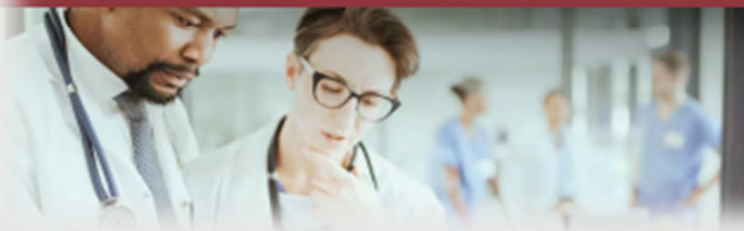


October 16, 2024



Integrating HIV Testing, Management, and Prevention in Primary Care



Presented by: Jennifer Sobolik, CNP, AACRN, AAHIVS

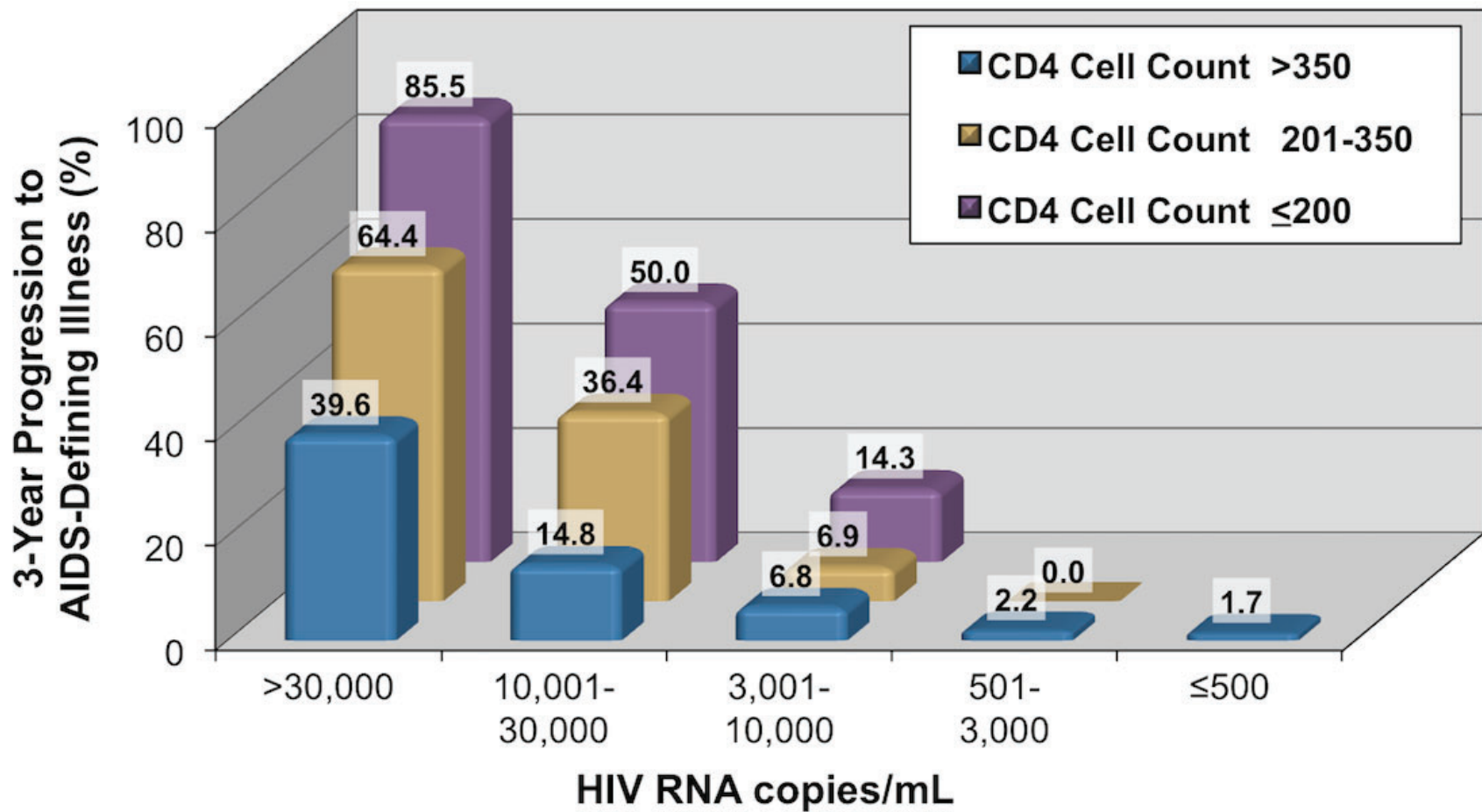
- **Review HIV Care Continuum**
- **Basics of antiretroviral therapy (ART)**
- **Rapid-start ART**
- **When to delay start of meds**
- **Opportunistic infection prophylaxis**
- **Co-administration of other meds**
- **Vaccine schedules**
- **Health maintenance**

HIV MANAGEMENT IN PRIMARY CARE



HIV CARE CONTINUUM:

The series of steps a person with HIV takes from initial diagnosis through their successful treatment with HIV medication.



Source: Mellors JW, Rinaldo CR Jr, Gupta P, White RM, Todd JA, Kingsley LA. Prognosis in HIV-1 infection predicted by the quantity of virus in plasma. Science. 1996;272:1167-70.

WHY SO SCARY?

- Unfamiliarity with current recommendations
- “So many” drug interactions
- “What if I mess it up?”
- Complexity of patient population
- “The meds have so many complications and side-effects”
- “Rare” in clinical practice
- “It doesn’t happen here”



Antiretroviral Therapy: What Does It Do?

Antiretroviral therapy (ART) is the daily use of a combination of HIV medicines to treat HIV.

ART saves lives,
but does not cure HIV.

