

The AIDS Education & Training Center's goal is to build the capacity of clinicians throughout their careers to care for people living with HIV/AIDS.

Skill building opportunities are available for pre-novice, novice and experienced providers. By increasing the HIV clinical competency of providers, outcomes along the HIV Care Continuum will improve with a greater number of patients diagnosed, engaged in care, on antiretroviral medications and virally suppressed.

Alabama	Florida
Georgia	Kentucky
Mississippi	North Carolina
South Carolina	Tennessee

Providing state-of-the-art HIV education, consultation, and resource materials to healthcare professionals throughout the region.	
Chart Reviews	Clinical Consultation
Customized Programs	Live & Online Learning
Skill-building Workshops	Preceptorships
Treatment Guideline Resources	Weekly Webcasts

Resources are available for:	
Physicians	Nurses
Medical Assistants	Advanced Practice Nurses
Pharmacists	Oral Health Professionals
Physician Assistants	Mental Health Counselors
Ryan White Funded Providers	Nutritionists
Social Service Providers and Case Managers	Medical Students

SPECIAL THANKS TO:
Colorado AIDS Education and Training Center for medication images (images are not actual size and colors may vary) and www.poz.com for phonetic pronunciations.

Antiretroviral Regimens or Components Not Recommended at Any Time	
Agent(s)	Comments
Monotherapy (All)	Rapid development of resistance; inferior to ≥ 3 drugs
Dual-NNRTI (AI)	Adverse events and drug-drug interactions prevent benefit
Dual-NRTI (AI)	Rapid development of resistance; inferior to ≥ 3 drugs
Triple NRTI (AI) exceptions: ABC/ZDV/3TC (BI) and possibly TDF/ZDV/3TC (BII)	Consider exceptions when preferred/alternative not feasible; ↑ early virologic non-response with ABC/TDF/3TC or TDF/ddl/3TC
d4T + ZDV (AII)	Both thymidine analogs; antagonistic
d4T + ddl (AII)	Toxicities: pancreatitis, neuropathy, ↑ lactate Fatalities (lactic acidosis with hepatic steatosis with or without pancreatitis) in pregnancy
ddl + TDF (AII)	↑ ddl levels and toxicity, ↑ virologic failure/resistance, potential for immunologic nonresponse/CD4 ↓; Consider altering regimen even if clinically stable on ddl/TDF containing regimen
FTC + 3TC (AIII)	Similar resistance profile; no benefit
EFV in 1 st trimester or if pregnancy potential (AIII)	Teratogenic (in nonhuman primates) use only if no other options and potential benefits > risks (BIII)
EFV + (ATV/c or DRV/c)	Do not combine
EVG + (EFV or NVP)	Do not combine
ETR + (all unboosted PIs, ATV/r, ATV/c, DRV/c, FPV/r, or TPV/r) (AII)	Do not combine
NVP + (ATV/r, ATV/c, or DRV/c)	Do not combine
NVP in ART-naïve ♀ with CD4 > 250 cells/mm ³ or ♂ with CD4 > 400 cells/mm ³ (BI)	↑ symptomatic hepatic events; use only if potential benefits > risks
ATV + IDV (AIII)	Potential for additive hyperbilirubinemia
RTV as sole PI ³	Pill burden; GI intolerance
Unboosted DRV, SQV, TPV (AII)	Should only be used with low-dose RTV or COBI (DRV)

3. The Guidelines list as "not recommended as part of initial therapy" but the editors of this resource do not recommend at any time.

ART Components Not Recommended as Part of Initial Therapy			
Agent(s)	Comments	Agent(s)	Comments
ABC/ZDV/3TC ± TDF	↓ virologic efficacy	FPV (± RTV)	Unboosted FPV virologic failure may → DRV resistance mutations; less data with FPV/r than for other boosted PIs
d4T + 3TC	Lipatrophy, peripheral neuropathy, symptomatic lactic acidosis, hepatic steatosis, and pancreatitis	IDV (± RTV)	Nephrolithiasis, meal/fluid requirements
ddl + (3TC or FTC)	↓ virologic efficacy; limited clinical trial data in ART-naïve; ddl toxicity	LPV/r + 2 NRTIs	Higher pill burden and RTV dose compared to other PIs; GI intolerance
ZDV/3TC	More toxicities (e.g., bone marrow suppression, GI toxicity, lipatrophy, symptomatic lactic acidosis, hepatitis steatosis, and pancreatitis) than recommended NRTIs	NFV	↓ virologic efficacy; ↑ diarrhea
DLV	↓ virologic efficacy; inconvenient dosing	SQV/r	High pill burden; QT and PR prolongation possible and requires ECG monitoring
ETR	Insufficient data in ART-naïve	TPV/r	↓ virologic efficacy
NVP	Serious and potentially fatal toxicities (e.g., hepatic events, severe rash including SJS, TEN); did not meet noninferiority criteria compared to EFV	ENF, T20	Insufficient data in ART-naïve, T20 requires bid SQ injections
ATV (unboosted)	Less potent than boosted ATV	MVC	CCR5 tropism testing required prior to use; no virologic benefit compared to recommended regimens; requires bid dosing

