TBI-BH ECHO

Traumatic Brain Injury – Behavioral Health ECHO

UW Medicine | Psychiatry and Behavioral Sciences

Alcohol Use and TBI

Charles H. Bombardier, PhD
Professor
Dept of Rehabilitation Medicine
University of Washington

Mark H. Duncan, MD
Associate Professor
Depts of Psychiatry and Behavioral Sciences and Family Medicine
University of Washington

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Project ECHO

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Overview

- Alcohol and TBI
  - Prevalence
  - Relationship to outcomes
  - Rationale for non-specialist interventions
  - Psychological Interventions
  - Medical Treatments
  - Discussion

Alcohol Use and TBI

- 30-50% intoxicated at time of TBI
- 36% met criteria for preinjury abuse or dependence
- Alcohol use stops or declines during the first year
- About 25-50% resume problem drinking after that
- There are also some new cases of alcohol use problems
- Childhood TBI confers a large (3.6-6.0-fold) increase in risk of alcohol problems as adults

Whelan-Goodinson et al., JHTR 2009; Weil et al Alch Res Curr Rev 2018

Does TBI Increase the Risk of Developing AUD?

- National US military/veteran cohort who served 9/2020-9/2016
- TBI severity correlated with increased likelihood of incident AUD after adjusting for demographic and clinical factors
  - MILD TBI HAZARD RATIO (HR) = 1.25
  - MODERATE-severe TBI HR = 1.4
  - PENETRATING TBI HR = 1.90
- Among those who developed AUD, those with TBI had a higher risk of death from alcohol, drug overdose, or suicide
  - MILD TBI HR = 2.47
  - Moderate-severe HR = 4.25
  - Penetrating TBI HR = 3.39

Song et al J Addict Med 2025

Correlates of AUD in US Military Veterans with TBI

- Nationally representative survey of 3976 military veterans showed 24.5% reported probable TBI
- Probable TBI was associated with higher odds of probable
  - current anxiety disorder (OR=2.82),
  - major depressive disorder (OR=2.17),
  - ideation (OR=1.78), PTSD (OR=1.72),
  - drug use disorder (OR=1.54), and
  - alcohol use disorder (OR=1.47).

Karr et al. Arch Phys Med Rehabil 2025

Predictors of Heavy Drinking After TBI

- Male
- Younger age
- History of heavy drinking or problems*
- Diagnosis of depression after TBI
- Better physical functioning
- Employed

*Only 5-7% of those without prior history will drink heavily after TBI

Horner, Fergusen et al., J Int Neuropsych Soc; 2005; Kreutzer et al., 1996
Ponsford et al Brain Inj 2007, Bombardier et al., 2003

Pre-TBI Alcohol Abuse and Outcomes

Meta-analysis of 16 studies

- Neuroradiological findings
  - Greater gray matter volume loss
  - Enlarged cerebral ventricles
- Neurocognitive findings
  - Worse executive functioning
  - Worse memory
- Worse post-TBI alcohol and substance use
- Worse emotional functioning

Unsworth & Mathias J Clin Exp Neuropsych 2017

Alcohol Intoxication and Recurrent TBI

- Finnish population
- 236 survivors of TBI
- 21-year follow-up
- Those with alcohol related index TBI were ~4 times as likely to have recurrent TBI compared to those with index TBI not alcohol-related
- 6% vs. 25% (RR 4.41, 95% CI=1.53–12.70)

