MWAETC Addiction Medicine Webinar:
Alcohol and Tobacco Use
Among People with HIV

Wednesday, June 12, 2024
Presented by:

Geetanjali Chander, MD, MPH
Professor of Medicine
Division Head
Division of General Internal Medicine
University of Washington
Alcohol and tobacco use among people with HIV

Geetanjali Chander, MD MPH
Professor of Medicine
University of Washington
Seattle, WA
Financial Relationships With Ineligible Companies* Within the Last 2 Years

Presenter
Dr. Chander has no financial disclosures or conflicts of interest
Poll #1

When do you personally screen for alcohol use in your practice?

1. At the initial visit only
2. At annual visits
3. At every visit
4. Only when alcohol use disorder is suspected
Poll #2

How often do you ask your patients about alcohol use when they experience viral rebound?

1. Always
2. Often
3. Sometimes
4. Never
Learning Objectives

Upon completion of this activity, learners will be able to:

• **Describe** the roles of unhealthy alcohol use and tobacco smoking on HIV-related morbidity and mortality

• **Implement** optimal screening **methods** for alcohol and tobacco use in HIV clinical settings

• **List** evidence-based therapies for alcohol and tobacco use among people with HIV
A 40 year old cisgender man with HIV infection presents with a viral load of 1500 copies after being undetectable for the last 12 months. Screening with the AUDIT-C reveals a score of 7. He smokes tobacco but he has no opioid or stimulant use. In addition to expressing concern about his viral load and alcohol use, what is the appropriate next step.

1. Assess for alcohol use disorder
2. Prescribe naltrexone
3. Prescribe disulfiram
4. Refer to psychiatry for further evaluation
Pretest Question #2

25 year old diagnosed with HIV 2 years ago on routine testing after presenting with a new STI. They have been persistently undetectable on 3TC/DTG since diagnosis. They have smoked 1 pack of cigarettes per day for the past 8 years. On routine screening they note they are interested in quitting tobacco use. Which of the following treatments has been demonstrated to the highest quit rate among people with tobacco use disorder?

1) Nicotine gum
2) Nicotine lozenge
3) Bupropion
4) Varenicline
5) Nicotine patch
Overview

- Unhealthy alcohol use, the HIV care continuum and comorbidities
- Screening and interventions for unhealthy alcohol use among PWH
- Tobacco use among PWH
- Management of tobacco use disorder in HIV clinical settings
Spectrum of unhealthy alcohol use

At-Risk Alcohol Use:
- Men < 65 years old: >4 drinks/occasion; >14 drinks/week
- Women and Men > 65 years old: >3 drinks/occasion; >7 drinks/week
- Transgender persons >4 drinks per occasion or AUDIT-C ≥3

Unhealthy Alcohol Use: HIV – 27%
Unhealthy alcohol use and the HIV Care Continuum

HIV care metrics assessed in year following AUDIT-C:
- Engaged in care: by CD4 or HIV viral load test
- Treatment with ART: at least one filled prescription
- Viral suppression: <500 copies/mL based on first lab after AUDIT-C

Sample: VACS N=33,224

Williams EC AIDS Behav 2018
Unhealthy alcohol use and viral suppression

Time Spent with HIV Viral Load > 1500 Copies/mL Among Persons Engaged in Continuity HIV Care in an Urban Clinic in the United States, 2010–2015

Catherine R. Lesko1, Bryan Lau1, Geetanjali Chander1,2, Richard D. Moore1,2

Changing Patterns of Alcohol Use and Probability of Unsuppressed Viral Load Among Treated Patients with HIV Engaged in Routine Care in the United States

Catherine R. Lesko1, Robin M. Nance2, Bryan Lau1, Anthony T. Fojo1, Heidi E. Hutton6, Joseph A. C. Delaney2, Heidi M. Crane2, Karen L. Cropsey6, Kenneth H. Mayer7, Sonia Napravnik8, Elvin Geng9, W. Christopher Mathews10, Mary E. McCaul3,4, Geetanjali Chander2 on behalf of the CNICS

Alcohol Use Disorder and Recent Alcohol Use and HIV Viral Non-Suppression Among People Engaged in HIV Care in an Urban Clinic, 2014–2018

Catherine R. Lesko1, Heidi E. Hutton1, Jessie K. Edwards3, Mary E. McCaul2, Anthony T. Fojo4, Jeanne C. Kersuly4, Richard D. Moore4, Geetanjali Chander4
Unhealthy alcohol use and retention in care

PWH with heavy alcohol use 22% less likely to be retained in care; individuals with binge/heavy episodic drinking 10% less likely to be retained in care (IOM definition)