ART in Adults & Adolescents



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This treatment guideline resource is a collaboration of the North and South Florida Southeast AETC partner sites

This resource summarizes critical information regarding antiretroviral agents approved for use in adults and adolescents such as adult dosing (including renal dosing recommendations), available dosage forms, side effects, and important patient (pt) counseling points. Unless otherwise noted, information is adapted from the Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. July 14, 2016. Available at: <https://aidsinfo.nih.gov/contentfiles/lvguidelines/adultandadolescentgl.pdf>. Accessed December 15, 2016.

Pregnancy & Perinatal Guidelines
For pregnant woman, see the Perinatal Guidelines for managing HIV infection in pregnancy including recommendations for prevention of mother to child transmission. https://aidsinfo.nih.gov/contentfiles/lvguidelines/PerinatalGL.pdf

The information contained in this publication is intended for medical professionals, as a quick reference to the national guidelines. This resource does not replace nor represent the comprehensive nature of the published guidelines. Recognizing the rapid changes that occur in this field, clinicians are encouraged to consult with their local experts or research the literature for the most up-to-date information to assist with individual treatment decisions for their patient. If your patient should experience a serious adverse event, please report the event to the FDA (www.fda.gov/Safety/MedWatch/HowToReport/default.htm) to help increase patient safety.

Definition of Symbols	
G = Generic Available	
= Take with food = Take without food = Take with or without food	
R = Renal Adjustment (See table)	H = Hepatic Adjustment See DHHS Guidelines (Appendix B, Table 7) for recommendations for dosing ART in pts with hepatic insufficiency.
↑OC = ↑ Combination Oral Contraceptive Level	
↓OC = ↓ Combination Oral Contraceptive Level; Use alternate/additional form of birth control	
↓OC = Do not coadminister with Combination Oral Contraceptive	
TB = See Treatment of Tuberculosis (TB) in Adults with HIV Infection treatment guideline resource for drug interactions. Located at www.seaetc.com/reference	
◆ = Dosage in photo, when multiple dosage forms are available	
Note: Medication images are NOT actual size, and colors may vary.	

Statin Interactions with ART ⁴		
Protease Inhibitor (PI) Interactions		
NOTE: Interactions with indinavir, fosamprenavir, nelfinavir, saquinavir, and tipranavir are not included since these are rarely used		
Statin	Interactive PI(s)	Prescribing Recommendation
Atorvastatin	ATV, ATV/c, ATV/r, DRV/c, LPV/r	Titrate atorvastatin dose carefully and use the lowest dose necessary (editors of this resource usually would not exceed 20 mg per day)
	DRV/r	Titrate atorvastatin dose carefully and use lowest dose necessary (not to exceed 20 mg daily)
Fluvastatin	All HIV PIs	No data available
Lovastatin Simvastatin	All HIV PIs	CONTRAINDICATED
Pitavastatin	All HIV PIs	No dosage adjustments necessary
Pravastatin	ATV/c, ATV/r, DRV/c or DRV/r	Use lowest possible starting dose of pravastatin with careful monitoring
	LPV/r	No dosage adjustments necessary
Rosuvastatin	ATV/r LPV/r	Titrate rosuvastatin dose carefully and use lowest dose necessary (not to exceed 10 mg daily)
	ATV/c DRV/c or DRV/r	Titrate rosuvastatin dose carefully and use lowest dose possible while monitoring for toxicities (editors of this resource usually would not exceed 10 mg per day)
Stribild® (EVG/c/TDF/FTC) & Genvoya® (EVG/c/TAF/FTC) Interactions		
Statin	Interacting Agent	Prescribing Recommendation
Atorvastatin Pravastatin Rosuvastatin	cobicistat	Titrate atorvastatin, pravastatin, or rosuvastatin dose carefully and use the lowest dose necessary
Fluvastatin Pitavastatin	cobicistat	No data or dosage recommendation
Lovastatin Simvastatin	cobicistat	CONTRAINDICATED

4. See DHHS Guidelines (Table 19b) and www.hiv-druginteractions.org for additional information including statin interactions with NNRTIs. Generally no dosage adjustments needed but there may be decreased statin response depending on agents used.

