

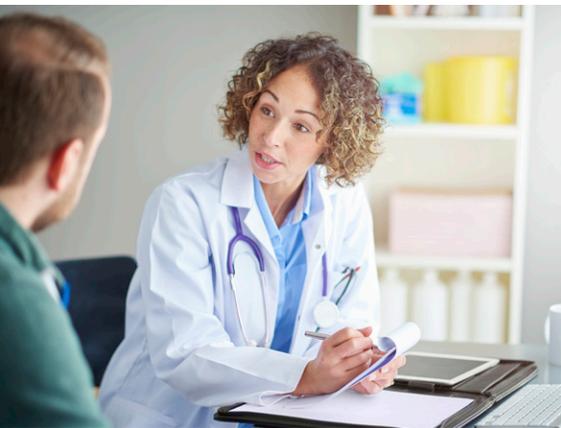
# NIAAA SPECTRUM

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES • National Institutes of Health • National Institute on Alcohol Abuse and Alcoholism

## FEATURE

### NIAAA ALCOHOL TREATMENT NAVIGATOR<sup>SM</sup> HELPS FIND QUALITY TREATMENT FOR ALCOHOL USE DISORDER



A new online resource is now available to help people recognize and choose high-quality care for alcohol use disorder, which affects nearly 15 million adults in the United States. NIAAA's Alcohol Treatment Navigator is a comprehensive, yet easy-to-use, tool to help individuals and their loved ones navigate the often complicated process of choosing treatment for alcohol problems by pointing the way to evidence-based care.

Many treatment options are available, and the Navigator makes the search easier by telling people what they need to know—and what they need to do—to find appropriate, quality care.

"We developed this tool to help address the alcohol treatment gap," says NIAAA Director George F. Koob, Ph.D. "In

any given year, less than 10 percent of individuals diagnosed with alcohol use disorder receive treatment, and many of them do not receive the type of care that best fits their needs. A significant reason for the treatment gap, we believe, is that people with alcohol use disorder often don't know where to turn for help. The Navigator offers a comprehensive strategy to help people search for professionally led, evidence-based alcohol treatment, which should improve their chances for success."

The Navigator's release is the culmination of a nearly 2-year development effort grounded in a review of decades of scientific research on clinical interventions and health services, with input from people seeking alcohol treatment, treatment providers, and researchers.

"Good alcohol treatment can be very hard to find," says Lori Ducharme, Ph.D., Program Director for Health Services Research in the NIAAA Division of Treatment and Recovery Research and lead developer of the Navigator. "Knowing where to look for treatment is difficult, mainly because treatment takes many forms, which often are not well-integrated into general health care. That makes it hard for people to find the kind of

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The NIAAA ALCOHOL TREATMENT NAVIGATOR<sup>SM</sup> logo and the slogan POINTING THE WAY TO EVIDENCE-BASED CARE<sup>SM</sup> are service marks of the U.S. Department of Health and Human Services.

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## FEATURE

## BLACKOUTS—DROWNING MEMORIES WITH ALCOHOL



Alcohol-induced memory loss for events that transpired while intoxicated—also known as a blackout—has achieved pop culture notoriety in recent years through social media and other outlets, especially among young adults. Given the focus on blackouts, a sober look at this all too common but dangerous consequence of alcohol misuse is in order.

Blackouts are periods when a person does not remember what happened while they were intoxicated. They occur when alcohol impairs information processing in the hippocampus, a brain region that plays a central role in the formation of new memories, explains Aaron White, Ph.D., Senior Scientific Advisor to the NIAAA Director and a leading expert on blackouts.

“This creates a temporary void in the record-keeping system,” says Dr. White. “Memories lost in a blackout will never come back, because the information wasn’t stored in the first place.” Missing events can range from mundane behaviors such as brushing one’s teeth, to dangerous and traumatic events such as driving a car, getting into a fight,

or committing or being the victim of a crime. Also, not all individuals experience a blackout in the same way. Some may appear mildly intoxicated and be able to hold a conversation, and others may appear highly intoxicated and be incoherent.