Unhealthy alcohol use and comorbidities

Comorbidities

Alcohol use and mental health disorders
  Depression, anxiety, trauma

Alcohol and other substance use
  • Opioids, stimulants, cannabis

Alcohol use and tobacco

Alcohol use and co-infections
  HCV, TB, Pneumonia

Alcohol use and chronic disease
  Diabetes, HTN, CVD

Alcohol use and liver disease

Alcohol use and cognition

Alcohol use and cancer

Mortality
Integration of evidence-based alcohol treatment in HIV Clinical Settings

• Among PWH, unhealthy alcohol use and alcohol use disorders (AUD) are associated with lower utilization of medical treatment, poorer medication adherence and HIV transmission risk behaviors, liver disease progression and mortality.

• Implementation of evidence-based alcohol treatment strategies in this population is critically needed.

• Most people in need of alcohol treatment do not access subspecialty services (SAMHSA)
  Not ready to stop, cannot afford, negative impact on job, unsure of where to go, stigma

• Given potential barriers to accessing traditional alcohol treatment services, integration of alcohol reduction strategies into HIV care and other clinical settings may increase treatment access and improve HIV outcomes
Unhealthy alcohol use: Management in HIV Care

- None/Never exceeds limit
- At-risk/Hazardous
- Mild AUD
- Moderate AUD
- Severe AUD

Screen annually → Brief Intervention
Pharmacotherapy; Behavioral Treatment, Alcohol Treatment Program, Psychiatric Care

Screening for unhealthy alcohol use

- **Who should we screen?**
  - All individuals presenting to care
  - Screen at baseline, and if negative, repeat at least annually, if positive, at every visit
    - New viremia, viral rebound
    - Transaminitis
    - High blood sugar/Blood pressure
    - Trauma, accidents
    - Depression/Anxiety and other mental health disorders
    - Tobacco and other substance use

- **What should we use?**
  - Alcohol: National Institute on Alcohol Abuse and Alcoholism recommends single question
    - How often in the last year have you had 4 or more drinks (women) or 5 or more drinks (men);¹
    - if ≥1, follow-up with quantity/frequency questions;
  - Alcohol Use Disorders Test-Consumption (AUDIT-C) Clarify that alcohol includes beer, wine, liquor

Alcohol Use Disorders Identification Test-Consumption

**Question 1**: How often do you have a drink containing alcohol?
(0) Never (1) Monthly or less (2) 2 to 4 times a month (3) 2 to 3 times a week (4) 4 or more times a week

**Question 2**: How many drinks containing alcohol do you have on a typical day when you are drinking?
(0) 1 or 2 (1) 3 or 4 (2) 5 or 6 (3) 7, 8, or 9 (4) 10 or more

**Question 3**: How often do you have 4 or more (women) 5 or more (men) drinks on one occasion?
(0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily

*A positive test is >3 in women/TG individuals, >4 in men*
Assessing for alcohol use disorder

AUD Symptom Checklist
Severity based on the number of criteria a person meets based on their symptoms—mild (2–3 criteria), moderate (4–5 criteria), or severe (6 or more criteria).
Definition of a standard drink

- 1 ½ ounces of hard liquor, 80 proof vodka, rum, whiskey
- 5 ounce glass of wine, 12% alcohol, red or white
- 12 ounce can/bottle of beer, 5% alcohol
Brief alcohol intervention

- Recommended by the USPTF for persons with unhealthy alcohol use

- Generally consists of 4 or fewer sessions
  - Typically lasted 5 – 15 minutes;
  - Includes non-judgmental normative feedback and advice to cut-down or stop drinking;
  - Advice placed in the context of recommended limits and health
  - May provide patients with written material to reinforce the intervention.

- Can consist of components of motivational interviewing, addressing ambivalence, and elements of CBT with goal settings and coping strategies

- Evidence suggests that follow-up visits further enhance outcomes

- 2018 review of BI for unhealthy alcohol use demonstrated reduced number of drinks per week among persons receiving BI versus control, with 14% more participants drinking below limits

  Recommendation: Unhealthy Alcohol Use in Adolescents and Adults: Screening and Behavioral Counseling Interventions | United States Preventive Services Taskforce (uspreventiveservicestaskforce.org)
Brief alcohol intervention: NIAAA 7 steps

1. Ask permission: Start by setting the agenda to discuss alcohol use.
   “If it is okay with you, I would like to discuss your alcohol use”

2. Give feedback and advice
   Based on current screening, link to current health (mental health, physical health)
   Provide advice (noting alcohol reduction may improve current health).
   - No AUD, recommend cutting down to safer limits;
   - AUD state concern, advice to reduce or quit, EBI, behavioral health, referral