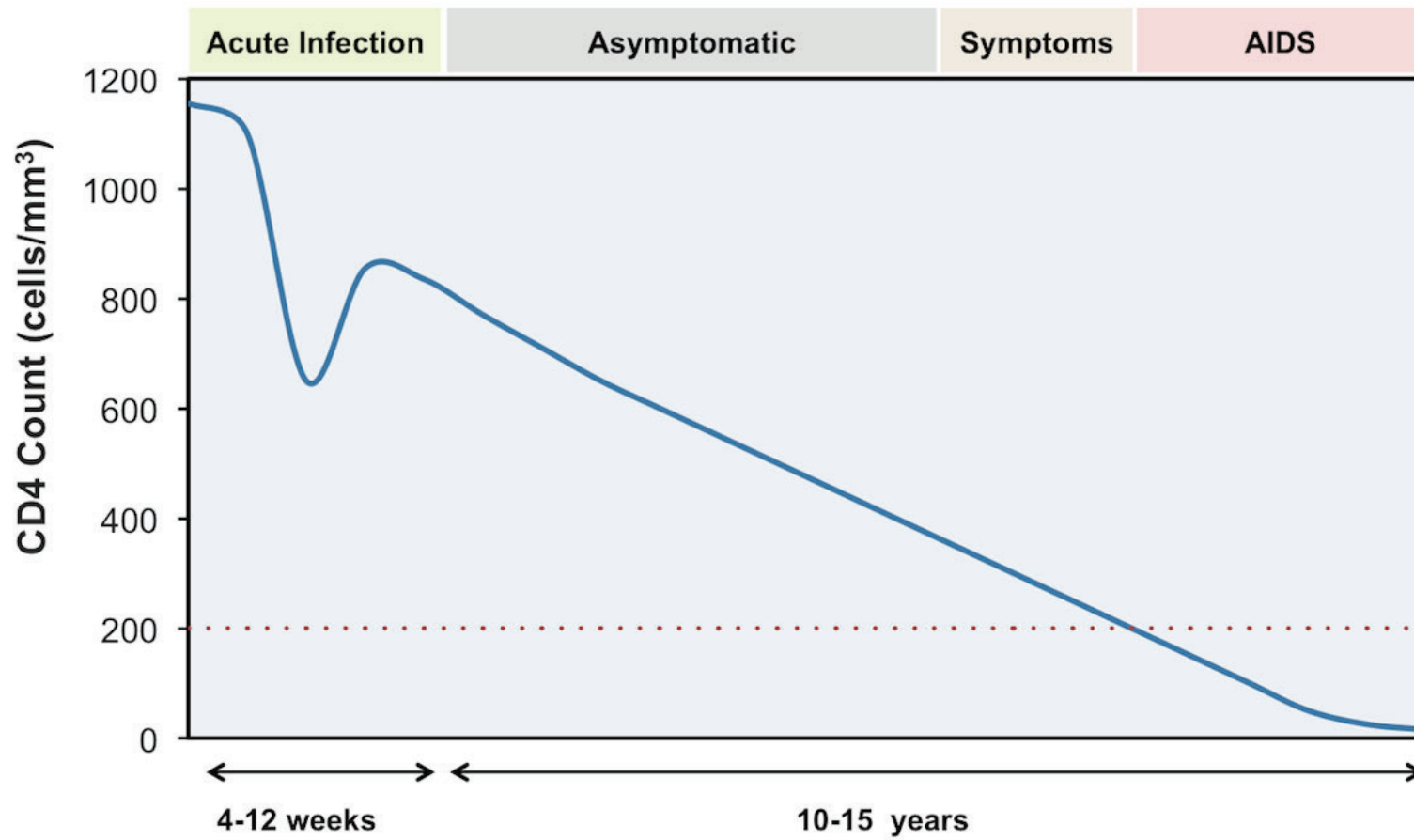


When a person with HIV has access to ART and takes it as prescribed, ART...

- ▶ **Reduces the amount of HIV in the body**
- ▶ **Reduces the risk of HIV transmission**
- ▶ **Prevents HIV from advancing to AIDS**
- ▶ **Protects the immune system**
- ▶ **Prolongs life expectancy to near-normal**

For more information, visit HIVinfo.NIH.gov.

NATURAL HISTORY OF HIV INFECTION WITHOUT ART



The HIV Life Cycle

HIV medicines in seven drug classes stop (X) HIV at different stages in the HIV life cycle.

1 Binding (also called Attachment): HIV binds (attaches itself) to receptors on the surface of a CD4 cell. Drugs in this/these classes stop this process.

- ✗ CCR5 Antagonist (CA)
- ✗ Post-attachment inhibitors (PAI)

2 Fusion: The HIV envelope and the CD4 cell membrane fuse (join together), which allows HIV to enter the CD4 cell. Drugs in this/these classes stop this process.

- ✗ Fusion inhibitors (FI)

3 Reverse Transcription: Inside the CD4 cell, HIV releases HIV RNA (its genetic material) and uses reverse transcriptase (an HIV enzyme) to convert HIV RNA into HIV DNA (to match the cell's genetic material). The conversion of HIV RNA to HIV DNA allows HIV genes to enter the CD4 cell nucleus and be combined with the cell's own genetic material. Drugs in this/these classes stop this process.

- ✗ Non-nucleoside reverse transcriptase inhibitors (NNRTIs)
- ✗ Nucleoside reverse transcriptase inhibitors (NRTIs)

7 Budding: Newly formed immature (noninfectious) HIV pushes itself out of the host CD4 cell. The new HIV releases protease (an HIV enzyme). Protease breaks up the protein chains of the immature virus into smaller functional pieces, creating the mature (infectious) virus. Drugs in this/these classes stop this process.

- ✗ Protease inhibitors (PIs)

6 Assembly: New HIV proteins and HIV RNA move to the surface of the cell and assemble into immature (noninfectious) HIV.

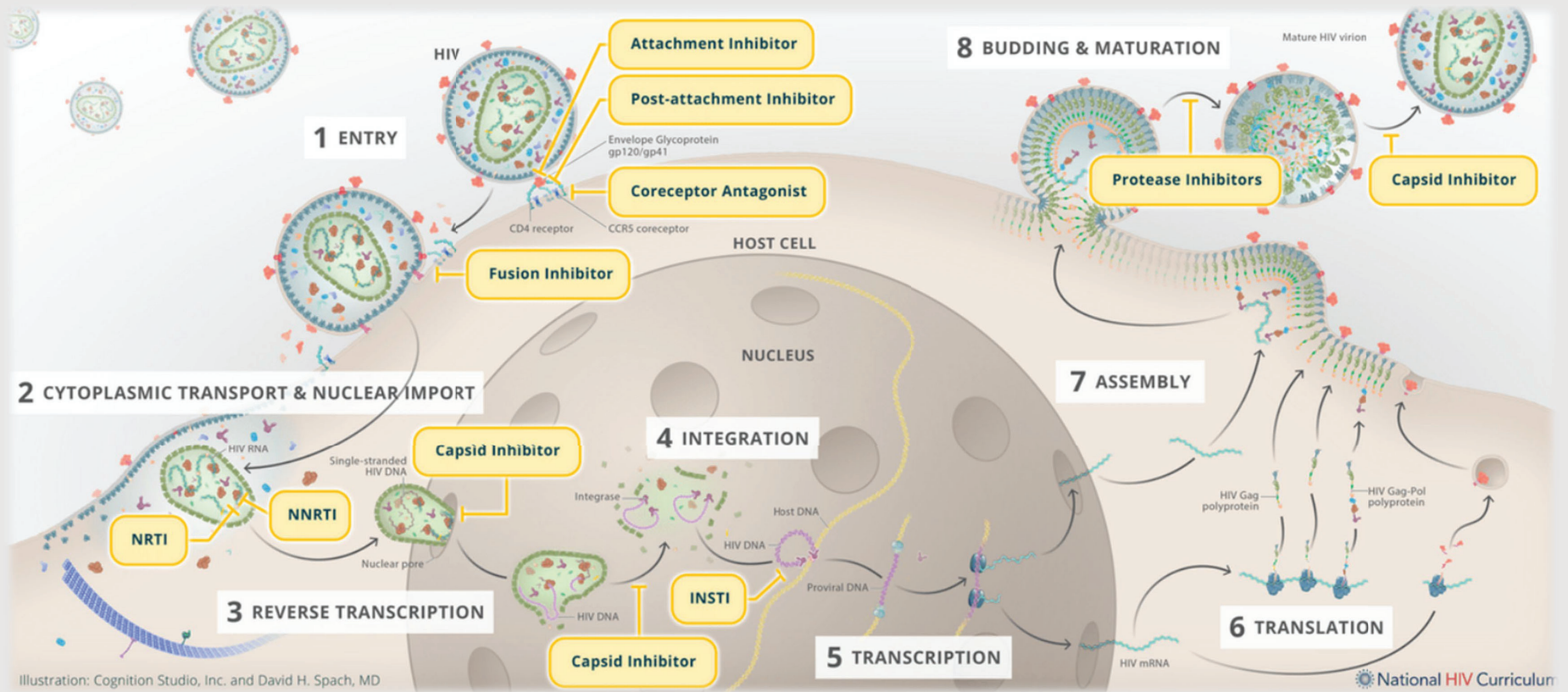
4 Integration: Inside the CD4 cell nucleus, HIV releases integrase (an HIV enzyme). HIV uses integrase to insert (integrate) its viral DNA into the DNA of the CD4 cell. Drugs in this/these classes stop this process.

