

NIAAA State of the Science: Update

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Friends of NIAAA

Virtual Meeting

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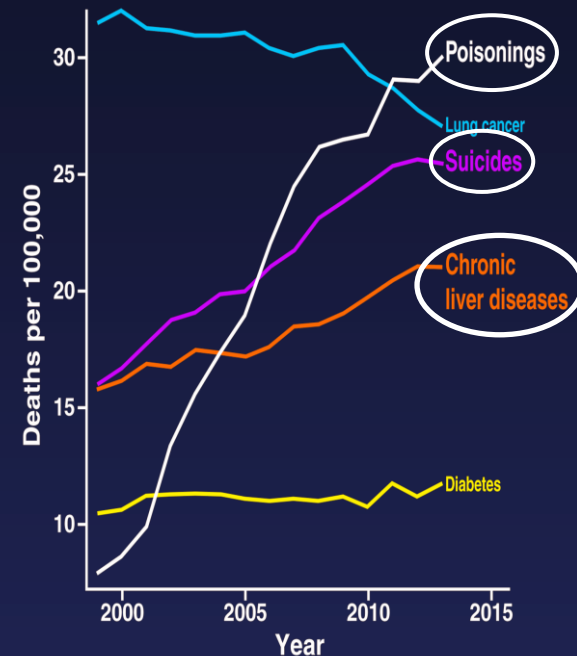
Overview

- I. Before the pandemic:** Alcohol-related conditions, mortality, and deaths of despair
- II. Where are we now?** What do we know about alcohol and COVID-19, and what are the research opportunities?
- III. Moving forward:** Emerging issues and priorities in alcohol research

Alcohol-Related Deaths in the United States

- Alcohol plays a prominent role in “**deaths of despair**”, contributing to:
 - 15-20% of all drug overdoses
 - 26% of suicides
 - 50% of liver disease deaths
- Deaths of despair contribute to the **decreasing life expectancy** in the U.S. observed since 2014 (Woolf et al., 2019)
- These patterns of increased mortality have also been **observed across many racial/ethnic groups and age groups** (Woolf et al., 2018)

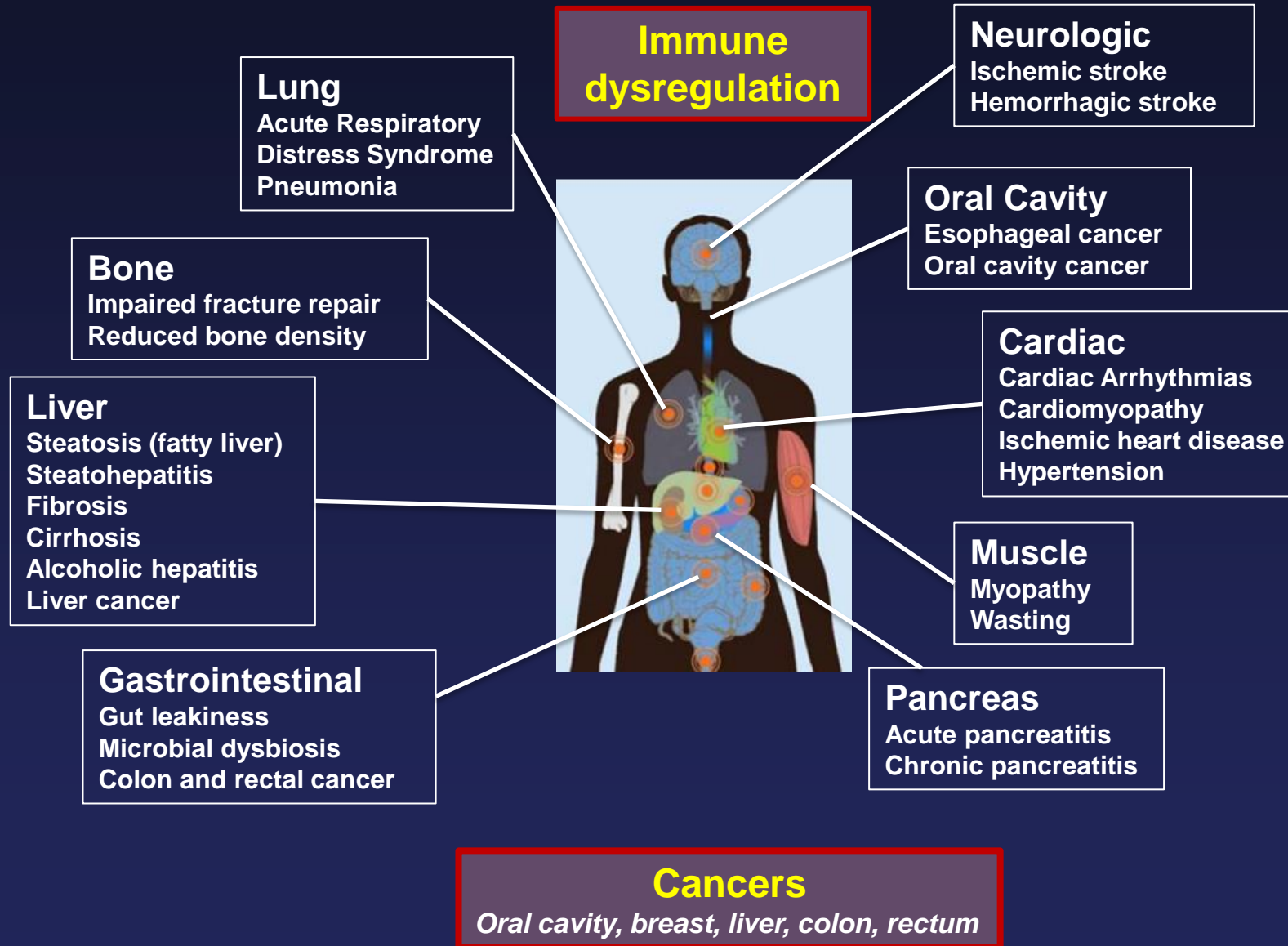
Mortality by cause among White non-Hispanics (age 45-54)



