

# Director's Report to the National Advisory Council on Drug Abuse

Nora D. Volkow, M.D.

Director, National Institute on Drug Abuse September 11, 2024

# NIDA BUDGET (All dollars are in thousands)

	FY 2023 Final	FY 2024 Operating Budget	FY 2025 President's Budget
Base	\$1,308,070	\$1,308,070	\$1,313,048
HEAL	\$355,295	\$355,295	\$355,295
Total	\$1,663,365	\$1,663,365	\$1,668,343

Office of Translational Initiatives and Program Innovations

Office of Research Training, Diversity & Disparities Office of the Director

**HIV Research Program** 

Office of Management

Office of Science Policy & Communications

Intramural Research Program Division of Extramural Research

Center for the Clinical Trials Network Division of Therapeutics and Medical Consequences

Division of Neuroscience and Behavior

Division of
Epidemiology,
Services and
Prevention Research

## NIDA Senior Staff Retiring Soon...



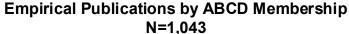
Betty Tai, Ph.D. Director, CCTN

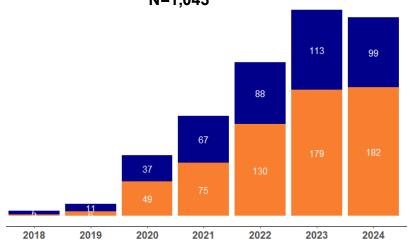


Rita Valentino, Ph.D. Director, DNB

searches have been initiated...

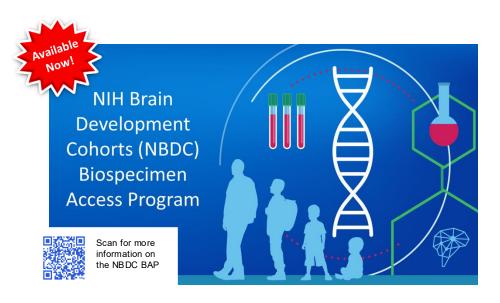
## **Adolescent Brain Cognitive Development Study**





~60% by Non-ABCD scientists

Current visit – 6 to 8-year follow-ups (youth ages 15-18) 96% retained



Early 2025

NBDC

NOVICE USERS



Authentication

- Data Use Certification (including responsible data use training)
- Tabulated data storage
- Query

cbrain

Data Processing

- Data download
- Knowledge base Expert

Expert Users Flexible



Structured

- Data dictionary viewer (public)
- · Tabulated data storage
- · Dataset creation and download
- Data exploration (descriptive statistics, visualizations) Late Fall 2024
- Data analysis (inferential statistics, inc. voxel/vertex/connectome-wide)
   Spring/Summer 2025



Command-line interface Future plan

Future pla

File-based data storage
HPC nodes for processing



Data share with authorized users Spring/Summer 2025

Data as of 8/30/24

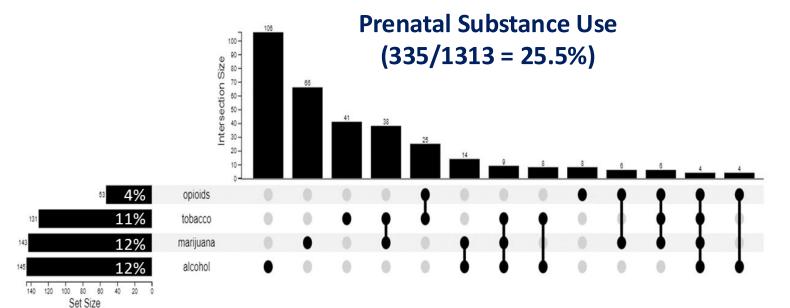


**Christopher Sarampote PhD** 

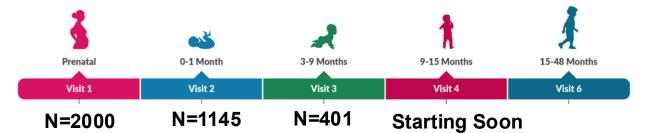
## **HEALthy Brain and Child Development Study**

Multi-site longitudinal study of > 7,000 participants examining brain development trajectories and behavior from birth through childhood (ages 9-10) including *in utero* substance exposure and effects of adverse social environments.