- ✗ Integrase inhibitors (INSTI)

5 Replication: Once HIV's genetic material is integrated with the genetic material of the CD4 cell, HIV begins to use the machinery of the cell itself to build long chains of HIV proteins. These protein chains are the building blocks for more HIV.

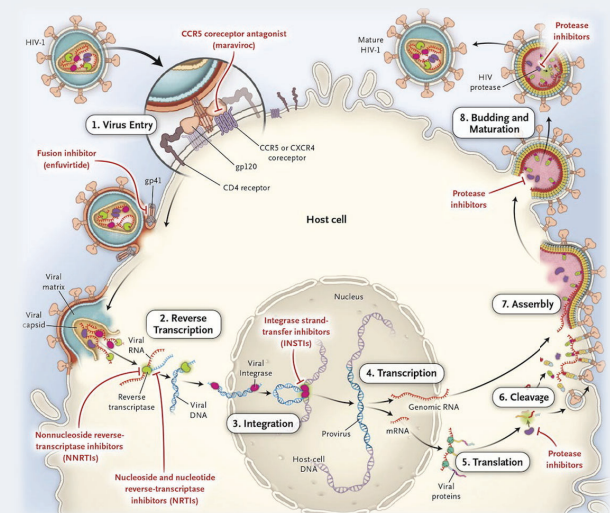
For more information, visit HIVinfo.NIH.gov.

HOW ART WORKS

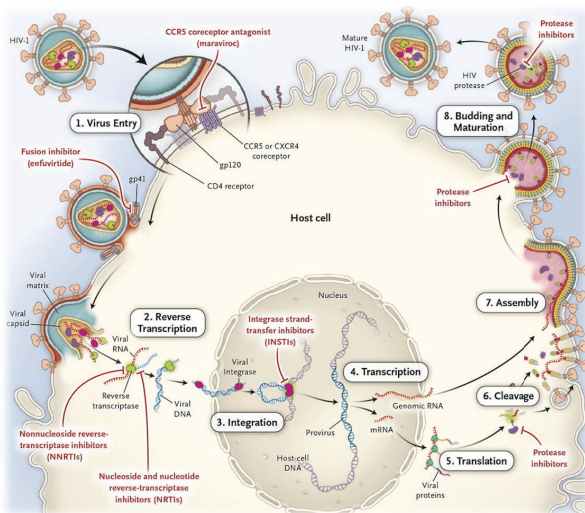


TYPES OF ART?

- Nucleoside/Nucleotide Reverse Transcriptase Inhibitors (NRTI)
- Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI)
- Integrase Inhibitors (INSTI)
- Protease Inhibitors (PI)
- Entry Inhibitors
- Boosting Agents



NUCLEOSIDE/NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITORS (NRTI)



Emtriva (emtricitabine) -FTC

Epivir (lamivudine) -3TC

Retrovir (zidovudine) -ZDV

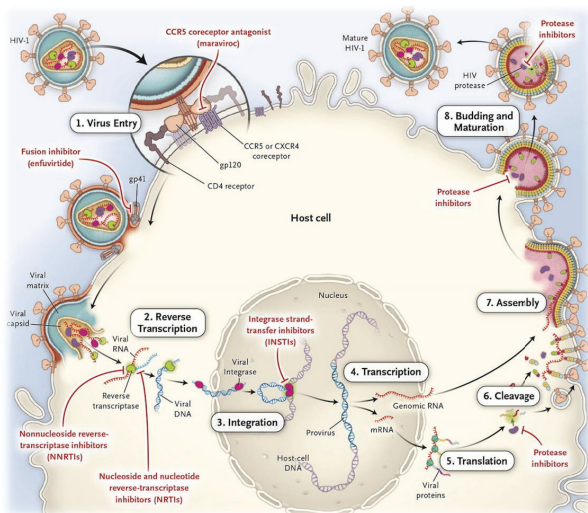
Viread (tenofovir DF) -TDF

Vemlidy (tenofovir AF) -TAF

Ziagen (abacavir) -ABC

Act as host nucleotide decoys and cause termination of the elongating HIV DNA chain

NON-NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITORS (NNRTI)



Edurant (rilpivirine) -RPV

Intelligence (etravirine) -ETR

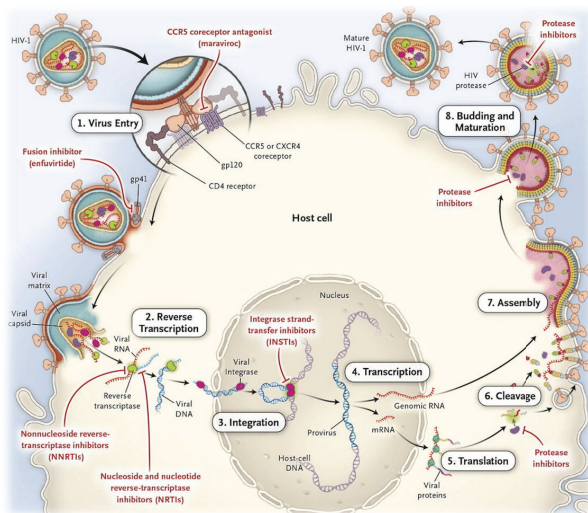
Pifeltro (doravirine) -DOR

Sustiva (efavirenz) -EFV

Viramune (nevirapine) -NVP

Bind directly to HIV reverse transcriptase enzyme and inhibit the function of the enzyme

INTEGRASE INHIBITORS (INSTI)