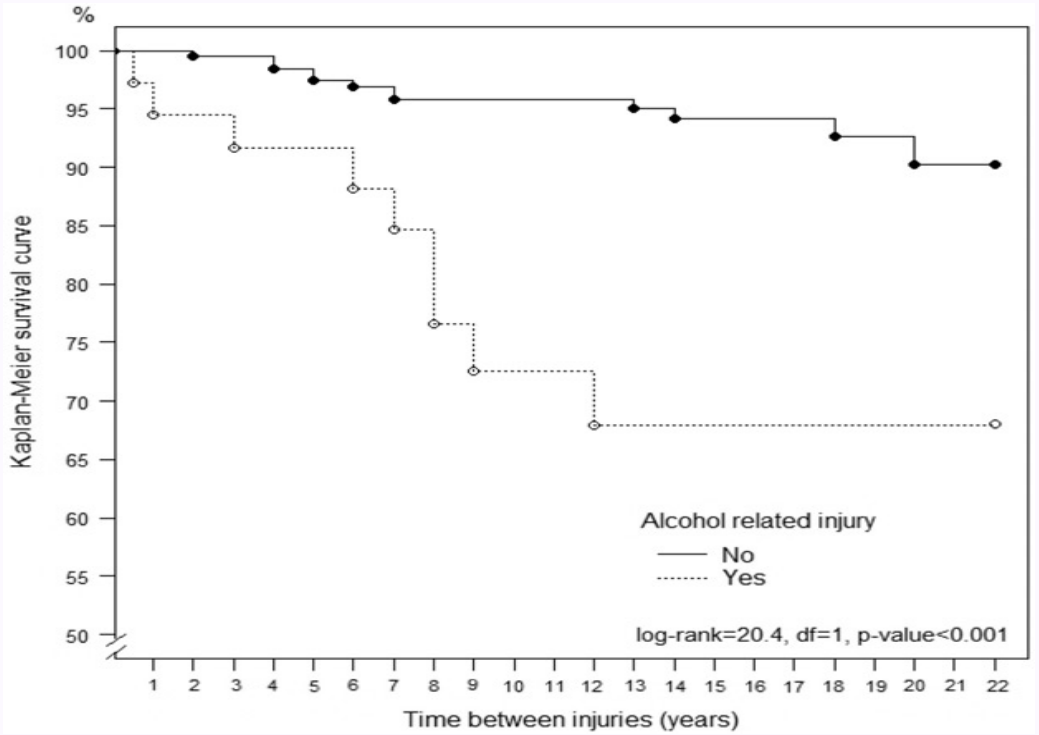

Figure 1. Kaplan-Meier curves showing proportions of patients remaining without TBI recurrence according to alcohol involvement during the first injury.

Winqvist et al., Brain Injury, September 2008; 22(10): 780–785

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Adverse Effects of Alcohol Use After TBI

- Alcohol use can increase risk for seizures directly via lowered seizure threshold or indirectly via interfering with efficacy of antiseizure medications
- People who drank at “heavy social” levels had impaired event-related potentials and greater cognitive deficits relative to abstainers
- Drinking 6-9 months post-TBI is associated with poorer executive functioning after controlling for pre-injury alcohol consumption

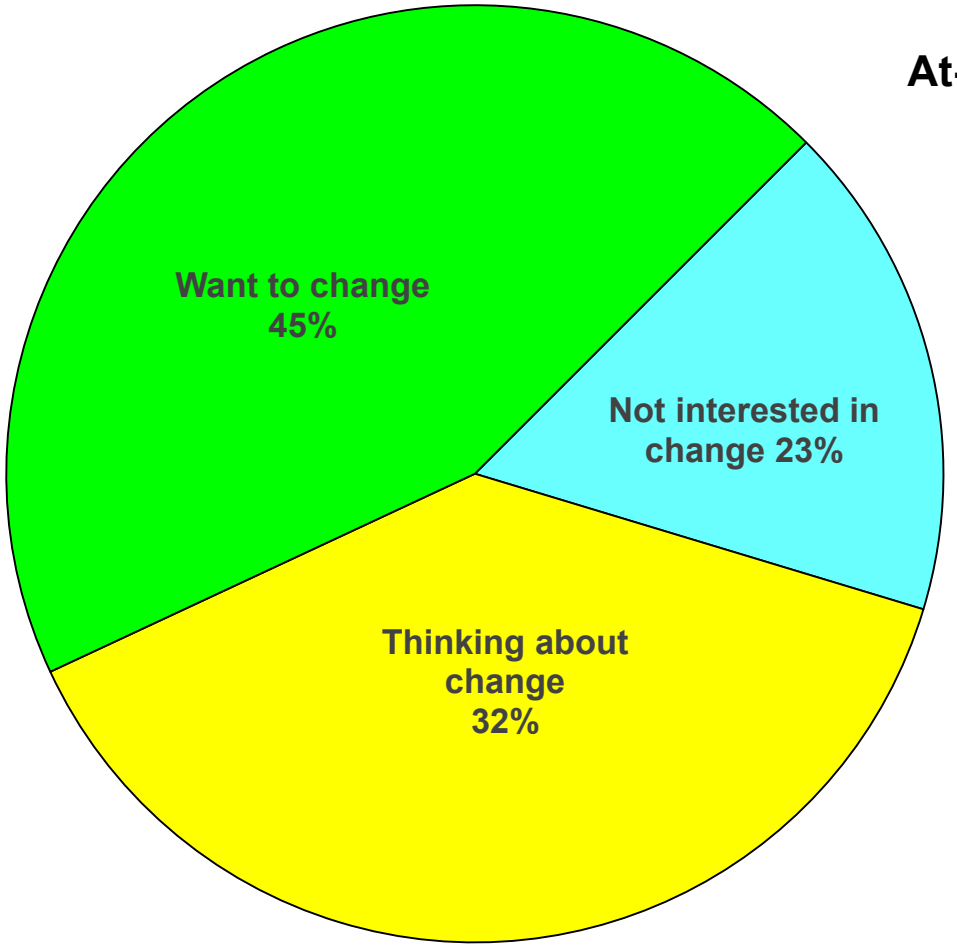
Weil et al Alch Res Curr Rev 2018; Baugley et al., APMR 1997
Ponsford et al., J Clin Exp Neuropsychol 2013

Why Pay Attention to AUD in Your Setting?

- Only 1 in 10 with SUD will get specialized treatment
- Since 1990 the IOM called for non-specialists to deliver brief interventions for SUD
- Treatment delivered by non-specialists can be effective, especially for less severe SUDs
- Brief treatment integrated into medical and surgical settings can be effective for mild-to-moderate SUD
- Brief interventions can be Step 1 of a stepped-care approach and increase readiness for more intensive treatment

Institute of Medicine. Broadening the base of treatment for alcohol problems. Washington, DC: National Academy Press; 1990.