Case and Deaton, 2015

- Alcohol-related deaths **doubled** from 1999 to 2017 (White et al., 2020)
 - Death rates were highest among men and middle-aged and older adults (45-74)
 - Death rates increased over time across all age groups except 16-20 and 75+
 - Increase in death rate over time was greater in women than men
- These statistics align with other recent reports that have highlighted changing trends in drinking patterns and increased consequences of alcohol in **women** and the **aging population**

Alcohol-Associated Organ Damage



Alcohol-attributable fractions (AAFs) for selected causes of death, disease, and injury in 2016

Alcohol Use Disorder

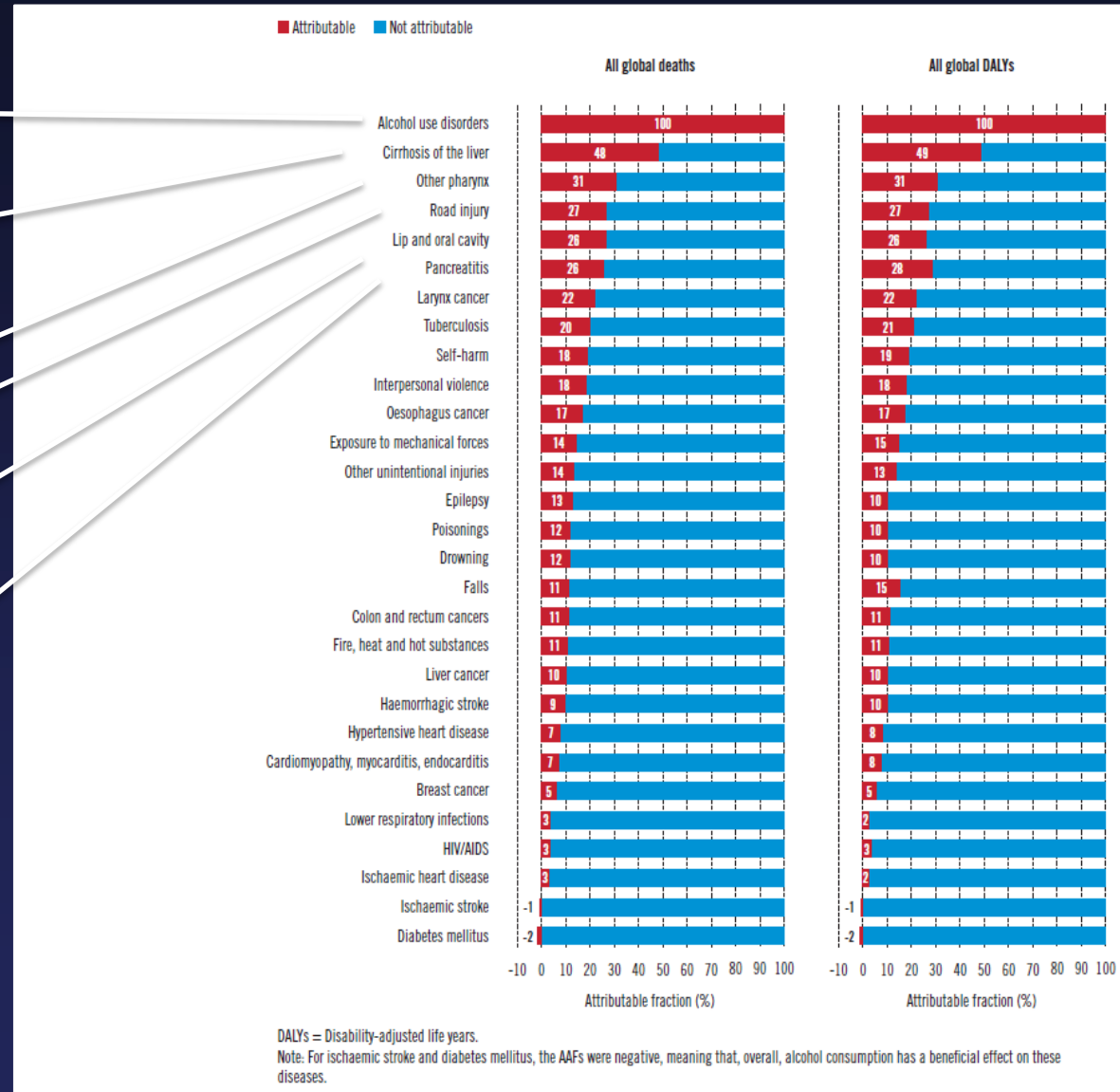
Cirrhosis of the liver

Other pharynx

Road Injury

Lip and oral cavity

Pancreatitis



Fetal Alcohol Spectrum Disorders

- **FASD prevalence** as high as **1.1 – 5%** among four U.S. communities

Recent research highlights:

- Choline supplements in young children with FASD have lasting cognitive benefits
 - FASD may increase the risk of type 2 diabetes and other metabolic issues
 - Combined prenatal smoking and drinking greatly increases SIDS risk
 - New funding opportunities: **Prevention and Intervention Approaches for Fetal Alcohol Spectrum Disorders**
- NIAAA has also established working groups of researchers to reach consensus and harmonize classification systems for research on FASD

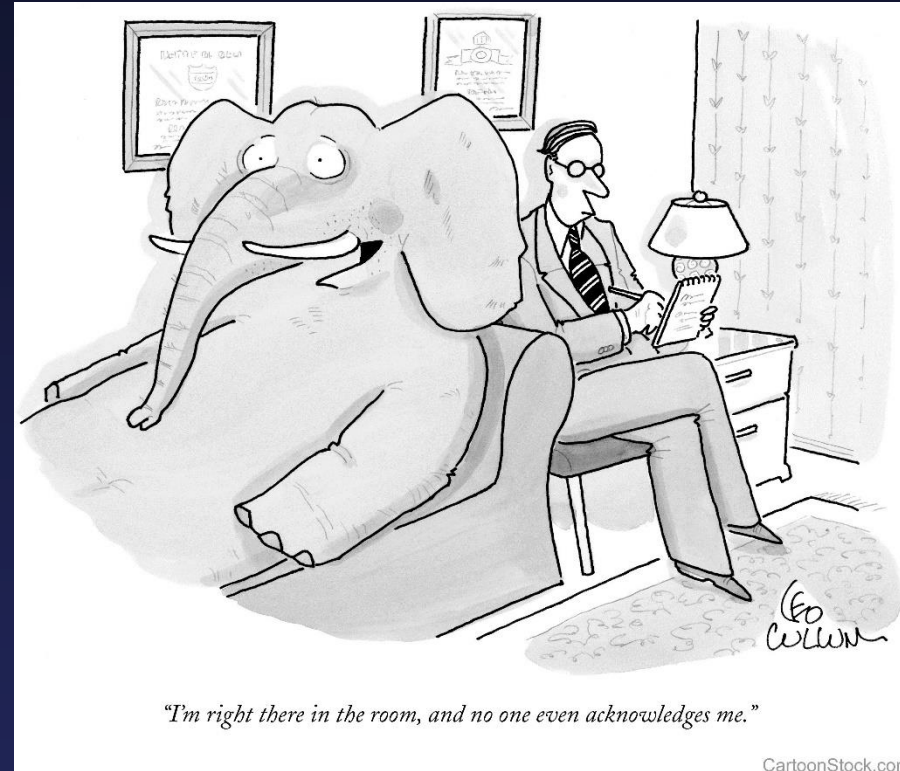


In development:
A new strategic plan for the
Interagency Coordinating Committee on
Fetal Alcohol Spectrum Disorders

Alcohol and Mental Health: The Elephant in the Room

Alcohol misuse correlates with poor mental health

- Often precedes diagnoses of mental health conditions
- Commonly used in an effort to cope with symptoms
- In the end it makes the prognoses worse
- Similarly, mental health conditions complicate treatment for AUD



"I'm right here in the room and no one even acknowledges me."

Sources: Centanni SW, Bedse G, Patel S, and Winder DG. 2019. Driving the Downward Spiral: Alcohol-Induced Dysregulation of Extended Amygdala Circuits and Negative Affect. *Alcohol Clin Exp Res*; Mäkelä P, Raitasalo K, and Wahlbeck K. 2015. Mental health and alcohol use: a cross-sectional study of the Finnish general population. *European Journal of Public Health*, 25(2): 225–231; Markou A, Kosten TR, and Koob GF. 1998. Neurobiological Similarities in Depression and Drug Dependence: A Self-Medication Hypothesis. *Neuropsychopharmacology*, 18: 135–174.

Addiction in Context: Social Determinants of Health

- Addiction is rooted in the brain but understanding why it develops and how to prevent and treat it requires examining the broader context of peoples' lives
- As with many other conditions, there are social determinants that influence the likelihood of developing and recovering from AUD
- Social determinants include aspects of the social environment (e.g., income, access to education, social support, exposure to discrimination, violence), the physical environment (e.g., location of housing, alcohol outlet density, transportation), and health services (e.g., access to and quality of care, insurance)
- These factors can contribute to health inequities and can also serve as allostatic loads on brain systems involved in stress, emotion regulation, increasing the vulnerability to AUD
- Such stressors can drive alcohol misuse to cope, eventually leading people to drink to fix a problem caused by the alcohol itself