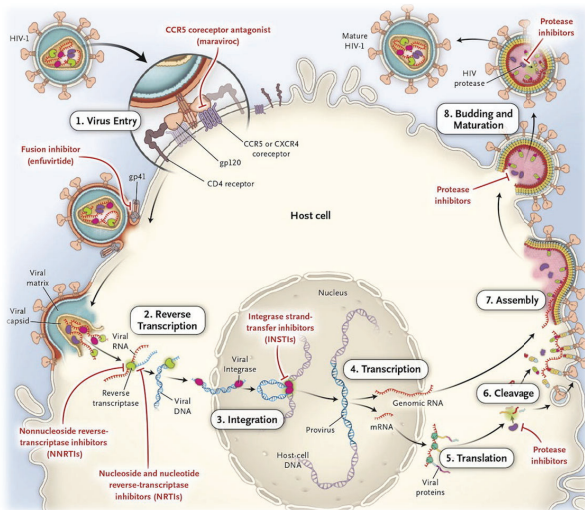
Isentress (raltegravir) – RAL

Isentress HD (Raltegravir) –RAL

Tivicay (dolutengravir) - DTG

Utilize multiple mechanisms to block the integrase enzyme

PROTEASE INHIBITORS (PI)



Lexiva (fosamprenavir) – FPV

Prezista (darunavir) –DRV

Reyataz (atazanavir) –ATV

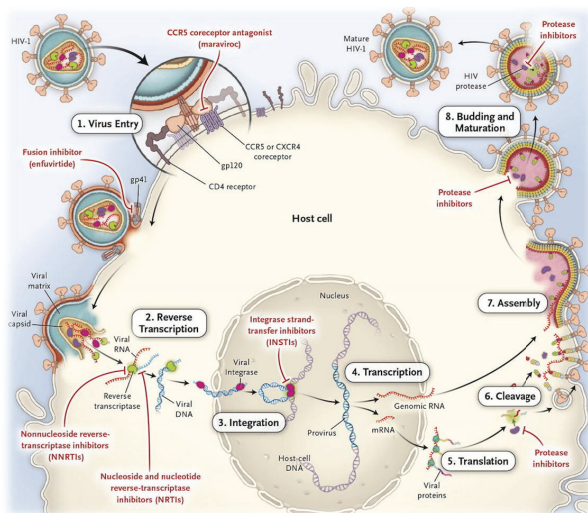
Viracept (nelfinavir) – NFV

Some are boosted Protease inhibitors

- Kaletra (lopinavir with ritonavir) – LPV/RTV
- Evotaz (atazanavir with cobicistat)
- Prezcofix (darunavir with cobicistat)

Bind to the active site of HIV protease and inhibit protease enzyme activity

ENTRY INHIBITORS



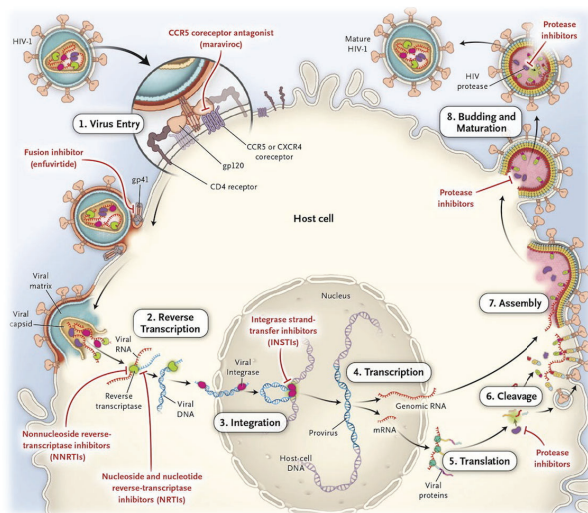
Fuzeon (enfuvirtide) – T-20 - Fusion Inhibitor

Selzentry (maraviroc) – MVC – CCR5 Antagonist

Trozargo (ibalizumab) – IBA - Post attachment inhibitor

In short, they prevent HIV from entering the host cell [*attachment, receptor binding, fusion with membrane*]

BOOSTING AGENTS



Norvir (ritonavir) – RTV

Tybost (cobicistat) - COBI

Act as host nucleotide decoys and cause termination of the elongating HIV DNA chain






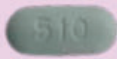








COMBINATION MEDS – THE MAJORITY!























Single-Tablet Regimens

<p>Bictegravir-Tenofovir alafenamide-Emtricitabine</p> <p><i>Biktarvy</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Darunavir-Cobicistat-Tenofovir alafenamide-Emtricitabine</p> <p><i>Symtuza</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Dolutegravir-Abacavir-Lamivudine</p> <p><i>Triumeq</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Dolutegravir-Lamivudine</p> <p><i>Dovato</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 
<p>Dolutegravir-Rilpivirine</p> <p><i>Juluca</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Doravirine-Tenofovir DF-Lamivudine</p> <p><i>Delstrigo</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Efavirenz-Tenofovir DF-Emtricitabine</p> <p><i>Atripla</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Elvitegravir-Cobicistat-Tenofovir alafenamide-Emtricitabine</p> <p><i>Genvoya</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 
<p>Elvitegravir-Cobicistat-Tenofovir DF-Emtricitabine</p> <p><i>Stribild</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Rilpivirine-Tenofovir alafenamide-Emtricitabine</p> <p><i>Odefsey</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	<p>Rilpivirine-Tenofovir DF-Emtricitabine</p> <p><i>Complera</i></p> <p>Prescribing Information » Clinical Trials » References » Slide Deck »</p> 	

HIV Medication Chart

Combination Antiretrovirals

Single-Tablet Regimens						Long-Acting Injectable Regimens	Regimens Used in Combination with Other HIV Medications	
Atripla [†] (EFV/TDF/FTC) 	Biktarvy (BIC/TAF/FTC) 	Complera (RPV/TDF/FTC) 	Delstrigo (DOR/TDF/3TC) 	Dovato (DTG/3TC) 	Genvoya (EVG/COBI/TAF/FTC) 	Cabenuva (CAB/RPV) 	Descovy (TAF/FTC) 	Truvada [†] (TDF/FTC) 
Juluca (DTG/RPV) 	Odefsey (RPV/TAF/FTC) 	Stribild (EVG/COBI/TDF/FTC) 	Symtuza (DRV/COBI/TAF/FTC) 	Triumeq (DTG/ABC/3TC) 				

