

# CON: Substance Use Considerations in Advanced Heart Therapies

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# SUBSTANCE USE DISORDERS ARE COMMON

- More than 1 in 10 Adults in the US reported ever having a SUD
- Approximately 75% of adults who report having a SUD report being in recovery.
- Treatment is associated with being in recovery



ELSEVIER


Drug and Alcohol Dependence

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Short communication

## Prevalence and correlates of ever having a substance use problem and substance use recovery status among adults in the United States, 2018

Christopher M. Jones <sup>a</sup>  , Rita K. Noonan <sup>a</sup>, Wilson M. Compton <sup>b</sup>

# WHAT GUIDELINES RECOMMEND

- Active drug use should have 6 months of abstinence (Expert opinion)
- Recommend cannabis abstinence
- Recommend 6 months abstinence with AUD and tobacco



## GUIDELINE

# International Society for Heart and Lung Transplantation Guidelines for the Evaluation and Care of Cardiac Transplant Candidates—2024

Recommendations for Psychosocial Evaluation: Evaluation of Substance Use		
COR	LOE	RECOMMENDATIONS
1	C-EO	1. In heart transplant candidates with a history of active illicit drug use, at least 6 months of abstinence is recommended prior to transplant listing.
2a	B-NR	2. In heart transplant candidates with a history of active cannabis use, recommendation for abstinence prior to evaluation and listing is reasonable due to reported infectious risk and potential drug-drug interaction post-transplant.
1	B-NR	3. In heart transplant candidates with a history of active alcohol use disorder, at least 6 months of abstinence is recommended prior to transplant listing.
1	B-NR	4. In heart transplant candidates with a history of active tobacco smoking, at least 6 months of abstinence is recommended prior to transplant listing.

# Where's the data?

- Most data is extrapolated from other organ transplant data (primarily liver)
  - Clear evidence of poor outcomes with nicotine use (data from 1993-2006)
    - Median survival in post-cardiac transplant was lower in patients who returned to nicotine use and smoking within 6 months of transplant was a predictor of relapse
    - Increased drive-line infections with nicotine use in VAD patients.
  - Most substance use data is not specific to heart transplant or advanced heart therapies
  - Recidivism/relapse after liver transplantation is lower in liver transplant in patients with greater than 6 months of abstinence.
  - There is limited data in heart transplant recipients to connect substance use and mortality. Evidence is inconsistent regarding substance use pre-transplant and medication adherence.

# Is all substance use the same?

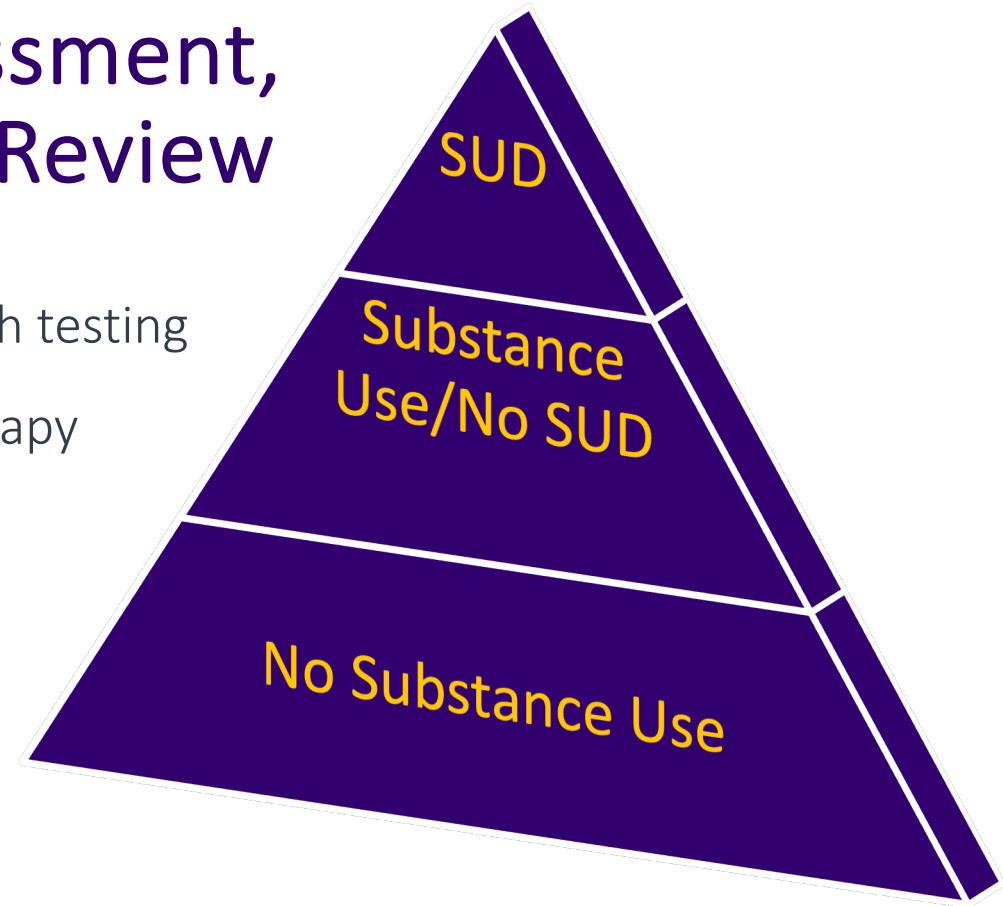
## Substance Use vs Substance Use Disorder

