



# IAS-USA Guidelines: Treatment of HIV December 2022 Updates

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Last Updated: January 19, 2023



# Disclosures

No conflicts of interest or relationships to disclose.

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Funding for this presentation was made possible by U1OHA29296 from the Human Resources and Services Administration HIV/AIDS Bureau. The views expressed do not necessarily reflect the official policies of the Department of Health and Human Services nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government. *Any trade/brand names for products mentioned during this presentation are for training and identification purposes only.*



JAMA | Special Communication

## Antiretroviral Drugs for Treatment and Prevention of HIV Infection in Adults

### 2022 Recommendations of the International Antiviral Society-USA Panel

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**IMPORTANCE** Recent advances in treatment and prevention of HIV warrant updated recommendations to guide optimal practice.

**OBJECTIVE** Based on a critical evaluation of new data, to provide clinicians with recommendations on use of antiretroviral drugs for the treatment and prevention of HIV, laboratory monitoring, care of people aging with HIV, substance use disorder and HIV, and new challenges in people with HIV, including COVID-19 and monkeypox virus infection.

**EVIDENCE REVIEW** A panel of volunteer expert physician scientists were appointed to update the 2020 consensus recommendations. Relevant evidence in the literature (PubMed and Embase searches, which initially yielded 7891 unique citations, of which 834 were considered relevant) and studies presented at peer-reviewed scientific conferences between January 2020 and October 2022 were considered.

**FINDINGS** Initiation of antiretroviral therapy (ART) is recommended as soon as possible after diagnosis of HIV. Barriers to care should be addressed, including ensuring access to ART and adherence support. Integrase strand transfer inhibitor-containing regimens remain the mainstay of initial therapy. For people who have achieved viral suppression with a daily oral regimen, long-acting injectable therapy with cabotegravir plus rilpivirine given as infrequently as every 2 months is now an option. Weight gain and metabolic complications have been linked to certain antiretroviral medications; novel strategies to ameliorate these complications are needed. Management of comorbidities throughout the life span is increasingly important, because people with HIV are living longer and confronting the health challenges of aging. In addition, management of substance use disorder in people with HIV requires an evidence-based, integrated approach. Options for preexposure prophylaxis include oral medications (tenofovir disoproxil fumarate or tenofovir alafenamide plus emtricitabine) and, for the first time, a long-acting injectable agent, cabotegravir. Recent global health emergencies, like the SARS-CoV-2 pandemic and monkeypox virus outbreak, continue to have a major effect on people with HIV and the delivery of services. To address these and other challenges, an equity-based approach is essential.

**CONCLUSIONS AND RELEVANCE** Advances in treatment and prevention of HIV continue to improve outcomes, but challenges and opportunities remain.

[+ Multimedia](#)

[+ Supplemental content](#)

## Recommendations for Timing of ART Initiation

- As soon as possible after diagnosis, ideally within 7 days
  - Includes same day as diagnosis or first visit, assuming no suspicion for an OI (AIII)
- At time of diagnosis of acute HIV (AIIa)
- If diagnosed during pregnancy, begin ART immediately (AIa)
- Elite controllers: theoretical benefits, so treatment “reasonable”

## Recommendations for ART Initiation with Opportunistic Infection (OI)

- Generally, start ART within 2 weeks of starting OI treatment

OI Scenario	Specific Considerations for ART Initiation Timing
TB without meningitis	Within 2 weeks after starting TB treatment, especially if CD4 <50 (A1a)
TB with meningitis	Within 2 weeks of starting TB treatment and corticosteroids (B1a)
Cryptococcal meningitis	2-4 weeks after starting antifungal treatment (B11b)
Cryptococcal antigenemia	Start ART immediately (B111)
New cancer diagnosis	Start ART immediately, with attention to drug interactions (B11a)

# IAS-USA Recommended Initial Regimens for Most People with HIV

## Initial Regimens (Listed in Alphabetical Order)

Bictegravir/TAF/FTC (Ala)

Dolutegravir + TXF/XTC (Ala) – TXF/XTC = TAF or TDF with FTC or 3TC

Dolutegravir/3TC (Ala) – only if HIV RNA <500,000 copies/mL and no HBV (should not be used for rapid initiation when genotype, HIV RNA, HBV serology pending)

“Although INSTIs and [TAF] have been implicated in weight gain for some individuals and preliminary data raise concern about metabolic adverse effects with INSTIs, such concerns do not override the potential benefit...(AIII).”

## IAS-USA Recommended Initial Regimens After PrEP Exposure

Acquire HIV while  
receiving oral PrEP  
(TXF/XTC)



Draw blood for  
genotype; ok to start  
DTG or BIC + TXF/XTC  
prior to result (AIII)

Acquire HIV after  
exposure to  
cabotegravir



Draw blood for genotype  
(with integrase); start  
boosted PI + TXF/XTC if  
initiate ART prior to  
result (AIII)



# IAS-USA Recommended Regimens During Pregnancy

## Recommended ART Regimens During Pregnancy

Dolutegravir + TAF/FTC (A1a)

Dolutegravir + TDF/XTC is a suitable alternative (A1a)

If dolutegravir not an option, may replace with:

- Raltegravir 400 mg BID (A1a)
- Atazanavir plus ritonavir (B1a)
- Darunavir plus ritonavir (B1a)
- Rilpivirine (B1a)

If already taking a bictegravir or doravirine 3-drug regimen or 2-drug regimen of dolutegravir/rilpivirine or dolutegravir/3TC, ok to continue, but counsel about uncertainties and monitor HIV RNA more frequently. Avoid cobicistat-containing regimens during pregnancy (A1b).

