AETC AIDS Education & Training Center Program Mountain West

June 2024
MWAETC Addiction Medicine Webinar: Alcohol and Tobacco Use Among People with HIV

Wednesday, June 12, 2024
Presented by:

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Alcohol and tobacco use among people with HIV

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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

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Pretest 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

Pretest Question #2

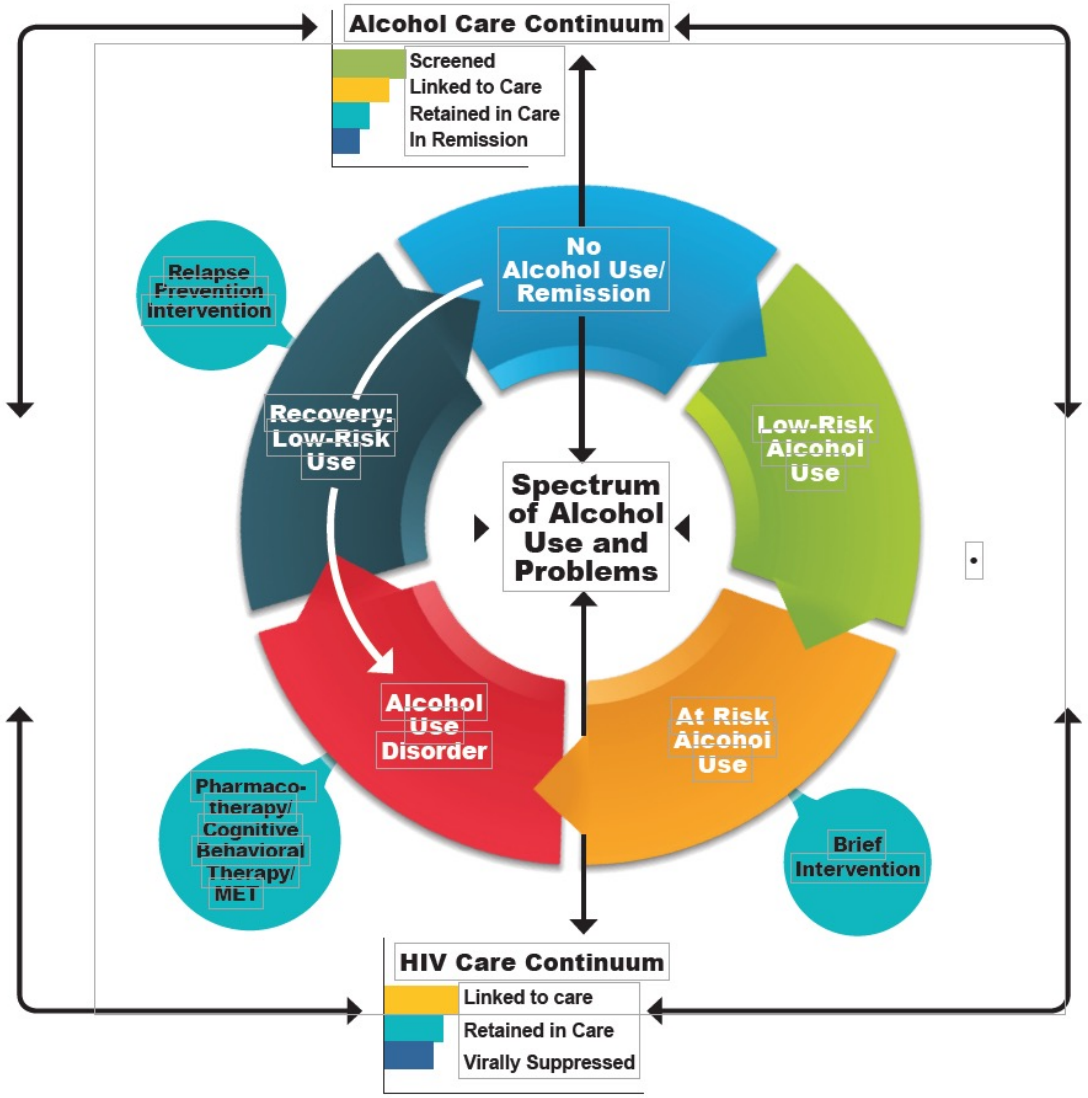
25 year old diagnosed with HIV 2 years ago on routine testing after presenting with a new STI. They have been persistently undetectable on 3TC/DTG since diagnosis. They have smoked 1 pack of cigarettes per day for the past 8 years. On routine screening they note they are interested in quitting tobacco 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

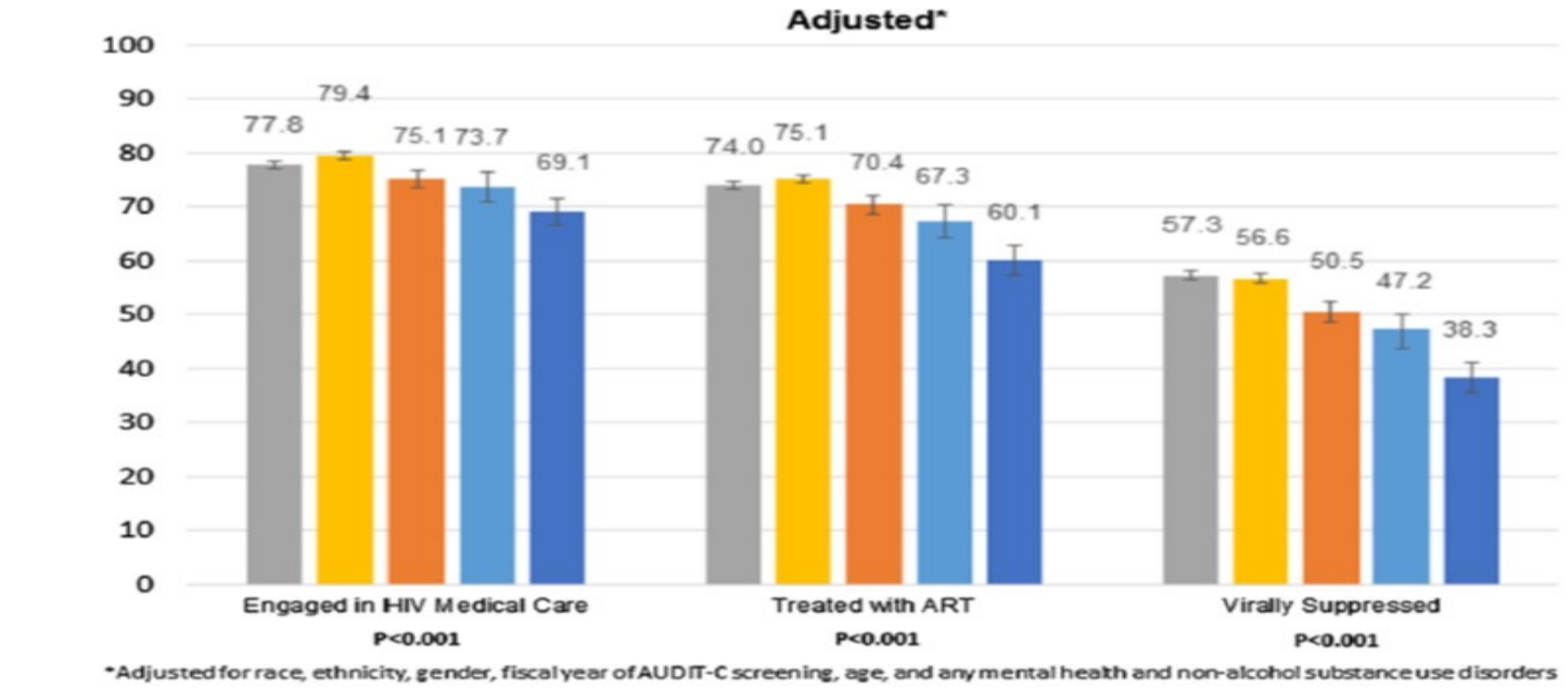
Spectrum of unhealthy alcohol use



At-Risk Alcohol Use:
Men ≤ 65years 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



Sample: VACS N=33,224

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 - <500copies/mL based on first lab after AUDIT-C

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. Lesko[1] · Bryan Lau[1,2] · Geetanjali Chander[1,2] · Richard D. Moore[1,2]

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. Lesko[1] · Robin M. Nance[2] · Bryan Lau[1] · Anthony T. Fojo[3] · Heidi E. Hutton[4] · Joseph A. C. Delaney[5] · Heidi M. Crane[2] · Karen L. Cropsey[6] · Kenneth H. Mayer[7] · Sonia Napravnik[8] · Elvin Geng[9] · W. Christopher Mathews[10] · Mary E. McCaul[3,4] · Geetanjali Chander[3] on behalf of the CNICS

AIDS and Behavior
https://doi.org/10.1007/s10461-021-03487-3

ORIGINAL PAPER

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. Lesko[1] · Heidi E. Hutton[2] · Jessie K. Edwards[3] · Mary E. McCaul[2] · Anthony T. Fojo[4] · Jeanne C. Keruly[4] · Richard D. Moore[4] · Geetanjali Chander[4]