Blackouts tend to begin at blood alcohol concentrations (BAC) around 0.16 percent and above, nearly twice the legal driving limit of 0.08 percent and when most cognitive abilities (e.g., impulse control, judgment, and decision making) are significantly impaired. Blackouts can occur at much lower doses if other sedative hypnotic drugs were also ingested.

Most available epidemiological data on blackouts come from studies of young adults, particularly college students. A survey of more than 26,000 college students found that 32 percent of them experience a blackout in a typical year, with males (34 percent) and females (31 percent) affected in about the same proportion. But blackouts can affect anyone who drinks alcohol, no matter their age or whether they are experienced drinkers.

Since blackouts occur at high BACs, they are often a consequence of binge drinking (4 or more drinks on an occasion for women, or 5 or more drinks on an occasion for men) or a more dangerous drinking pattern known as extreme binge drinking. Extreme binge drinking is defined as consuming two or more times the binge-drinking threshold. About 26 percent of adults engaged in binge drinking in 2016, according to the National Survey on Drug Use and Health. A recent analysis conducted by NIAAA researchers using 2012–2013 survey data found that nearly 32 million adults in the United States (13 percent of the population ages 18 and older) engaged in extreme binge drinking on at least one occasion in the past year (<https://www.nih.gov/news-events/news-releases/study-finds-tens-millions-americans-drink-alcohol-dangerously-high-levels>).

“As more people engage in extreme bingeing, it seems inevitable that more people will experience blackouts,” says Dr. White.

Among college students, research has shown that the frequency of blackouts predicts other alcohol-related consequences, and questions about blackouts could serve as an important simple screen for risk of alcohol-related harms. “More research is needed to understand why some people are more likely to black out than others and to determine the relationship between blackouts and alcohol use disorder,” Dr. White says. “To reduce the risk for having a blackout as well as other alcohol-related consequences, drinking in moderation is key.”

## Reference:

American College Health Association. National College Health Assessment II: Reference Group Executive Summary. Hanover, MD: American College Health Association, Spring 2012.

## NIAAA ALCOHOL TREATMENT NAVIGATOR

*Pointing the way to evidence-based care*

care that they need, when they need it. The Navigator is designed to take the mystery and frustration out of that search by guiding them through a step-by-step process to find a qualified treatment provider.”

Popular stereotypes about alcohol treatment are another deterrent to finding treatment, Dr. Ducharme notes. Many people think their only treatment options are mutual help groups or long-term residential rehabilitation facilities. While those options can be helpful for some people, they are not a good fit for everyone.

“A theme of the Navigator is that different people need different options,” says Dr. Ducharme. “We need to help people understand the whole range of treatment options that are available, how to find one that meets their unique needs

and preferences, and that treatments with the strongest chances for success are those that are informed by the results of rigorous scientific research on alcohol use disorder.”

The Navigator offers these features:

- An overview of alcohol use disorder
- A description of different kinds of professionally led treatment options
- Step-by-step instructions for searching several existing online directories of treatment providers, including information from the Substance Abuse and Mental Health Services Administration’s Behavioral Health Treatment Services Locator
- Ten questions to ask a provider, and five signs of quality to listen for

- A downloadable toolkit to help organize and simplify the search process

As its name implies, the Navigator is designed to point the way to evidence-based alcohol treatment options delivered by skilled health professionals and to help people choose the best options for their specific situations.

The need for the Navigator became apparent to Dr. Koob when he came to NIAAA in 2014. “During my tenure as Director, I’ve received numerous calls from colleagues and the general public asking for advice on finding ‘good’ alcohol treatment providers—in or near their communities—for their family and friends,” he says.

“Those calls inspired us to develop the Navigator,” Dr. Koob says. “This landmark resource tells people what they need to know and what they need to do. It helps people better understand their options, empowers families to help their loved ones, and gives health professionals a resource to share with clients who need a referral.”

The NIAAA Alcohol Treatment Navigator is available at <https://alcoholtreatment.niaaa.nih.gov>.