# IAS-USA Recommended Regimens During Tuberculosis Treatment

## Recommended ART During TB Treatment (In Alphabetical Order by Anchor Drug)

TXF/XTC\* with one of the following:

- Dolutegravir 50 mg BID (Bla)
- Efavirenz 600 mg daily (A1a)
- Raltegravir 800 mg BID (B1a)

Ritonavir-boosted PI regimen with TXF/XTC only if not possible to use one of the above regimens and if can replace rifampin with rifabutin (150 mg daily) (B111)

Avoid bictegravir, boosted darunavir, doravirine, elvitegravir/cobicistat, long-acting cabotegravir/rilpivirine, etravirine, rilpivirine, and dolutegravir/lamivudine with rifampin (A11a)

\*There is a pharmacokinetic interaction between rifampin and TAF; clinical data for coadministration are limited

## IAS-USA Other Regimens and Considerations

Regimen	Potential Uses and Cautions
Darunavir/cobicistat/TAF/FTC	Preferred if prior CAB PrEP exposure but INSTI genotype not available
Boosted darunavir + TXF/XTC	Potential use for known or suspected multidrug resistance or INSTI resistance or if high risk of poor adherence
Doravirine/TDF/3TC or doravirine + TXF/XTC	May be useful for persons who don't tolerate INSTIs
Rilpivirine/TAF/FTC	Small pill size, but only use if HIV RNA <100k and CD4 >200 (and no PPI and can adhere to meal requirement)
Raltegravir + TXF/XTC	Potential use for HIV-TB coinfection or if pregnancy, pregnancy intention, or high risk of drug interactions

## Switching ART Regimens

- Emphasizes efficacy of bicitegravir/TAF/FTC or dolutegravir + TDF/XTC in setting of NRTI resistance (M184V +/- K65R) if viral suppression
- Switching to long-acting, injectable cabotegravir/rilpivirine:
  - Not recommended in setting of viremia outside of research setting
  - Administered by clinic staff, so requires more resources (and visits) than oral ART
  - With on-time injections, still small risk of treatment failure and resistance (1-2%)
  - Collect proviral genotype before switching if don't have pre-ART genotype results

# Virologic Failure

Virologic Failure Scenario	Recommended ART Options
At least one active NRTI	Dolutegravir + TXF/XTC ok (or bictegravir/TAF/FTC)
No active NRTI	<ul style="list-style-type: none"><li>• Boosted darunavir + TXF/XTC</li><li>• Boosted darunavir + dolutegravir +/- additional agents</li><li>• Alternative: dolutegravir + TXF/XTC (4% risk of emergent dolutegravir resistance)</li></ul>
Low-level INSTI resistance	Dolutegravir BID + 1 or preferably 2 active drugs from classes not previously used (fostemsavir, lenacapavir, maraviroc if R5-tropic, ibalizumab, enfuvirtide); +/- recycled NRTIs
High-level INSTI resistance + PI resistance	At least 2 fully active agents + recycled NRTIs

# Laboratory Monitoring

Lab	At HIV diagnosis/ start of ART	During ART	At virologic failure
HIV RNA	Yes	Within 6 weeks of starting; once suppressed: every 3 months for 1 year then every 6 months	Yes
CD4	Yes	Every 6 months until >250 for 1 year, then stop	Yes
RT genotype	Yes	N/A	Yes
INSTI genotype	If partner known to have failing ART regimen that includes an INSTI, or patient received CAB for PrEP	N/A	If failing ART regimen includes an INSTI
Cryptococcal antigen test	If CD4 <100	N/A	N/A

## Weight Gain and Metabolic Complications

- Weight gain generally occurs within first year following initiation of any ART
- Greater weight gain associated with INSTI or TAF compared to EFV, PI, TDF
- Can occur with switch to INSTI +/- TAF
- More likely for women and Black or Hispanic individuals
- Use of EFV or TDF associated with weight suppression
- INSTIs may be associated with incident CVD, DM, hyperglycemia, HTN, NAFLD

## Weight Gain and Metabolic Complications

1) Counsel about possible weight gain and cardiometabolic complications when initiating or switching ART (AIII)

2) Document weight and BMI at baseline and every 6 months (AIIa)

3) Yearly diabetes screen and CVD risk score if receiving INSTI (BIII)

4) Lifestyle changes if gain greater than 5% body weight (AIII)

5) Until there are data proving benefit, switching ART because of weight gain not recommended (BIIa)



## HIV and Aging

- Screening for HIV recommended for older individuals (AIIa)
- Initiation of ART recommended as soon as possible after diagnosis (AIIa)
- Address polypharmacy (AIIb)
- Screen for issues with cognition, mobility, frailty, falls (BIII)
- Integrated care models and ARV stewardship models recommended (BIII)

## Other Topics

- PEP for HIV:
  - Dolutegravir + TXF/XTC or bictegravir/TAF/FTC recommended
- PEP for bacterial STIs:
  - Doxycycline 200 mg x1 after condomless intercourse: RCT data for MSM, TGW
  - TBD: efficacy for cisgender women, impact on antimicrobial resistance, microbiome
  - Consider on case-by-case basis for persons at high risk
- Sections not reviewed today:
  - Substance use; COVID-19; Mpox; global disparities in access

# Acknowledgment

This Mountain West AIDS Education and Training (MWAETC) program is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) as part of an award totaling \$3,098,654 with 0% financed with non-governmental sources.

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