Regimens for Treatment of HIV-1 in Non-Pregnant Antiretroviral-Naïve Adults/Adolescents	
Adapted from Table 6 of the Guidelines	
Regimens within classes are in alphabetical order. (r) indicates low-dose ritonavir and (c) indicates cobicistat for boosting. See detailed information in this resource and in the Guidelines for dosing and other important points.	
NOTE: Regimens below assume no baseline resistance. Resistance testing recommended for all pts upon entry into care. Consider repeat testing at the time of ART initiation if treatment is deferred. ART can be started prior to the results of resistance testing, for example in the setting of acute HIV infection. If ART is initiated without results of resistance testing, [Darunavir/r or dolutegravir] + tenofovir disoproxil fumarate/emtricitabine recommended (AIII ¹).	
Recommended Regimen Options (All rated AI or AII ¹)	
INSTI-Based	
Dolutegravir/abacavir/lamivudine ² (Triumeq®) - Only if HLA-B*5701 negative	
Dolutegravir (Tivicay®) + [tenofovir disoproxil fumarate/emtricitabine ² (Truvada®) or tenofovir alafenamide/emtricitabine (Descovy®)]	
Elvitegravir/c/tenofovir alafenamide/emtricitabine (Genvoya®)	
Elvitegravir/c/tenofovir disoproxil fumarate/emtricitabine (Stribild®)	
Raltegravir (Isentress®) + [tenofovir disoproxil fumarate/emtricitabine ² or tenofovir alafenamide/emtricitabine]	
PI-Based	
Darunavir (Prezista®)/r ² + [tenofovir disoproxil fumarate/emtricitabine ² or tenofovir alafenamide/emtricitabine]	
Alternative Regimen Options: Effective/tolerable but have potential disadvantages compared to recommended regimens listed above, have limitations for use in certain patient populations, or have less randomized clinical trial data. May be preferred in some pts. (All rated BI or BII¹)	
NNRTI-Based	
Efavirenz/tenofovir disoproxil fumarate/emtricitabine ² (Atripla®)	
Efavirenz (Sustiva®) + tenofovir alafenamide/emtricitabine	
Rilpivirine/tenofovir disoproxil fumarate/emtricitabine ² (Complera®) or Rilpivirine/tenofovir alafenamide/emtricitabine (Odefsey®)	
Only if pre-ART viral load < 100,000 copies/mL and CD4 > 200 cells/mm³	
PI-Based	
[Atazanavir/r (Reyataz®/r) or atazanavir/c (Evotaz™)] + [tenofovir disoproxil fumarate/emtricitabine ² or tenofovir alafenamide/emtricitabine]	
Darunavir/r or darunavir/c (Prezcobix®) + abacavir/lamivudine ² (Epzicom®) - Only if HLA-B*5701 negative	
Darunavir/c + [tenofovir disoproxil fumarate/emtricitabine ² or tenofovir alafenamide/emtricitabine]	
Other Regimen Options: When compared to Recommended or Alternative options, may have ↓ virologic efficacy, limited data from large comparative clinical trials, more toxicities, higher pill burden, drug interaction potential or limitations for use in certain pt populations. (All rated CI, CII, or CIII¹)	
If HIV RNA < 100,000 copies/mL and HLA-B*5701 negative	
[Atazanavir/c or atazanavir/r] + abacavir/lamivudine ²	
Efavirenz + abacavir/lamivudine ²	
Raltegravir + abacavir/lamivudine ²	
Other Regimens when Tenofovir alafenamide, Tenofovir disoproxil fumarate, or Abacavir Cannot be Used	
Darunavir/r once daily + raltegravir twice daily - Only if pre-ART viral load < 100,000 copies/mL and CD4 > 200 cells/mm³	
Lopinavir/r (Kaletra®) twice daily + lamivudine ² (Epivir®) twice daily	

1. See Table 2 of DHHS Guidelines for rating scheme for strength of recommendations/quality of evidence.
2. Emtricitabine may replace lamivudine and vice versa (co-formulation is major determining factor).