Unhealthy alcohol use and retention in care

TABLE 2. Association Between Alcohol and Retention*

	IOM Retention Measure		Visit Adherence Measure	
	Drinking Categories	Binge Frequency Categories	Drinking Categories	Binge Frequency Categories
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Drinking category				
Never	Ref	Ref	Ref	Ref
Moderate	0.93 (0.83 to 1.03)	—	1.01 (0.96 to 1.07)	—
Heavy†	0.78 (0.69 to 0.88)‡	—	0.97 (0.91 to 1.04)	—
Binge frequency category				
Never	Ref	Ref	Ref	Ref
Monthly/less than monthly	—	0.89 (0.80 to 0.99)§	—	0.98 (0.93 to 1.03)
Daily/weekly	—	0.90 (0.74 to 1.10)	—	0.90 (0.82 to 0.98)§
Current drug use				
Yes (vs. no)	0.88 (0.77 to 1.00)	0.87 (0.76 to 0.99)§	0.74 (0.69 to 0.79)‡	0.74 (0.70 to 0.79)‡
Panic symptoms				
None	Ref	Ref	Ref	Ref
Some	0.94 (0.83 to 1.08)	0.94 (0.82 to 1.07)	0.96 (0.91 to 1.02)	0.96 (0.91 to 1.02)
Panic disorder	0.92 (0.80 to 1.07)	0.92 (0.80 to 1.07)	0.85 (0.80 to 0.90)‡	0.85 (0.80 to 0.90)‡
Depression screen				
Positive (vs. negative)	1.15 (1.02 to 1.30)§	1.15 (1.02 to 1.30)§	0.92 (0.88 to 0.97)§	0.92 (0.88 to 0.97)§

*Four different models were fit for each retention measure and drinking exposure type reported. Each model was adjusted for age, race, sex/sexual risk factor, CD4 category, viral load category, enrollment date, site, intravenous drug use as HIV risk factor.
†Heavy = AUDIT-C >3 for women or >4 for men.
‡$P < 0.0001$.
§$P < 0.05$.

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)

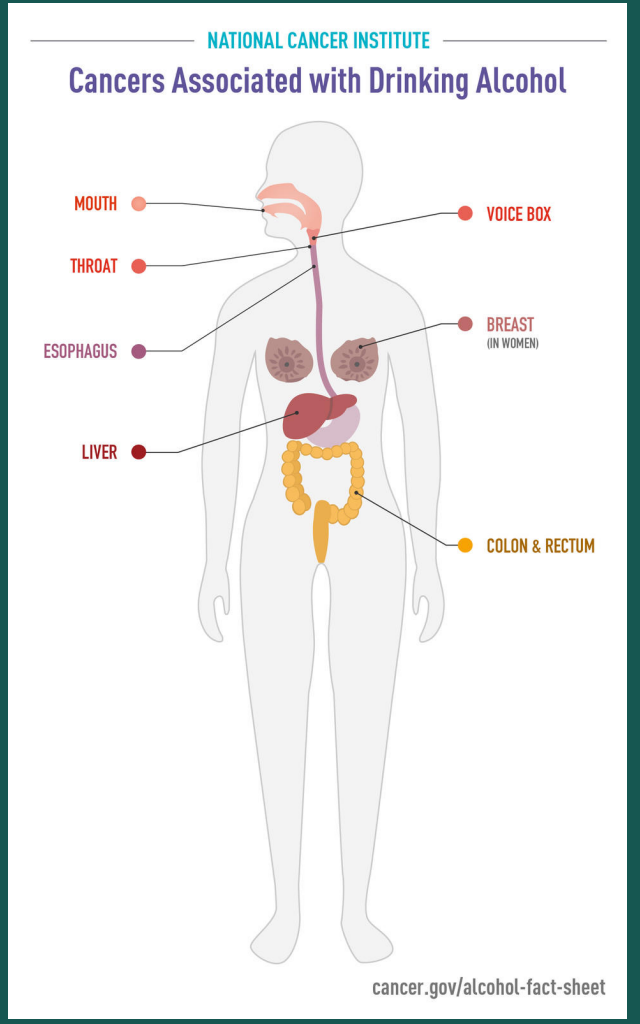
Monroe AK, Lau B, Mugavero MJ, Mathews WC, Mayer KH, Napravnik S, Hutton HE, Kim HS, Jabour S, Moore RD, McCaul ME, Christopoulos KA, Crane HC, Chander G. Heavy Alcohol Use Is Associated With Worse Retention in HIV Care. J Acquir Immune Defic Syndr. 2016 Dec 1;73(4):419-425. doi: 10.1097/QAI.0000000000001083. PMID: 27243904; PMCID: PMC5085857.

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

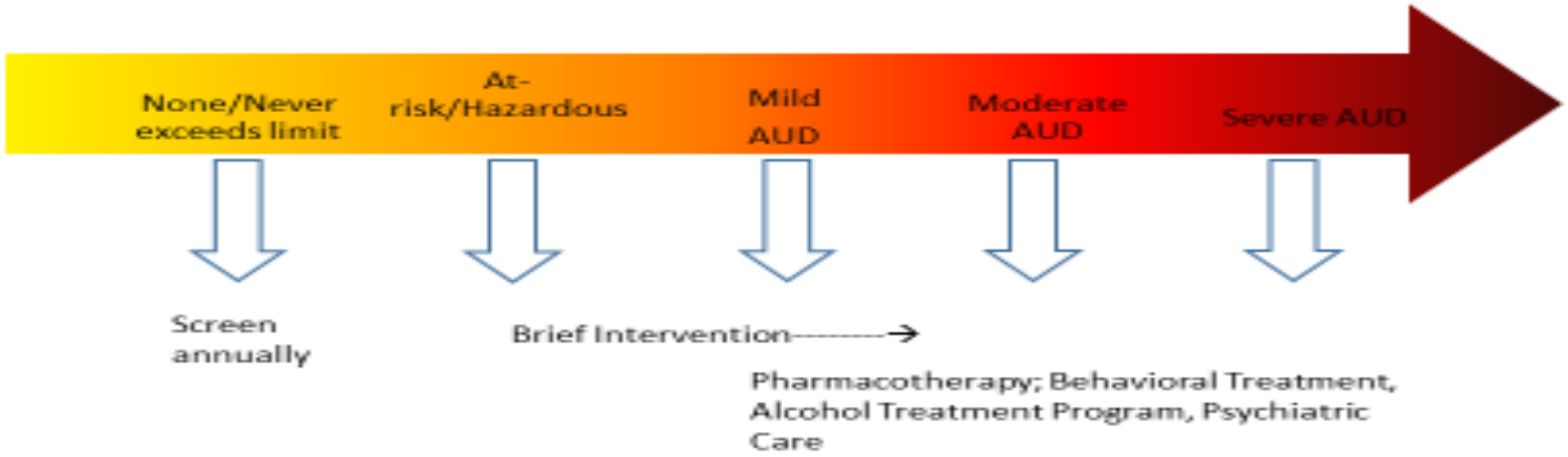
- Among PWH, unhealthy alcohol use and **alcohol use disorders (AUD)** are associated with lower utilization of medical treatment, poorer medication adherence and HIV transmission risk behaviors, liver disease progression and mortality.

- 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



Adapted from Willenbring ML, et al. *American Family Physician*. 2009. Volume 80, issue 1 and Willenbring ML. Addiction Professional 2008. http://www.addictionpro.com.

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

- Smith PC. J Gen Intern Med. 2009 24:783-8.

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

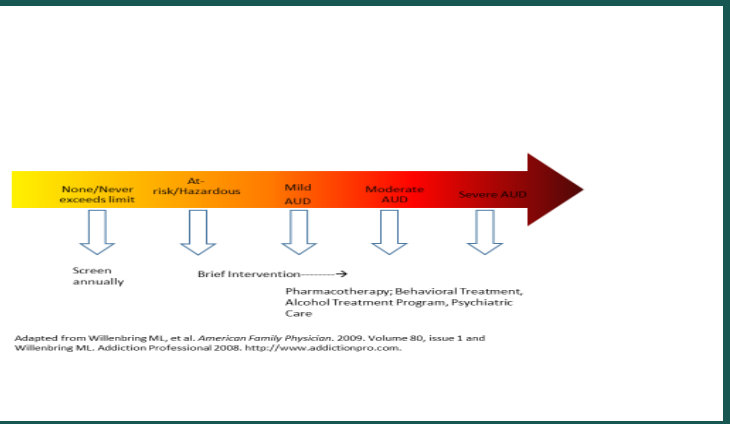
AUD Symptom Checklist

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).



Adapted from Willenbring ML, et al. *American Family Physician*. 2009. Volume 80, issue 1 and Willenbring ML. Addiction Professional 2008. http://www.addictionpro.com.

To help you and your provider understand how your alcohol use might be affecting your health, please answer the following questions.

Please SELECT the best response to each question.

