

Antiretroviral Formulations for Swallowing Difficulties

Revised December 2018.

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ARVs	Trade Name	Tablets/Capsules	Oral Solution or Powder or Other
Abacavir	Ziagen	Tablets can be crushed and added to a small amount of semi-solid food or liquid and taken immediately.	Oral Solution <ul style="list-style-type: none"> Dosing is the same for oral solution and tablets.
Abacavir + Lamivudine	Kivexa Epzicom	Tablets should not be crushed as separate abacavir and lamivudine solutions are available. [EACS Guidelines, version 9.1, 2018]	
Abacavir + Lamivudine + Zidovudine	Trizivir	Tablets should not be crushed as abacavir, lamivudine and zidovudine solutions are available. [EACS Guidelines, version 9.1, 2018]	
Atazanavir	Reyataz	Capsules should be swallowed whole. Do not open the capsules.	Oral Powder <ul style="list-style-type: none"> It is preferable to mix with food such as apple sauce or yogurt, however, it can be mixed with milk, infant formula, or water for infants who can drink from a cup, or mixed with infant formula and given using an oral dosing syringe to young infants (<6 months) who cannot eat solid food or drink from a cup. Using an infant bottle is not recommended as the full dose may not be delivered.
Atazanavir + Cobicistat	Evotaz	Tablets should be swallowed whole and must not be chewed, broken, cut or crushed.	
Bictegravir + Emtricitabine + Tenofovir alafenamide	Biktarvy	Tablets should be swallowed whole and should not be chewed, crushed or split	
Cobicistat	Tybost	Tablets should not be chewed or crushed.	
Darunavir	Prezista	Tablets can be crushed and added to a small amount of semi-solid food or liquid and taken immediately. [EACS Guidelines, version 9.1, 2018]	Oral Solution <ul style="list-style-type: none"> Dosing is the same for oral suspension and tablets.
Darunavir + Cobicistat	Prezcobix Rezolsta	Tablets should be swallowed whole to ensure administration of the entire dose of both darunavir and cobicistat. Crushing of tablets is not recommended in the product information. However based on data with a fixed-dose tablet containing DRV/c/FTC/TAF (Symtuza), crushing of tablets does not impact significantly DRV/c pharmacokinetics. [Brown K, et al, EACS 2017, abstract PS 8/3]	
Darunavir + Cobicistat + Emtricitabine + Tenofovir alafenamide	Symtuza	Tablets should not be crushed. For patients who are unable to swallow the whole tablet, Symtuza tablets may be split into two pieces using a tablet-cutter, and the entire dose should be consumed immediately after splitting. Crushing Symtuza tablets had no significant effect on darunavir, cobicistat or emtricitabine. TAF bioavailability reduced by 20% but this is unlikely to be clinically significant. [Brown K, et al, EACS 2017, abstract PS 8/3]	
Didanosine	Videx Videx-EC	Capsules (gastro-resistant, delayed-release) should be taken intact.	Powder for Oral Solution <ul style="list-style-type: none"> Must be first reconstituted in water and then an antacid added.
Dolutegravir	Tivicay	Tablets can be split or crushed and added to a small amount of semi-solid food or liquid and taken immediately. [EACS Guidelines, version 9.1, 2018]	
Dolutegravir + Rilpivirine	Juluca	Tablets should be swallowed whole and should not be chewed, crushed or split	
Dolutegravir + Abacavir + Lamivudine	Triumeq	Tablets can be split or crushed and added to a small amount of semi-solid food or liquid and taken immediately. Administration of crushed tablets suspended in water increased dolutegravir AUC by 26%, but had no significant effect on abacavir or lamivudine. Administration of crushed tablets with enteral nutrition decreased abacavir Cmax by 17%, but had no significant effect on dolutegravir or lamivudine. [Roskam-Kwint M, et al, J Antimicrob Chemother, 2018, 73(9):2430-2434.]	