Information on crushing and liquid ART formulations available at http://www.hivclinic.ca/main/drugs_extra_files/Crushing%20and%20Liquid%20ARV%20Formulations.pdf
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Fact Sheet: Pharmaceutical Company Co-payment Assistance Programs (CAP)
This fact sheet from the National Alliance of State & Territorial AIDS Directors (NASTAD) provides background on what co-payment assistance programs are and an overview of CAP contact information, drugs covered, and assistance offered. (http://www.nastad.org/sites/default/files/121330_HIV_and_PAPs_CAPs_Resource_Document.pdf)

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Renal Dose Adjustments ⁵	
Note: See equation below for estimating Creatinine Clearance (CrCL) using the Cockcroft-Gault Equation	
Renal dosage adjustments are required for didanosine and stavudine. The clinician is encouraged to consider alternative regimen options in any pts on either of these agents. See prescribing information if renal dosing is necessary.	
Agent(s)	Dose Adjustment
NRTIs	
Zidovudine	CrCL < 15 or HD ⁶ : 100 mg tid or 300 mg every 24 hours
Emtricitabine	CrCL 30-49: 200 mg cap every 48 hours; CrCL 15-29: 200 mg cap every 72 hours; CrCL < 15 or HD ⁶ : 200 mg cap every 96 hours <i>See guidelines for oral soln dosing</i>
Lamivudine	CrCL 30-49: 150 mg every 24 hours; CrCL 15-29: 150 mg x 1 then 100 mg every 24 hours; CrCL 5-14: 150 mg x 1 then 50 mg every 24 hours; CrCL < 5 or HD ⁶ : 50 mg x 1 then 25 mg every 24 hours
Tenofovir disoproxil fumarate ⁷	CrCL < 70: Do not use with cobicistat CrCL 30-49: 300 mg every 48 hours; CrCL 10-29: 300 mg twice weekly every 72-96 hours; CrCL < 10 and not on HD: not recommended; HD ⁶ : 300 mg every week (assumes 3 HD sessions per week of approximately 4 hours each)
NNRTIs	
Nevirapine ⁸	HD: Give extra 200 mg dose following each HD
Rilpivirine ⁹	Severe renal impairment or HD: use with caution and monitor for adverse effects
PIs	
Atazanavir (ATV)	ART-naïve on HD: ATV 300 mg + RTV 100 mg once daily; ART-experienced (exp) on HD: ATV not recommended (unboosted or boosted)
Lopinavir/r	HD: Avoid once daily dosing
INSTI	
Dolutegravir ¹⁰	Use with caution in INSTI-exp pts with severe renal impairment as DTG levels may be decreased
CCR5 Inhibitor	
Maraviroc	CrCL < 30 or HD: With potent CYP3A inhibitor or inducer: not recommended Without potent CYP3A inhibitor or inducer: 300 mg po bid (↓ to 150 mg po bid if postural hypotension occurs)
Pharmacokinetic Enhancers	
Cobicistat	CrCL < 70: ATV/c or DRV/c use with TDF not recommended

5. No renal dose adjf for abacavir, PIs (except ATV, lopinavir/r), NNRTIs, dolutegravir, raltegravir, or T20.
6. Dose after hemodialysis (HD) on HD days.
7. CAUTION: consider tenofovir disoproxil fumarate (TDF) as possible cause for renal dysfunction.
8. Viramune® [package insert], Ridgefield, CT: Boehringer Ingelheim Pharmaceuticals, Inc.; Revised January 2014.
9. Edurant® [package insert], Titusville, NJ: Janssen Therapeutics, Division of Janssen Products; Revised August 2015.
10. Tivicay® [package insert], Research Triangle Park, NC: ViiV Healthcare; Revised June 2016.

Cockcroft-Gault Equation CrCL Estimation	
Male	
(140-age in years) x (weight in kg) 72 x (serum creatinine)	
Female	
(140-age in years) x (weight in kg) x 0.85 72 x (serum creatinine)	

Renal Dosing for Combo Products	
Agent(s)	Dose Adjustment
EFV/FTC/TDF (Atripla®) ¹¹	These fixed-dose combo products should not be used in pts with CrCL < 50. See dosing for individual agents.
ZDV/3TC (Combinir®)	
RPV/FTC/TDF (Complera®) ¹¹	
ABC/3TC (Epizicom®)	
DTG/ABC/3TC (Triumeq®)	
ABC/ZDV/3TC (Trizivir®)	
FTC/TDF (Truvada®) ¹¹	CrCL 30-49: One tab every 48 hours; CrCL < 30: Combo product cannot be used; see dosing for individual agents
ATV/c (Evotaz™)	CrCL < 70: Use with TDF not recommended ART-exp on HD: ATV/c not recommended
DRV/c (Prezcobix®)	CrCL < 70: Use with TDF not recommended
FTC/TAF (Descovy®) ¹¹	CrCL < 30: do not use
EVG/c/FTC/TAF (Genvoya®) ¹¹	
RPV/FTC/TAF (Odefsey®) ¹¹	
EVG/c/FTC/TDF (Stribild®) ¹¹	CrCL < 70: do not initiate CrCL < 50: discontinue