Nucleoside/Nucleotide Reverse Transcriptase Inhibitors (NRTI)				Entry Inhibitors	Integrase Inhibitors (INSTI)
Emtriva ^{*†} (emtricitabine, FTC) 	Epivir ^{*†} (lamivudine, 3TC) 	Viread ^{*†} (tenofovir DF, TDF) 	Vemlidy (tenofovir alafenamide, TAF) FDA approved for <u>HBV only</u> 	Rukobia (fostemsavir, FTR) gp120 Attachment Inhibitor 	Isentress ^{*▲} (raltegravir, RAL) 
Protease Inhibitors (PI)				Selzentry [*] (maraviroc, MVC) CCR5 Antagonist 	Isentress HD (raltegravir, RAL) 
Evotaz (ATV/COBI) 	Prezcobix (DRV/COBI) 	Prezista ^{*†} (darunavir, DRV) 	Reyataz ^{*†} (atazanavir, ATV) 	Trogarzo (ibalizumab, IBA) Post-Attachment Inhibitor 	Tivicay [*] (dolutegravir, DTG) 
Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTI)				Sunlenca (lenacapavir, LEN) 	Boosting Agents
Edurant (rilpivirine, RPV) 	Intelence [†] (etravirine, ETR) 	Pifeltro (doravirine, DOR) 	Sustiva [†] (efavirenz, EFV) 	Norvir ^{*†} (ritonavir, RTV) 	Tybost (cobicistat, COBI) 
				Vocabria (cabotegravir, CAB) 	

All pills shown in relative size/scale. Medication brand names appear in bold. Generic names and commonly used abbreviations appear in parentheses.

* Also available in liquid or powder form. † Generic formulation available. ▲ Chewable form available.

LONG-ACTING ART

Table 1. Recommended Dosing Schedule with Optional Oral Lead-in or Direct to Injection for Monthly Injection

Drug	Optional Oral Lead-in ^a (at Least 28 Days)	Intramuscular (Gluteal) Initiation Injections (One-Time Dosing)	Intramuscular (Gluteal) Continuation Injections (Once-Monthly Dosing)
	Month (at Least 28 Days) Prior to Starting Injections	Initiate Injections at Month 1 ^b	One Month after Initiation Injection and Monthly Onwards
Cabotegravir	30 mg once daily with a meal	600 mg (3 mL)	400 mg (2 mL)
Rilpivirine	25 mg once daily with a meal	900 mg (3 mL)	600 mg (2 mL)

A DIFFERENT WAY TO TREAT HIV

Every other month, and you're good to go.

CABENUVA is given by a healthcare provider as 2 injections, initially 1 month apart for 2 months. Attend all appointments.



Unlike daily pills, **CABENUVA is a long-acting, complete HIV regimen** you can get monthly or every other month—that's as few as 6 times a year.



It's an injectable treatment that **works continuously to help you stay undetectable*** for up to 2 months, depending on the treatment plan.



With regular injections, you **won't have to take any more daily HIV pills.**[†]

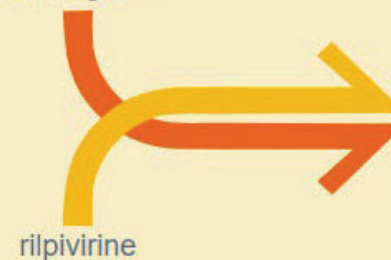
*Undetectable means the amount of HIV in the blood is below the level that can be measured by a lab test. Results may vary.

†Before your first injections, you may take daily starter pills for about a month to see how your body reacts.

HOW DOES LONG-ACTING CABENUVA WORK?

It contains 2 HIV medicines, cabotegravir and rilpivirine, to help keep you undetectable.* These 2 medicines slowly release over time to keep around the same level of medicine in your body between appointments.

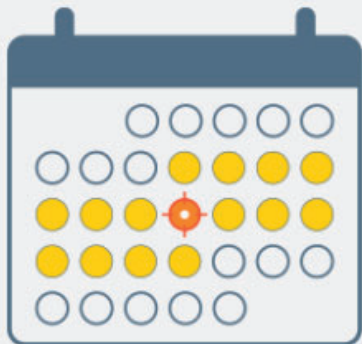
cabotegravir



rilpivirine

SCHEDULING CABENUVA TREATMENT

CABENUVA injections can be given by a healthcare professional once a month or every other month, depending on your treatment plan. To help stay undetectable, it's important to keep your planned appointments.

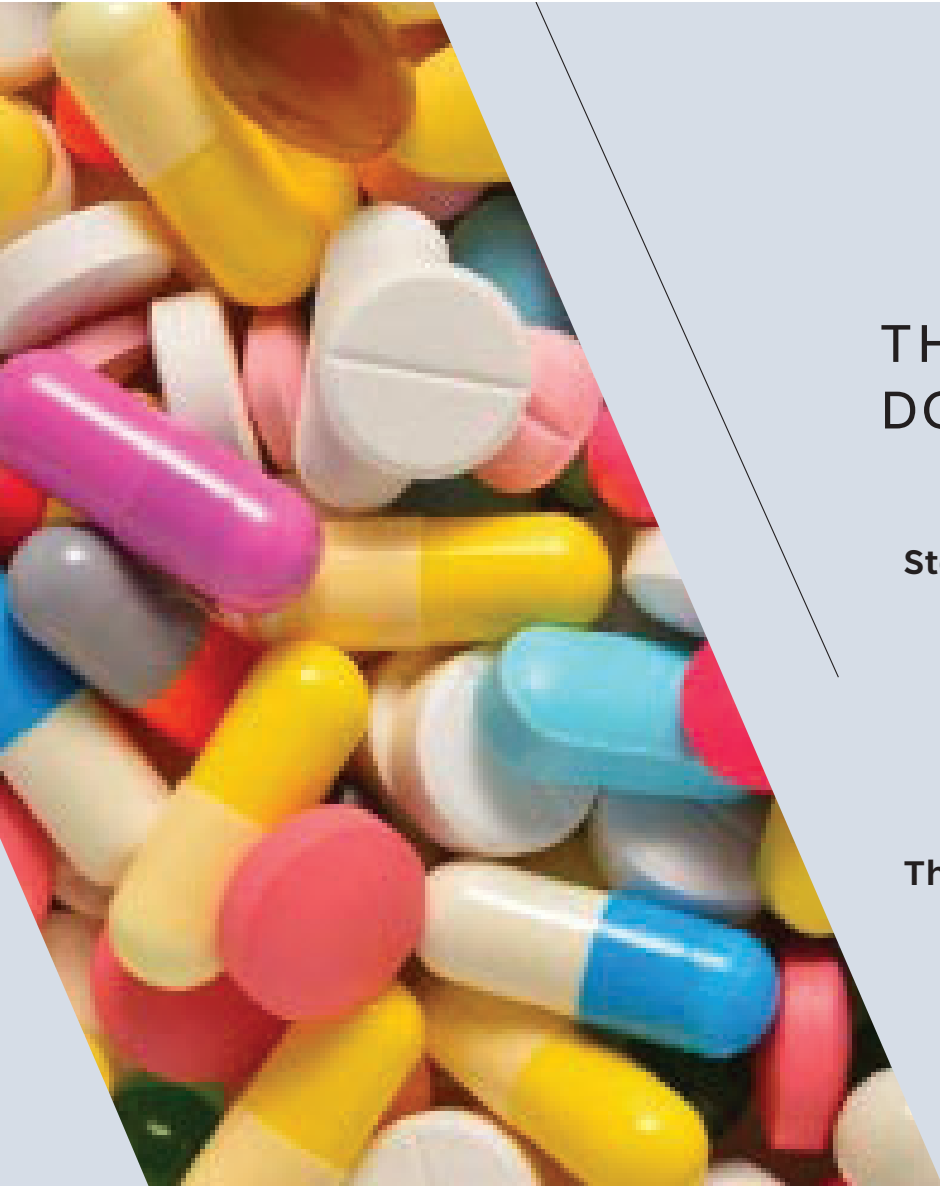


 **Target Treatment Date**

You and your doctor will choose an ongoing date that works best for your injection appointments. This is called your **Target Treatment Date**. If you can't make your appointment, be sure to contact your doctor right away.