In the past 12 months…

1. Did you find that drinking the same amount of alcohol has less effect than it used to or did you have to drink more alcohol to get intoxicated?	No ☐	Yes ☐
2. When you cut down or stop drinking did you get sweaty or nervous, or have an upset stomach or shaky hands? Did you drink alcohol or take other substances to avoid these symptoms?	No ☐	Yes ☐
3. When you drank, did you drink more or for longer than you planned to?	No ☐	Yes ☐
4. Have you wanted to or tried to cut back or stop drinking alcohol, but been unable to do so?	No ☐	Yes ☐
5. Did you spend a lot of time obtaining alcohol, drinking alcohol, or recovering from drinking?	No ☐	Yes ☐
6. Have you continued to drink even though you knew or suspected it creates or worsens mental or physical problems?	No ☐	Yes ☐
7. Has drinking interfered with your responsibilities at work, school, or home?	No ☐	Yes ☐
8. Have you been intoxicated more than once in situations where it was dangerous, such as driving a car or operating machinery?	No ☐	Yes ☐
9. Did you drink alcohol even though you knew or suspected it causes problems with your family or other people?	No ☐	Yes ☐
10. Did you experience strong desires or craving to drink alcohol?	No ☐	Yes ☐
11. Did you spend less time working, enjoying hobbies, or being with others because of your drinking?	No ☐	Yes ☐

Source: Hallgren KA et al. Alcohol Clin Exp Res. 2022 Mar;46(3):458-467.

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

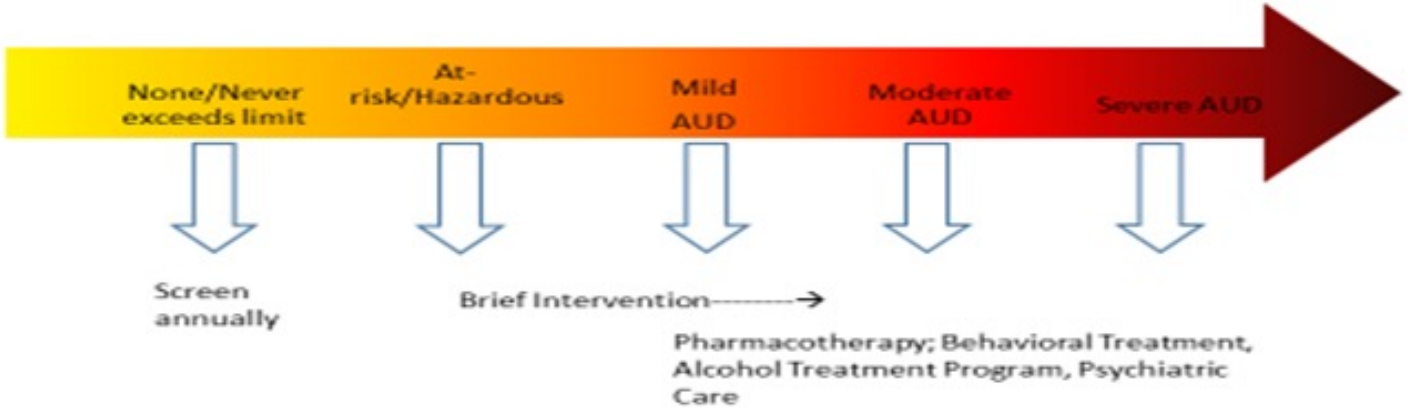
- Recommended by the USPTF for persons with unhealthy alcohol use
- Generally consists of 4 or fewer sessions
  - typically lasted 5 – 15 minutes;
  - Includes non-judgmental normative feedback and advice to cut-down or stop drinking;
  - Advice placed in the context of recommended limits and health
  - 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)



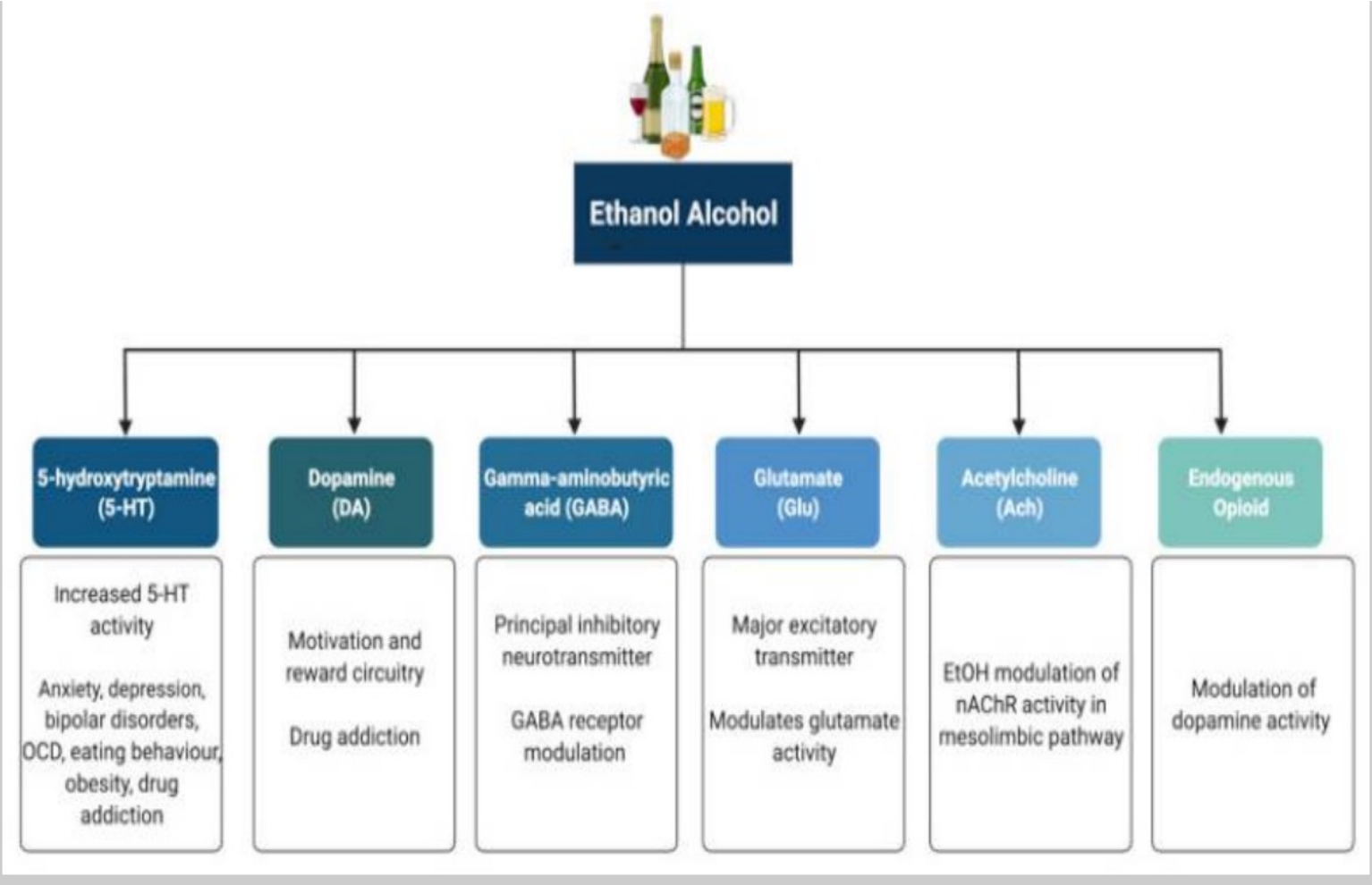
Adapted from Willenbring ML, et al. *American Family Physician*. 2009. Volume 80, issue 1 and Willenbring ML. Addiction Professional 2008. http://www.addictionpro.com.

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)

Han B, Jones CM, Einstein EB, Powell PA, Compton WM. Use of Medications for Alcohol Use Disorder in the US: Results From the 2019 National Survey on Drug Use and Health. *JAMA Psychiatry.* 2021;78(8):922–924. doi:10.1001/jamapsychiatry.2021.1271

Pharmacotherapy for AUD: Rationale for use



Yang W, Singla R, Maheshwari O, Fontaine CJ, Gil-Mohapel J. Alcohol Use Disorder: Neurobiology and Therapeutics. Biomedicines. 2022 May 21;10(5):1192. doi: 10.3390/biomedicines10051192. PMID: 35625928; PMCID: PMC9139063.