11. CAUTION: consider tenofovir alafenamide (TAF) as possible cause for renal dysfunction

NUCLEOSIDE/NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTIs)

Class adverse effects: Lactic acidosis and hepatic steatosis

Abacavir (Ziagen®, ABC)
(uh-BACK-ah-veer)

Dosage form: 300 mg tab, 20 mg/mL soln (240 mL/bottle)
Also available in combination products: Epzicom®, Trizivir®, Triumeq®; see **Combination Products** for more detail

Adult and adolescent dose (weight ≥ 25 kg):
300 mg po bid or 600 mg po once daily

NOTE: Perform HLA-B*5701 test prior; only use if negative

Important Points:

- Use with caution in pts with ↑ CVD risk. Use with caution if pre-ART viral load >100,000 copies/mL unless combined with dolutegravir.
- Alcohol ↑ ABC levels 41%; potential for adverse effects
- AEs: Hypersensitivity reaction (2-9%), characterized by sign/symptom from ≥ 2 groups: G1: fever; G2: rash; G3: nausea, vomiting, diarrhea, or abdominal pain; G4: malaise, fatigue, or achiness; G5: dyspnea, cough, or pharyngitis (onset 4-6 weeks). Discontinue drug promptly and DO NOT RECHALLENGE!

Didanosine (Videx® EC, ddl)¹²
(dye-DAH-no-seen)

Rarely used. Adult/adolescent formulations will be removed from the market in 2020. Switch pts to another ARV.

12. See Videx® and Videx EC® Prescribing Information for dosage forms, dosing, adverse effects and other important points.

Emtricitabine (Emtriva®, FTC)
(em-trih-SIGH-ta-been)

Dosage form: 200 mg cap, 10 mg/mL soln (170 mL/bottle)

Also available in combination products: Truvada®, Atripla®, Complera®, Descovy®, Genvoya®, Odefsey®, Stribild®; see **Combination Products** for more detail

Adult and adolescent dose (weight ≥ 40 kg):
200 mg cap or 240 mg (24 mL) soln po once daily

Important Points:

- Abrupt withdrawal can cause chronic active hep B flares
- AEs: Generally well-tolerated, ↑ pigmentation of palms/soles (> in black and Hispanic pts)
- Refrigerate soln or room temp if used within 3 months

NRTIs (Continued)

Lamivudine (Epivir[®], 3TC)

(*la-MI-vue-deen*) GⓘⓂⓃⓅⓇ

Dosage form: 150 mg, ◆300 mg tab, 10 mg/mL soln (240 mL)

Also available in combination products: Combivir[®], Epzicom[®], Trizivir[®], Triumeq[®]; see **Combination Products** for more detail

Adult and adolescent dose (weight ≥ 25 kg): 300 mg po once daily or 150 mg po bid

Important Points:

- Abrupt withdrawal can cause chronic active hep B flares
- AEs: Generally well-tolerated

Stavudine (Zerit[®], d4T)¹³

(*STA-vue-deen*) GⓘⓂⓃⓅⓇ

Rarely used. All formulations will be removed from the market in 2020.

Switch pts to another ARV.

^{13.} See *Zerit[®] Prescribing Information* for dosage forms, dosing, adverse effects and other important points.

Tenofovir Disoproxil Fumarate (Viread[®], TDF)

(*ten-OH-foh-veer*) ⓂⓃⓅⓇⓇ

Nucleotide RTI

Dosage form: 150, 200, 250, ◆300 mg tab 40 mg/1 g oral powder (60 g multi-use bottle)

Also available in combination products: Truvada[®], Atripla[®], Complera[®], Stribild[®]; see **Combination Products** for more detail

Adult and adolescent¹⁵ dose (weight ≥ 35 kg): 300 mg po once daily

Important Points:

- Take tabs with or without food; take powder with food. Mix powder in ¼ - ½ cup of soft food (e.g., applesauce, baby food, yogurt) and take entire dose ASAP to avoid bad taste.
- Interacts with ATV (see ATV for dosing)
- Document urine glucose and protein at baseline and perform routine monitoring (at least every 6 months) of eGFR
- Monitor serum phosphorus in pts with or at risk for renal impairment
- Avoid TDF if concomitant or recent use of nephrotoxic agent
- Abrupt withdrawal can cause chronic active hep B flares
- Can decrease bone mineral density, consider calcium and vitamin D supplementation
- AEs: Flatulence, headache, diarrhea, nausea, vomiting, renal insufficiency, Fanconi Syndrome (rare), ↓ PO₄, osteopenia (rare, multifactorial)

^{14.} Tabs are with or without food; powder is with food.