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Doravirine	Pifeltro	Tablets must be swallowed whole.	
Doravirine + Lamivudine + Tenofovir-DF	Delstrigo	Tablets must be swallowed whole.	
Efavirenz	Sustiva Stocrin	Tablets may be divided for ease of swallowing. Capsules can be opened and the contents administered with a small amount of food using the capsule sprinkle method of administration.	
Efavirenz + Emtricitabine + Tenofovir-DF	Atripla	Tablets should be swallowed whole with water.	
Elvitegravir + Cobicistat + Emtricitabine + Tenofovir alafenamide	Genvoya	Tablets should not be chewed, crushed, or split. Crushing of tablets is not recommended in the product information. However based on data with fixed-dose combination tablets (EVG/c/FTC/TDF or DRV/c/FTC/TAF), crushing tablets has no significant effect on EVG/c [Jongbloed-de Hoon M, et al. <i>J Acquir Immune Defic Syndr.</i> 2017, 74(5):571-574] and did not significantly alter FTC/TAF pharmacokinetics [Brown K, et al, <i>EACS 2017, abstract PS 8/3</i>] (TAF bioavailability reduced by 20% (crushing) but this is unlikely to be clinically significant).	
Elvitegravir + Cobicistat + Emtricitabine + Tenofovir-DF	Stribild	Tablets should not be chewed or crushed. Crushing tablets is not recommended in the product label, however, there was no significant effect on the pharmacokinetics of the components of the tablet following oral administration of a crushed and suspended tablet. [Jongbloed-de Hoon M, et al. <i>J Acquir Immune Defic Syndr.</i> 2017, 74(5):571-574.]	
Emtricitabine	Emtriva	Capsules can be opened and contents dissolved in at least 30 ml water. [EACS Guidelines, version 9.1, 2018]	Powder for Oral Solution <ul style="list-style-type: none"> Oral solution and capsules are NOT bioequivalent: Contains Na+ 460 µmol/ml.
Emtricitabine + Tenofovir alafenamide	Descovy	Tablets should not be chewed, crushed, or split. Crushing of tablets is not recommended in the product information. However based on data with a fixed-dose combination tablet containing DRV/c/TAF/FTC (Symtuza), crushing of tablets did not significantly alter FTC/TAF/ pharmacokinetics (TAF bioavailability reduced by 20% (crushing) but this is unlikely to be clinically significant). [Brown K, et al, <i>EACS 2017, abstract PS 8/3</i>]	
Emtricitabine + Tenofovir-DF	Truvada	Tablets may be disintegrated in at least 100 ml of water, orange juice, or grape juice and taken immediately.	
Etravirine	Intelence	Tablets may be dispersed in 5 ml of water, or at least enough liquid to cover, and stir well. If desired, add more water or alternatively orange juice or milk (do not place the tablets in orange juice or milk without first adding water). Drink immediately and rinse the glass several times to ensure the entire dose is taken.	
Fosamprenavir	Telzir Lexiva	(Not mentioned in product label)	Oral Suspension <ul style="list-style-type: none"> Bioequivalence was not demonstrated when oral suspension was given with food. Adults should take the oral suspension on an empty stomach; patients under 18 years should take the oral suspension with food.

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Ibalizumab-uiyk	Trogarzo	Not applicable	IV concentrate for dilution and infusion
Indinavir	Crixivan	Capsules should be swallowed whole.	
Lamivudine	Epivir	Tablets can be crushed and added to a small amount of semi-solid food or liquid and taken immediately.	Oral Solution <ul style="list-style-type: none"> Dosing is the same for oral solution and tablets. Contains 1g/5ml sucrose. Sorbitol significantly reduces the bioavailability of lamivudine solution in a dose dependent manner. [Adkison KK, et al, CROI 2017, abstract 428]
Lamivudine + Zidovudine	Combivir	Tablets may be crushed and mixed with a small amount of semi-solid food or liquid (at least 15 ml) which must be consumed immediately.	
Lopinavir	Kaletra	Tablets must be swallowed whole and not chewed, broken or crushed.	Oral Solution <ul style="list-style-type: none"> Dosing is the same for oral solution and tablets. Contains 153 mg/ml propylene glycol and alcohol (42%). Not recommended for use with polyurethane feeding tubes due to potential incompatibility. Feeding tubes that are compatible with ethanol and propylene glycol, such as silicone and polyvinyl chloride (PVC) feeding tubes, can be used.
Maraviroc	Celsentri Selzentry	No specific pharmacokinetic data on file. Crushing the tablet is not expected to have a negative effect on bioavailability. [EACS Guidelines, version 9.1, 2018]	Oral Solution <ul style="list-style-type: none"> Dosing is the same for oral solution and tablets.
Nevirapine	Viramune Viramune XR	Tablets can be crushed and dissolved in water but any extended release effect will be lost. If the extended release effect is lost, twice daily administration is recommended in patients with higher body weight (≥ 90 kg) as sub-therapeutic trough levels may occur following administration of nevirapine 400 mg once daily immediate release. [EACS Guidelines, version 9.1, 2018]	Oral Suspension <ul style="list-style-type: none"> Viramune tablets and oral suspension are comparably bioavailable and interchangeable at doses up to 200 mg. Contains 150 mg/ml sucrose and 162 mg/ml sorbitol.
Raltegravir	Isentress	Film coated tablets should not be chewed, crushed or split due to anticipated changes in the pharmacokinetic profile. Crushing tablets is not recommended in the product information, however absorption of raltegravir was not compromised when the drug was crushed, dissolved in 60 mL warm water and administered by gastrostomy tube. [Sandkovsky U, et al. Pharmacotherapy, 2012, 32(2):142-7.]	Granules for Oral Suspension <ul style="list-style-type: none"> Isentress for oral suspension is NOT bioequivalent with Isentress film coated tablets. Each single-use sachet contains 100 mg of raltegravir which is to be suspended in 10 mL of water giving a final concentration of 10 mg/mL. Each sachet contains approximately 0.5 mg fructose, 1.5 mg sorbitol, 4.7 mg sucrose. Chewable tablets <ul style="list-style-type: none"> Isentress chewable tablets are NOT bioequivalent with Isentress film coated tablets. May be chewed or swallowed whole. Maximum dose is 300 mg twice daily.