3. Check in: Ask what patients think of this information
   - Assess understanding, readiness to change
   - Dispel misconceptions

4. Build motivation: Briefly explore reasons for making a change.
   - Open ended questions ( “what might be some benefits of cutting back?”); Listening for change talk

5. Offer support: Express empathy and encourage autonomy.
   - Maintain empathy, non-judgmental tone, person many not be ready to change but conversation
     opens a “door” to future communication

6. Identify next steps: Work together to develop a plan for change.

7. Follow up: Continue the dialogue at the next visit.

Conduct a Brief Intervention: Build Motivation and a Plan for Change | National Institute on Alcohol Abuse and Alcoholism (NIAAA) (nih.gov)
None/Neversexceeds limit
At-risk/Hazardous

MildAUD

ModerateAUD

Severe AUD

Screen annually
Brief Intervention
Pharmacotherapy, Behavioral Treatment,
Alcohol Treatment Program, Psychiatric
Care

Adapted from Willenbring ML, et al. American Family Physician. 2009. Volume 80, issue 1 and
Pharmacotherapy for Alcohol Use Disorder: Rationale

- Evidence suggests that BI may not reduce drinking in patients with more serious drinking problems.
- As in management of other chronic health problems (depression, tobacco, OUD), medications may offer the next level of intervention.
- Medications can target neurotransmitters involved in the reinforcing and anxiolytic effects of alcohol use.
- Beneficial in combination with non-pharmacologic therapy, including counseling and other behavioral therapies.
- 3 FDA approved therapies for AUD: Naltrexone (po and IM), Acamprosate and Disulfiram.
- Data from 2019 NSDUH suggest that 1.6% patients with AUD receive FDA approved medication for AUD (Han, 2021).

Pharmacotherapy for AUD: Rationale for use

Naltrexone

- Blocks opioid receptors, attenuates positive reinforcing effects of alcohol consumption
- Decreases heavy drinking days and return to heavy drinking; decreases craving
- Mechanism of action: Opioid receptor antagonist
- Indication: Moderate to severe alcohol use disorder
- Typical adult dosing: 50mg Daily (oral) or 380mg IM Q28Days (injectable)
- Side effects: Nausea / vomiting, dizziness, headache, elevated LFTs, injection site reaction, decreased appetite
- Contraindicated: Acute hepatitis, liver enzymes ≥3 to 5 times normal, or liver failure; opioid use or risk of opioid withdrawal
- Monitoring: Periodic liver function tests

Naltrexone use among PWH
Acamprosate

Restores balance of excitation and inhibition dysregulated by alcohol exposure (reduces craving)

Mechanism of action: Increase the activity of the GABAergic system, and decreases activity of glutamate

Indication: Moderate to severe alcohol use disorder (during abstinence, e.g., after alcohol treatment)

Dosing: 666mg TID if CrCl > 50 mL/minute; 333mg TID if CrCl 31-50 mL/minute

Side effects: Diarrhea, nervousness, fatigue

Contraindicated: severe renal impairment (CrCl ≤ 30 mL/minute)

Monitoring: Renal function, weight

<table>
<thead>
<tr>
<th></th>
<th>Acamprosate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Return to any drinking</strong></td>
<td></td>
</tr>
<tr>
<td>No. of studies</td>
<td>20</td>
</tr>
<tr>
<td>No. of participants</td>
<td>6380</td>
</tr>
<tr>
<td>Results effect size (95% CI)</td>
<td>RR, 0.88</td>
</tr>
<tr>
<td></td>
<td>(0.83-0.93)</td>
</tr>
<tr>
<td>Number needed to treat (95% CI)</td>
<td>11 (1-32)</td>
</tr>
<tr>
<td>Strength of evidence</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Acamprosate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Return to heavy drinking</strong></td>
<td></td>
</tr>
<tr>
<td>No. of studies</td>
<td>7</td>
</tr>
<tr>
<td>No. of participants</td>
<td>2496</td>
</tr>
<tr>
<td>Results effect size (95% CI)</td>
<td>RR, 0.99</td>
</tr>
<tr>
<td></td>
<td>(0.94-1.05)</td>
</tr>
<tr>
<td>Number needed to treat (95% CI)</td>
<td></td>
</tr>
<tr>
<td>Strength of evidence</td>
<td>Moderate (no effect)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Acamprosate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Percentage of drinking days</strong></td>
<td></td>
</tr>
<tr>
<td>No. of studies</td>
<td>14</td>
</tr>
<tr>
<td>No. of participants</td>
<td>4916</td>
</tr>
<tr>
<td>Results effect size (95% CI)</td>
<td>WMD, -8.3</td>
</tr>
<tr>
<td></td>
<td>(-12.2 to -4.4)</td>
</tr>
<tr>
<td>Strength of evidence</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
Disulfiram

Interferes with alcohol metabolism by blocking the enzyme acetaldehyde dehydrogenase, causing a buildup of acetaldehyde
- flushing, nausea, increased heart rate, sweating, dizziness when alcohol is consumed.

