NIAAA Director’s Report on Institute Activities to the 160th Meeting of the National Advisory Council on Alcohol Abuse and Alcoholism

May 10, 2022
Virtual Meeting

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Director
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https://www.niaaa.nih.gov/about-niaaa/advisory-council
FY 2022 Budget

• On March 15, 2022, the President signed H.R. 2471 - Consolidated Appropriations Act, 2022.

• NIH received a total of $45.2 billion for FY 2022 (5.4% increase), including
  – General increases to NIH Institutes and Centers
  – Allocations for the Helping to End Addiction Long-term (HEAL) Initiative, the 21st Century Cures Act, NIH Brain Research Through Advancing Innovative Neurotechnologies (BRAIN), and the All of Us research program
  – Continued support for the Gabriella Miller Kids First Act pediatric research initiative.

• NIAAA received a total of $573.7 million for FY 2022 (3.4% increase)

*The President’s FY 2023 Budget was released on March 28, 2022.*
NIAAA Funding Opportunities
(See Director’s Report for Complete Listing)

Specialized Alcohol Research Centers (P50, RFA-AA-22-001): Invites applications to foster and conduct interdisciplinary, collaborative research on alcohol use disorder (AUD), alcohol misuse and alcohol related problems, and other health related consequences across the lifespan and across racial/ethnic groups and other health disparity populations. Scientific Contacts: Drs. Kathy Jung, Mariela Shirley, Ivana Grakalic, Greg Bloss, Antonio Noronha

Comprehensive Alcohol Research Centers (P60, RFA-AA-22-002): Invites applications to conduct and foster interdisciplinary, collaborative research on topics relevant to the NIAAA mission across the lifespan and across racial/ethnic groups and other health disparity populations. Applications must include a dissemination core to initiate and expand community education related to the activities of the proposed Center. Scientific Contacts: Drs. Kathy Jung, Mariela Shirley, Ivana Grakalic, Greg Bloss, Antonio Noronha

Alcohol Health Services Research (R01, R34, PAR-22-157, PAR-22-157): Encourages research on closing the treatment gap for AUD, including increasing access to AUD treatment and making it more appealing and reducing health disparities. Scientific Contacts: Dr. Laura Kwako

Alcohol Treatment and Recovery Research (R01, R34, PAR-22-158, PAR-22-159): Encourages research on topics relevant to treatment of and recovery from AUD, including behavioral and pharmacotherapy, recovery, precision medicine, translational research, and innovative methods and technologies for AUD treatment and recovery. Scientific Contacts: Dr. Brett T. Hagman and Dr. Dan Falk
NIAAA Funding Opportunities
(See Director’s Report for Complete Listing)

Notices of Special Interest Issued by NIAAA

Research on Alcohol and Coronavirus Disease (COVID-19) within the Mission of NIAAA (R01, R03, R21, K99/R00, NOT-AA-22-012): Invites grant applications that advance understanding of the critical interactions between alcohol use, SARS-CoV-2, and COVID-19. A central focus is research that can improve public health by informing responses to the evolving COVID-19 pandemic and its consequences. Scientific Contact: Dr. Kathy Jung
Alcohol and Healthy Aging: Current Research and Future Directions

• On May 9, 2022, NIAAA participated in a webinar on alcohol and aging sponsored by the Friends of NIAAA, American Psychological Association, and the Research Society on Alcoholism

• Speakers included:
  – Dr. Robert Huebner, Chair, Friends of NIAAA
  – Dr. George F. Koob, Alcohol and Aging: An Overview
  – Dr. Katherine Keyes, Increased Alcohol Consumption Among Older Adults: Trends, Causes, and Consequences
  – Dr. Sara Jo Nixon, Neurobiological and Behavioral Consequences of Moderate Alcohol Consumption in Older Adults
  – Dr. Frederick C. Blow, Assisting Older Adults Who Misuse Alcohol: Brief Evidence-Based Treatment Approaches
  – Dr. Jeff Boissoneault, Pain and Alcohol Use: Implications for Healthy Aging
From NIAAA: The Healthcare Professional’s Core Resource on Alcohol

Launched May 10, 2022!
What is the Core Resource on Alcohol?