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Rilpivirine	Edurant	Tablets should be swallowed whole with water and not be chewed or crushed. Rilpivirine is insoluble in water over a wide pH range.	
Rilpivirine + Emtricitabine + Tenofovir alafenamide	Odefsey	Tablets should not be chewed, crushed or split.	
Rilpivirine + Emtricitabine + Tenofovir-DF	Complera Eviplera	Tablets should not be chewed, crushed or split.	
Ritonavir	Norvir	Tablets should be swallowed whole and not chewed, broken or crushed.	<p>Oral Solution</p> <ul style="list-style-type: none"> Dosing is the same for oral solution and tablets. Bitter taste can be masked by mixing with chocolate milk. Must NOT be mixed with water and the measuring cup must be dry. Contains alcohol (~43%) and propylene glycol (~27%). Not recommended for use with polyurethane feeding tubes due to potential incompatibility. Feeding tubes that are compatible with ethanol and propylene glycol, such as silicone and polyvinyl chloride (PVC) feeding tubes, can be used. <p>Powder for Oral Suspension</p> <ul style="list-style-type: none"> Can be mixed with food or liquid. The entire contents of a sachet can be poured over a small amount of soft food or suspended in 9.4 ml of liquid (water, chocolate milk, or infant formula) giving a final concentration of 10 mg/ml Can be administered via a feeding tube after being mixed with water.
Saquinavir	Invirase	Tablets should be swallowed whole and not crushed. Capsules can be opened and mixed with 15 ml sugar/sorbitol syrup, or 3 teaspoons of jam.	
Stavudine	Zerit	Capsules can be opened and mixed with food.	<p>Powder for Oral Solution</p> <ul style="list-style-type: none"> Reconstitute with water
Tenofovir-DF	Viread	Tablets may be disintegrated in at least 100 ml of water, orange juice, or grape juice if granules/powder not available.	<p>Granules/Powder</p> <ul style="list-style-type: none"> Viread granules should be mixed in a container with soft food not requiring chewing, for example yoghurt, applesauce or baby food. One tablespoon (15 ml) of soft food per one level scoop of granules is required. The entire mixture should be ingested immediately. Viread granules/powder must not be mixed with liquids.
Tipranavir	Aptivus	Capsules must be swallowed whole and must not be opened or chewed.	<p>Oral Solution</p> <ul style="list-style-type: none"> Dosing is the same for oral solution and capsules. Contains 78 mg/ml Vitamin E.
Zidovudine	Retrovir	Tablets/capsules should not be crushed/opened as zidovudine solution is available. [EACS Guidelines, version 9.1, 2018]	<p>Oral Solution</p> <ul style="list-style-type: none"> Dosing is the same for oral solution and tablets/capsules. <p>IV concentrate for dilution and infusion</p>

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