## NOTEWORTHY

### NIAAA DIRECTOR NAMED TO NATIONAL ACADEMY OF MEDICINE



In October 2017, the National Academy of Medicine elected NIAAA Director George F. Koob, Ph.D., among 70 new regular members to its distinguished organization. Membership in the National Academy of Medicine is considered one of the highest honors in the fields of health and medicine. Members are elected annually by their peers for major contributions in the medical sciences, health care, and public health.

Dr. Koob is recognized as one of the major contributors to the field of addiction medicine and a world authority on alcohol and stress, as well as on the neurobiology of alcohol and drug addiction. His work has advanced understanding of the physiological effects of alcohol and other substance use, including why some people transition from use to misuse to addiction, whereas others do not.

## NOTEWORTHY

## DR. PATRICIA POWELL APPOINTED NIAAA DEPUTY DIRECTOR



Patricia A. Powell, Ph.D., was named Deputy Director of NIAAA in September 2017.

Dr. Powell joined NIAAA in 2001, after more than 20 years of research experience in developmental genetics and molecular biology. She earned her doctorate from Washington University in St. Louis and continued with postdoctoral studies at the Salk Institute, the University of California San Diego, as well as the Washington University School of Medicine in St. Louis.

Dr. Powell served as interim NIAAA Deputy Director from November 2015 to September 2017 and previously served as NIAAA Associate Director for Scientific Initiatives and Chief of the NIAAA Science Policy Branch.

## NIAAA@WORK

## LABORATORY ON NEUROBIOLOGY OF COMPULSIVE BEHAVIORS



Martin Adrover, Ph.D., (then NIAAA Postdoctoral Fellow and now Investigator at the University of Buenos Aires) discusses plans for the day's experiments with Veronica Alvarez, Ph.D., (Chief of NIAAA's Laboratory on Neurobiology of Compulsive Behaviors [LNCB]). LNCB works to uncover the circuits and synaptic mechanisms mediating reward-motivated behaviors and compulsive alcohol and drug use.

Photo credit:  
National Institutes of Health  
Intramural Research Program

## SPOTLIGHT

### NIAAA HOSTS CONFERENCE ON ALCOHOL AND OPIOID USE IN WOMEN AND GIRLS



More than 100 researchers, health care providers, health policymakers, and addiction prevention and treatment professionals gathered in Washington, D.C., in late October for the first National Conference on Alcohol and Opioid Use in Women and Girls.

The conference reviewed key findings from current research on the

causes, consequences, prevention, and treatment of harmful alcohol, opioid, and other substance use among women and girls, and the best approaches for sustaining recovery.

NIAAA hosted the conference with the Women, Drinking, and Pregnancy Work Group of the Interagency Coordinating Committee on Fetal Alcohol Spectrum Disorders. It was co-chaired by Deidra Roach, M.D., Medical Project Officer in NIAAA’s Division of Treatment and Recovery Research, and Cora Lee Wetherington, Ph.D., Women and Sex/Gender Differences Research Coordinator at the National Institute on Drug Abuse.

“We sought to identify important directions for future research and to provide a platform for developing coordinated approaches for addressing

epidemic substance misuse among females,” says Dr. Roach. “Just as important was the opportunity to provide a setting where stakeholders from diverse professional backgrounds could be energized and motivated to start new collaborations and to strengthen existing ones.”

Conference highlights included a keynote address, “Alcohol and the Female Brain,” by NIAAA Director George F. Koob, Ph.D., as well as panel presentations and group discussions of diverse areas of addiction prevention and treatment. Dr. Koob’s presentation can be viewed at <https://www.niaaa.nih.gov/news-events/news-noteworthy/new-video-alcohol-and-female-brain-presentation>.

## NEWS FROM THE FIELD

### NIAAA SCIENTISTS PROVIDE MORE EVIDENCE THAT BINGE DRINKING MAY INDICATE VULNERABILITY TO ALCOHOL USE DISORDER



An NIAAA study shows that people who drink socially and have certain risk factors for alcohol use disorder (AUD) self-administer more alcohol and at a faster rate during a single laboratory session of alcohol consumption than people at low risk for developing AUD. Participants with all three risk factors evaluated in this study—being male, having a family history of AUD, and having higher impulsivity behaviors—had the highest rates of binge drinking. The findings suggest that people at risk for AUD have different drinking patterns than those at low risk.