The Healthcare Professional’s Core Resource on Alcohol consists of 14 interconnected articles covering the basics of what every healthcare professional needs to know about alcohol. The “Core” was developed by NIAAA.

With guidance from practicing physicians and clinical psychologists, NIAAA created the Core with busy clinicians in mind. The Core articles provide user-friendly, practical overviews of

- Foundational knowledge for understanding alcohol-related problems (4 articles)
- Clinical impacts of alcohol (4 articles)
- Strategies for prevention and treatment of alcohol problems (5 articles)
- How to “put it all together” to promote practice change (1 article)

The Core articles are living documents that will be updated regularly.

Who can receive continuing education credit?

Free continuing education credit—0.75 to 1 credit hour for each of 14 articles (10.75 credit hours total)—is offered for physicians, physician assistants, nurses, pharmacists, and clinical psychologists.
Support Recovery: It’s a Marathon, Not a Sprint

Step 1 - Read the Article
- How is recovery defined?
- What are the odds for recovery?
- What does the change process for AUD recovery look like?
- How can healthcare professionals support recovery?
- What strategies can help patients prevent or recover from a return to heavy drinking?
- Resources
- References

Step 2 - Complete the CME/CE Post-Test
- Earn CME/CE Credit

Takeaways
- Most people with AUD can and do recover, and their individual paths to recovery vary widely. By highlighting the likelihood of recovery, you may encourage more people with AUD to seek treatment or to reinforce their decision to continue or to seek treatment.
- Recovery is a long-term change process that may be characterized by occasional returns to heavy drinking. Especially in the bumpy first year, patients will benefit from ongoing support as they maintain their changes and deal with additional challenges.
- Healthcare professionals can support recovery by offering AUD medications in priority areas, adhering to standards as needed, engaging in meaningful and sustained relationships with people affected by AUD, and offering ways to help prevent or recover from drinking episodes.
- It helps to apply compassion and awareness of the difficulty of behavior change when encouraging patients to get back on track with a drinking problem. Avoid criticizing the patient for the situation, which can alienate the patient from the recovery process.
- Online resources from NIAAA can help you support your patients by providing insights on building skills and strategies for managing their alcohol use.

For different patients, both alcohol use disorder (AUD) and its recovery will play different roles in their lives. Here, we provide tips to help you understand and support your patients with AUD as they forge their individual paths to recovery.

A note on a drinking level term used in this Core article: Heavy drinking has been defined for women as 4 or more drinks on any day or 8 or more drinks per week, and for men as 5 or more drinks on any day or 15 or more drinks per week.
The NIAAA Core Resource on Alcohol was developed with the help of more than 70 contributors, including physicians, clinical psychologists, and basic and clinical alcohol researchers, who served as writers for full articles, content contributors to subsections, reviewers, and editorial staff. These contributors included both experts external to NIAAA as well as NIAAA staff.

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Research Highlights
Alcohol-Related Deaths During the COVID-19 Pandemic

The number and rate of alcohol-related deaths increased approximately 25% between 2019 and 2020, the first year of the COVID-19 pandemic. Rates increased for all age groups, with the largest increases occurring for people ages 35 to 44 (39.7%) and 25 to 34 (37.0%). The number of deaths remained elevated in the first half of 2021.