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			
	50 mg/d, oral	100 mg/d, oral	Injection	Any dose
Return to any drinking				
No. of studies	16	3	2	25
No. of participants	2347	946	939	4604
Results effect size (95% CI)	RR, 0.93 (0.87-0.99)	RR, 0.97 (0.91-1.03)	RR, 0.96 (0.90-1.03)	RR, 0.95 (0.92-0.99)
Number needed to treat (95% CI)[c]	18 (4-32)			
Strength of evidence	Moderate	Low (no effect)	Low (no effect)	Moderate
Return to heavy drinking				
No. of studies	23	2	2	27
No. of participants	3170	858	615	4645
Results effect size (95% CI)	RR, 0.81 (0.72-0.90)	RR, 0.93 (0.84-1.01)	RR, 1.00 (0.82-1.21)	RR, 0.86 (0.80-0.93)
Number needed to treat (95% CI)[c]	11 (5-41)			
Strength of evidence	Moderate	Low (no effect)	Low (no effect)	Moderate
Percentage of drinking days				
No. of studies	15	3	2	24[d]
No. of participants	1992	1023	467	4021
Results effect size (95% CI)[b]	WMD, −5.1 (−7.16 to −3.04)	WMD, −2.3 (−5.60 to 0.99)	WMD, −4.99 (−9.49 to 0.49)	WMD, −4.51 (−6.26 to −2.77)
Strength of evidence	Moderate	Low	Low	Moderate
Percentage of heavy drinking				
No. of studies	7	2	3	13
No. of participants	624	423	956	2167
Results effect size (95% CI)[b]	WMD, −4.3 (−7.60 to −0.91)	WMD, −3.1 (−5.8 to −0.3)	WMD, −4.68 (−8.63 to −0.73)	WMD, −3.92 (−5.86 to −1.97)
Strength of evidence	Moderate	Low	Low	Moderate

McPheeters M, O'Connor EA, Riley S, et al. Pharmacotherapy for Alcohol Use Disorder: A Systematic Review and Meta-Analysis. *JAMA.* 2023;330(17):1653–1665. doi:10.1001/jama.2023.19761

Naltrexone use among PWH

CLINICAL SCIENCE

Extended-release Naltrexone Improves Viral Suppression Among Incarcerated Persons Living with HIV and Alcohol use Disorders Transitioning to the Community: Results From a Double-Blind, Placebo-Controlled Trial

Springer, Sandra A. MD[*,†]; Di Paola, Angela MS[‡]; Barbour, Russell PhD[†]; Azar, Marwan M. MD[*]; Altice, Frederick L. MD[*,†,§,‖] **Author Information**

JAIDS Journal of Acquired Immune Deficiency Syndromes: September 1, 2018 - Volume 79 - Issue 1 - p 92-100

ALCOHOLISM
CLINICAL & EXPERIMENTAL RESEARCH

Full Access

Hepatic Safety and Antiretroviral Effectiveness in HIV-Infected Patients Receiving Naltrexone

Jeanette M. Tetrault, Janet P. Tate, Kathleen A. McGinnis, Joseph L. Goulet, Lynn E. Sullivan, Kendall Bryant, Amy C. Justice, David A. Fiellin, For the Veterans Aging Cohort Study Team

First published: 28 July 2011 | https://doi.org/10.1111/j.1530-0277.2011.01601.x | Citations: 29

Original Paper | Published: 02 August 2018

Efficacy of Extended-Release Naltrexone on HIV-Related and Drinking Outcomes Among HIV-Positive Patients: A Randomized-Controlled Trial

E. Jennifer Edelman, Brent A. Moore, Stephen R. Holt, Nathan Hansen, Tassos C. Kyriakides, Michael Virata, Sheldon T. Brown, Amy C. Justice, Kendall J. Bryant, David A. Fiellin & Lynn E. Fiellin

Acamprosate

- Restores balance of excitation and inhibition dysregulated by alcohol exposure (reduces craving)
- Mechanism of action: Increase the activity of the GABA-ergic 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

	Acamprosate
Return to any drinking	
No. of studies	20
No. of participants	6380
Results effect size (95% CI)	RR, 0.88 (0.83-0.93)
Number needed to treat (95% CI)[c]	11 (1-32)
Strength of evidence	Moderate
Return to heavy drinking	
No. of studies	7
No. of participants	2496
Results effect size (95% CI)	RR, 0.99 (0.94-1.05)
Number needed to treat (95% CI)[c]	
Strength of evidence	Moderate (no effect)
Percentage of drinking days	
No. of studies	14
No. of participants	4916
Results effect size (95% CI)[b]	WMD, −8.3 (−12.2 to −4.4)
Strength of evidence	Moderate

McPheeters et al. JAMA 2023

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

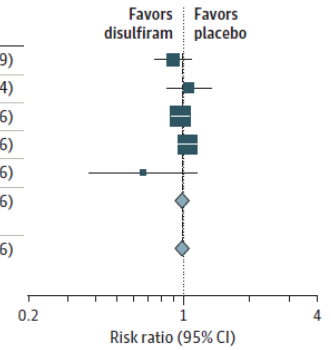
Contraindicated: patients receiving or using alcohol (ritonavir liquid; tripanavir capsule), metronidazole, or alcohol-containing products; psychosis; severe myocardial disease or coronary occlusion.

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

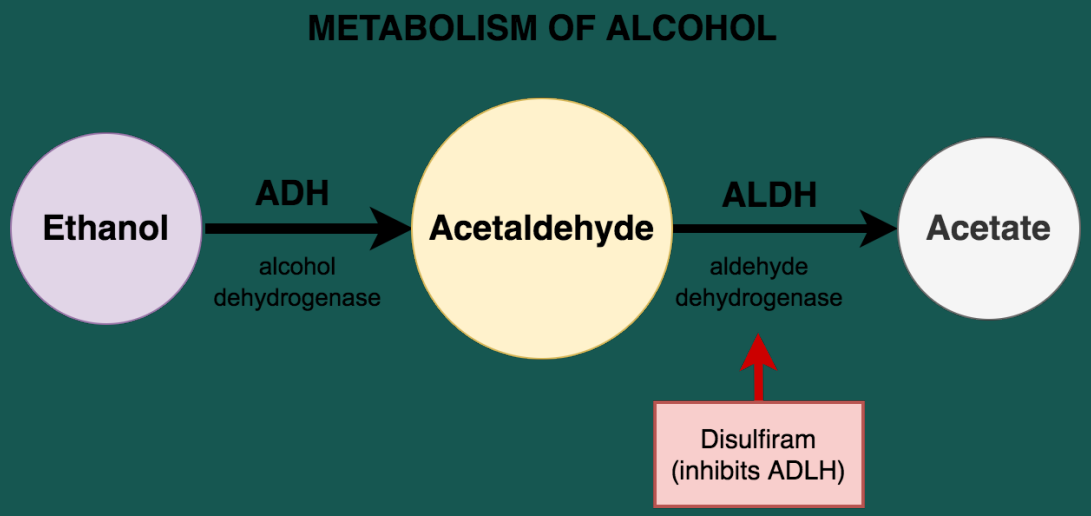
Disulfiram reactions can occur up to14 days after taking disulfiram if alcohol is consumed and can with alcohol-containing tonics, mouthwash, cough syrup, aftershave, etc.

Figure 3. Return to Any Drinking, Disulfiram vs Placebo

Source	Duration, wk	No./total No. (%) Disulfiram	Placebo	Risk ratio (95% CI)
Fuller et al,[28] 1986	52	34/43 (79.1)	37/42 (88.1)	0.90 (0.74-1.09)
Fuller et al,[28] 1986	52	34/43 (79.1)	32/43 (74.4)	1.06 (0.84-1.34)
Fuller and Roth ,[29] 1979	52	164/202 (81.2)	167/199 (83.9)	0.97 (0.88-1.06)
Fuller and Roth ,[29] 1979	52	164/202 (81.2)	158/204 (77.5)	1.05 (0.95-1.16)
Petrakis et al,[58] 2005	12	15/66 (22.7)	22/64 (34.4)	0.66 (0.38-1.16)
Heterogeneity: $\tau^2 = 0.00$, $I^2 = 18.41\%$, $H^2 = 1.23$ Test of $\theta_i = \theta_j$: $Q(4) = 4.90$, $P = .30$				0.99 (0.92-1.06)
Overall Heterogeneity: $\tau^2 = 0.00$, $I^2 = 18.41\%$, $H^2 = 1.23$ Test of group differences: $Q_b(0) = 0.00$				0.99 (0.92-1.06)