 **Flexible Treatment Window**

You have a **Flexible Treatment Window** to schedule your appointment within—from 7 days before to 7 days after your Target Treatment Date.



THAT'S ALL GREAT... BUT WHAT DO I START?

Start with a “backbone” of two NRTIs

- Tenofovir-emtricitabine
- Avoid abacavir whenever possible
- Avoid Tenofovir DF if kidney disease/osteoporosis

Then add a third “anchor” drug – can be NNRTI, PI, or INSTI

- Bictegravir or dolutegravir

Rapid ART

Starting antiretroviral therapy (ART) immediately after HIV diagnosis is recommended by U.S. federal guidelines. Rapid ART (aka immediate ART) can result in earlier HIV viral suppression, improved retention in care, and reduced HIV transmission.



INDICATIONS

Rapid ART is appropriate for:

- Individuals with a confirmed HIV diagnosis (i.e., HIV Ag, Ab, and/or HIV RNA viral load)
- Persons with suspected acute HIV infection, with or without confirmed HIV diagnosis (HIV Ag or Ab test results may be negative or indeterminate at the time of evaluation)

Rapid ART is not appropriate for:

- Persons with certain untreated opportunistic infections (OIs)—e.g., the CNS infections cryptococcal or TB meningitis; begin OI treatment before starting ART (consult with experts)

COMPRESSED HIV INTAKE

- Review of HIV test results
- Targeted health history
- HIV risk behaviors
- Date of last negative HIV test
- Use of PrEP or PEP
- Psychoemotional counseling, support
- HIV education (including ART benefits, possible adverse effects, adherence, preventing transmission)
- Targeted physical exam
- Benefits counseling, insurance enrollment or optimization

Baseline Labs

- Repeat HIV testing (if indicated)
- HIV RNA (quantitative viral load)
- CD4 cell count
- HIV genotype, including integrase
- HLA-B*5701
- CBC/differential
- Complete metabolic panel (kidney & liver tests, glucose)
- STI testing: syphilis test (RPR, VDRL, or treponemal), chlamydia and gonorrhea NAAT tests (urine, pharynx, rectum as indicated by sites of exposure)
- TB screening test (e.g., Quantiferon)
- Hepatitis serologies (HAV IgG, HBsAb, HBsAg, HBeAb, HCV IgG)
- Pregnancy test (if appropriate)

AIDS Education and Training Center Program. January 2023. AIDSETC.org

Offer ART

- If patient agrees and there are no contraindications, prescribe 30-day supply, give starter pack if available
- If patient declines immediate ART, follow up within 1-2 weeks, re-offer ART, continue HIV education

RECOMMENDED REGIMENS

These can be modified based on results of baseline labs.

- Dolutegravir (Tivicay), 50 mg once daily + [TAF/FTC (Descovy), TDF/FTC (Truvada), or TDF/3TC] 1 once daily
- Bictegravir/TAF/FTC (Biktarvy) 1 once daily
- Darunavir/cobicistat/TAF/FTC (Symtuza) 1 once daily

If taking PrEP or PEP at or since the time of HIV infection:

- Consider an enhanced regimen: boosted PI + integrase inhibitor + TAF/FTC (Descovy), TDF/FTC (Truvada), or TDF/3TC; seek consultation
- If on injectable cabotegravir PrEP, consider boosted PI + TAF/FTC (Descovy), TDF/FTC (Truvada), or TDF/3TC

If pregnant or trying to conceive (some antiretrovirals are not recommended during pregnancy):

- Dolutegravir (Tivicay), 50 mg once daily + [TAF/FTC (Descovy), TDF/FTC (Truvada), or TDF/3TC] 1 once daily
- Other options may be appropriate; consult with expert

Abbreviations: 3TC: lamivudine; FTC: emtricitabine; PI: protease inhibitor; TAF: tenofovir alafenamide; TDF: tenofovir disoproxil fumarate; BID: twice daily

FOLLOW UP

Schedule a follow-up visit for 1-2 weeks, then at least monthly until well established in care

RESOURCES / REFERENCES

- **AETC National Clinician Consultation Center** Monday–Friday 9 AM to 8 PM ET / 800-933-3413
- See **full Rapid ART guide** at <https://aidsetc.org/rapid-art>
- Based on: Getting to Zero San Francisco. **Rapid ART: Immediate ART initiation at HIV diagnosis and re-engagement in care** at: www.gettingtozerosf.org

RAPID START ART

- Ideally, ART would be started the **same day** as diagnosis
- Benefits
 - Prevention of low CD4 is shown to prevent decreased overall morbidity/mortality
- Why aren't we doing this a primary care providers?
 - Fear
 - Lack of education
 - Poor collaboration



WHEN TO DELAY START OF ART IN PRIMARY CARE

- Rather than delay – make urgent referral to infectious disease
- RARE to delay
- Patient preference
- Multiple severe, poorly managed co-morbidities
- Prior history of multiple ART regimens

WHAT NOT TO DO!

- Monotherapy with ANY ARV Regimen
- Dual Therapy with two NRTIs
- Triple therapy with three NRTIs
- TAF plus TDF



MONITORING RESPONSE TO MEDS

- Baseline HIV viral load and CD4
- **ANY time there is a change in clinical status – recheck labs**
- Recheck a CD4 every 3-6 months for the first 2 years of therapy
 - THEN:
 - If less than 300 – every 3-6 months
 - 300-500 – every 12 months
 - If consistently greater than 500 – optional (CHCBH still checks every 12mo)
- Repeat viral load in 2-8 weeks, no later than 8 weeks
 - Recheck VL every 4-8 weeks until virally suppressed
 - After fully suppressed – extend VL to every 3-4 months for 1-2 years
 - Long-term suppression – VL every 6 months

BUT MY PATIENT IS ON OTHER MEDS, NOW WHAT DO I DO?