Window of Opportunity After TBI



At-risk drinkers
n = 84

Bombardier et al., APM&R 2002

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Perceived Barriers To AUD Counseling

- *"I am not sure what constitutes alcohol misuse after TBI"*
  - More than zero drinks per day during the first post-TBI year and more than 2 drinks per day for men or 1 drink per day for women is harmful according to Surgeon General
- *"I am afraid that asking about drinking could harm my relationship with the patient"*
  - Rarely elicits resistance when part of routine health screening

Barnes et al. Med Clin North Am. 1997; Beich et. al. BMJ. 2002

Perceived Barriers To SUD Counseling

- *"I am not sure I can impact substance use in my patients"*
  - Screening + education + MI can double the abstinence rate
- *"I do not have much time."*
  - Education or brief interventions can be done in a few minutes
- *"I am not qualified to do substance use counseling."*
  - SUD responds to standard counseling strategies (behavioral, cognitive-behavioral, motivational, values) and therapist EMPATHY and ACCEPTANCE play a major role in effectiveness
- *"Screening for SUDs is a waste of time--they lie about their drinking."*
  - Decades of research shows that when asked in confidential setting, with a non-judgemental attitude, clients are relatively honest about use and problems

Barnes et al. Med Clin North Am. 1997; Beich et. al. BMJ. 2002

Patient Willingness To Discuss Alcohol

VA Primary Care Study

- 90% of patients with heaviest alcohol use admitted they drank more than they should
- 75% of patients of any patients screening positive for alcohol misuse indicated readiness to change behavior

Williams et al., Ann Fam Med 2006, 4 (3) 213-220;

VA Qualitative Study

- Patients interviewed were generally receptive to being asked about alcohol use and to receive a treatment referral, particularly when providers:
  - Framed treatment as a collaborative choice
  - Had practical knowledge of treatment options
  - Had a good relationship with the patient

Lewis et al. J Addict Dis 2016

Screening

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Multiple Brief Screening Options

- CAGE: Cut down, Angered, Guilty, Eye-opener (78/ 81)
- Two Item Conjoint Screening: In the last year, have you ever drunk or used drugs more than you meant to? and Have you felt you wanted or needed to cut down on your drinking or drug use in the last year? (79%/78%)
- AUDIT-C: How often do you have a drink containing alcohol? How many drinks containing alcohol do you have on a typical day when you are drinking? How often do you have six or more drinks on one occasion? (86%/89% in men; 73%/91% in women)

TAPS-1 Screening Tool

1. In the PAST 12 MONTHS, how often have you used any tobacco product (for example, cigarettes, e-cigarettes, cigars, pipes, or smokeless tobacco)?

   ☐ Daily or Almost Daily ☐ Weekly ☐ Monthly
   ☐ Less Than Monthly ☐ Never

2. In the PAST 12 MONTHS, how often have you had 5 or more drinks containing alcohol in one day? One standard drink is about 1 small glass of wine (5 oz), 1 beer (12 oz), or 1 single shot of liquor. (Note: This question should only be answered by males).

   ☐ Daily or Almost Daily ☐ Weekly ☐ Monthly
   ☐ Less Than Monthly ☐ Never

3. In the PAST 12 MONTHS, how often have you had 4 or more drinks containing alcohol in one day? One standard drink is about 1 small glass of wine (5 oz), 1 beer (12 oz), or 1 single shot of liquor. (Note: This question should only be answered by females).

   ☐ Daily or Almost Daily ☐ Weekly ☐ Monthly
   ☐ Less Than Monthly ☐ Never

4. In the PAST 12 MONTHS, how often have you used any drugs including marijuana, cocaine or crack, heroin, methamphetamine (crystal meth), hallucinogens, ecstasy/MDMA?

   ☐ Daily or Almost Daily ☐ Weekly ☐ Monthly
   ☐ Less Than Monthly ☐ Never

5. In the PAST 12 MONTHS, how often have you used any prescription medications just for the feeling, more than prescribed or that were not prescribed for you? Prescription medications that may be used this way include: Opiate pain relievers (for example, OxyContin, Vicodin, Percocet, Methadone) Medications for anxiety or sleeping (for example, Xanax, Ativan, Klonopin) Medications for ADHD (for example, Adderall or Ritalin)

   ☐ Daily or Almost Daily ☐ Weekly ☐ Monthly
   ☐ Less Than Monthly ☐ Never

Gryczynski et al., J Gen Int Med 2017

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Alcohol Use After Traumatic Brain Injury

January 2021 www.msktc.org/tbi/factsheets TBI Factsheet

This factsheet describes negative effects that may occur from alcohol use after a TBI. See pages 3 & 4 for suggestions on how to reduce or stop drinking.

Introduction

Alcohol and traumatic brain injury (TBI) are closely related. Up to 50% of adults with TBI were drinking more alcohol than is recommended before they were injured. People who were over age 60 when they had their TBI were less likely to drink too much before their injury, but those who did had worse outcomes. Although many people initially drink less after a TBI, starting to drink again increases their chances of having worse outcomes. By 2 years after injury, we find that more than 40% start drinking again.

After a TBI, many people are more sensitive to alcohol. Drinking raises their risk of getting injured again. It also makes cognitive (thinking) problems worse and increases the risk of emotional problems such as depression. Drinking can also get in the way of TBI recovery. For these reasons, doctors urge people with TBI not to drink. Not drinking can prevent further injury to the brain and promote healing.

