

## Administration of ARVs in patients who have swallowing difficulties<sup>11</sup>

Drug	Formulation	Crush tablets	Open capsules	Comment
<b>NRTIs</b>				
ABC	tablet (300 mg) solution (20 mg/mL)	yes		Bitter taste. Crushed tablets can be added to small amount of semi-solid food or liquid, all of which should be consumed immediately
d4T	capsule (20, 30, 40 mg) oral solution (1 mg/mL)	no	yes	Take on empty stomach
FTC	capsule (200 mg) solution (10 mg/mL)	no	yes	Dissolve in ≥ 30 mL of water, contains Na 460 µmol/mL Bioequivalence: 240 mg solution = 200 mg capsule; adjust dosage accordingly
3TC	tablet (150, 300 mg) solution (10 mg/mL) <sup>(vii)</sup>	yes		Crushed tablets can be added to small amount of semi-solid food or liquid, all of which should be consumed immediately
TDF	tablet (300 <sup>(i)</sup> mg)	yes		Better: dissolve in ≥ 1 dL of water/orange or grape juice (bitter taste)
ZDV	capsule (250 mg) syrup (10 mg/mL)	no	no	Sticky, bitter taste Better: use syrup or iv 6 mg/kg per day in glucose 5%
TAF/FTC	tablet (25/200 mg and 10/200 mg) <sup>(v)</sup>	yes		Crushing of tablets is not recommended in the product information. However based on data with the fixed-dose combination tablet (TAF/FTC/DRV/c/), crushing of tablets does not impact significantly TAF/FTC pharmacokinetics (of note: TAF bioavailability is reduced by 20% (crushing) but this decrease is unlikely to be clinically significant) <sup>(viii)</sup>
TDF/FTC	tablet (300 <sup>(i)</sup> /200 mg)	yes		Better: dissolve in ≥ 1 dL of water/orange or grape juice (bitter taste)
ABC/3TC	tablet (600/300 mg)	no		Use solution of individual compounds
ZDV/3TC	tablet (300/150 mg)	yes		Disperse in ≥ 15 mL water, alternative: use solution of individual compounds
ABC/3TC/ZDV	tablet (300/150/300 mg)	no		Use solution of individual compounds
<b>NNRTIs</b>				
EFV	tablet (600 mg)	yes		Difficult to dissolve; solution has lower bioavailability; if > 40 kg use 720 mg
	capsule (50, 100, 200 mg) solution (30 mg/mL)	no	yes	
ETV	tablet (200 mg)	no		Disperse in ≥ 5 mL water. The glass should be rinsed with water several times and each rinse completely swallowed to ensure the entire dose is consumed.
NVP	tablet (200, 400 mg) <sup>(ii)</sup> suspension (10 mg/mL)	yes <sup>(ii)</sup>		Dissolve in water
RPV	tablet (25 mg)	no		Crushing of tablets and dispersion into a liquid is not recommended. RPV is insoluble in water over a wide pH range
TDF/FTC/EFV	tablet (300 <sup>(i)</sup> /200/600 mg)	no		
TAF/FTC/RPV	tablet (25/200/25 mg) <sup>(v)</sup>	no		Tablets should be swallowed whole and should not be chewed, crushed or split
TDF/FTC/RPV	tablet (300 <sup>(i)</sup> /200/25 mg)	no		Crushing of tablets and dispersion into a liquid is not recommended. RPV is insoluble in water over a wide pH range.
<b>PIs</b>				
ATV	capsule (150, 200, 300 mg)	no	no	Do not open the capsule, swallow whole
ATV/c	tablet (300/150 mg)	no		Tablets should be swallowed whole and should not be chewed, broken, cut or crushed
DRV	tablet (75, 150, 400, 600, 800 mg) solution (100 mg/mL)	yes		Take with food. Crushed tablets can be added to small amount of semi-solid food or liquid, all of which should be consumed immediately
DRV/c	tablet (800/150 mg)	yes		Crushing of tablets is not recommended in the product information. However, based on data with the fixed-dose combination tablet (/TAF/FTC/ DRV/c), crushing of tablets does not impact significantly DRV/c pharmacokinetics <sup>(viii)</sup>
FPV	tablet (700 mg) suspension (50 mg/mL)			Bitter taste; adults take suspension on empty stomach
LPV/r	tablet (200/50 mg) solution (80/20 mg/mL)	no		42% alcohol, do not dilute with water (risk of precipitation), rinse with milk (no water); take with food, bitter taste: dilute with chocolate milk
RTV	tablet (100 mg) solution (80 mg/mL)	no		43% alcohol, do not dilute solution (risk of precipitation), rinse with milk (no water); bitter taste; take with food
SQV	tablet (500 mg)	no		
TAF/FTC/DRV/c	tablet (10/200/800/150 mg) <sup>(v)</sup>	yes		Crushing of tablets has no significant effect on the pharmacokinetics of the components of the tablet (of note: TAF bioavailability is reduced by 20% (crushing) but this decrease is unlikely to be clinically significant. TAF bioavailability is not changed when splitting the pill) <sup>(viii)</sup>