Adult starting dosing: 250mg Daily
Maintenance dose: 125-500mg Daily

Side effects: Fatigue / drowsiness, headache, dermatitis, change in taste

Serious adverse events: Severe hepatitis and/or hepatic failure; psychosis

Contraindicated: patients receiving or using alcohol (ritonavir liquid; tripanavir capsule), metronidazole, or alcohol-containing products; psychosis; severe myocardial disease or coronary occlusion.

Monitoring: Liver function tests (baseline and after 2 weeks), CBC, chemistries; cardiac function if clinically appropriate

Disulfiram reactions can occur up to 14 days after taking disulfiram if alcohol is consumed and can with alcohol-containing tonics, mouthwash, cough syrup, aftershave, etc.

McPheeters et al. JAMA 2023

METABOLISM OF ALCOHOL

Ethanol → Alcohol dehydrogenase → Acetaldehyde → Alddehyde dehydrogenase → Acetate

Disulfiram (inhibits ALDH)
# Non-FDA approved medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Systematic Review results</th>
<th>Evidence Strength</th>
<th>Other notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baclofen</td>
<td>Reduces return to any drinking</td>
<td>Low</td>
<td>Often use in liver disease</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>Reduces return to heavy drinking</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Topiramate</td>
<td>Reduces % drinking days and heavy drinking days and drinks per drinking day</td>
<td>Moderate</td>
<td>Use limited by side effects, including paresthesia, drowsiness, memory impairment</td>
</tr>
</tbody>
</table>

McPheeters, JAMA 2023
Step 1: Screen for Heavy Drinking
Use a brief, validated alcohol screening tool (e.g., NIAAA Single Alcohol Screening Question, AUDIT-C)

If YES to heavy drinking

Step 2: Advise and Assess
Stay within the U.S. Dietary Guidelines or abstain. Single-day drink limit: 1 for women, 2 for men

If NO to heavy drinking

Step 3: Brief Intervention
Advise and Assist
Brief intervention for heavy drinking.
- Ask permission
- Give feedback and advice
  - Link your concern
  - Advise cutting down
  - Negotiate
  - Check-in
  - Build motivation
  - Offer support
  - Identify next steps

Advise and Assist
Brief intervention for AUD.
- Ask permission
- Give feedback and advice
  - Inform
  - Link your concern
  - Advise quitting
  - Discuss treatment options
- Check-in
- Build motivation
- Offer behavioral support/pharmacotherapy
- Identify next steps

At next visit, continue follow-up and support
- Revisit
- Acknowledge
- Affirm
- Explore

If no AUD (0-1 symptom)

If Yes to AUD (2 symptoms or greater)

Summary

Unhealthy alcohol use can interrupt steps in the HIV Care Continuum and complicate comorbidities and their management among persons with HIV.

Given the impact of alcohol use on HIV infection and comorbidities and US goals of HIV treatment as prevention, it is critical to initiate ART among persons with unhealthy alcohol use.

Universal screening with standardized tools can improve identification of unhealthy alcohol use.

Evidence-based alcohol reduction interventions can be implemented in primary care/HIV settings and may improve HIV outcomes.
NIAAA Treatment Navigator and Core Resources

FIND YOUR WAY TO QUALITY ALCOHOL TREATMENT

In addition to in-person options, you can access alcohol treatment through telehealth services and other online options.

Learn how to find quality care for yourself or others as care for patients or clients.

WHAT TO KNOW ABOUT ALCOHOL TREATMENT

What is alcohol use disorder (AUD)?
A health condition that can improve with treatment.

What types of alcohol treatment are available?
More options available today than you may expect.

Why do different people need different options?

HOW TO FIND QUALITY ALCOHOL TREATMENT

Step 1: SEARCH trusted sources to find providers.
See all your options: programs, therapists, and doctors.