Facts about TBI and alcohol

Alcohol and TBI recovery

- TBI recovery goes on for a lot longer than we used to think was possible. Most people see improvements for many years after injury.
- Drinking can slow down or stop TBI recovery.
- Not drinking gives the brain the best chance to heal.
- People's lives often continue to get better many years after TBI. Not drinking can increase the chance of improvement.

Alcohol, brain injury, and seizures

The Traumatic Brain Injury Model System (TBIMS)

https://msktc.org/sites/default/files/MSKTC-TBI-Alcohol-Use-508_0.pdf

Offering Advice

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Efficacy of Physician Advice

Table 2.

Primary Outcome: Changes in Alcohol Use Between Groups After Brief Intervention (N = 226)

Alcohol Use	Treatment n = 114 % (n)	Control n =112 % (n)	*t*Score	*P*Value
Consumes ≥3 drinks per day in previous 7 days				
Baseline	39 (45)	46 (51)	0.92	NS
6 mo	18 (20)	30 (34)	2.08	.02
12 mo	17 (19)	35 (39)	2.98	.002
24 mo	14 (16)	30 (34)	2.80	.01
36 mo	14 (16)	35 (39)	3.53	.001
48 mo	15 (17)	20 (22)	0.70	NS
Overall $P < .001$*				
Drinks consumed in previous 7 days	**Mean No. (SD)**	**Mean No. (SD)**		
Baseline	16.2 (11.2)	18.3 (12.1)	1.36	NS
6 mo	9.4 (10.3)	14.3 (11.1)	3.42	.001

Grossberg et al., Ann Fam Med. 2004 2(5): 474–480

Offering Advice To People With TBI

ASK-TELL-ASK

- People with TBI will remember and be influenced more by what they say than what you say, so instead of saying, "You should not drink because…" try this:
- ASK, "What concerns do you have about using alcohol after a TBI?" or "What have you heard about using alcohol after TBI?"*
  - If answer is adequate, express appreciation and agreement
  - If answer is inadequate,
- ASK, may I tell you what other people in your situation usually do?
  - If they give you permission to proceed
- TELL them that others usually choose to abstain for at least one year to give their brains the best chance to heal
- ASK, What do you make of that advice?

*CAGE questions regarding cut down and guilt are great options too

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Brief Motivational Interventions

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Efficacy of Brief Hospital Interventions

- Brief counseling interventions (1-3 sessions)
- 14 studies, 4041 mainly male participants
- BI resulted in greater reductions in alcohol consumption compared to controls at six months but not at one year.
- BI resulted in fewer deaths at six months
- Assessment alone may reduce drinking

McQueen J, Howe TE, Allan L, Mains D, Hardy V. Brief interventions for heavy alcohol users admitted to general hospital wards. Cochrane Database Syst Rev. 2011 Aug 10;(8):CD005191.

Brief Treatment for AUD is Promising in TBI

- People with TBI respond to standard psychological treatments adapted for TBI
- 32% of those who received screening + education, + brief motivational intervention during inpatient rehabilitation resumed drinking within one year versus 62% who received screening + education and attention but no motivational interviewing

Bogner Corrigan et al Rehab Psychol 2021

TBI-Related Accommodations

- Used multi-media educational component
- Connected intervention to “Brain health”
- Devised written brain health plan
- Kept it simple-choose three goal activities
- Used telephone or posted visual cues to trigger recall and implementation of the plan
- Provided a one-month booster session
- Referred for treatment of comorbid mental health diagnoses

Bogner Corrigan et al Rehab Psychol 2021

Why MI Has Special Appeal In TBI

- People with TBI have difficulty delaying gratification and recalling/accessing personally relevant information when they need it
- fMRI studies show a key MI strategy, eliciting change talk engages reward and self-reflection circuits in the brain that are implicated in successful SUD treatment
  - Eliciting "change talk" suppresses activation of reward circuits in response to alcohol cues compared to "sustain talk"
  - Exposure to person-specific "change talk" activates self-reflection brain circuits more than generic "change talk"

Feldstein Ewing et al., J Stud Alch Drug 2011; Feldstein Ewing et al., Addictive Behav 2014

More Intensive Interventions

- Cognitive Behavioral Therapy
- Relapse Prevention
- Alcoholics Anonymous (alone or supported)
- Contingency Management
- Behavioral Couples Therapy
- Etc.