Loss of Control	Social Impairments	Health Impairments	Pharmacology*
Use of substance in increased amounts or for longer than intended	Interference of substance use with social obligations	Continued use in physically hazardous situations (driving)	Need to increase use to achieve same effect (tolerance)
Persistent wish or unsuccessful attempt to cut down or control substance use	Continued use despite interpersonal or social problems (legal, loss of relationships)	Continued use despite psychologic or physical problems	Withdrawal of substance
Excessive time spent to obtain, use, or recover from substance	Elimination or reduction of important activities due to substance		*Pharmacology is not included in the criteria for patients on prescribed chronic benzos or opioids
Strong desire or urge to use substance			
<b>SEVERITY</b>	<b>MILD:</b> 2-3 components	<b>MODERATE:</b> 4-5 components	<b>SEVERE:</b> 6+ components

# UW APPROACH

## — Addiction Medicine Assessment, Substance Testing, Chart Review

- Substance Use Disorder (SUD)
  - Requires a period of abstinence verified with testing
  - May be required to engage in treatment
  - Agrees to ongoing testing pre and post-therapy
- Substance Use without a Use Disorder
  - Can receive advanced heart therapies
  - Must agree to abstinence
  - Agrees to ongoing testing post-therapy
- No Substance use
  - No barriers to Advanced Heart Therapies
  - No additional testing needed