^{15.} See *the Guidelines for Use of Antiretroviral Agents in Pediatric HIV Infection* for concerns about ↓ bone mineral density especially in pre-pubertal or early puberty (Tanner Stages 1 or 2)

Zidovudine (Retrovir[®], AZT, ZDV)

(*zye-DOE-vue-deen*) GⓘⓂⓃⓅⓇ

Dosage form: ◆300 mg tab, 100 mg cap, 10 mg/mL IV soln, 10 mg/mL syrup (240 mL/bottle)

Also available in combination products: Combivir[®], Trizivir[®]; see **Combination Products** for more detail

Adult and adolescent dose (age ≥ 18 years): 300 mg po bid or 200 mg po tid

Important Points:

- AEs: Headache, nausea, ↑ pigmentation skin/nails, ↓ hemoglobin/hematocrit, ↓ WBC, ↑ MCV, myopathy

NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NNRTIs)

Class adverse effects: rash (rarely Stevens-Johnson Syndrome), ↑ LFTs, many drug interactions.

See DHHS Guidelines and www.hiv-druginteractions.org.

Delavirdine (Rescriptor[®], DLV)¹⁶

(*deh-LAH-ver-deen*) ⓂⓃⓅⓇⓇⓇⓇ

Rarely used

^{16.} See *Rescriptor[®] Prescribing Information* for dosage forms, dosing, adverse effects and other important points.

Efavirenz (Sustiva[®], EFV)

(*eh-FAH-vih-rehnz*) ⓂⓃⓅⓇⓇⓇⓇ

Dosage form: 50, 200 mg cap, ◆600 mg tab

Also available in combination product: Atripla[®]; see **Combination Products** for more detail

Adult and adolescent dose (weight ≥ 40 kg): 600 mg po once daily at bedtime

Important Points:

- Take at bedtime without food to ↓ CNS side effects
- False positive cannabinoid or benzodiazepine test (usually on screening, confirmatory test should be negative)
- Use with caution in pts with psychiatric illness or using medications with neuropsych effects (CNS AEs more common)
- AEs: Drowsiness, dizziness, impaired concentration, insomnia, abnormal dreaming, agitation (Usually resolves in 2-4 weeks), depression, suicidal ideation (rare), hallucinations (rare), ↑ lipids

^{17.} Consider alternative agent in ♀ with childbearing potential not using adequate birth control due to the risk of teratogenicity during the first 5-6 weeks of pregnancy. If pregnancy occurs while on EFV, EFV can be continued if the pt is virologically suppressed.

Etravirine (Intence[®], ETR)

(*eh-truh-VIGH-reen*) GⓘⓂⓃⓅⓇⓇⓇ

Dosage form: 25, 100, ◆200 mg tab

Adult and adolescent dose¹⁸ (weight ≥ 30 kg): 200 mg po bid

Important Points:

- Take following a meal
- May disperse tabs in 5mL of water, stir well. If desired mix with additional water, orange juice or milk (no warm or carbonated drinks) and then drink immediately. Rinse glass several times with water, milk, or orange juice and drink rinse.¹⁹
- AEs: Nausea, hypersensitivity reactions with rash, constitutional findings, hepatic failure has been reported

^{18.} Do not use ETR with unboosted PIs, ATV/c, ATV/r, DRV/c, FPV/r, TPV/r. Standard dosing with DRV/r, LPV/r, SQV/r.

^{19.} Intence[®] [*package insert*]. Titusville, NJ: Janssen Therapeutics, Division of Janssen Products, LP; Revised August 2014.

Nevirapine (Viramune[®],Viramune XR[®], NVP)

(*nah-VAIR-ah-peen*) GⓘⓂⓃⓅⓇⓇⓇ

Dosage form: 100 mg tab (XR), ◆200 mg tab, ◆400 mg tab (XR), 10 mg/mL susp (240 mL bottle)

Adult and adolescent dose²⁰ (BSA ≥ 1.33 m²): 200 mg po once daily for 14 days, then [200 mg po bid or 400 mg (XR) po once daily]

Important Points:

- XR tabs should not be crushed, chewed, or broken
- AEs: Rash - mild to severe, usually within 1st 6 weeks, discontinue if severe; ↑ LFTs (Monitor LFTs - baseline, 2 weeks after dose escalation, then monthly for the 1st 18 weeks); hepatotoxicity often rash-associated, check LFTs in any pt with rash; ♀ and ♂ with pre-ART CD4 > 250 and > 400, respectively and pts with chronic active hep B or C co-infection are at ↑ risk for ↑ LFTs

^{20.} If NVP discontinued ≥ 7 days, restart at lower dose for 14 days; pts taking NVP immediate release (200 mg bid or 400 mg once daily) can switch to XR 400 mg tab, ◆200 mg daily lead-in dosing; if mild rash occurs and hepatotoxicity ruled out, can continue 200 mg once daily lead-in dose for up to 28 days.