Step 2: ASK 10 recommended questions.
Get expert guidance on what to ask providers and how

Helping Your Patients with Alcohol-Related Problems
What to know, ask, and offer

Alcohol contributes to more than 200 health conditions and more than 140,000 deaths in the U.S. each year. Yet alcohol-related risks often go unaddressed in healthcare settings. The Core Resource on Alcohol provides evidence-based content to help healthcare professionals:

- Gain new insights—and earn FREE CME or CE credit—with 14 articles on alcohol and health covering basic principles, clinical impacts, and patient care from screening through recovery.
- Overcome barriers to care for patients with alcohol problems—by filling training gaps for providers who are not addiction specialists, including ways to counteract patient stigma.

“This resource is a good way to increase your confidence when you see patients with alcohol-related concerns, which you're going to see often.” — Primary care practitioner

Learn how to apply the Core Resource in clinical practice.
Tobacco use among People with HIV

With highly effective and durable antiretroviral therapy, tobacco smoking is a large threat to the gains achieved through durable viral suppression.

Mortality Attributable to Smoking Among HIV-1–Infected Individuals: A Nationwide, Population-Based Cohort Study

The Journal of Infectious Diseases

Impact of Cigarette Smoking and Smoking Cessation on Life Expectancy Among People With HIV: A US-Based Modeling Study
The prevalence of tobacco smoking in PWH is almost twice that of persons without HIV

NHANES 1999-2016
46% vs. 25.5

Tobacco use is more prevalent among people with substance use disorders, mental health disorders (depression) which also intersect with HIV infection

PWH with tobacco smoking have increased risk of cancer, cardiovascular disease compared to those who do not smoke tobacco; increased TB

With tobacco cessation, CVD risk can be reduced and QOL can improve

Figure 2.
Trend analysis of change in the percentage of current smoking and quit ratio among people living with HIV compared to people without HIV (NHANES; 6 survey cycles, 1999-2016) (weighted percentages).

Approach to tobacco cessation

• Ask-Ask about and document tobacco use at every patient visit
  “Do you ever use or smoke a tobacco product such as cigarettes?”
  Assess history/pattern/level of use
  Number of cigarettes per day, days per week, prior quit attempts and treatments

• Advise-Advise in a clear, strong and personal manner to quit use
  “Quitting smoking is the most important action you can take to improve your overall health

• Assist/Connect-Assist with connecting to counseling and pharmacotherapy (combined therapy superior to either alone)
DOPAMINE REWARD PATHWAY

- Prefrontal cortex
- Nucleus accumbens
- Ventral tegmental area

Dopamine release
Stimulation of nicotine receptors
Nicotine enters brain
Behavioral Interventions

- Combined pharmacotherapy + behavioral support
- Physician Advice vs UC
- Nurse Advice vs UC
- Individual Counseling
- Group Counseling
- Quitline Proactive Counseling
- Non-Quitline Proactive Counseling
- Mobile-Phone Based Interventions
- Video Counseling
- Incentives

Pharmacotherapy for Tobacco Use Disorder

• Withdrawal symptoms accompany tobacco use cessation:
  - Irritability, difficulty sleeping, feeling down or sad
  - Intense cravings, headaches, weight gain

• These symptoms can be a formidable barrier to the brain-behavior changes involved in progressing in tobacco use disorder

• There are tools for easing the burden of withdrawal symptoms and supporting patients’ ability to change behavior
  - Varenicline, Bupropion
  - Nicotine Replacement Therapy (Gum, Patch, Lozenge, etc.)

• NRT and medications do not have the harmful effects of combusted tobacco/cigarettes
Nicotine Replacement Therapy

- **Mechanism of Action:**
  
  Nicotine full receptor agonist; reduces nicotine withdrawal when an individual stops smoking.

  Nicotine Patch is long-acting and has a slow onset while lozenge, gum, nasal spray and inhaler are short acting and have rapid onset.

  Used in combination provides basal nicotine levels from the patch and allows for rapid treatment of craving with rapid onset NRT.

  Dual NRT more effecting than single NRT.

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Number of Studies</th>
<th>Tobacco Cessation (risk ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual NRT vs Single NRT</td>
<td>14 studies</td>
<td>1.25 95% CI (1.15-1.36)</td>
</tr>
<tr>
<td>Single NRT vs Placebo/No drug</td>
<td>133 studies</td>
<td>1.55 95% CI (1.49-1.61)</td>
</tr>
</tbody>
</table>

Nicotine replacement therapy

- **Nicotine Patch**
  - OTC or prescription; generic and brand
  - Doses available: 7 mg, 14 mg, 21 mg
  - Dosing: 21 mg for ≥10 cigarettes/d; 14 mg for <10 cigarettes/d
- **Administration**
  - Apply a new patch each morning to dry skin
  - Rotate application site to avoid skin irritation
  - Start patch on quit day or before quit date
- **Duration:**
  - Use ≥3 months;
  - After 6 wk, continue original dose or taper to lower doses