Option for Treatment Resistant Patients

- Community Reinforcement Approach Family Training (CRAFT)
- Train spouse or parents in behavioral techniques e.g., positive reinforcement, negative reinforcement, extinction, response cost, time out, response incompatibility to eliminate positive reinforcement for drinking and enhance positive reinforcement for sobriety
- CRAFT was superior to the confrontation approach to motivate treatment acceptance in two separate RCTs and improved drinking and spouse status before treatment

RJ Meyers et al., J Consult Clin Psychol 1999;67:688-697
http://pubs.niaaa.nih.gov/publications/arh23-2/116-121.pdf

Medical Treatments

- 4 FDA approved medications for AUD
  - Naltrexone
  - Extended-release IM Naltrexone
  - Disulfiram
  - Acamprosate

- Other medications commonly used for AUD
  - Gabapentin: withdrawal and relapse prevention
  - Topiramate: relapse prevention

Limited evidence for all medications in the context of TBI

Medical Treatments: Overview

- 2005, Beresford et al, Retrospective, Open label
  - N=18, VA, Specialty SUD clinic (significant beh tx provided)
  - Depakote and Carbamazepine
    - To help reduce affective lability→reduce drinking?
  - ***Results***
    - 78%: improved affective symptoms
    - 89% (16): achieved alcohol abstinence at 6 weeks

2019 Jorge et al, RCT at VA, N=62, Mean age 47, all Men

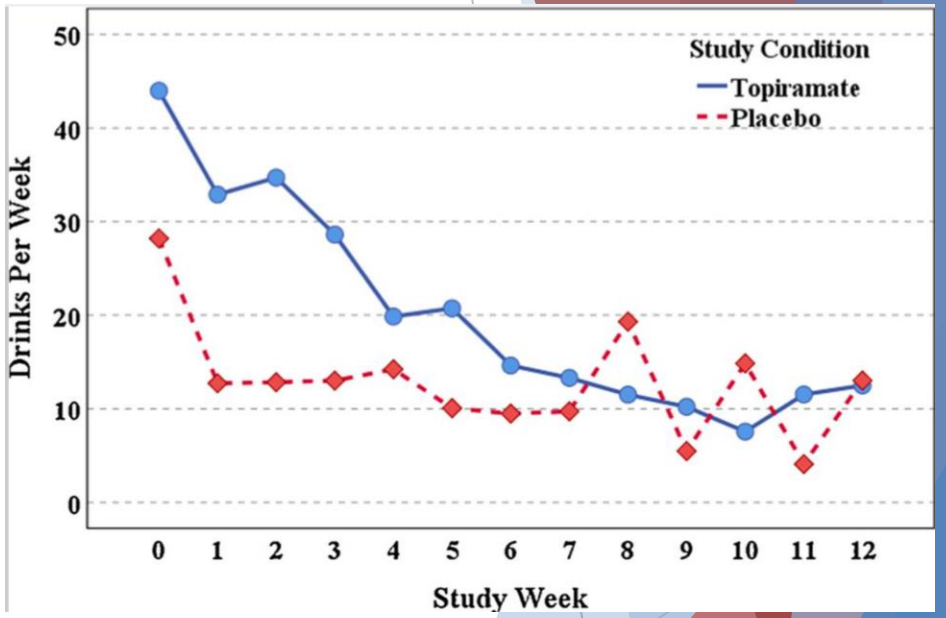
- 24 with mild TBI, 13 with mod to sev TBI
- Valproate ER up to 1000mg qday (14) vs Naltrexone 50mg qday (9)
  - 74% in intensive outpatient program; 26% in weekly counseling
- ***Results***
  - **Non-significant trend for less alcohol use in Naltrexone**
  - Med non-adherence: 20% Naltrexone vs 12.9% Valproate (not significant)
  - Mod-Sev TBI→more likely to relapse into heavy drinking
    - (HR 4.834 CI-1.103-21.194)
  - Need IOP support

Medical Treatments: Overview

2020 Pennington et al, VA, 12 weeks, RCT, N=32, Mean age 45-49yo, 2 females

- **All with mild TBI**, Blunt trauma, Blast trauma-mostly in placebo
- Topiramate (25-300mg qday) vs Placebo (tapered at week 12)
  - Light weekly counseling provided to all
  - 14 were in residential treatment program
- ***Results***
  - No difference on post concussive symptoms
  - Cognitive effects mostly tolerated-exception: working memory worse and verbal fluency
  - No difference on alcohol consumption, cravings, drinking days vs placebo (intent to treat)
  - In those that completed the study
    - Topiramate reduced drinks per week vs Placebo

Mean Drinks Per Week



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Medical Treatments: Overview

🧠 Efficacy of Divalproex Sodium (VPA) for Posttraumatic Irritability in TBI

🎯 Objective

- Evaluate **VPA's efficacy** in treating **posttraumatic irritability** in adults ≥1 year after mild-to-moderate TBI
- Examine secondary effect on **alcohol use**

❓ Study Design

- **Randomized**, **double-blind**, **placebo-controlled** clinical trial, 8 weeks, no psychosocial intervention
- Participants: Adults with TBI & alcohol use disorder
- N = 50 (23 VPA, 27 placebo)
  - Average daily Valproic acid dose: 963mg (range 750-1250mg, serum 50-100mcg/mL
- Outcome: 8-item **Agitated Behavior Scale**, informed by proxies

📊 Key Findings

Metric	VPA Group	Placebo Group	Significance
Irritability reduction	✓ Sustained ↓ 20% reduction	✗ No change	p = 0.03
Self vs. Proxy rating	Self: underrated baseline and effect of med	—	p < 0.05
Alcohol use	No change	No change	—
Adverse events	None serious	—	Well tolerated

Beresford T, Ronan PJ, Hipp D, Schmidt B, Thumm EB, Temple B, Wortzel H, Weitzenkamp D, Emrick C, Kelly J, Arciniegas DB. A Double-Blind Placebo-Controlled, Randomized Trial of Divalproex Sodium for Posttraumatic Irritability Greater Than 1 Year After Mild to Moderate Traumatic Brain Injury. J Neuropsychiatry Clin Neurosci. 2022 Summer;34(3):224-232. doi: 10.1176/appi.neuropsych.19070159. Epub 2022 Mar 11. PMID: 35272494.