Rilpivirine (Edurant[®], RPV)

(*ril-pih-VIGH-reen*) ⓂⓃⓅⓇⓇⓇ

Dosage form: 25 mg tab

Also available in combination products: Complera[®] and Odefsey[®]; see **Combination Products** for more detail

Adult and adolescent dose²¹ (weight ≥ 35 kg): 25 mg once daily

Important Points:

- Take with a meal (at least 400 kcal)
- Interacts with acid-reducing agents
 - PPIs (e.g., omeprazole, lansoprazole): contraindicated
 - H2-receptor blockers (e.g., famotidine, ranitidine) should be taken at least 12 hours before or 4 hours after RPV
 - Antacids (e.g., aluminum or magnesium hydroxide, calcium carbonate) should be taken at least 2 hours before or 4 hours after RPV
- Caution with drugs that prolong the QT interval
- AEs: Depression, insomnia, headache, rash

^{21.} Not recommended in pts with pre-ART HIV RNA > 100,000 copies/mL or CD4 count < 200 cells/mm³ due to ↑ rate of virologic failure

PROTEASE INHIBITORS (PIs)

Class adverse effects: ↑ glucose, ↑ lipids (less with ATV and DRV), lipodystrophy, ↑ LFTs, nausea, vomiting, diarrhea (more common with LPV/r compared to DRV or ATV) ↑ bleeding in hemophiliacs.

All undergo hepatic metabolism mostly via CYP3A4 - Many drug interactions.

See DHHS Guidelines and www.hiv-druginteractions.org.

Atazanavir (Reyataz[®], ATV)

(*ah-ta-ZA-na-veer*) ⓂⓃⓅⓇⓇⓇⓇ

Dosage form: 100, 150, 200, ◆300 mg cap, 50 mg oral powder packets

Also available in combination product: Evotaz[™]; see **Combination Products** for more detail

Adult and adolescent dose (weight ≥ 40 kg):

- 400 mg po once daily (ART-naïve only) or
- 300 mg + (COBI 150 mg or RTV 100 mg) po once daily (naïve, exp, or with TDF)

Important Points:

- Take with food
- AEs: ↑ unconjugated bilirubin (common), jaundice or scleral icterus (less common); rash; prolonged PR interval, asymptomatic 1st degree AV block (rare); nephrolithiasis (rare), cholelithiasis

Atazanavir Dosing with Acid-reducing Agents		
Acid-reducing Agents	ART-naïve	ART-exp
Antacids or buffered medications	ATV, ATV/c, ATV/r: Give ≥ 2 hours before or 1 to 2 hours after antacid or buffered medication	
H ₂ Receptor Antagonists (H ₂ RAs)	ART-naïve with or without TDF	ART-exp without TDF
Approximate Dose Equivalents: ²²	<ul style="list-style-type: none">ATV: Give ≥ 2 hours before or 10 hours after H₂RA. Max dose of famotidine 20 mg bid (not to exceed 20 mg in single dose) [or equivalent].	ATV/r or ATV/c: Give simultaneously with or ≥ 10 hours after H ₂ RA. Max dose of famotidine 20 mg bid [or equivalent].
Famotidine 20 mg BID or 40 mg qhs		ART-exp with TDF
Nizatidine 150 mg BID or 300 mg qhs	<ul style="list-style-type: none">ATV/r or ATV/c: Give simultaneously with or ≥ 10 hours after H₂RA. Max dose of famotidine 40 mg bid [or equivalent].	ATV/r (400/100 mg) or ATV/c (400/150 mg): Give simultaneously with or ≥ 10 hours after H ₂ RA. Max dose of famotidine 20 mg bid [or equivalent].
Ranitidine 150 mg BID or 300 mg qhs		
Proton Pump Inhibitors (PPIs)		
Approximate Dose Equivalents: ²³	<ul style="list-style-type: none">ATV: not recommended ATV/r or ATV/c: Max dose of omeprazole 20 mg once daily [or equivalent] taken ≥ 12 hours prior to ATV/r	ATV/r or ATV/c: not recommended
Esomeprazole 20 mg		
Lansoprazole 30 mg		
Omeprazole 20 mg		
Pantoprazole 40 mg		
Rabeprazole 20 mg		

^{22.} ATV/r: OC dose **minimum** 35 mcg ethinyl estradiol (EE); ATV: OC dose **maximum** 30 mcg EE. Alternative contraception recommended. OCs with < 25 mcg EE, progestins other than norethindrone or norgestimate, and other hormonal contraceptives have not been studied. ATV/c: No data available regarding coadministration with oral or other hormonal contraceptive. Consider alternative nonhormonal contraception.