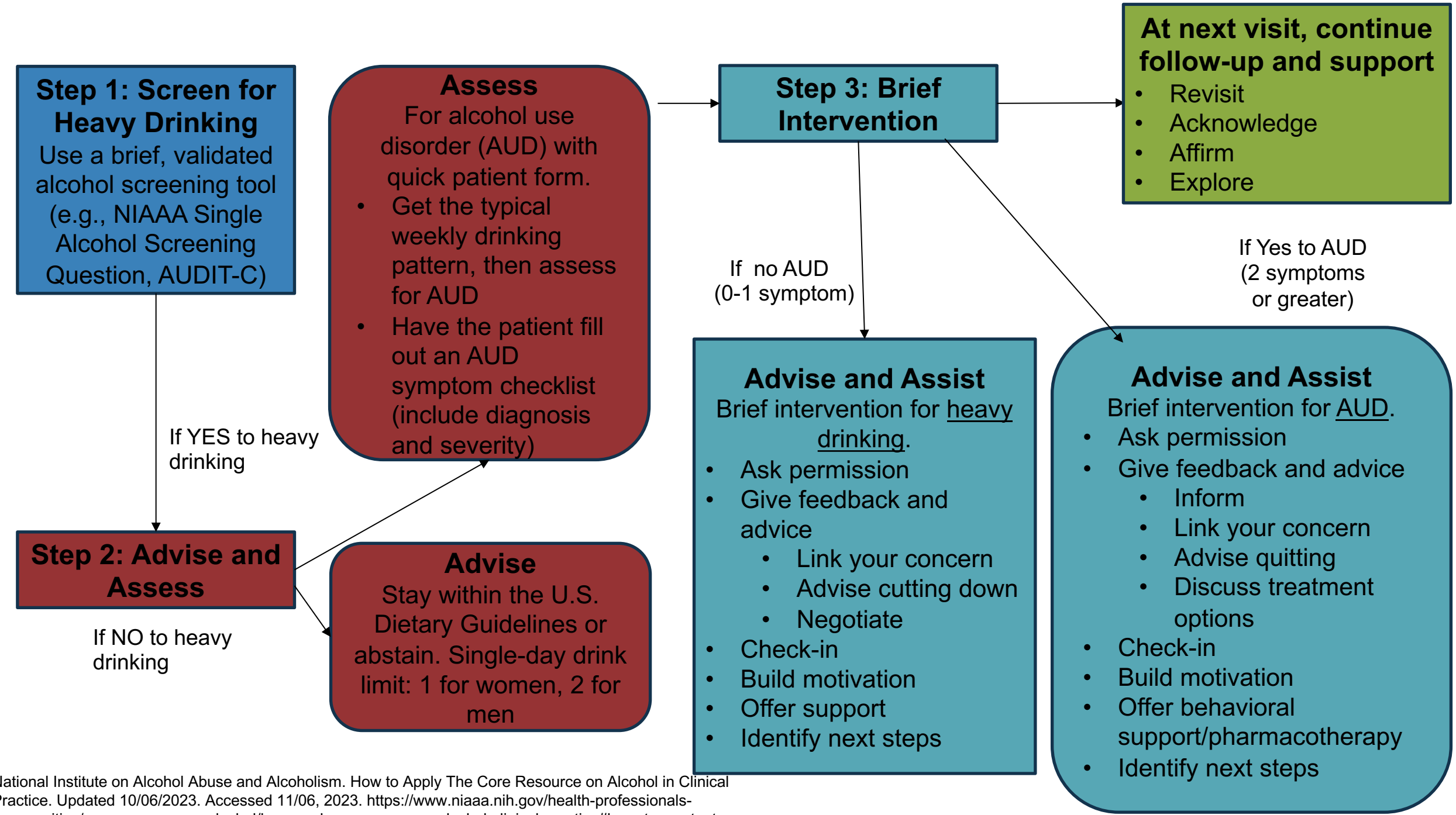
McPheeters et al. JAMA 2023



Non-FDA approved medications

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

McPheeters, JAMA 2023



National Institute on Alcohol Abuse and Alcoholism. How to Apply The Core Resource on Alcohol in Clinical Practice. Updated 10/06/2023. Accessed 11/06, 2023. https://www.niaaa.nih.gov/health-professionals-communities/core-resource-on-alcohol/how-apply-core-resource-alcohol-clinical-practice#how_to_content

Summary

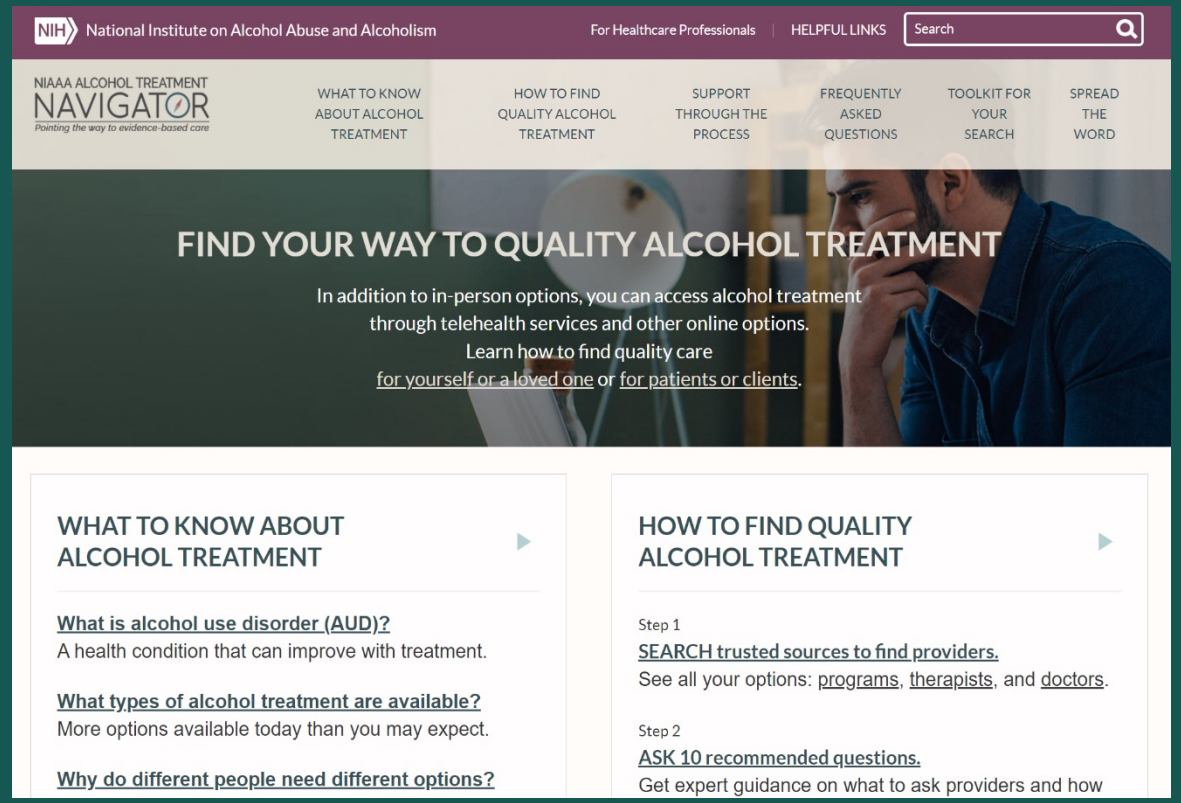
Unhealthy alcohol use can interrupt steps in the HIV Care Continuum and complicate comorbidities and their management among persons with HIV

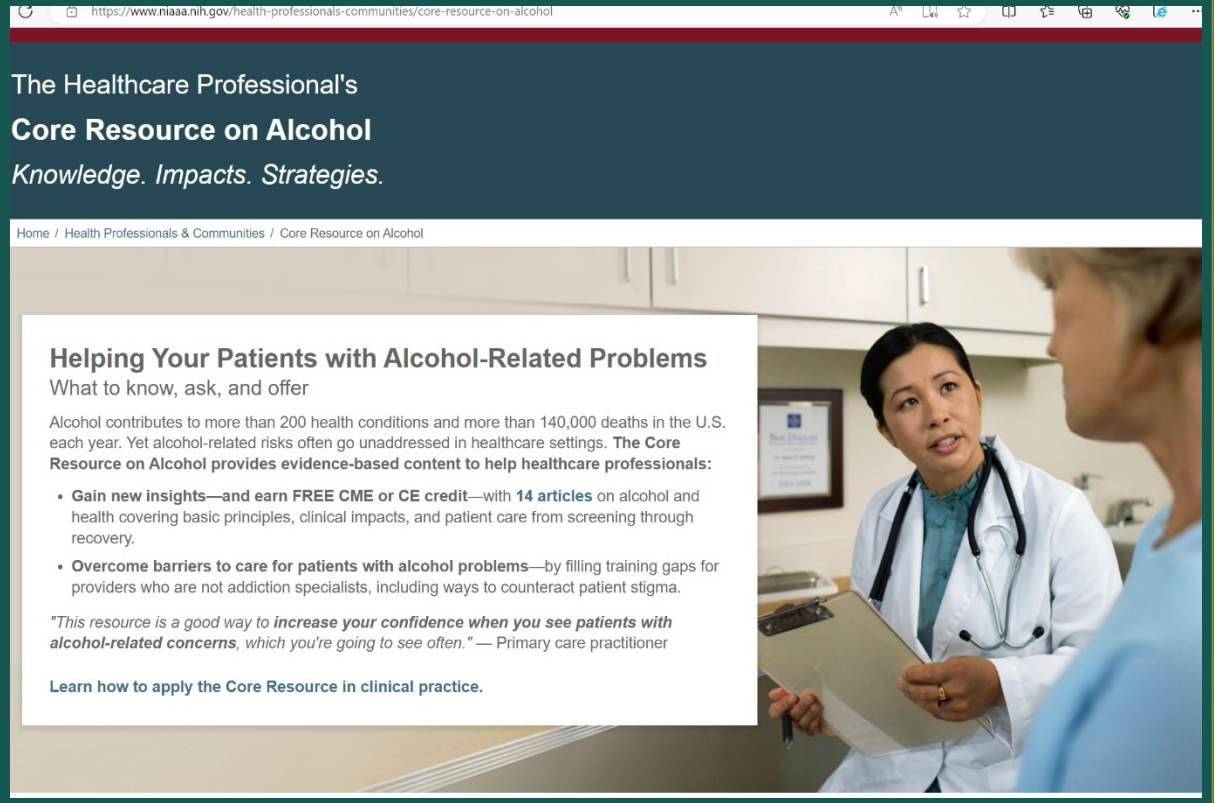
Given the impact of alcohol use on HIV infection and comorbidities and US goals of HIV treatment as prevention, it is critical to initiate ART among persons with unhealthy alcohol use

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





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

MAJOR ARTICLE HIV/AIDS

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

Marie Helleberg,[1,7] Shoaib Afzal,[2] Gitte Kronborg,[3] Carsten S. Larsen,[4] Gitte Pedersen,[5] Court Pedersen,[6] Jan Gerstoft,[1] Børge G. Nordestgaard,[2,7] and Niels Obel[1]