Skin irritation (5%-20%), Sleep problems (10%-11%), Vivid dreams (12%)

## Nicotine lozenge/gum

### Nicotine Lozenge
- OTC or prescription; generic and brand
- 2 mg, 4 mg
- 4 mg if 1st cigarette is ≤30 min after waking; 2 mg if 1st cigarette is >30 min after waking
- **Administration**
  - 1 Piece every 1-2 h as needed (20/d maximum)
  - Place between gum and cheek, let it melt slowly
  - No food or drink 15 min before or during use
- Use ≥3 months
- Mouth irritation (5%-24%); Hiccups (3%-24%); Heartburn (4%-11%); Nausea (9%-10%)

### Nicotine Gum
- OTC or prescription; generic and brand (Nicorette, Nicotrol, Habitrol)
- 2 mg, 4 mg
- 4 mg if 1st cigarette is ≤30 min after waking; 2 mg if 1st cigarette is >30 min after waking
- **Administration**
  - 1 Piece/h as needed (24/d maximum)
  - Chew briefly until mouth tingles, then park gum inside cheek until tingle fades; discard gum after 30 min
  - No food or drink 15 min before or during use
- Use ≥3 months
- Mouth irritation (5%-24%); Jaw soreness (rate not available); Hiccups (3%-24%); Heartburn (4%-11%); Nausea (9%-10%)
# Nicotine inhaler and nasal spray

<table>
<thead>
<tr>
<th>Nicotine Inhaler</th>
<th>Nicotine Nasal Spray</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prescription only</strong></td>
<td><strong>Prescription only</strong></td>
</tr>
<tr>
<td>10 mg cartridge</td>
<td>10 mL bottle (10 mg nicotine/mL)</td>
</tr>
<tr>
<td>1 cartridge has 80 puffs</td>
<td>0.5 mg/spray; 1 bottle has ≈ 200 sprays</td>
</tr>
<tr>
<td><strong>Administration</strong></td>
<td><strong>Administration</strong></td>
</tr>
<tr>
<td>1 cartridge every 1-2 h as needed (16/d maximum)</td>
<td>1 spray to each nostril every 1-2 h as needed. (80 sprays/d maximum)</td>
</tr>
<tr>
<td>Puff into mouth and throat until cravings subside</td>
<td>Do not sniff, swallow, or inhale while spraying</td>
</tr>
<tr>
<td>Do not inhale into lungs</td>
<td>After use, wait 2-3 min before blowing the nose</td>
</tr>
<tr>
<td>Change cartridge when nicotine taste disappears</td>
<td>Use ≥3mo</td>
</tr>
<tr>
<td><strong>Use ≥3mo</strong></td>
<td><strong>Nasal discomfort (94%); Throat irritation (≤66%); Rhinitis (23%); Sneezing (rate not available); Cough (32%)</strong></td>
</tr>
<tr>
<td>Mouth and throat irritation (≤66%); Cough (32%), especially if inhaled too deeply</td>
<td></td>
</tr>
</tbody>
</table>
Varenicline

- Mechanism of action: α4β2 nicotinic receptor partial agonist. Reduces withdrawal symptoms (agonist) and blocks rewarding effects of smoking (antagonist)

### Varenicline use among PWH

<table>
<thead>
<tr>
<th>Study</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy and safety of varenicline for smoking cessation in people living with HIV in France (ANRS 144 Inter-ACTIV): a randomized controlled phase 3 clinical trial</td>
<td>A randomized trial among PWH (94% on ART) in France, who had no history of depression or suicide attempt and were not dependent on another psychoactive substance, found that varenicline was safe and resulted in a higher rate of continuous tobacco abstinence: 18% with varenicline vs 7% with placebo (weeks 9–48; adjusted odds ratio, 2.7 [95% confidence interval (CI): 1.1–6.5]).²</td>
</tr>
<tr>
<td>Placebo-controlled randomized clinical trial testing the efficacy and safety of varenicline for smokers with HIV: Correlates of varenicline adherence among smokers with HIV and its association with smoking cessation¹</td>
<td>A randomized trial among PWH on ART in the US found a higher 7-day point prevalence of abstinence at week 12 with varenicline vs placebo (28% vs 12%; odds ratio, 4.54 [95% CI: 1.83–11.25]), but the effect diminished by week 24; better adherence to varenicline correlated with tobacco cessation.³⁴</td>
</tr>
</tbody>
</table>