^{23.} Tseng A. Interactions between acid reducing agents and antiretrovirals. Available at http://www.hivclinic.ca/main/drugs_interact_files/acid-reducing%20agents-int.pdf.

Darunavir (Prezista[®], DRV)

(*da-ROO-nuh-veer*) ⓂⓃⓅⓇⓇⓇ

Dosage form: 75, 150, ◆600, ◆800 mg tab, 100 mg/mL susp (200 mL/bottle)

Also available in combination product:

Prezcobix[®]; see **Combination Products** for more detail

Adult and adolescent dose (weight ≥ 40 kg):

- 800 mg + (COBI 150 mg or RTV 100 mg) po once daily (ART-naïve or ART-exp if no DRV mutations [V711, V321, L33F, I47V, I50V, I54L, I54M, T74P, L76V, I84V, L89V])²⁴ **or**
- 600 mg + RTV 100 mg po bid (ART-naïve or ART-exp)

Important Points:

- Take with food
- AEs: Rash (10%), abdominal pain, headache, hepatotoxicity, caution with sulfa allergy (not contraindicated)

^{24.} *Prezista[®] [package insert]*. Titusville, NJ: Janssen Pharmaceuticals; Revised September 2016.

Fosamprenavir (Lexiva[®], FPV)²⁵

(*foss-am-PREH-nah-veer*) ⓂⓃⓅⓇⓇⓇ

Rarely used

^{25.} See *Lexiva[®] Prescribing Information* for dosage forms, dosing, adverse effects and other important points

^{26.} Suspension: adults without food; peds with food.

Indinavir (Crixivan[®], IDV)²⁷

(*in-DIH-nuh-veer*) ⓂⓃⓅⓇⓇ

Rarely used

^{27.} See *Crixivan[®] Prescribing Information* for dosage forms, dosing, adverse effects and other important points.

^{28.} If given without RTV (rarely, if ever, done), take 1 hour before or 2 hours after a meal or with low fat/protein snack.

Lopinavir/ritonavir (Kaletra[®], KAL, LPV/r)

(*lo-PIN-uh-veer/rih-TAH-nuh-veer*) ⓂⓃⓅⓇⓇⓇ

Dosage form: ◆200/50 mg, 100/25 mg tab 400/100 mg per 5 mL soln (160 mL/bottle)
Adult and adolescent dose³⁰ (weight > 35 kg):

- 2 tabs (400/100 mg) po bid (PI-naïve or PI-exp) or
- 4 tabs (800/200 mg) po once daily (PI-naïve or PI-exp with ≤ 3 significant mutations)

Important Points:

- Swallow tabs whole; cannot be chewed, broken, or crushed
- May take tabs without food, soln should be taken with food
- Oral soln contains 42% alcohol
- AEs: GI intolerance (N/V/D); asthenia; pancreatitis; prolonged PR, rare cases of 2nd/3rd degree AV block; prolonged QT interval, rare cases of torsade de pointes (causality not established)
- Do not take tabs out of container for > 2 weeks especially in areas of ↑ humidity
- Refrigerate soln (stable until label date) or store at room temp (max 25°C/77°F) for up to 60 days

^{29.} Tabs are with or without food; soln is with food.

^{30.} Once daily dosing should not be used in pregnant ♀. Dose LPV/r bid in pts with ≥ 3 of the following PI mutations: L101F/I/R/N, K20M/N/R, L24I, L33F, M36I, I47V, G48V, I54L/L/T/V, V82A/C/F/S/T, and I84V.

Nelfinavir (Viracept[®], NFV)³¹

(*nell-FIH-nuh-veer*) GⓘⓂⓃⓅⓇⓇ

Rarely used

^{31.} See *Viracept[®] Prescribing Information* for dosage forms, dosing, adverse effects and other important points.

Saquinavir (Invirase[®], SQV)³²

(*sa-KWIH-nuh-veer*) ⓂⓃⓅⓇⓇⓇ

Rarely used

^{32.} See *Invirase[®] Prescribing Information* for dosage forms, dosing, adverse effects and other important points.

Tipranavir (Aptivus[®], TPV)³³

(*ti-PRAN-a-veer*) ⓂⓃⓅⓇⓇⓇ

Rarely used

^{33.} See *Aptivus[®] Prescribing Information* for dosage forms, dosing, adverse effects and other important points.