The study, led by senior author Vijay Ramchandani, Ph.D., Chief of NIAAA’s Section on Human Psychopharmacology, and co-first authors Joshua Gowin, Ph.D., and Matthew Sloan, M.D., Postdoctoral Fellows in the Section, was published in *The American Journal of Psychiatry*.

NIAAA defines binge drinking as a pattern of drinking that brings blood alcohol concentration (BAC) to .08 g/dL. This typically occurs after 4 drinks for women and 5 drinks for

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## NEWS FROM THE FIELD

## ANTI-SMOKING MEDICATION MAY REDUCE ALCOHOL CRAVING



Varenicline, an anti-smoking medication, may reduce craving for alcohol in people who drink heavily and for people with alcohol use disorder (AUD) who are also depressed, according to two recent studies. The research, funded by NIAAA and led by Sherry McKee, Ph.D., Professor of Psychiatry at Yale School of Medicine, provides more evidence that varenicline may be a potential treatment for AUD.

Previous research has shown that varenicline can reduce alcohol use among heavy drinkers; however, the mechanisms by which varenicline exerts its effects are not well-understood. To

elucidate these mechanisms, researchers investigated the effects of varenicline on alcohol craving induced by cues associated with drinking (alcohol craving is a major cause of relapse in AUD). Volunteers who were smokers and drank heavily took varenicline or a placebo. After 10 days, they completed tests in a laboratory that assessed their cravings for alcohol in response to neutral cues and alcohol-related cues, such as smelling and handling a glass of alcohol.

Participants receiving varenicline reported less craving for alcohol when exposed to the alcohol-related

cues compared to those who received the placebo. This finding suggests that reducing alcohol craving may be a mechanism through which varenicline exerts its effects on alcohol consumption.

In a separate study, Dr. McKee's team reanalyzed data from a 2016 study of individuals with AUD to determine whether symptoms of depression, which frequently co-occurs with AUD, influenced the effectiveness of varenicline on reducing alcohol consumption. Participants who reported moderate to high levels of depression had less alcohol craving and drank less alcohol during laboratory tests after receiving varenicline. These findings show that depression may influence varenicline efficacy in individuals with AUD and suggest that varenicline may be helpful for reducing alcohol consumption in people who drink heavily and have heightened levels of depressive symptoms.

These studies shed light on a potential mechanism by which varenicline reduces drinking in individuals with AUD. Understanding the effects of varenicline on alcohol craving may prove useful in developing future AUD treatment strategies.

## References:

Roberts, W.; Harrison, E.L.R.; and McKee, S.A. Effects of varenicline on alcohol cue reactivity in heavy drinkers. *Psychopharmacology* 234(18):2737–2745, 2017. PMID: 28600734

Roberts, W.; Verplaetse, T.L.; Moore, K.; Oberleitner, L.; Picciotto, M.R.; and McKee, S.A. Effects of varenicline on alcohol self-administration and craving in drinkers with depressive symptoms. *Journal of Psychopharmacology* 31(7):906–914, 2017. PMID: 28351203

## 5 QUESTIONS WITH . . .

### LORI DUCHARME, PH.D.

*Program Director for Health Services Research in the NIAAA Division of Treatment and Recovery Research and Lead Developer of the NIAAA Alcohol Treatment Navigator<sup>SM</sup>*



**1** You are a program director for health services research at NIAAA. How would you describe the area of research?

It's probably easiest to think about health services research as the far distant end of the research pipeline. It focuses on how best to deliver evidence-based interventions in real-world settings. This is really where the rubber meets the road—getting our interventions into routine use is where we ultimately see the return on our research investments. My grantees investigate the availability, access, utilization, cost, and quality of alcohol treatment services. This can include studies that look for more efficient ways to deliver treatment or better structures for health care systems, organizations, and workflow. It can also include studies to reduce disparities in treatment access or outcomes, and on comprehensive implementation of newly developed interventions.

**2** What are some of the recent advances in health services research? What do we know today that we didn't know a decade ago?