### Varenicline Evidence

#### Cochrane Review 2023:

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Number of studies</th>
<th>Risk of tobacco cessation</th>
<th>Strength of the evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varenicline vs. Placebo</td>
<td>41 studies, 17,395 participants</td>
<td>RR 2.32, 95% CI 2.15 to 2.51</td>
<td>High certainty evidence</td>
</tr>
<tr>
<td>Varenicline vs. Bupropion</td>
<td>9 studies, 7560 participants</td>
<td>RR 1.36, 95% CI 1.25 to 1.49</td>
<td>High certainty evidence</td>
</tr>
<tr>
<td>Varenicline vs. NRT</td>
<td>11 studies, 7572 participants</td>
<td>RR 1.25, 95% CI 1.14 to 1.37</td>
<td>High certainty evidence</td>
</tr>
<tr>
<td>Varenicline vs. Dual NRT</td>
<td>5 studies, 2344 participants</td>
<td>RR 1.02, 95% CI 0.87 to 1.20</td>
<td>Low certainty evidence</td>
</tr>
</tbody>
</table>

Varenicline

- Doses available: 0.5 mg tablet, 1.0 mg tablet
- Dosing: Dose up-titration over 1 week:
  - Days 1-3, 0.5 mg/d
  - Days 4-7, 0.5 mg 2/d
  - Days ≥8, 1 mg 2/d
- Administration: Start 1-4 wk before quit date – Alternative to abrupt quitting is gradual smoking reduction (start medication and reduce smoking by 50% by wk 4, 25% by wk 8, quit by wk 12)
- Duration: Use 3-6 months – Longer use has demonstrated safety
- Common Adverse Effects
  - Nausea (16%-40%)
  - Insomnia (9%-19%)
  - Vivid dreams (8%-13%)
  - Headache (12%-19%)
EAGLES Study

- Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EAGLES): a double-blind, randomized, placebo-controlled clinical trial\(^1\)
- Demonstrated safety in a large, multinational, randomized trial, in which half of the participants had clinically stable psychiatric disorders.\(^1\)
- No significant difference in neuropsychiatric adverse events between those who received varenicline, bupropion, nicotine patch, or placebo.\(^1\)

**Bupropion**

- **Mechanism of action:** Reduces nicotine withdrawal by inhibiting reuptake of dopamine and norepinephrine stimulated by nicotine binding to midbrain neurons.

- **Cochrane Review:**

<table>
<thead>
<tr>
<th>Comparison</th>
<th>Number of Studies</th>
<th>Tobacco Cessation (risk ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bupropion vs. Placebo or no drug</td>
<td>50 studies</td>
<td>1.60 95% CI (1.49-1.72)</td>
</tr>
<tr>
<td>Bupropion vs. Dual NRT</td>
<td>2 studies</td>
<td>0.74, 95% CI (0.55-0.98)</td>
</tr>
</tbody>
</table>

Bupropion

• Doses available: 150 mg tablet, sustained release
• Dosing
  Days 1-3, 150 mg/d
  Days ≥4, 150 mg 2/d
• Administration: Start 1-2 wk before quit date
• Duration: Use 3-6 months
• Common Adverse Effects
  Insomnia (11%-40%)
  Agitation (3%-32%)
  Dry mouth (7%-28%)
  Headache (9%-34%)
Positively Smoke Free

• An intensive behavioral intervention built upon the Social Cognitive Theory model that is designed specifically for PWH smokers.

• It encourages participants to analyze and dissect their own behaviors, from craving to lighting up to smoking, in order to learn how to interrupt the lethal pathway.

• It is based upon an 8-session format.

• It has been studied, or is currently being studied, in a variety of forms:
  - In-person, live group therapy
  - Individual therapy
  - Static website
  - Smartphone app with text-messaging
  - Group therapy conducted via internet (Zoom)
  - Positively Smoke Free – Kenya individual counseling
  - Positively Smoke Free – India mobile counseling
Positively Smoke Free on the Web

Randomized controlled trial design

- PSFW+ was compared to an attention-matched web-based control intervention (American Heart Association Getting Healthy; AHA).

- From July 2016 to March 2020, 506 participants from urban HIV care sites in NYC and Baltimore were randomized to PSFW (N=255) or AHA (N=251).

- Participants in both arms were offered 12-weeks of nicotine patches.

- Automated text or email reminders were sent to prompt return to the website and completion of sessions.

- Assessments were conducted on or about 3-months and 6-months post-baseline.