Enrollment began July 2023
2,000 participants enrolled to date
24.9% reported prenatal substance
1st data release in Early 2025
Full sample enrolled by 2027









Special Issue: *Developmental Cognitive Neuroscience* 

An Overview of HBCD



# Population Assessment for Tobacco and Health (PATH)

Nationally representative <u>longitudinal</u> <u>study</u> of tobacco use, its determinants, and impacts in noninstitutionalized population, aged 12 and older. Started in 2013 with over 40 000 participants

- Primarily funded by FDA Center for Tobacco Products (CTP)
- Administered by NIDA
- Developed by FDA and NIH with assistance from Westat and Westat Scientific Partners

Total Funding FY2024: 53,324,000

**FDA: 45,350,000** NIH: 6,550,000:

**NIDA** 

NCI

**NIMHD** 

**NHLBI** 

NIAAA

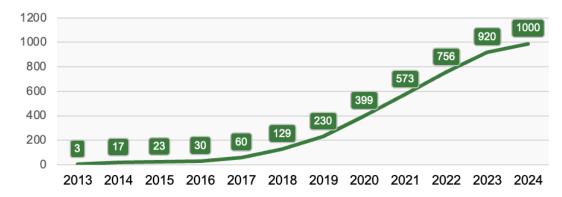
**NIEHS** 

**OBSSR** 

**ODP** 

**NIDDK** 

#### **Papers Published**



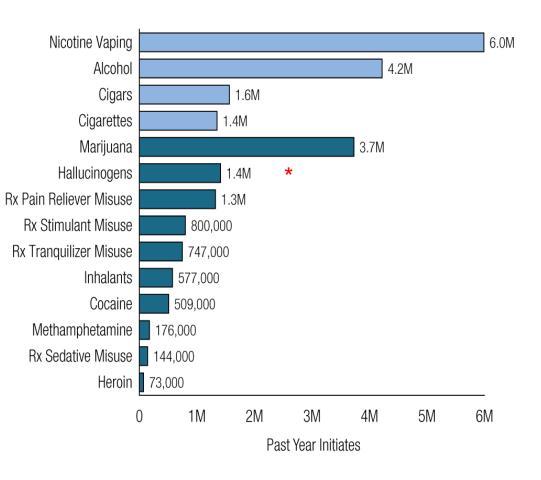


## **PATH Study impacts on policy**

- Data cited in several FDA policy documents, including two
   2022 Proposed Rules:
  - Tobacco Product Standard for Menthol in Cigarettes
  - Tobacco Product Standard for Characterizing Flavors in Cigars
- Data cited in the 2023 U.S Surgeon General's Advisory
   Social Media and Youth Mental Health, supporting the link
   between time spent on social media and depression and
   anxiety.
- Cited in Congressional testimony regarding FDA regulation of ENDS.
- Data cited in FDA CTP's decisions on premarket tobacco product applications (PMTA) for new tobacco products seeking an FDA marketing order.

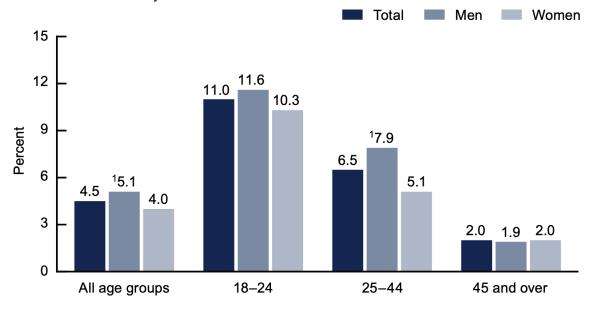
#### **National Survey Drug Use and Health**