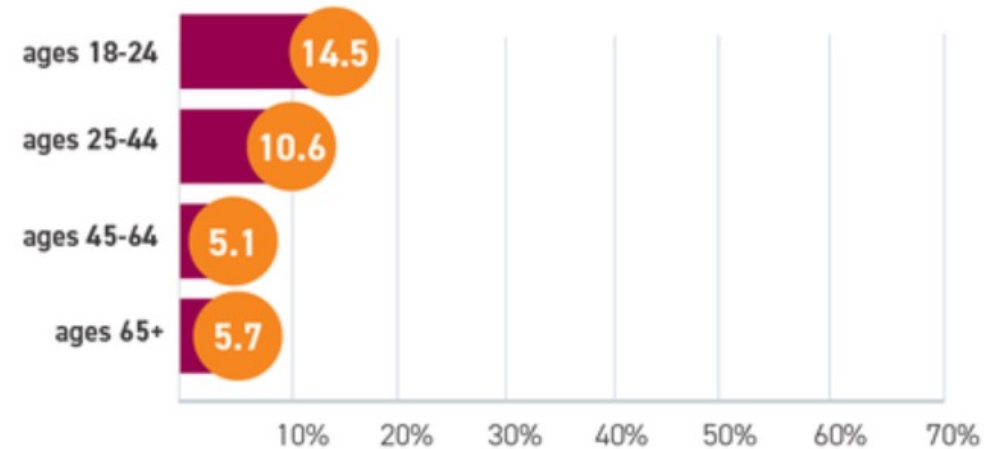
# Legal Substance Use: Nicotine

- Clear data supports poor outcomes with transplant and VAD
- 34 million Americans smoke, prevalence is only 14% (all-time low)
- About 2/3 of adults who smoke have quit
- Quit Rates are secondhand improved with medication and counseling.
- Testing can distinguish nicotine replacement, secondhand exposure, and tobacco use (nicotine, cotinine, anabasine)

Smokers who made quit attempts in 2020:



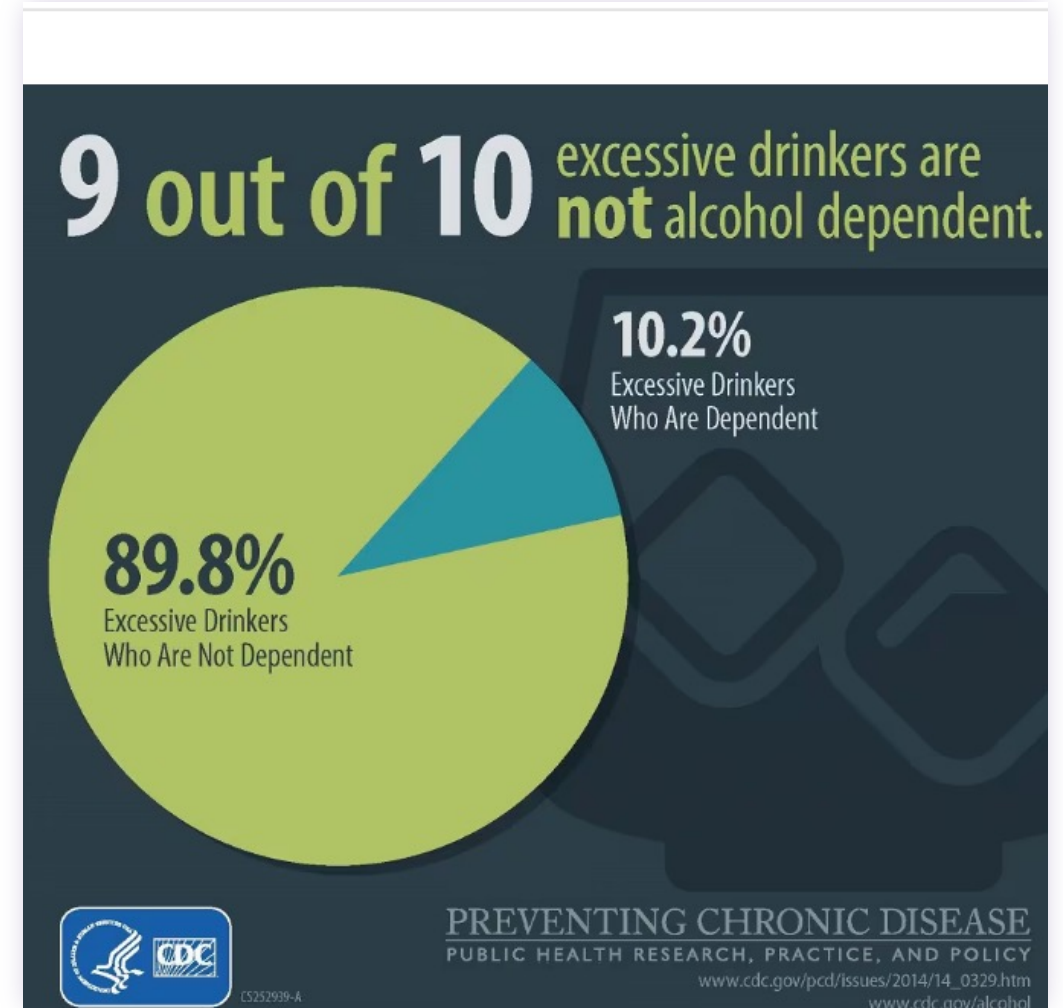
Smokers who successfully quit in 2020:



Source: National Health Interview Survey

# Legal Substance Use: Alcohol

- Light use vs. Heavy Use vs. Use Disorder
- Requires patient history, chart review, PEth evaluation, patient input, ongoing testing
- Most data extrapolated from Liver Transplant Data (selecting for severe alcohol use disorder patients)
- Treatment of AUD can be effective with behavioral and medication assisted treatment.