[1]Department of Infectious Diseases, Copenhagen University Hospital, Rigshospitalet, Copenhagen; [2]The Copenhagen General Population Study, Copenhagen University Hospital, Herlev; [3]Department of Infectious Diseases, Copenhagen University Hospital, Hvidovre; [4]Department of Infectious Diseases, Aarhus University Hospital, Skejby; [5]Department of Infectious Diseases, Aalborg University Hospital, Aalborg; [6]Department of Infectious Diseases, Odense University Hospital, Odense; and [7]Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark

The Journal of Infectious Diseases

MAJOR ARTICLE

IDSA Infectious Diseases Society of America hivma hiv medicine association OXFORD

Impact of Cigarette Smoking and Smoking Cessation on Life Expectancy Among People With HIV: A US-Based Modeling Study

Krishna P. Reddy,[1,2,8] Robert A. Parker,[1,3,4,8] Elena Losina,[1,8,9,11] Travis P. Baggett,[3,8,13] A. David Paltiel,[15] Nancy A. Rigotti,[3,5,6,8] Milton C. Weinstein,[14] Kenneth A. Freedberg,[1,3,7,8,12,14] and Rochelle P. Walensky[1,3,7,8,10]

[1]Medical Practice Evaluation Center, [2]Division of Pulmonary and Critical Care Medicine, [3]Division of General Internal Medicine, [4]Biostatistics Center, [5]Tobacco Research and Treatment Center, [6]Mongan Institute for Health Policy, [7]Division of Infectious Diseases, Massachusetts General Hospital, [8]Harvard Medical School, [9]Department of Orthopedic Surgery, [10]Division of Infectious Diseases, Brigham and Women's Hospital, [11]Department of Biostatistics, [12]Department of Epidemiology, Boston University School of Public Health, [13]Boston Health Care for the Homeless Program, and [14]Department of Health Policy and Management, Harvard T. H. Chan School of Public Health, Boston, Massachusetts; and [15]Yale School of Public Health, New Haven, Connecticut

Tobacco use among People with HIV

- 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

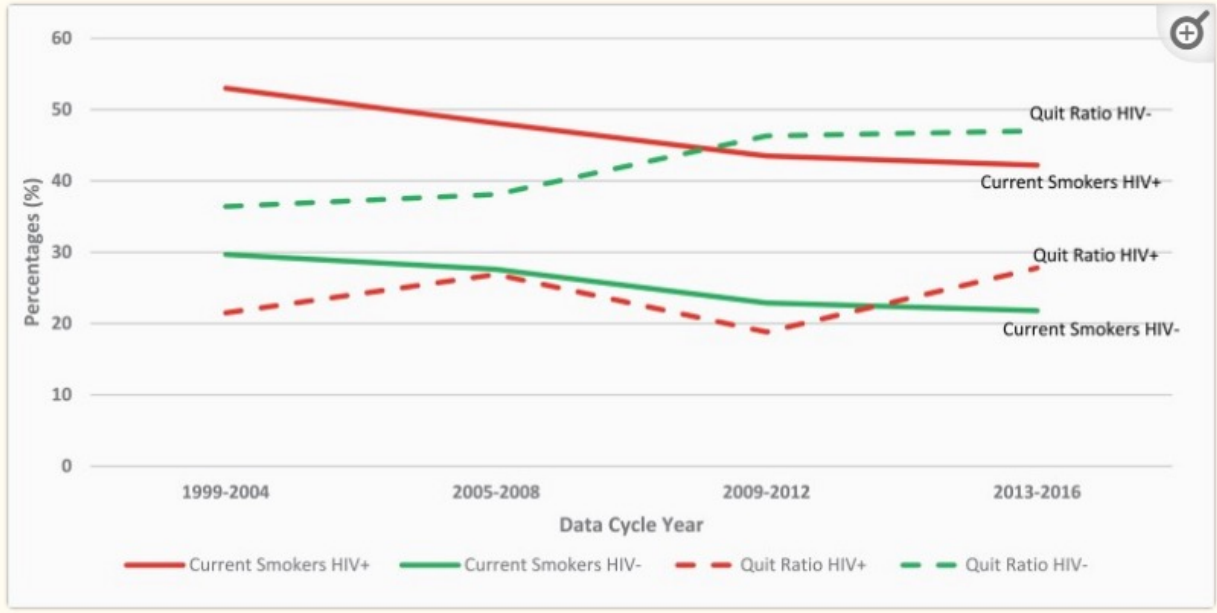


Figure 2.

Trend analysis of change in the percentage of current smoking and quit ratio among people living with HIV compared to people without HIV (NHANES; 8 survey cycles, 1999–2016) (weighted percentages).

Asfar T, Perez A, Shipman P, Carrico AW, Lee DJ, Alcaide ML, Jones DL, Brewer J, Koru-Sengul T. National Estimates of Prevalence, Time-Trend, and Correlates of Smoking in US People Living with HIV (NHANES 1999-2016). Nicotine Tob Res. 2021 Aug 4;23(8):1308-1317.