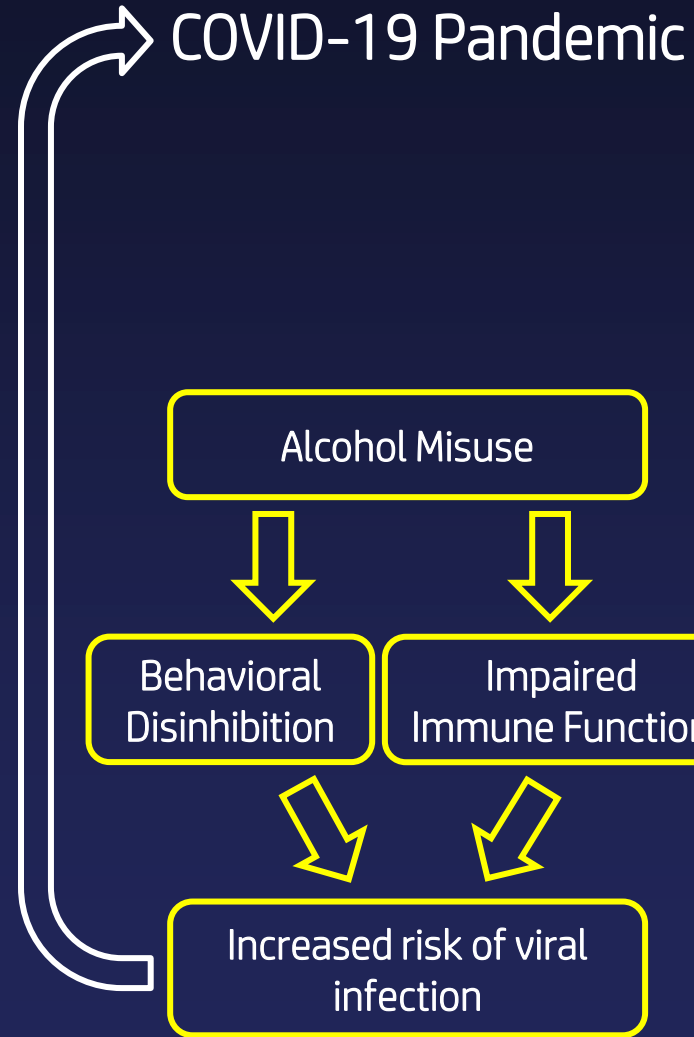
Role of Alcohol in the COVID-19 Pandemic

Impact of alcohol use on COVID pandemic

Biological effects: Alcohol effects on immune function

Chronic alcohol consumption increases the risk for Acute Respiratory Distress Syndrome (ARDS), with increased need for mechanical ventilation, prolonged intensive care unit stay, and higher incidence of mortality

Disinhibition: May affect the ability to take precautions for reducing the spread of the coronavirus, such as maintaining appropriate physical distance and wearing a mask.



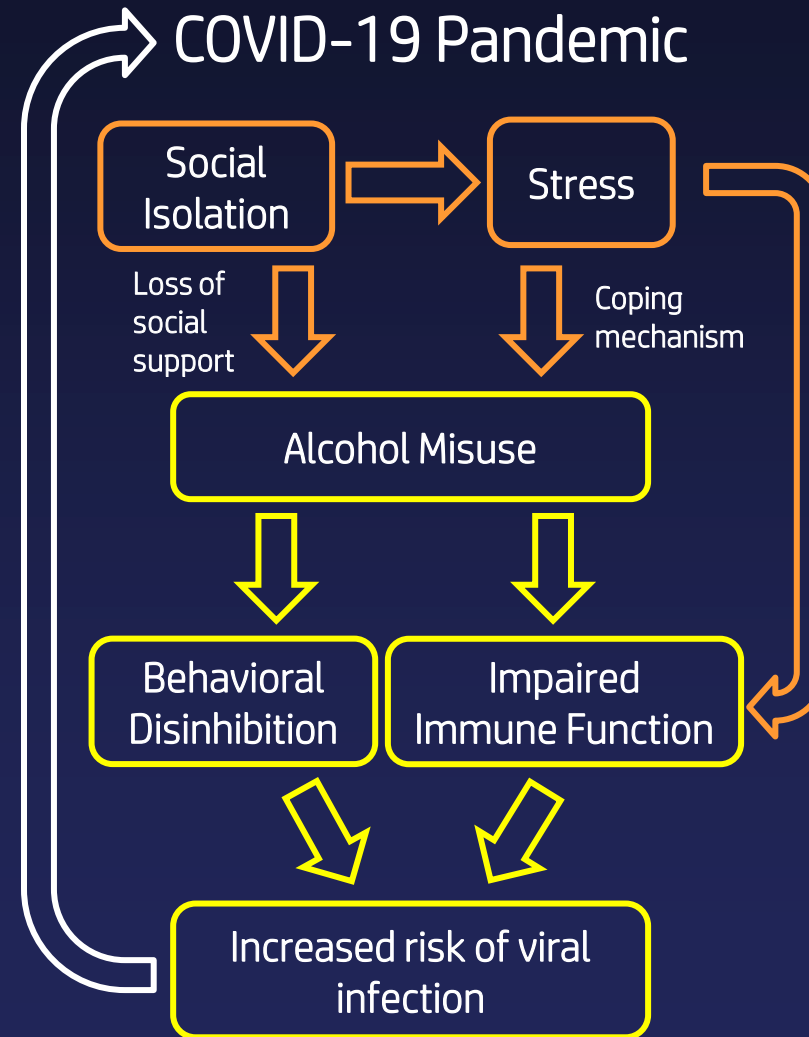
Role of Alcohol in the COVID-19 Pandemic