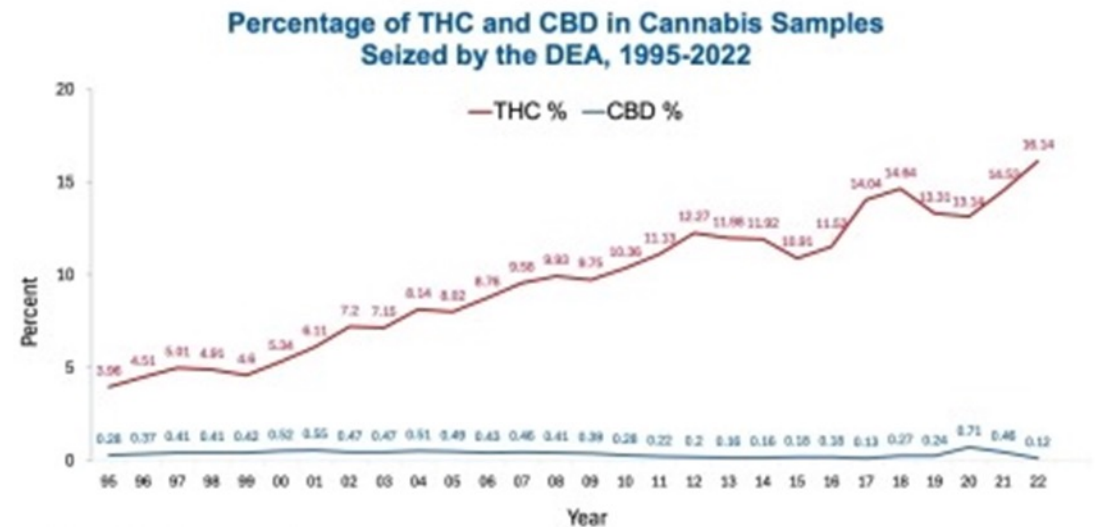




# Legal Substance Use: Cannabis



- High variation in usage
- Secondary verification of history is challenging due to nature of cannabis metabolism
- Inhaled has higher risks than oral ingestion.
- Cannabis has many drug interactions (warfarin, immunosuppressants, azoles, diltiazem, trimethoprim/sulfamethoxazole, dapsone)
- Cannabis can contribute to mental health issues and cyclic vomiting (the higher the THC, the more risk)



SOURCE: U Miss, Potency Monitoring Project

# Legal Substance Use: Controlled Prescriptions

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Requires extensive chart review, PDMP review, potentially calling prescribing providers

- **Opioids**

- Should be less than 50 MED due to CDC recommendations (fewer benefits and higher side effects including overdose if MED>50)

- **Benzos/hypnotic:**

- Generally recommend a taper plan for benzos and hypnotics due to risk for delirium, cognitive impairment.

- **Opioids with benzos or hypnotics**

- Should not be combined due to increased risk of overdose

- **Stimulants:**

- Non-stimulant alternatives should be tried due to risk of cardiomyopathy. If not effective, psychiatrist and cardiologist should work to reach safest possible option for patient.

- **Testosterone**

- Should be converted to daily use (avoiding injections that have high peak levels) to reduce cardiotoxicity

# Use of illegal substances

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Most illegal substance use **does** classify as a substance use disorder

- Stimulants  
(cocaine/methamphetamine)
  - No clear medication assisted therapy
  - Requires intensive behavioral resources
  - Relapse prevention is key
  - Social support for sobriety is important
  - Verify positive tox screening with confirmation testing.
  - Patients may benefit from longer-term abstinence prior to advanced therapies.