Others				
DTG	tablet (50 mg)	yes		Tablets may be split or crushed and added to a small amount of semi-solid food or liquid, all of which should be consumed immediately
MVC	tablet (150, 300 mg)	yes		While the company does not have any specific kinetic information, crushing the tablet is not expected to negatively affect the bioavailability
RAL <sup>(iii)</sup>	tablet (400 mg) chewable tablets (25, 100 mg)	yes		The bioavailability of the chewable tablet is higher: 300 mg chewable tablet (= 400 mg film-coated tablet)
Drug	Formulation	Crush tablets	Open capsules	Comment
RPV/DTG	tablet (25/50 mg)	no		Tablets should be swallowed whole and should not be chewed, crushed or split
TAF/FTC/BIC	tablet (25/200/50 mg) <sup>(vi)</sup>	no		Tablets should be swallowed whole and should not be chewed, crushed or split
TAF/FTC/EVG/c	tablet (10/200/150/150 mg) <sup>(vi)</sup>	yes		Crushing of tablets is not recommended in the product information. However, based on data with the fixed-dose combination tablet (TAF/FTC/DRV/c/), crushing of tablets does not impact significantly TAF/FTC pharmacokinetics (of note: TAF bioavailability is reduced by 20% (crushing) but this decrease is unlikely to be clinically significant) <sup>(viii)</sup> . Similarly, crushing of /TDF/FTC/EVG/c did not have a significant effect of the pharmacokinetics of EVG/c <sup>(iv)</sup>
TDF/FTC/EVG/c	tablet (300 <sup>(i)</sup> /200/150/150 mg)	yes		Crushing of tablets does not significantly modify the pharmacokinetic profiles <sup>(iv)</sup>
ABC/3TC/DTG <sup>(vi)</sup>	tablet (600/300/50 mg)	yes		Tablets may be split or crushed and added to a small amount of semi-solid food or liquid, all of which should be consumed immediately
Prophylaxis/treatment of opportunistic infections				
azithromycin	tablet (250, 500 mg) suspension (40 mg/mL)	no		
cotrimoxazole	tablet (400/80 mg, forte 800/160 mg) solution (40/8 mg/mL)	yes; forte difficult		Dilute solution 3-5 times with water (high osmolality)
fluconazole	capsule (50, 200 mg) suspension (40 mg/mL)	no	yes	
pyrimethamine	tablet (25 mg)	yes		Take with food
valganciclovir	tablet (450 mg) solution (50 mg/mL)	no	no	Difficult to dissolve
rifampicin	tablet (450, 600 mg)	yes		Take on empty stomach
	capsule (150, 300 mg)	no	yes	
	suspension (20 mg/mL)			
rifabutin	capsule (150 mg)	no	yes	Mix with apple sauce, syrup (insoluble in water)
isoniazid	tablet (100, 150 mg)	yes		Take on empty stomach
pyrazinamide	tablet (500 mg)	yes		
ethambutol	tablet (100, 400 mg)	yes		Difficult to dissolve Better: use iv solution
rifampicin/isoniazid	tablet (150/100, 150/75 mg)	yes		Take on empty stomach
Rifater (rifampicin, isoniazid, pyrazinamide)	tablet (120/50/300 mg)	yes		Take on empty stomach
Rimstar (rifampicin, isoniazid, pyrazinamide, ethambutol)	tablet (150/75/400/275 mg)	yes		Take on empty stomach
ribavirin	capsule (200 mg)	no	yes	Disperse in orange juice, take with food