[HIV and HCV Drug Interactions: Quick Guides for Clinicians](#)



HIVinfo.NIH.gov: HIV treatment – side effects

HIV Drugs	Co-medications	Drug Interactions
<input type="text" value="Search HIV drugs..."/>	<input type="text" value="Search co-medications..."/>	<input type="checkbox"/> Check HIV/ HIV drug interactions
<input type="radio"/> A-Z <input type="radio"/> Class <input type="radio"/> Trade	<input type="radio"/> A-Z <input type="radio"/> Class <input type="radio"/> Trade	<input type="button" value="Switch to table view"/>
<input type="checkbox"/> Emtricitabine (FTC)	<input type="checkbox"/> Amodiaquine	<input type="button" value="Reset Checker"/>
<input checked="" type="checkbox"/> Emtricitabine/Tenofovir alafenamide for PrEP (FTC/TAF, PrEP)	<input checked="" type="checkbox"/> Amoxicillin	<input type="button" value="No Interaction Expected"/>
<input type="checkbox"/> Emtricitabine/Tenofovir alafenamide (FTC/TAF)	<input type="checkbox"/> Amphetamine	Emtricitabine/Tenofovir alafenamide for PrEP (FTC/TAF, PrEP)
<input type="checkbox"/> Emtricitabine/Tenofovir-DF (FTC/TDF, PrEP)	<input type="checkbox"/> Amphotericin B	Amoxicillin
	<input type="checkbox"/> Ampicillin	<input type="button" value="More Info"/>

[University of Liverpool: HIV Drug Interactions Checker](#)

MEDICATIONS – KEY CONCEPTS

Steroids

- HIV medications can increase concentrations
 - Cushing's syndrome adrenal suppression
- More common with “boosters”
- Adjust dosing for:
 - Most inhaled steroids
 - Prednisone
- AVOID Flonase

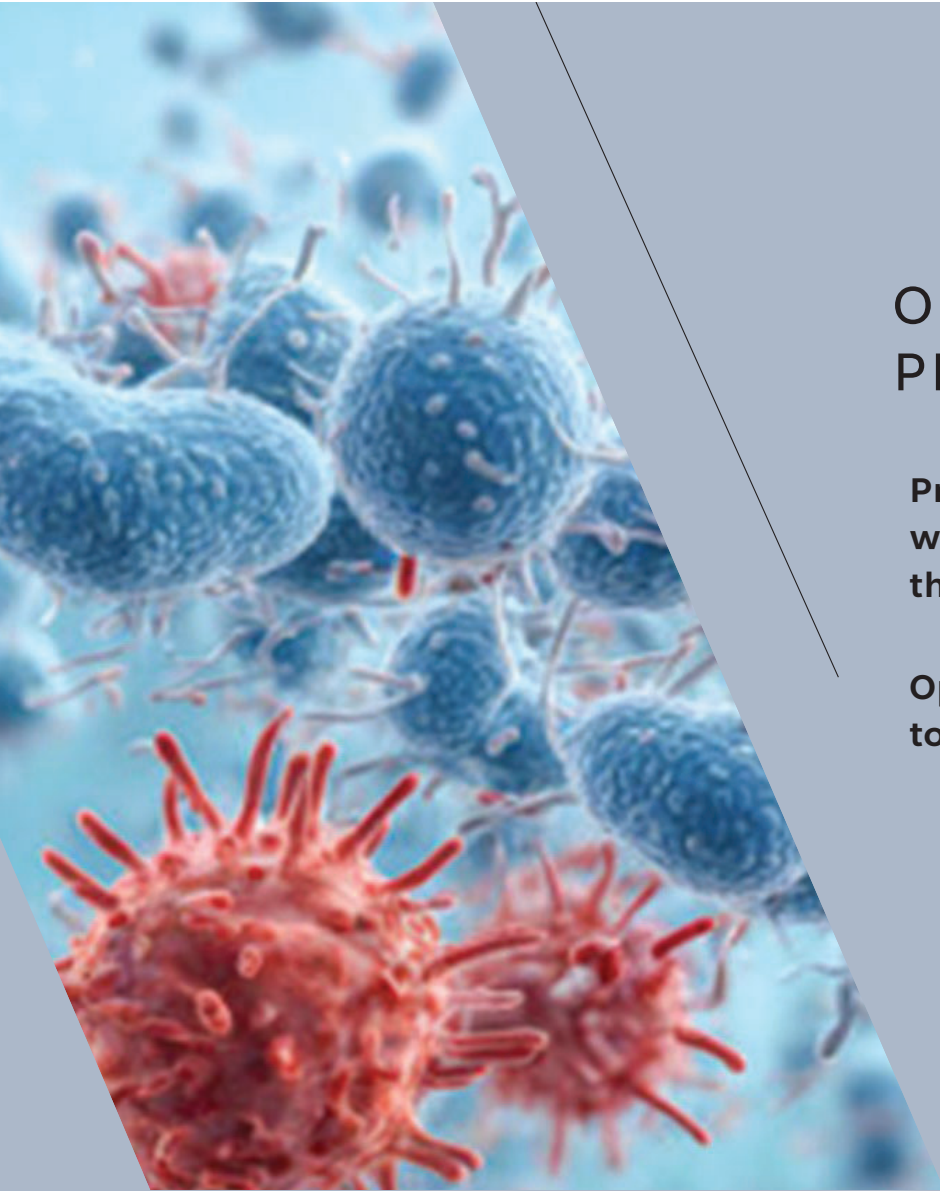
Over the Counter (OTC)

- St. John's Wort – CP450 3A4
 - May reduce concentration of PIs and NNRTIs by as much as 82%
- Garlic – topic of debate
- PPIs and H2 receptor antagonists
- Antacids – magnesium and/or aluminum
 - neutralize stomach acids and may interfere with absorption of ART



Other common opportunistic infections in PLWH

Coccidioidomycosis | Cryptococcal meningitis | Cytomegalovirus
Histoplasmosis | Kaposi Sarcoma | Toxoplasmosis



OPPORTUNISTIC INFECTIONS (OI): PREVENTION

Primary care providers need a basic understanding of what opportunistic infections are and how to prevent them from occurring

Opportunistic infections are more frequent or severe due to immunosuppression

- Most common in undiagnosed HIV, those with late diagnosis, or those with poor retention in care
- Typically occur with a CD4 count less than 200
- AIDS-defining infections

OPPORTUNISTIC INFECTIONS:

Prevention of *Pneumocystis* Pneumonia

Pneumocystis pneumonia

- Prior to ART, this infected up to 80% of patients with AIDS
- 90% of those who get PCP have a CD4 less than 200

Indications for primary prophylaxis

- CD4 less than 200
- CD4 percentage less than 14%
- CD4 200-250 and ART needs to be delayed and unable to monitor CD4 every 3 months