- Opioids
  - Excellent treatment options with medication assisted treatment (MAT)
  - Recommend against stopping MAT for advanced therapies
  - Recommend behavioral therapies
  - Confirm tox screening with confirmatory testing and chart review (iatrogenic fentanyl common)
  - Longer-term abstinence prior to advanced therapies ideal.

# Sentinel Events

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There is some evidence in research and anecdotal experience with the power of sentinel events in producing behavioral changes.

- We have the power to utilize sentinel events in motivating change
- Providing treatment during this sentinel event can allow patients to reach recovery and improve access to life saving treatment.
- This is studied most frequently with smoking (and alcohol)



# Substance Use Disorder Treatment

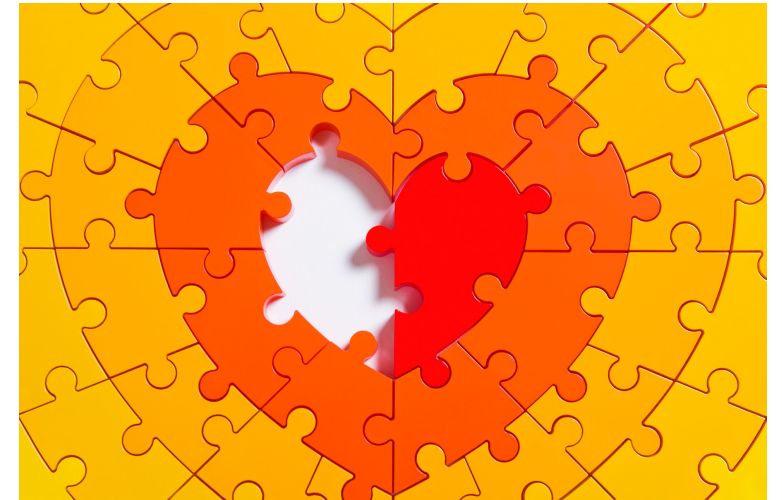


# Early Substance Use Assessments and Testing

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## Outpatient Substance Use Assessments are Essential in Heart Failure Management

- Identifying heart failure patients who use substances (detailed substance use history, toxicology screening)
- Assessment by Addiction Medicine with substance use testing
  - Must understand importance of abstinence as harm reduction
  - Must provide clear education regarding the science behind substance use requirements.
- Referral to higher level substance use treatment as needed
- Ongoing support with addiction medicine team.



# VAD as Bridge to Transplant

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Supporting patients to recovery

- Must demonstrate social stability
- Agreeable to participating in treatment recommended by addiction medicine team
- Agreeable to regular substance use testing and follow-up with addiction team.
- Addiction Medicine and Cardiology Team must have excellent collaboration.



Port Mann Bridge, Vancouver BC

# Patient Surveillance and Ongoing Support

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- Regular testing and review of substance use is key from the advanced heart failure team
- Understanding ongoing testing is a motivator to continue abstinence
- Addiction medicine should remain available to support patients who are struggling with cravings or who have started using substances.
- Medications or specific therapy (such as PTSD treatment) may be important in reducing recidivism.



Lake Diablo, North Cascades National Park



# Conclusions

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- Substance Use Disorder (SUD) is very common in the US population and most people achieve recovery
- Treatment (behavioral and medication assisted treatment) can be very effective for SUD
- Sentinel health events can provide motivation for change and improve treatment outcomes
- There is poor data with regarding to adverse outcomes and substance use in advanced heart therapies.
- A multidisciplinary approach to treatment of patients with substance use disorder is essential in reducing substance use as a barrier for advanced heart failure treatments

# References

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- Please note some references are noted on the slides. Others are included below.
- Dew MA, DiMartini AF, Steel J, et al. Meta-analysis of risk for relapse to substance use after transplantation of the liver or other solid organs. *Liver Transplant* 2008; 14:159-72.
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# QUESTIONS?