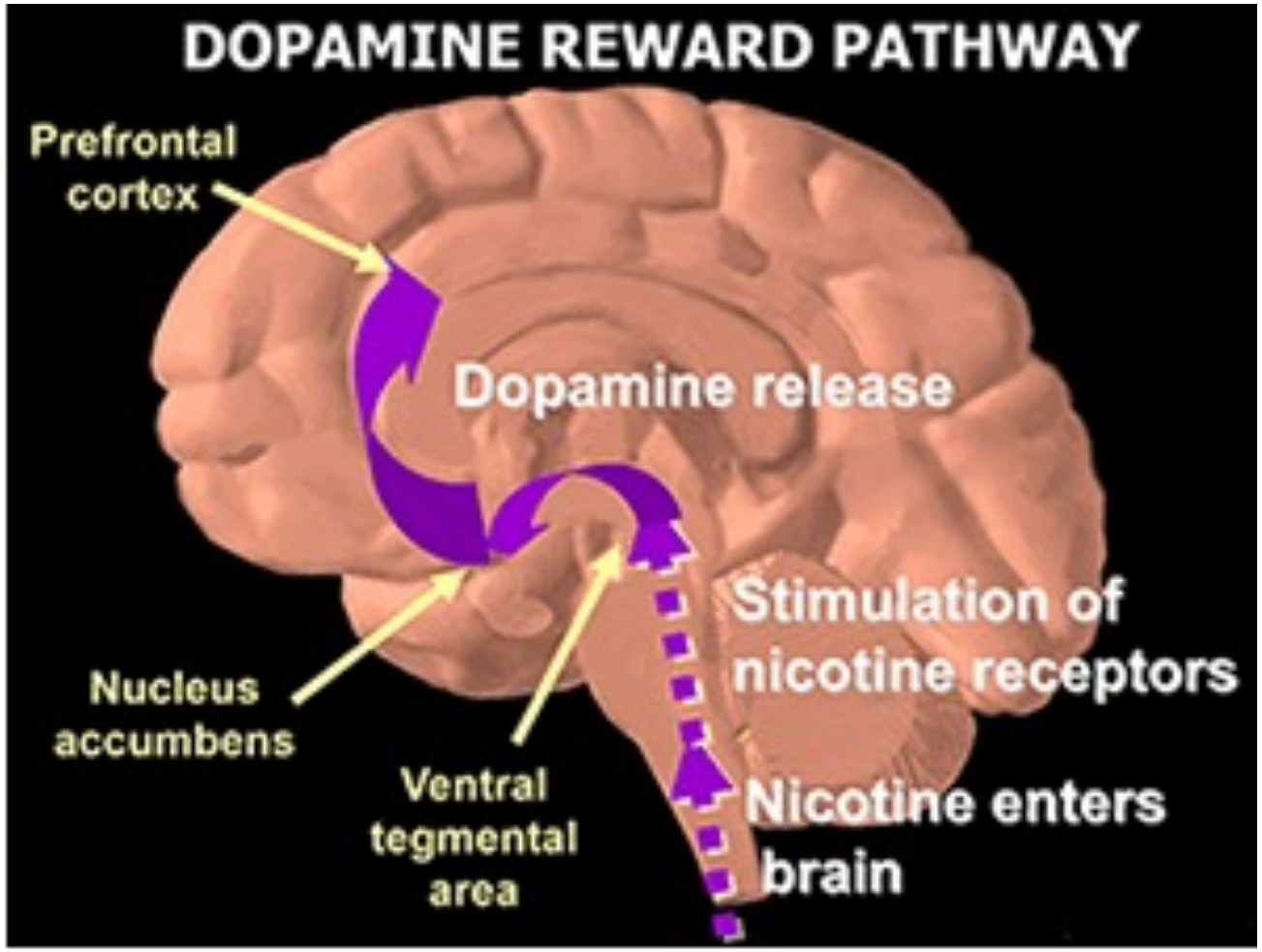
Approach to tobacco cessation

- 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

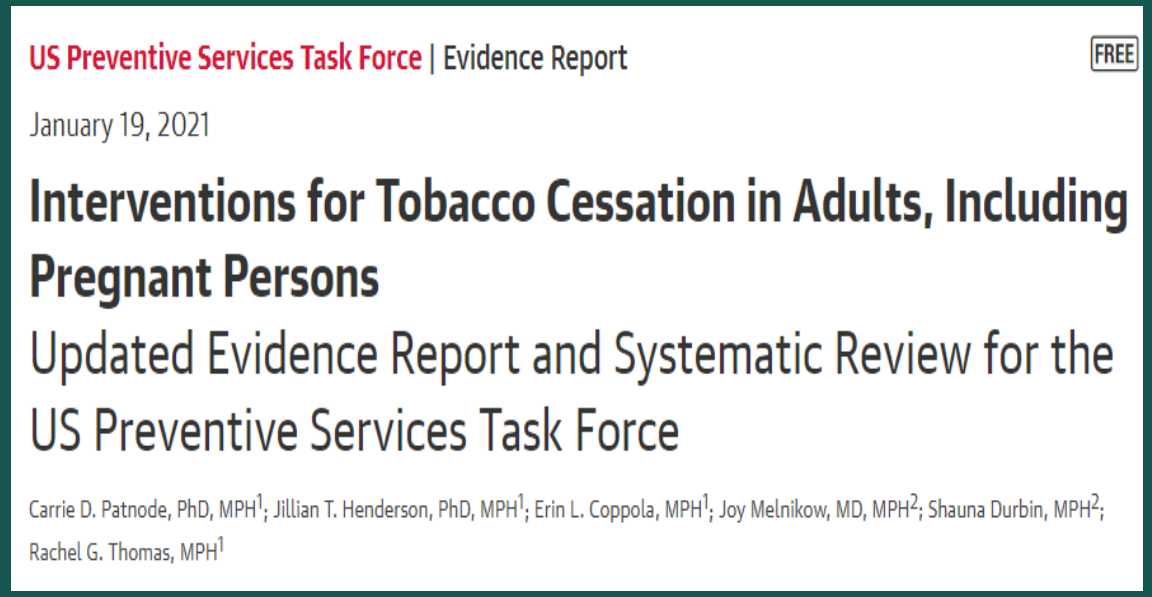
- Advise-Advise in a clear, strong and personal manner to quit use
  "*Quitting smoking is the most important action you can take to improve your overall health*

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

ASSIST or Connect



Approach to tobacco use: Evidence based behavioral treatments



US Preventive Services Task Force | Evidence Report

FREE

January 19, 2021

Interventions for Tobacco Cessation in Adults, Including Pregnant Persons

Updated Evidence Report and Systematic Review for the US Preventive Services Task Force

Carrie D. Patnode, PhD, MPH[1]; Jillian T. Henderson, PhD, MPH[1]; Erin L. Coppola, MPH[1]; Joy Melnikow, MD, MPH[2]; Shauna Durbin, MPH[2]; Rachel G. Thomas, MPH[1]

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

Patnode CD, Henderson JT, Coppola EL, Melnikow J, Durbin S, Thomas RG. Interventions for Tobacco Cessation in Adults, Including Pregnant Persons: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. *JAMA.* 2021;325(3):280–298. doi:10.1001/jama.2020.23541

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

Comparison	Number of Studies	Tobacco Cessation (risk ratio)
Dual NRT vs Single NRT	14 studies	1.25 95% CI (1.15-1.36)
Single NRT vs Placebo/No drug	133 studies	1.55 95% CI(1.49-1.61)

- Patnode CD, Henderson JT, Coppola EL, Melnikow J, Durbin S, Thomas RG. Interventions for Tobacco Cessation in Adults, Including Pregnant Persons: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. *JAMA.* 2021;325(3):280–298. doi:10.1001/jama.2020.23541

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%)

The following slides on NRT are based on 2 table in: Rigotti NA, Kruse GR, Livingstone-Banks J, Hartmann-Boyce J. Treatment of Tobacco Smoking: A Review. *JAMA.* 2022;327(6):566–577. doi:10.1001/jama.2022.0395

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

Nicotine Inhaler

Prescription only

10 mg cartridge

1 cartridge has 80 puffs

Administration

- 1 cartridge every 1-2 h as needed (16/d maximum)
- Puff into mouth and throat until cravings subside
- Do not inhale into lungs
- Change cartridge when nicotine taste disappears

Use ≥3mo

Mouth and throat irritation (≤66%); Cough (32%), especially if inhaled too deeply

Nicotine Nasal Spray

Prescription only

10 mL bottle (10 mg nicotine/mL)

0.5 mg/spray; 1 bottle has ≈ 200 sprays

Administration

- 1 spray to each nostril every 1-2 h as needed. (80 sprays/d maximum)
- Do not sniff, swallow, or inhale while spraying
- After use, wait 2-3 min before blowing the nose

Use ≥3mo

Nasal discomfort (94%); Throat irritation (≤66%); Rhinitis (23%); Sneezing (rate not available); Cough (32%)

Varenicline

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

Varenicline use among PWH

Study	Results
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[2]	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]
Placebo-controlled randomized clinical trial testing the efficacy and safety of varenicline for smokers with HIV[3]; Correlates of varenicline adherence among smokers with HIV and its association with smoking cessation[4]	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.[3,4]

Mercié P, Arsandaux J, Katlama C, et al. Efficacy and safety of varenicline for smoking cessation in people living with HIV in France (ANRS 144 Inter-ACTIV): a randomised controlled phase 3 clinical trial. Lancet HIV. Mar 2018;5(3):e126-e135. Ashare RL, Thompson M, Serrano K, et al. Placebo-controlled randomized clinical trial testing the efficacy and safety of varenicline for smokers with HIV. Drug Alcohol Depend. Jul 1 2019;200:26-33. doi:10.1016/j.drugalcdep.2019.03.0113.4.Quinn MH, Bauer AM, Flitter A, et al. Correlates of varenicline adherence among smokers with HIV and its association with smoking cessation. Addict Behav. Mar 2020;102:106151.

Varenicline Evidence

- Cochrane Review 2023:

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

Livingstone-Banks J, Fanshawe TR, Thomas KH, Theodoulou A, Hajizadeh A, Hartman L, Lindson N. Nicotine receptor partial agonists for smoking cessation. Cochrane Database Syst Rev. 2023 Jun 28;2023(6):CD006103. doi: 10.1002/14651858.CD006103.pub9. PMCID: PMC10303407.

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 quite 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]

1.Anthenelli RM, Benowitz NL, West R, et al. Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EAGLES): a double-blind, randomised, placebo-controlled clinical trial. Lancet. Jun 18 2016;387(10037):2507-20. doi:10.1016/s0140-6736(16)30272-2

Bupropion

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

- Cochrane Review:

Comparison	Number of Studies	Tobacco Cessation (risk ratio)
Bupropion vs. Placebo or no drug	50 studies	1.60 95% CI (1.49-1.72)
Bupropion vs. Dual NRT	2 studies	0.74, 95% CI (0.55-0.98)

Hajizadeh A, Howes S, Theodoulou A, Klemperer E, Hartmann-Boyce J, Livingstone-Banks J, Lindson N. Antidepressants for smoking cessation. Cochrane Database of Systematic Reviews 2023, Issue 5. Art. No.: CD000031. DOI: 10.1002/14651858.CD000031.pub6.