- The primary study outcome was biochemically confirmed 7-day ppa at the 6-month time point.
Positively Smoke Free on the Web

### Ask, Advise and Connect

**Figure 1.** Treatment of tobacco dependence: a visual aid for human immunodeficiency virus (HIV) clinicians. The Ask-Advise-Connect framework was described and assessed among people with HIV.2


---

#### What To Do

**Ask**
- Ask about tobacco use routinely during clinical encounters
- Deliver clear advice to stop tobacco use, focusing on the benefits of cessation
- Consider planning an entire office visit dedicated to tobacco cessation
- Prescribe pharmacotherapy AND
  - Directly connect to behavioral therapy

**Advise**
- "Do you ever use or smoke tobacco products, such as cigarettes?"
- "While we are controlling your HIV, quitting smoking is the most important thing you can do to improve your health and live longer. I can help."
- "Quitting smoking will help you get the full benefits of the HIV medicines."
- "Quitting smoking will reduce the health risks of secondhand smoke for the people and pets around you."
- "You know that a pack of cigarettes is not cheap. Quitting will save you money."
- Show how quitting reduces cardiovascular disease risk through ACC/AHA online ASCVD risk estimator

**Connect to treatment**
- Pharmacotherapy
  - Varenicline: treatment of choice
  - Dual nicotine replacement therapy (NRT): effective alternative
  - Bupropion or single NRT: also FDA-approved

- Behavioral therapy
  - Telephone-based (e.g., 1-800-QUIT-NOW in US)
  - Text message-based (e.g., text "quit" to 47848 in US)
  - In-person individual counseling or group therapy
  - Internet-based (e.g., BecomeAnEx.org; smokefree.gov)
Lung cancer screening

- Screening for tobacco use and providing evidence-based tobacco cessation treatments are also an excellent time to screen for lung cancer

**What does the USPSTF recommend?**

- Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years:
  - Screen for lung cancer with low-dose computed tomography (CT) every year.
  - Stop screening once a person has not smoked for 15 years or has a health problem that limits life expectancy or the ability to have lung surgery.

**To whom does this recommendation apply?**

- Adults aged 50 to 80 years who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 years. (See below for definition of pack-year.)
How to implement this recommendation?

1. **Assess risk based on age and pack-year smoking history:** Is the person aged 50 to 80 years and have they accumulated 20 pack-years or more of smoking?
   
   a. A pack-year is a way of calculating how much a person has smoked in their lifetime. One pack-year is the equivalent of smoking an average of 20 cigarettes—1 pack—per day for a year.

2. **Screen:** If the person is aged 50 to 80 years and has a 20 pack-year or more smoking history, engage in shared decision making about screening.
   
   a. The decision to undertake screening should involve a discussion of its potential benefits, limitations, and harms.
   
   b. If a person decides to be screened, refer them for lung cancer screening with low-dose CT, ideally to a center with experience and expertise in lung cancer screening.
   
   c. If the person currently smokes, they should receive smoking cessation interventions.

**How often?**

- Screen every year with low-dose CT.
- Stop screening once a person has not smoked for 15 years or has a health problem that limits life expectancy or the ability to have lung surgery.
Patient and Provider Resources for Tobacco Cessation

https://aidsetc.org/resource/smoking-cessation-people-hiv

https://www.becomeanex.org/

Summary

• Tobacco and alcohol use disorders are prevalent among PWH and are modifiable barriers to optimal health outcomes among PWH.

• Evidence-based treatments are effective in reducing alcohol and tobacco use.

• Routine screening, providing non-judgmental advice, and connecting to care via pharmacotherapy referral, linkage to behavioral treatment and additional resources are an important aspect of HIV primary care.
Posttest Question #1

A 40 year old cisgender man with HIV infection presents with a viral load of 1500 copies after being undetectable for the last 12 months. Screening with the AUDIT-C reveals a score of 7. He smokes tobacco but he has no opioid or stimulant use. In addition to expressing concern about his viral load and alcohol use, what is the appropriate next step.

1. Assess for alcohol use disorder
2. Prescribe naltrexone
3. Prescribe disulfiram
4. Refer to psychiatry for further evaluation
Posttest Question #2

25 year old diagnosed with HIV 2 years ago on routine testing after presenting with a new STI. They have been persistently undetectable on 3TC/DTG since diagnosis. They have smoked 1 pack of cigarettes per day for the past 8 years. On routine screening they note they are interested in quitting tobacco use. Which of the following treatments has been demonstrated to the highest quit rate among people with tobacco use disorder?

1) Nicotine gum
2) Nicotine lozenge
3) Bupropion
4) Varenicline
5) Nicotine patch
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 $3,333,289 with 0% financed with non-governmental sources.

The content in this presentation are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, HRSA, HHS, or the U.S. Government.