Medical Treatments: Future Treatment?

- Glucagon-like peptide 1 receptor agonists

JAMA Psychiatry

RCT: Once-Weekly Semaglutide in Adults with Alcohol Use Disorder

POPULATION

14 Men, 34 Women

Non–treatment-seeking adults meeting criteria for alcohol use disorder

Mean (SD) age, 39.9 (10.6) y

SETTINGS / LOCATIONS

1 US academic medical center

INTERVENTION

48 Participants randomized and analyzed

24 Semaglutide
Once-weekly semaglutide

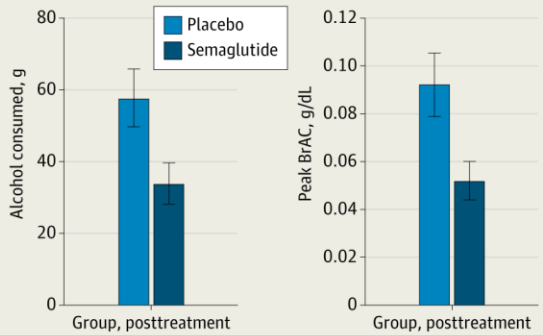
24 Placebo
Placebo injections

PRIMARY OUTCOME

Estimated alcohol consumed over 120 min during laboratory self-administration (estimated alcohol consumed in grams and peak breath alcohol concentration [BrAC] in g/dL)

FINDINGS

Among participants consuming alcohol in a laboratory session following 8 wk of treatment, those in the semaglutide group drank significantly less alcohol than those in the placebo group



Mean (SD) alcohol consumed: Semaglutide: 33.62 (20.72) g; placebo: 57.19 (28.15) g
Mean (SD) peak BrAC: Semaglutide: 0.052 (0.029) g/dL; placebo: 0.092 (0.046) g/dL
Effect sizes: Alcohol consumed: β, −0.48; 95% CI, −0.85 to −0.11; *P* = .01; peak BrAC: β, −0.46; 95% CI, −0.87 to −0.06; *P* = .03

Hendershot CS, Bremmer MP, Paladino MB, et al. Once-weekly semaglutide in adults with alcohol use disorder: a randomized clinical trial. *JAMA Psychiatry*. Published online February 12, 2025. doi:10.1001/jamapsychiatry.2024.4789

Medical Treatment: GLP-1s?

- Neuroprotective?
  - Modulation of neuroinflammation, oxidative stress, excitotoxicity, and apoptosis, as well as the enhancement of neurogenesis and axonal regeneration
  - Being studied in Alzheimer's disease and multiple sclerosis
- GLP-1s and TBI
  - No data in humans
  - Beneficial effects in mice and rat models
    - Mitigated hearing loss
    - Improved memory function
    - Prevented cognitive deficits

Now Recruiting!

STAR-B Trial

- RCT, placebo controlled, double blinded
- Non-treatment seeking adults
- 20 weeks
- Semaglutide vs Placebo
- Outcomes
  - Safety
  - Change in drinking amounts
  - Brain function (fMRI)

[Study Details | Semaglutide Therapy for Alcohol Reduction (STAR) | ClinicalTrials.gov]

Teixeira, L. C. R., Luizon, M. R., & Gomes, K. B. (2025). Exploring the Role of GLP-1 Receptor Agonists in Alzheimer's Disease: A Review of Preclinical and Clinical Evidence. *Receptors*, *4*(1), 2. https://doi.org/10.3390/receptors4010002

Kaye, A., Sala, K. R., Abbott, B. M., Dicke, A. N., Johnson, L. D., Wilson, P. A., Amarasinghe, S., Singh, N., Ahmadzadeh, S., Kaye, A. M., Shekoohi, S., & Varrassi, G. (2024). The Role of Glucagon-Like Peptide-1 Agonists in the Treatment of Multiple Sclerosis: A Narrative Review. Cureus. https://doi.org/10.7759/cureus.67232

Harej Hrkać A, Pilipović K, Belančić A, Juretić L, Vitezić D, Mršić-Pelčić J. The Therapeutic Potential of Glucagon-like Peptide 1 Receptor Agonists in Traumatic Brain Injury. Pharmaceuticals. 2024; 17(10):1313. https://doi.org/10.3390/ph17101313

Medication Summary

- **Which medications would I consider?**
  - Naltrexone, Depakote, Topiramate
- Would IM ER Naltrexone be a better option?
- Disulfiram contraindicated?