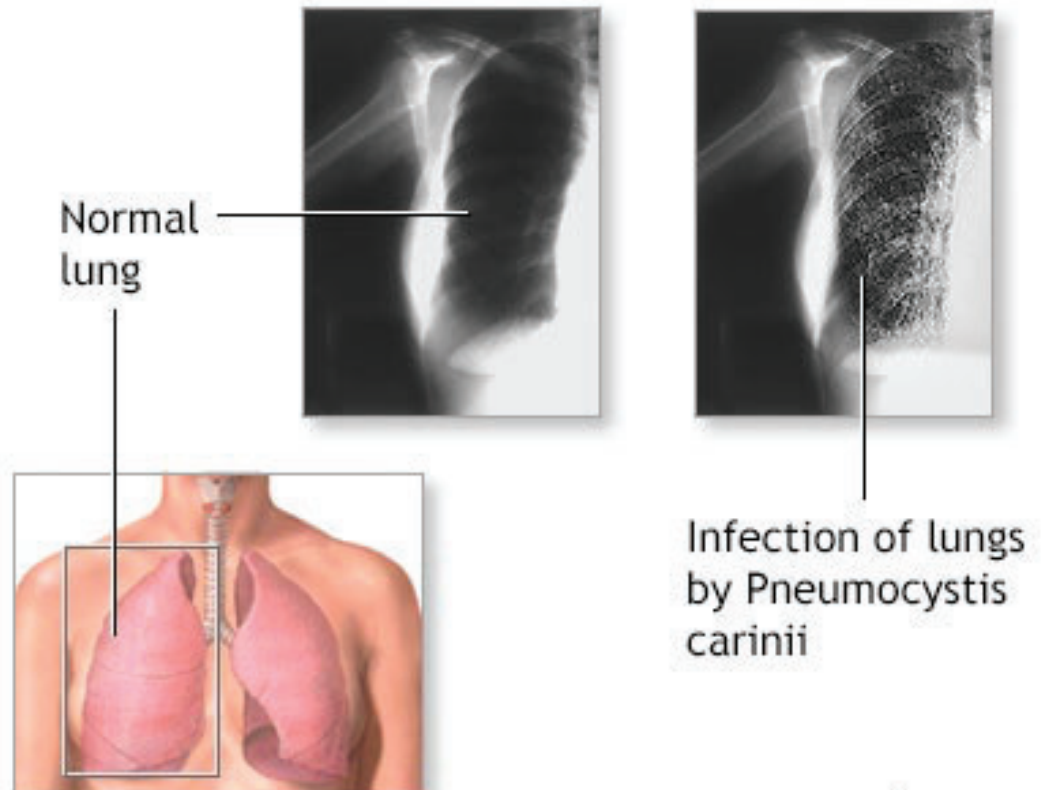
Regimen: Trimethoprim-sulfamethoxazole tablet daily

When to discontinue primary prophylaxis

- CD4 greater than 200 for at least 3 months or CD4 100-200 for 3-6 months with an undetectable viral load

PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

- Fever
- Cough
- Shortness of breath
- Chest pain
- Chills
- Fatigue
- Weight Loss



OPPORTUNISTIC INFECTIONS:

Prevention of Disseminated *Mycobacterium avium* Complex (MAC)

MAC: Non-tubercular mycobacterium found in environment – infection causes fever, night sweats, weight loss, fatigue, diarrhea, anemia

- Usually in those not on ART or with resistance
- If disseminated – may take several weeks for culture to be positive

Indications for primary prophylaxis

- CD4 less than 50
 - *If suspect active MAC – get cultures before starting treatment*

Regimen:

- Azithromycin 1200mg/week or 600mg 2x/week

When to discontinue primary prophylaxis

- Effective ART has been started – regardless of CD4 count

HEALTH MAINTENANCE

- STI testing and Trichomoniasis at diagnosis - then every 3 months, *and at least annually*
- Syphilis at diagnosis - every 3 months, *and at least annually*
- Pap at diagnosis - then routine if normal, if abnormal follow ASCCP guidelines
- Anal Pap smear at diagnosis - *research pending*
- Mental health/substance use disorder screening - bi-annually
- Cholesterol panel at diagnosis - then 1-3 months after starting meds
- DEXA scan at age 50 - then based on sex assigned at birth
- People with HIV should receive evidence-based, patient-centered counseling to support shared decision-making about infant feeding

HEALTH MAINTENANCE

- TB screening at diagnosis - and annually
- Hep A/B/C testing at diagnosis - and annually
- HPV vaccine - all PLWH up to age 45
- STOP SMOKING
- Dentist every 6 months
- Yearly eye exam

Table 2 Recommended Adult Immunization Schedule by Medical Condition or Other Indication, United States, 2024

Always use this table in conjunction with Table 1 and the Notes that follow. Medical conditions or indications are often not mutually exclusive. If multiple medical conditions or indications are present, refer to guidance in all relevant columns. See Notes for medical conditions or indications not listed.

VACCINE	Pregnancy	Immunocompromised (excluding HIV infection)	HIV infection CD4 percentage and count		Men who have sex with men	Asplenia, complement deficiency	Heart or lung disease	Kidney failure, End-stage renal disease or on dialysis	Chronic liver disease; alcoholism ^a	Diabetes	Healthcare Personnel ^b
			<15% or <200mm ³	≥15% and ≥200mm ³							
COVID-19	See Notes										
IIV4 or RIV4	1 dose annually										
LAIV4			1 dose annually if age 19–49 years			1 dose annually if age 19–49 years					
RSV	Seasonal administration. See Notes.	See Notes									See Notes
Tdap or Td	Tdap: 1 dose each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	*										
VAR	*	See Notes									
RZV		See Notes									
HPV	*	3 dose series if indicated									
Pneumococcal											
HepA											
Hep B	See Notes										Age ≥ 60 years
MenACWY											
MenB											
Hib		HSCT: 3 doses ^c									Asplenia: 1 dose
Mpox	See Notes		See Notes							See Notes	

 Recommended for all adults who lack documentation of vaccination, OR lack evidence of immunity
 Not recommended for all adults, but recommended for some adults based on either age OR increased risk for or severe outcomes from disease
 Recommended based on shared clinical decision-making
 Recommended for all adults, and additional doses may be necessary based on medical condition or other indications. See Notes.
 Precaution: Might be indicated if benefit of protection outweighs risk of adverse reaction
 Contraindicated or not recommended
 *Vaccinate after pregnancy, if indicated
 No Guidance/Not Applicable

a. Precaution for LAIV4 does not apply to alcoholism. b. See notes for influenza; hepatitis B; measles, mumps, and rubella; and varicella vaccinations. c. Hematopoietic stem cell transplant.

IMMUNIZATIONS

- **NO LIVE VACCINES – avoid FluMist**
- **Know your CD4 before giving vaccinations**
 - No varicella, MMR, or Zoster if CD4 less than 200
- **Yes, they need a Covid vaccine.**
- [Vaccinations for Adults with HIV Infection](#)



It takes a team to stay healthy with HIV. Who's on your team?

Case Managers can help a person with HIV by connecting them with services.

Pharmacists can fill prescriptions and answer questions about ART and other medications.

Health Care Providers run tests, prescribe medicines, and work with a person to select an HIV regimen.

Partners, Friends and Family offer support and help a person with HIV live a healthy lifestyle.



For more information, visit HIVinfo.NIH.gov.