Impact of COVID pandemic on alcohol use and treatment

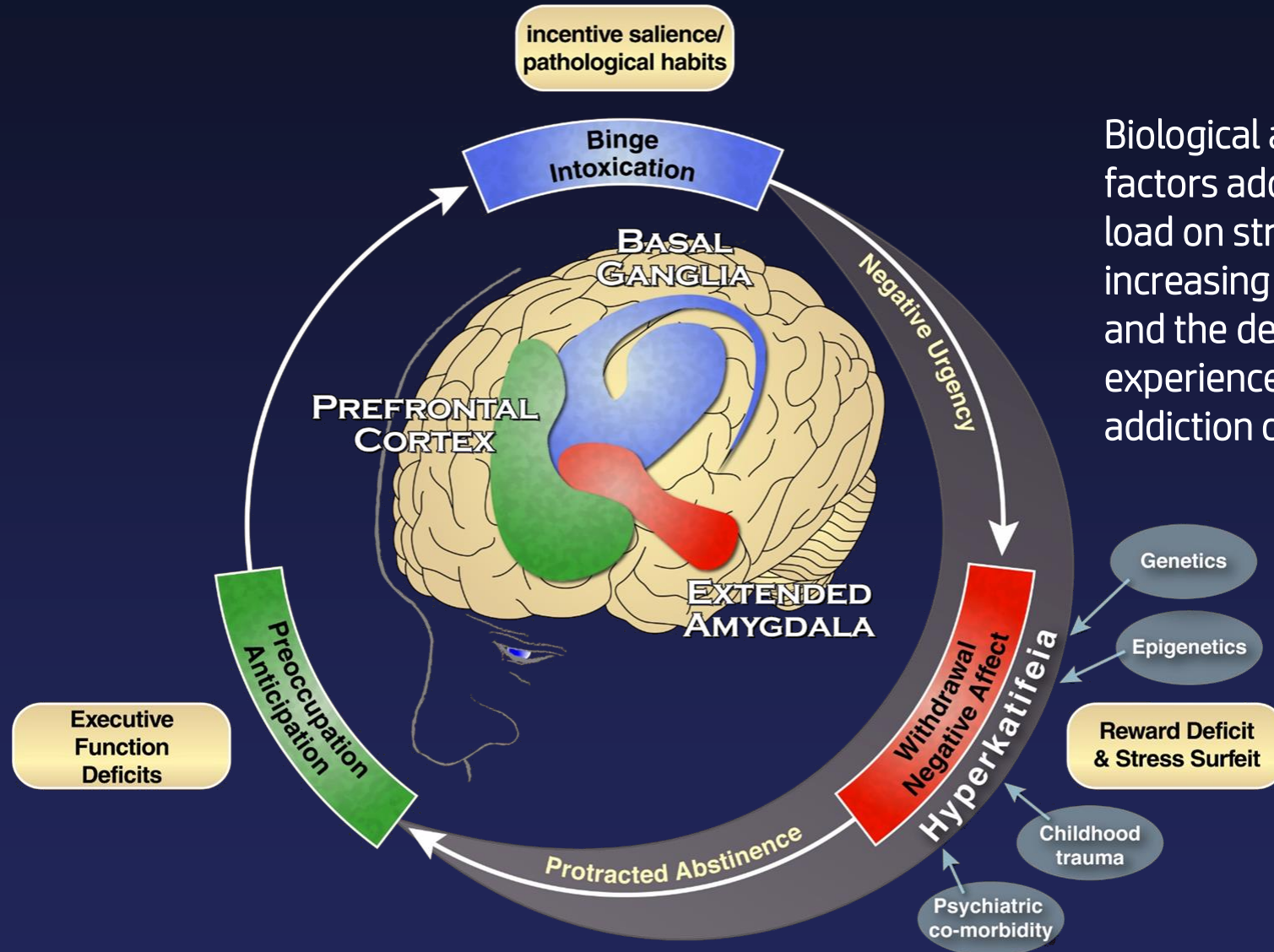
Isolation: Physical distancing can lead to social isolation or loss of social support, which can lead to stress

Stress: Drinking to cope with the stress of the pandemic

Treatment and Recovery: Physical distancing poses challenges for those with alcohol use disorder and emphasizes the need for telehealth and virtual meeting options for individuals seeking treatment or in recovery from AUD



Addiction as a Coping Response



Biological and experiential factors add to the allostatic load on stress circuitry, increasing the likelihood of AUD and the degree of hyperkatifeia experienced during the addiction cycle.

Drinking to Cope During the COVID-19 Pandemic

- Studies suggest **some people are drinking more during the pandemic while others are drinking less**
- Stress is a common factor for those drinking more:
 - A survey by the American Psychological Association ([2021](#)) found that nearly 1 in 4 adults (23%) reported drinking more alcohol to cope with stress during the pandemic
 - In a survey of ~12,000 physicians, 42% reported they are experiencing burnout and 1 in 4 of them (26%) indicated drinking alcohol to cope with it ([Medscape, 2021](#))
 - In another survey, 29% of respondents reported drinking more and the odds of increasing were higher for those with symptoms of anxiety or depression ([Capasso et al, 2021](#))
 - Other studies suggest having psychological well-being impacted negatively by the pandemic is associated with more drinking days and more drinks per occasion ([Rodriguez et. al. 2020](#); [Grossman et al., 2020](#))
- Such findings are concerning given that drinking to cope places a person on a slippery slope to AUD

Emerging Issue: How Do We Envision the Role of Telehealth in Addressing Alcohol Use Disorder in the Post-Pandemic Era?