- **When to start?**
  - When alcohol becomes accessible, currently using

- **Is controlled drinking an option?**

- **How long should a person use these meds?**
  - As long as needed

*****Psychosocial interventions are foundational for relapse prevention*****

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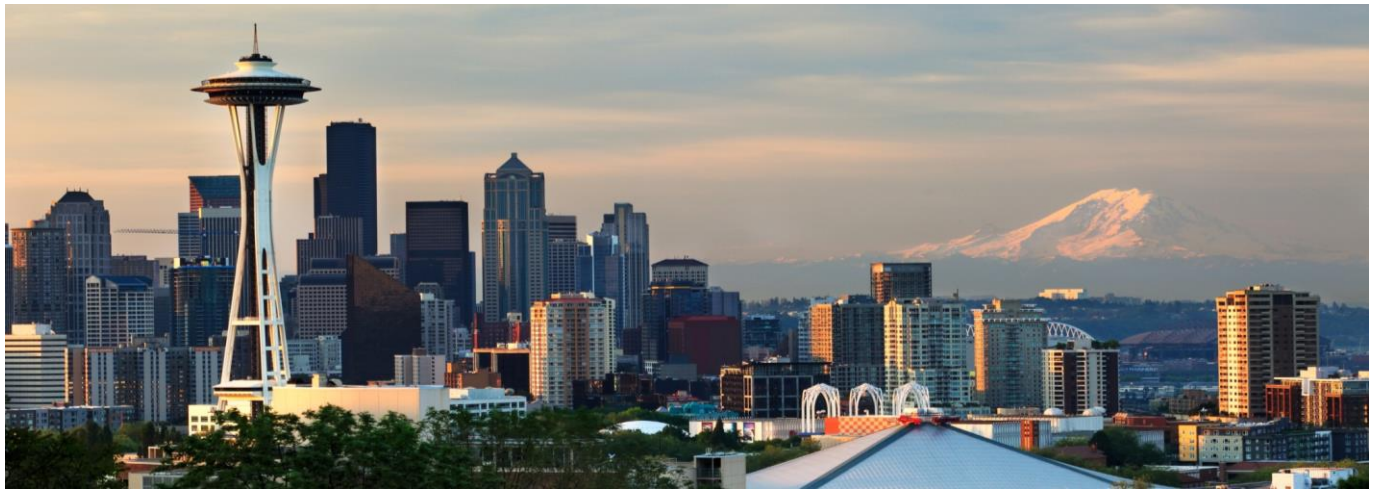
Next Steps

- What opportunities do you have to address SUD in your patients?
- What are the potential benefits of expanding screening, education, advice and brief interventions in your settings?
- What strategies might you want to experiment with?
- What would be your next step(s)?

THANK YOU



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Opioid Use in TBI

- People with self-reported history of TBI are 4.9 times more likely to report chronic pain and had a 52% increased risk of opioid use (19.7% vs. 13.6%) vs. those without TBI history
- At 1, 6, and 12 months post-TBI 41%, 23% and 19% of opioid naïve people were prescribed opioids

Hatch et al APRM 2018; Guilcher et al Spinal Cord 2018; Clark et al J Pain 2017; Krause et al APMR 2017; Kumar et al J Neurotrauma 2021; Dunn PLoS One 2019

History of TBI and Opioid Use/Misuse

- 25.5% of people with self-reported history of TBI reported a past year prescription for opioids and 3.1% met criteria for opioid misuse.
- Compared to those without a history of TBI, those with TBI were 1.52 times more likely to be prescribed opioids and 1.65 ties more likely to meet criteria for opioid misuse after controlling for sex, age, race/ ethnicity and marital status.

Adams, Corrigan J Head Trauma Rehabil 2021

Summary

- SUDs are prevalent and harmful in people with SCI and TBI
- Rehabilitation provides multiple opportunities to intervene and patients are largely open
- Research in other medical settings suggests screening, education, advice and brief interventions can be effective
- Nonspecialists can learn skills to be more effective at integrating SUD interventions into standard rehabilitation practice

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Substance Use Before And After TBI

Substance Use Diagnosis	Before TBI	After TBI	New Onset	Current
Alch Abuse	7%	3%	2%	2%
Alch Dep	29%	14%	1%	10%
Drug Abuse	5%	2%	0%	2%
Drug Dep	12%	7%	3%	5%
Totals*	41%	21%	3%	

Whelan-Goodinson et al., 2009; n=100; *Totals include some comorbidity

Adverse Effects of Alcohol Use After TBI

Speculative

- TBI magnifies alcohol-related cognitive and balance impairments. 38% report being more affected by alcohol.
- 30-70% report insomnia, daytime sleepiness or fatigue after TBI. Alcohol use is associated with greater
- TBI lowers sex drive and alcohol can lower testosterone, erections and orgasm in men and sexual satisfaction in men and women

Oddy et al 1985;

Cannabis Use in TBI

- People with prior TBI were 2.8 times more likely to use cannabis than in non-TBI
- 74% used before injury, 45% after injury
- Reasons for use: recreational (72%), stress/anxiety (62%), sleep (55%)
- Side effects: decreased motivation (28%), paranoia (21%), fatigue (21%), feeling hazy or dull (21%)
- Used medically, cannabis can have neuroprotective and therapeutic effects

Ilie et al., J Neurotrauma 2015; Hawley et al Arch PM&R 2018; survey of 116 people in Colorado; Hergert et al J Neurotrauma 2021