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

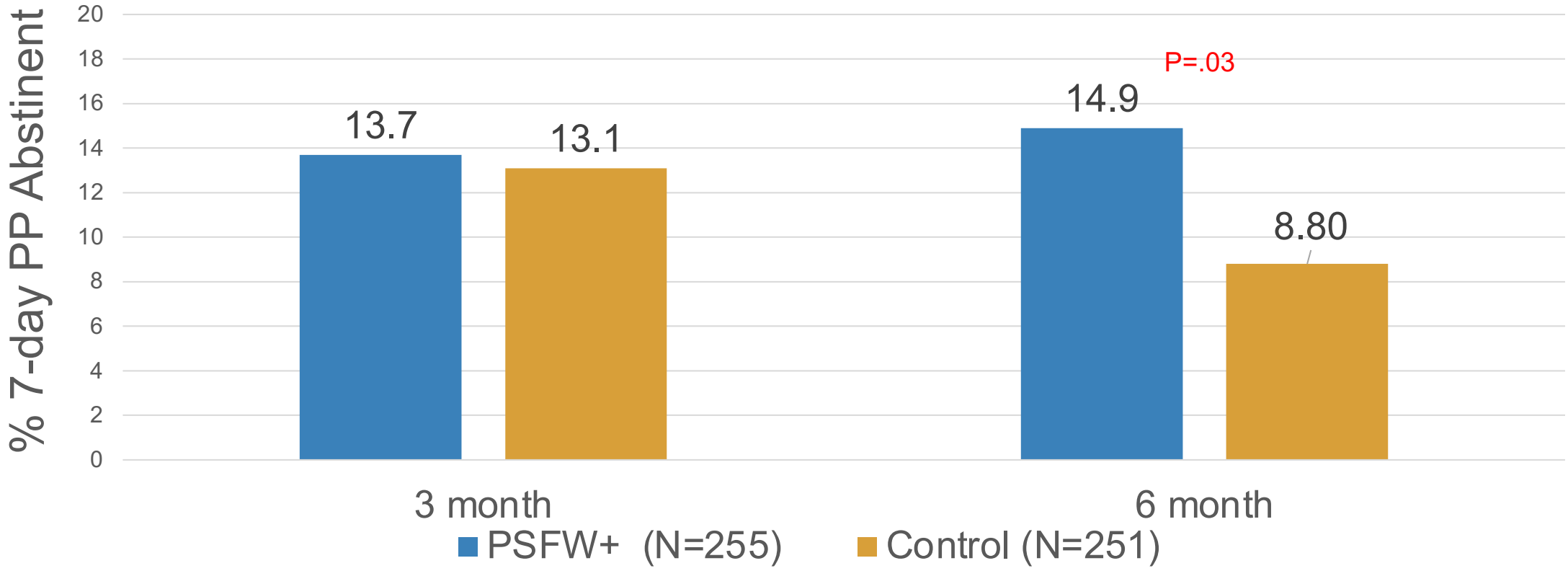
Slide shared by Dr. Jonathan Shuter

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

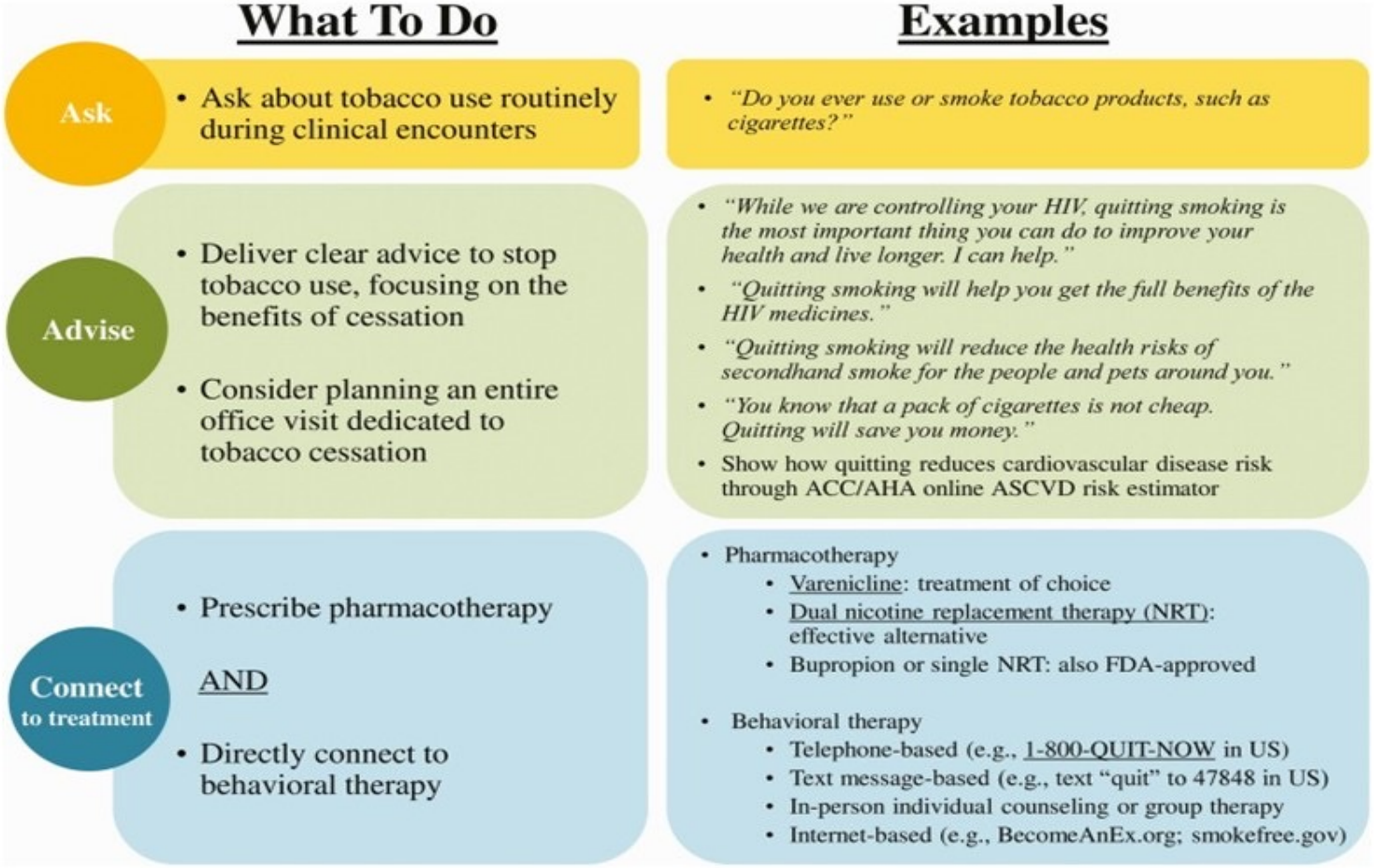


Shuter J, Chander G, Graham AL, Kim RS, Stanton CA. Randomized Trial of a Web-Based Tobacco Treatment and Online Community Support for People With HIV Attempting to Quit Smoking Cigarettes. J Acquir Immune Defic Syndr. 2022 Jun 1;90(2):223-231. doi: 10.1097/QAI.0000000000002936. PMID: 35175971; PMCID: PMC9203899.

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[1] and assessed among people with HIV.[2]

Figure from: Reddy KP, Kruse GR, Lee S, Shuter J, Rigotti NA. Tobacco Use and Treatment of Tobacco Dependence Among People With Human Immunodeficiency Virus: A Practical Guide for Clinicians. Clin Infect Dis. 2022 Aug 31;75(3):525-533. doi: 10.1093/cid/ciab1069. PMID: 34979543; PMCID: PMC9427148.



1. Vidrine JI, Shete S, Cao Y, et al. Ask-Advise-Connect: a new approach to smoking treatment delivery in health care settings. JAMA Intern Med. Mar 25 2013;173(6):458-64. doi:10.1001/jamainternmed.2013.3751 2. Bui TC, Piñeiro B, Vidrine DJ, Wetter DW, Frank-Pearce SG, Vidrine JI. Quitline Treatment Enrollment and Cessation Outcomes Among Smokers Linked With Treatment via Ask-Advise-Connect: Comparisons Among Smokers With and Without HIV. Nicotine Tob Res. Aug 24 2020;22(9):1640-1643. doi:10.1093/ntr/ntz227

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?

B Grade

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.)

Lung cancer screening

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.

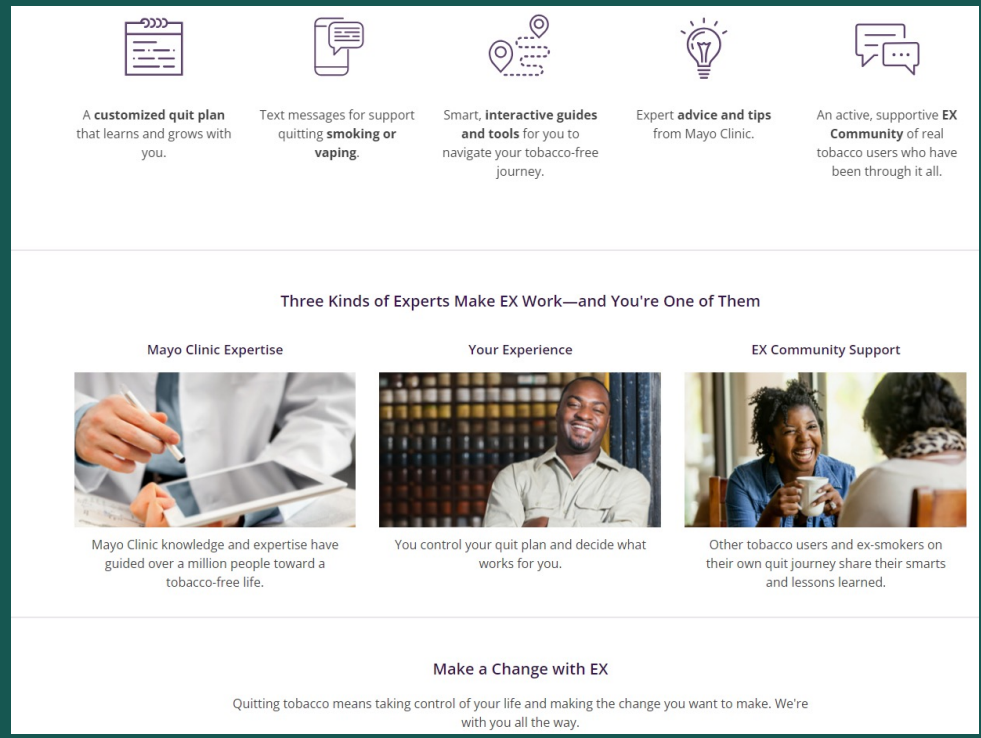
The USPSTF recognizes that clinical decisions involve more considerations than evidence alone.

U.S. Preventive Services TASK FORCE

Patient and Provider Resources for Tobacco Cessation

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

https://www.becomeanex.org/



Reddy KP, Kruse GR, Lee S, Shuter J, Rigotti NA. Tobacco Use and Treatment of Tobacco Dependence Among People With Human Immunodeficiency Virus: A Practical Guide for Clinicians. Clin Infect Dis. 2022 Aug 31;75(3):525-533. doi: 10.1093/cid/ciab1069. PMID: 34979543; PMCID: PMC9427148.

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.

AETC AIDS Education & Training Center Program Mountain West