Citation: White AM, Castle IP, Powell PA, Hingson RW, Koob GF., JAMA. 2022 Mar 18;e224308. doi: 10.1001/jama.2022.4308. Online ahead of print. PMID: 35302593
Bariatric surgery is associated with higher blood alcohol concentrations (BACs), higher bioavailability of alcohol, and, thus, higher risk of alcohol-related consequences. These effects may be related to deficits in first-pass metabolism of alcohol. To better understand how the stomach contributes to first-pass metabolism, researchers examined alcohol pharmacokinetics after alcohol administration among women with sleeve gastrectomy. Women with the gastrectomy had an approximately 40% higher peak BAC after oral alcohol administration compared to women without the procedure. The higher BACs seen indicate that the stomach contributes significantly to the first-pass metabolism of alcohol in this population. These results help explain the link between bariatric surgery and elevated risk of alcohol-related consequences.
Serum Metabolomic Analysis Reveals Several Novel Metabolites in Association with Excessive Alcohol Use - An Exploratory Study

To identify biomarkers of excessive alcohol use, NIAAA-supported researchers profiled metabolites in the serum of research participants with a history of excessive alcohol use, compared to healthy participants. Of the metabolites identified, ten were most significantly associated with quantity and average number of drinks in the last 30 days and had better diagnostic performance for screening than commonly used lab tests.

Most metabolites identified were in the sphingolipid pathway.

Diagnostic performance of the top 10 metabolites (orange lines) compared to commonly used biomarkers

AST: aspartate aminotransferase
ALT: alanine aminotransferase
MCV: mean corpuscular volume of erythrocytes
GGT: gamma-glutamyl transpeptidase
CDT: carbohydrate-deficient transferrin

High-risk Drinkers Engage Distinct Stress-Predictive Brain Networks

This study examined whether changes in brain networks that underlie emotional stress responses can serve as an early marker of alcohol misuse. Functional brain imaging and predictive modeling were conducted with people who engaged in binge drinking or “light” drinking and showed differences in stress-related brain networks. Stress was associated with visual and motor networks in the binge drinking group and with the default mode and frontoparietal networks in the light drinking group. The stress networks identified for the binge drinking group predicted future daily stress and loss of control over drinking.

Widespread stress network differences between the groups indicated by asterisks

The central amygdala (CeA) and the noradrenaline/norepinephrine (NA) system are both involved in the brain’s responses to stress and alcohol. In the current study, researchers investigated how the NA system regulates CeA activity and influences drinking behavior in animal models of AUD. They found that NA receptors, $\alpha_1$ and $\beta$, potentiated CeA GABAergic transmission and drove alcohol intake. In the animal model of alcohol dependence, $\beta$ receptors disinhibited a subpopulation of CeA neurons and contributed to elevated alcohol intake. Postmortem analyses of human brain tissue revealed increased $\alpha_{1B}$ receptor mRNA expression in the amygdala of humans with AUD.

Propranolol prevented the NA’s ability to reduce GABA release, suggesting involvement of $\beta$ receptors.

Propranolol reduces alcohol consumption in dependent animals.

Significant increase in amygdala $\alpha_{1B}$ mRNA levels in humans with AUD.

Genetic Variants Associated with Acamprosate Treatment Response in Alcohol Use Disorder Patients: A Multiple Omics Study

Acamprosate is an approved FDA-approved medication for the treatment of alcohol use disorder (AUD) and is thought to reduce alcohol craving during abstinence. Patients vary in their treatment response to acamprosate and pharmacogenomic variations could partially explain the differences. Researchers conducted a genome-wide association study (GWAS) to identify genetic variants that contribute to variations in plasma metabolomic profiles associated with craving and/or acamprosate treatment outcomes. A series of genes were identified, including a protein-protein interaction network involving the protein tyrosine phosphatase receptor type D (PTPRD) gene. Single nucleotide polymorphisms (SNPs) in PTPRD were associated with acamprosate treatment outcomes.

Age 18-30 Trajectories Of Binge Drinking Frequency And Prevalence Across The Past 30 Years For Men And Women: Delineating When And Why Historical Trends Reversed Across Age

Binge drinking at age 18 has been decreasing historically but by the mid to late 20s, the reverse is true as reflected in increased binge drinking. The current study examined data from the Monitoring the Future study to examine this reversal. Researchers found that the reversal occurred primarily between ages 18-24 for men and 18-22 for women. The historical narrowing in the gap in binge drinking between men and women was more pronounced at the beginning than at end of the transition to adulthood.

Trajectories of binge drinking by sex and historical cohort group

THANK YOU!

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