Effects of Cannabis Use Relevant to TBI

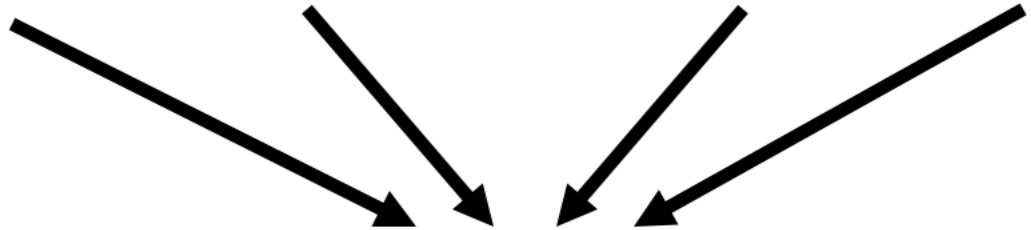
- Daily use leads to mild cognitive impairment that persists up to 4 weeks after last use
- Increased risk of psychosis
- Increased risk of depression
- Decreased motivation
- May increase or decrease anxiety
- Cannabis impairs driving ability and is increasingly associated with fatal car crashes

Schreiner & Dunn Exp Clin Psychopharm 2019; Volkow et al., JAMA Psychiatry 2016; Grenier et al Can J Neurol Sci. 2020; Simmons et al., Addiction 2022; Lira et al., Am J Public Health 2021

MI Involves a Two-Step Process of Change

1. Elicit "Change Talk"

Desire Ability Reasons Need

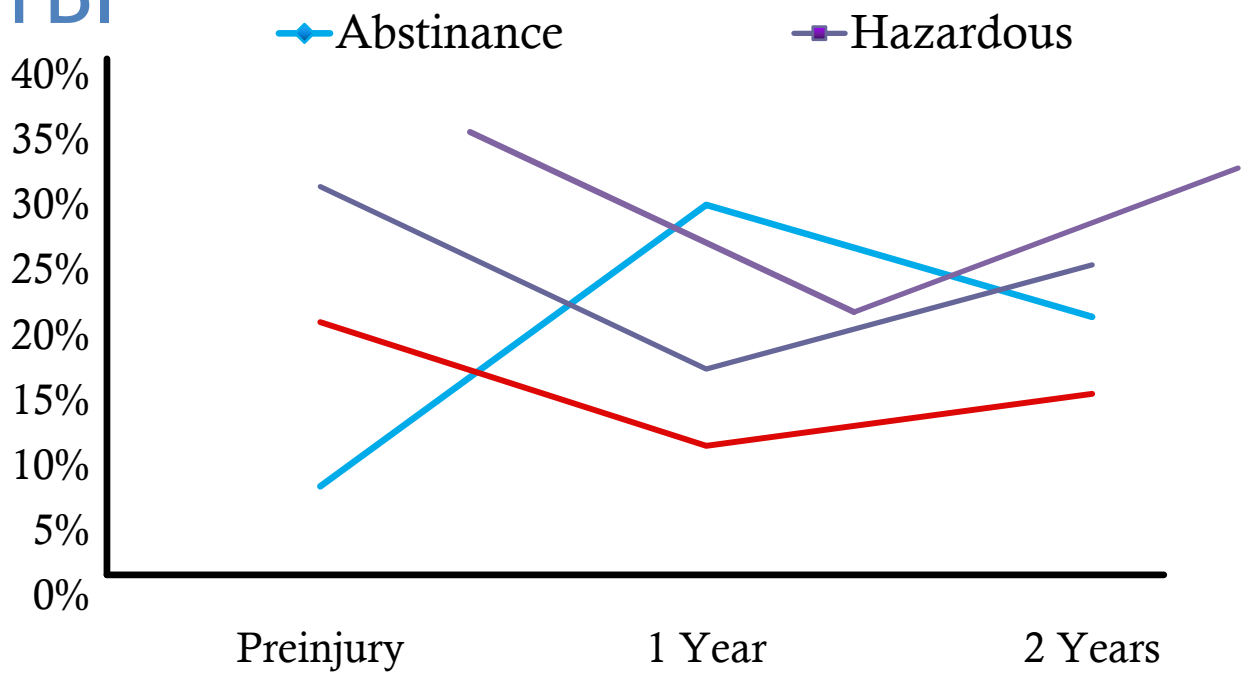


2. Elicit Commitment Language

Behavior Change

Amrhein, Miller, Yahane JCCP, 2003

Changes in Substance Use after TBI



Ponsford et al., Brain Inj 2007

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How To Offer Advice

ELICIT

- Find out what they know, have done or tried

PROVIDE

- Provide information with permission
- Give an unambiguous recommendation
- Avoid threats or moralizing
- Use neutral, non-personal language "What usually happens to people is …"

ELICIT

- Ask for feedback "What do you make of all this?"

Screening

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Substance Use Screening

How not to do it

- Screen selectively
- Screen separately
- Frame as a special moral or personality issue
- Remain skeptical due to alcoholic “denial”
- Provide no reassurance
- Use “clinical judgment”

How to do it

- Screen everyone
- Imbed screening
- Frame as part of health and recovery
- Use a neutral, nonjudgmental tone
- Ensure confidentiality
- Use valid measures

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