- The COVID-19 pandemic caused a rapid expansion in the use of telehealth
- Evidence suggests telehealth can be effective for addressing alcohol misuse and can reach people who might not otherwise get support (e.g., Kiluk et al., 2018; Oesterle et al., 2020)
- **NIAAA supports a variety of telehealth projects** (pre-pandemic and pandemic-related):
 - SBIRT with clinicians by phone or video chat
 - CBT with a clinician or self-guided (CBT4CBT)
 - Telehealth to address PTSD and alcohol use following sexual assault
 - Video-conferencing based MI for alcohol misuse and medication adherence in patients living with HIV
- The NIAAA Treatment Navigator links to effective options
 - see <https://alcoholtreatment.niaaa.nih.gov/>
- We anticipate a larger role for telehealth for alcohol prevention, treatment, and recovery going forward

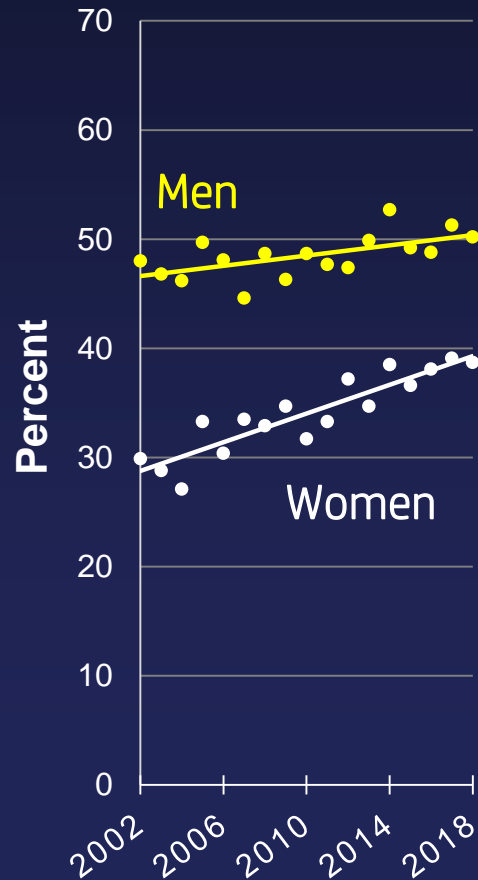


Emerging Issue: Alcohol and Women's Health

- **Gaps between women and men are narrowing** for prevalence, early onset drinking, frequency and intensity of drinking, having AUD, drunk driving, and self-reported consequences (Grucza et al., 2018; Slade et al., 2016; White et al, 2015)
- Women **more likely to experience** blackouts, liver inflammation, brain atrophy, cognitive deficits, certain cancers, negative affect during withdrawal and stress, and anxiety-induced relapse (Becker and Koob, 2016)
- **Only 26%** of 230 structural neuroimaging studies on substance use over 23 years **evaluated sex differences** (Lind et al., 2017)
- **More research is needed to better understand sex differences in alcohol use and consequences**

Emerging Issue: Rising Alcohol Use Among Older Adults (Aged 65+)

From 2002-2018, past-month alcohol use increased for men and women aged 65 and older, with a greater increase observed in women.



Source: NSDUH, 2018

- **1 in 10 older adults in the U.S. engage in binge drinking** (Han et al., 2019)
- **Alcohol misuse among this population contributes to:**
 - **Accelerated aging** in some brain regions, including the frontal cortex (Sullivan et al., 2018)
 - **Pronounced reductions in brain volume** in multiple cortical regions (Sullivan et al., 2018)
 - **Impaired cognitive function, learning, memory, and motor function** (Woods et al., 2016)
- **NIAAA supports aging research:**
 - RFA with NIA “Impact of Alcohol on the Onset and Progression of Alzheimer’s Disease and Its Related Dementias” – *total of 13 projects funded*
 - Current NOSI: “Alcohol and Aging” (**NOT-AA-20-019**)

Emerging Issue: Research on Recovery from AUD

- In order to improve consistency across recovery research studies, NIAAA engaged stakeholders to develop a consensus research definition of recovery
 - The proposed definition describes **recovery as a process through which an individual pursues both remission from AUD and cessation of heavy drinking**
 - NIAAA has disseminated the definition to the broader research community via a recent public virtual roundtable and is using the feedback from these stakeholders to refine the definition and to inform the direction of new recovery research opportunities
 - For more information, visit <https://www.niaaa.nih.gov/division-treatment-recovery-research>



Priority: Developing Resources to Close the Treatment Gap

Updates to NIAAA Alcohol Treatment Navigator®

New portal to help healthcare professionals **build or expand their referral lists** to include providers offering science-backed AUD treatments, including **telehealth options**, that meet the varied needs of their patients

<https://alcoholtreatment.niaaa.nih.gov/healthcare-professionals>

In Development:
Clinician's Core Resource

Modules include:

- Presentation in primary care
- Role in common co-occurring conditions
- Neuroscience
- Diagnostic criteria, recommended drinking limits
- Evidence-based therapies/medications
- Addressing stigma
- Interactions with commonly used medications

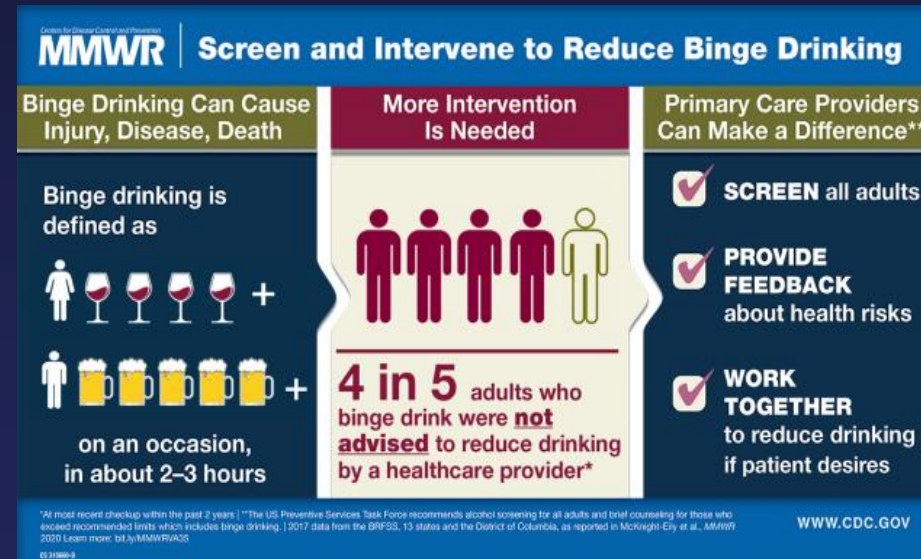
Priority: Expanding Uptake of SBI/SBIRT

(Screening, Brief Intervention/and Referral to Treatment)