Implementation science is a relatively new area of health services research. It is devoted to figuring out how to get health care providers to adopt and fully utilize evidence-based prevention and treatment practices, and also how to get them to discontinue practices that are outdated, ineffective, or harmful. This field barely existed 10 years ago when I arrived at NIH, but it now has a full array of journals and conferences and really active constituencies across NIH and throughout public health. It even has its own Center for Scientific Review study section—Dissemination and Implementation Research in Health—that reviews NIH grant applications intending to bridge gaps between public health, clinical research, and everyday practice. It's been exciting to watch this new specialty area unfold and to have been a part of it.

**3** Are there any exciting research breakthroughs on the horizon? Should we be optimistic?

In the last couple of years, we've seen strong research in some areas in particular. One is an increase in the use of pragmatic trials—large, real-world effectiveness trials designed explicitly to generate evidence to inform clinical decisions. By relying largely on electronic health records and other data systems to track patients, these types of study designs can make our research faster and more efficient. Another very promising area is the integration of alcohol and other substance use treatment into mainstream health care. We're just now starting to see the results of the first wave of research studies that

have been testing strategies to achieve meaningful care integration in ways that yield good outcomes for patients while not overburdening primary care physicians.

**4** You've led the development of NIAAA's new Alcohol Treatment Navigator. Why is this such an important resource?

The Navigator consolidates everything that health services research has learned over the past 20 years about the treatment system and markers of good quality treatment. I think its most important feature is that it brings together everything you need to know about alcohol treatment in one place and lays out actionable steps that the general public can understand and follow. The addiction treatment system is confusing even if you know it inside out—we really tried to use the Navigator to help make sense of it all.

*Editor's note: For more information, please see the feature story NIAAA Alcohol Treatment Navigator<sup>SM</sup> Helps Find Quality Treatment for Alcohol Use Disorder.*

**5** What is something interesting about you that we might be surprised to learn?

I live for baseball season. My grandfather didn't have any grandsons, so I inherited the baseball genes. Lately I've been on something of a quest to "collect" ballparks—the way birders have life lists of species. I've been to 27 of the 30 major league parks in the United States. There are mini-helmets from all of them in my office, and I just need the Twins, Astros, and Rangers to complete the set. I've also been to 6 ballparks in Cuba, 3 in South Korea, and all 12 of the professional ballparks in Japan. Europe is next.

**NEWS FROM THE FIELD: NIAAA Scientists Provide . . . Continued from page 5**

men—in about 2 hours. Binge drinking may be an early indicator for risk of developing AUD. Examining drinking behavior during individual drinking sessions may provide more clues for identifying individuals at risk for AUD.

To determine whether the examined AUD risk factors can predict the rate of binge drinking, 159 social drinkers between the ages of 21 and 45 completed assessments about family history of problem drinking, behavioral impulsivity, and level of response to alcohol. They then participated in a laboratory session in which they self-administered alcohol intravenously to

mimic a typical drinking session with friends. The participants' BACs were continuously estimated by computer and confirmed by breathalyzer every 15 minutes.

Participants who were identified as being at a higher risk for AUD administered alcohol faster, reaching binge-like BACs more quickly than those at a lower risk for developing AUD. Having a family history of AUD was most strongly associated with a faster rate of binge drinking. Participants with all three risk factors had the fastest rates of intravenous alcohol administration—five times

faster—during a session, compared to the lowest risk group. Although more research is needed, the results suggest that, as part of a clinical exam, assessing binge drinking during individual drinking sessions may help identify individuals in need of early intervention.

**Reference:**

Gowin, J.L.; Sloan, M.E.; Stangl, B.L.; Vatsalya, V.; and Ramchandani, V.A. Vulnerability for alcohol use disorder and rate of alcohol consumption. *The American Journal of Psychiatry* 174(11):1094–1101, 2017. PMID: 28774194

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*NIAAA Spectrum* is NIAAA's triannual webzine. With engaging feature articles, short news updates, and colorful graphics, *NIAAA Spectrum* offers accessible and relevant information on NIAAA and the alcohol research field for a wide range of audiences.

Each issue includes feature-length stories, new research findings from the field, image and data analyses, and an interview with an NIAAA staff member or alcohol researcher.

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