsule	Extended-release Note: capsule contains beads that dissolve throughout GI tract ^b
Thioguanine	Tabloid	Tablet	Antineoplastic, cytotoxic ⁱ
Tolterodine ^h	Detrol LA	Capsule	Extended-release ^b
Topiramate	Topamax	Tablet	Reproductive harm, bitter taste ^{e,i}
Ulipristal	Ella	Tablet	Reproductive harm ⁱ
Valganciclovir	Valcyte	Tablet	Teratogenic and irritant potential ^{b,g}
Valproic acid	Depakote, Depakote ER	Tablet/Capsule	Teratogen ^b
Venlafaxine XR ^h	Effexor XR	Capsule	Extended-release ^b
Verapamil SR	Calan SR	Tablet	Slow-release ^{b,f}
Vitamin A	A-25	Capsule	Liquid filled ^d
Voriconazole	Vfend	Tablet	Reproductive harm ^b
Warfarin	Coumadin	Tablet	Reproductive harm ^j
Zidovudine	Retrovir	Capsule	Carcinogen ^b
Zidovudine/lamivudine	Combivir	Tablet	Carcinogen ^b
Zidovudine/lamivudine/abacavir	Trizivir	Tablet	Carcinogen ^b
Ziprasidone	Geodon	Capsule	Genotoxin, carcinogen, teratogen ⁱ
Zonisamide	Zonegran	Capsule	Teratogen ⁱ

- a. Capsule may be opened and contents taken without chewing or crushing; soft food such as applesauce or pudding may facilitate administration. Contents may generally be given via a nasogastric tube providing all the contents are flushed down the tube.
- b. Liquid or immediate-release tablet/capsule dosage forms of this medication are available; however, dose, frequency of administration and manufacturers may differ from that of the solid/slow-release form.
- c. Antacids or milk may prematurely dissolve the coating of the tablet
- d. Capsule may be opened and the liquid contents removed for administration.
- e. The taste of this product in a liquid form would likely be unacceptable to the patient; administration via nasogastric tube is acceptable.
- f. Tablet is scored and may be broken in half without affecting release characteristics.
- g. Skin contact may enhance tumor production; avoid direct contact.
- h. Various formulations are available (IR vs. ER,SR), please ensure formulation ordered by provider and product dispensed from pharmacy both match.
- i. Hazardous drug – Cutting/crushing of tablet/opening of capsule is only allowed in the pharmacy's chemotherapy hood. Pharmacy to prepare drug and put in enteral syringe.
- j. Hazardous agent – RN to dissolve in 10 mL of H₂O. Refer to Appendix C: Recommended Personal Protective Equipment (PPE) for Hazardous Drug Handling.

References:

1. Mitchell JF. Oral Dosage Forms That Should Not Be Crushed. August 2013. www.ismp.org (Accessed September 26, 2013)
2. Miller D, Miller H. To crush or not to crush? What to consider before giving medications to a patient with a tube or who has trouble swallowing. *Nursing* 2000; 30:50-2.
3. www.cdc.gov/NIOSH (2014). NIOSH List of Antineoplastic and Other Hazardous Drugs in Health Care Settings.
4. SFGH Administrative Policy 16.36; Non-Cytotoxic Hazardous Drugs Management (Updated 9/2017)

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