- The U.S. Preventive Services Task Force recommends alcohol screening and brief intervention followed by counseling for persons whose screening indicates they are drinking in ways that could negatively impact health
- However, evidence suggests we are not doing enough basic screening, let alone actual SBI/SBIRT

Among patients 18+ who saw a healthcare provider in the past 2 years:

- 81% were asked about their alcohol use, but only 38% were asked whether they binged in the past month
- Among those who reported binge drinking, about 1 in 5 were given advice to cut down
- **Women** were less likely than men to be advised about the risks of binge drinking (33% vs 47%)
- And **women** who reported binge drinking were less likely than men to be advised to cut down (14% vs 25%)
- **Older drinkers** (65+) were less likely to be screened or advised to cut down than younger drinkers



McKnight-Eily LR, Okoro CA, Turay K, Acero C, Hungerford D.
MMWR Morb Mortal Wkly Rep. 2020 Mar 13;69(10):265-270.

Priority: SBI/SBIRT Offers An Opportunity to Narrow the Treatment Gap

According to 2018-2019 NSDUH data:

- Very few people who report drinking to a healthcare provider are asked if they have any problems related to their drinking (~7%) and even fewer (<5%) are offered additional information about alcohol or advised to cut down

This is concerning for multiple reasons:

- Many patients are prescribed medications that could interact negatively with alcohol
- Alcohol misuse is increasing among women and older drinkers, two groups that are less likely to be given advice or offered more information about alcohol

Alcohol screening has other implications for health:

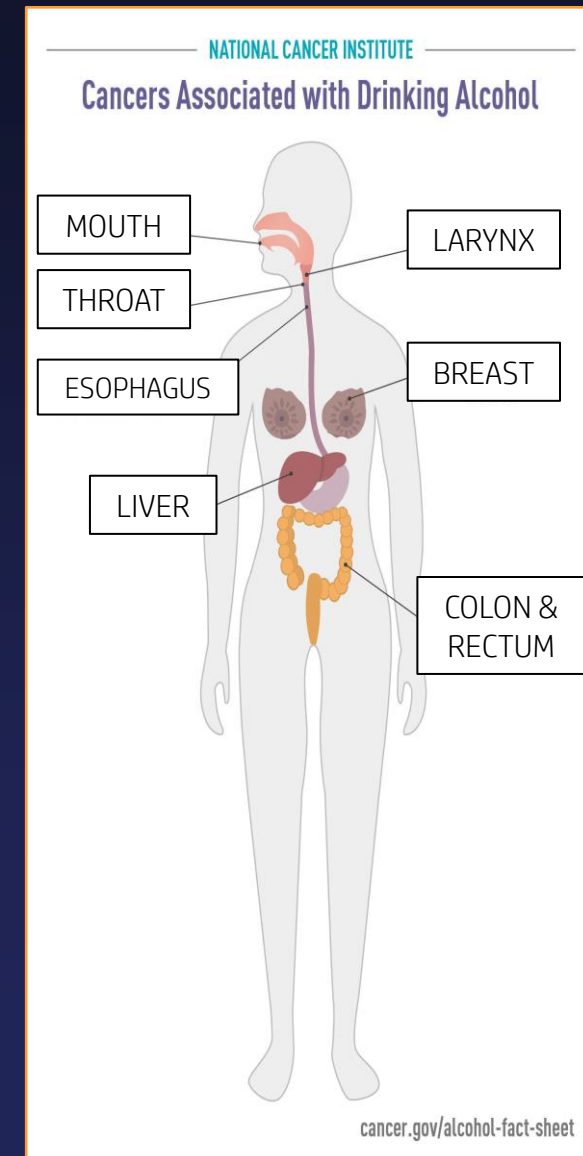
- Questions about alcohol misuse can provide clues about other important aspects of health (e.g., binge drinkers are more likely to have serious thoughts of suicide and to misuse Rx opioids or sedatives)

NIAAA's core resource for healthcare providers aims to provide physicians the information they need to become more comfortable discussing alcohol misuse with patients
(Coming later this year!)

Healthy People 2030 is an HHS initiative that has outlined a goal of increasing the percentage of people with SUDs receiving specialty treatment from 11% to 14%. SBIRT offers a route for achieving this goal!

Priority: Alcohol and Cancer

- American Cancer Society estimates that about 41% of men and 39% of women will eventually develop cancer, and **about 5.6% of newly diagnosed cases are alcohol-attributable**.
- A recent study estimated that **75,000 new cancer cases**—and **19,000 cancer deaths**—per year are attributed to alcohol consumption in America. (Goding Sauer et al., 2021)
- **Surveys reveal a common lack of awareness:**
 - A 2017 survey from the American Society for Clinical Oncology found that of 4,016 respondents, **fewer than one-third** recognized that alcohol can cause cancer.
 - Similarly, a 2019 survey from the American Institute for Cancer Research found that **fewer than 50%** of respondents recognized the cancer risks posed by alcohol.
- ***Reminder*** Notice of Special Interest: Alcohol and Cancer Control [NOT-CA-20-034](#) (NIAAA and NCI)



Priority: Addressing Diversity and Health Disparities in the Alcohol Field

- NIAAA fully supports and is committed to the **NIH UNITE initiative**, a coordinated effort to address structural racism and promote racial equity and inclusion at NIH and within the larger biomedical research enterprise
 - see www.nih.gov/ending-structural-racism
- To advance equity, diversity, and inclusion in the alcohol research enterprise, NIAAA is also focusing on 3 primary areas:
 - improving the NIAAA intramural and extramural **workplace and culture**
 - increasing diversity and equity in the scientific and administrative alcohol research **workforce**
 - enhancing the NIAAA intramural and extramural scientific **research portfolio**



The Value of Diversity in the Alcohol Field

- Research shows that **diverse teams** that capitalize on innovative ideas and distinct perspectives **outperform homogenous teams**.
- Individuals from diverse backgrounds and life experiences bring **different perspectives, creativity, and individual enterprise** to address complex scientific problems.
- Diversity fosters scientific innovation, improves the quality of the research, increases the likelihood that underserved populations participate in and benefit from health research, and expands public trust.
- Ensuring that diversity reflected in the **NIAAA workplace and culture, alcohol biomedical workforce, and the alcohol research portfolio** is vital to our science enterprise and the NIAAA mission.

#GREATMINDS
THINKDIFFERENTLY

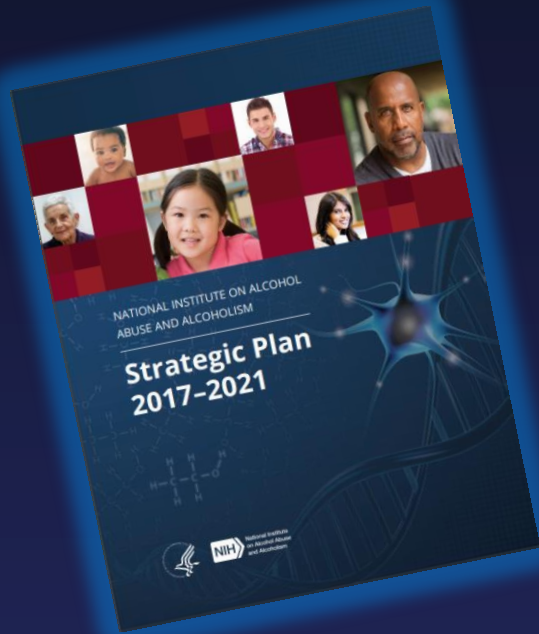
Priority: Training Opportunities to Support a Diverse Workforce

- NIH Ruth L. Kirschstein NRSA for Individual **Predocctoral Fellowships** to Promote Diversity in Health-Related Research (F31); [PA-20-251](#)
- NIH Blueprint Diversity Specialized **Predocctoral to Postdoctoral Advancement in Neuroscience** (D-SPAN) Award (F99/K00); [RFA-NS-21-012](#)
- BRAIN Initiative Advanced **Postdoctoral Career Transition Award** to Promote Diversity (K99/R00); [RFA-NS-19-043](#); [RFA-NS-19-044](#)
- Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) **Postdoctoral Career Transition Award** to Promote Diversity (K99/R00); [PAR-19-343](#)
- **Diversity supplements** ([PA-21-071](#)) provide supplements to existing NIH-funded active grants to increase the diversity of the research workforce by supporting and recruiting students, and postdoctoral and other new investigators from groups that are underrepresented
 - More details on our website: <https://go.usa.gov/xHf2j>

Supporting the Next Generation of Alcohol Researchers: Increases in NIAAA Training and Career Development Awards



A New Strategic Plan is Coming Soon!



- **NIAAA is currently developing the 2022-2026 Strategic Plan**
- **Stay tuned for a public “Request for Information” – your opportunity to weigh in on our priorities and objectives**

Help Us Share Our Message: NIAAA Resources for Prevention and Treatment of Alcohol-Related Problems



Youth Screening Guide



Rethinking Drinking



CollegeAIM



Treatment Navigator



NIAAA

Your source for credible,
evidence-based
information about alcohol
and health.

www.niaaa.nih.gov

Special thanks to:

Rachel Anderson

Aaron White

Bridget Williams-Simmons



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Priority: Addressing Health Disparities

Examples of Current Funding Opportunities

- ***Improving Health Disparities in Alcohol Health Services***; [RFA-AA-21-001](#)
 - Health disparate and vulnerable populations face unique and intersecting barriers to treatment including but not limited to stigma, mistrust, bias, and structural racism
 - This new funding opportunity seeks to expand alcohol health services research on health disparities as well as encourage new studies on the accessibility, appeal, costs, dissemination, and implementation on alcohol use disorder treatment
- ***Understanding and Addressing the Impact of Structural Racism and Discrimination on Minority Health and Health Disparities***; [RFA-MD-21-004](#)
 - Despite increased awareness of the contribution of racism and discrimination to poorer health outcomes, these issues are not routinely included as determinants of health in biomedical research
 - The goal of this initiative is to support observational or intervention research to understand and address the impact of structural racism and discrimination on minority health and health disparities