# Past Year Initiates of Substances: People Aged 12 or Older; 2022



#### NCHS Data Brief ■ No. 475 ■ July 2023

Percentage adults aged 18 and over who currently use e-cigarettes, by age group and sex: US, 2021



~11M Adult e-cigarette users in the U.S.<sup>1</sup>

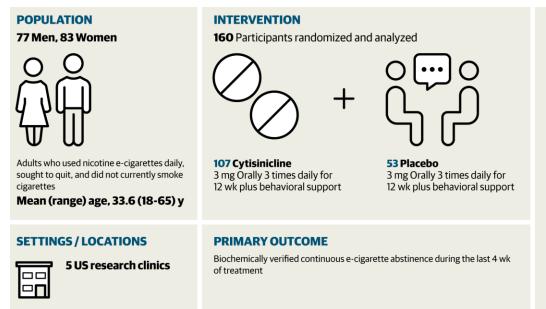
73%

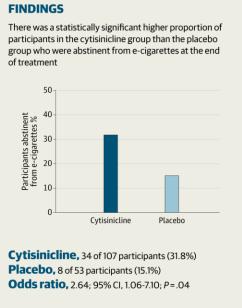
Intend to quit vaping in the next 3-12 months<sup>2</sup> 65%

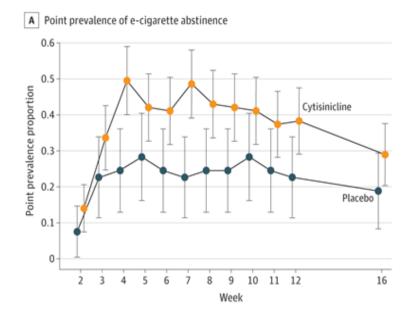
Of vapers would try a new, natural treatment\*

# Cytisinicline for Vaping Cessation in Adults Using Nicotine E-Cigarettes The ORCA-V1 Randomized Clinical Trial

Nancy A. Rigotti, MD; Neal L. Benowitz, MD; Judith J. Prochaska, PhD, MPH; Daniel F. Cain, BSc; Julie Ball, MS; Anthony Clarke, PhD; Brent A. Blumenstein, PhD; Cindy Jacobs, PhD, MD







- Of 160 participants, 83 (51.9%) had tried to quit e-cigarettes; most without treatment, but 16 (19.3%) had used NRT.
- Reasons for quit attempt were health (n=102 [63.8%]), cost (n=23 [14.4%]), and addiction freedom (n=21; 13.1%).
- Eighty participants (50.0%) rated their motivation to quit now as "very much"

# 2023-2024: Provisional\* Drug Overdose Deaths 12-months Ending In Select Months

	ALL DRUGS	HEROIN	NAT & SEMI SYNTHETIC	METHADONE	SYNTHETIC OPIOIDS (illicit fentanyl)	COCAINE	OTHER PSYCHO- STIMULANTS (meth.)
3/2023*	111,837	5,440	11,840	3,458	77,631	29,389	36,386
9/2023*	112,442	4,560	10,971	3,505	78,603	31,026	37,602
3/2024*	103,451	3,740	9,788	3,426	70,972	29,181	35,610
Percent Change 03/23-03/24	-7.50%	-31.25%	-17.33%	-0.93%	-8.58%	-0.71%	-2.13%

<sup>\*</sup>NCHS Provisional drug-involved overdose death counts are <u>PREDICTED VALUES</u>, 12 months ending in select months.

The numbers for 2023 differ in slides 1 and 2 because provisional data includes all deaths that occurred in the US including foreign residents.

Source: Provisional Drug Overdose Death Counts produced by the National Vital Statistics System, NCHS, CDC, UHHS.

## **MOUD Treatment in Emergency Departments**





Original Investigation | Substance Use and Addiction

## Extended-Release 7-Day Injectable Buprenorphine for Patients With Minimal to Mild Opioid Withdrawal

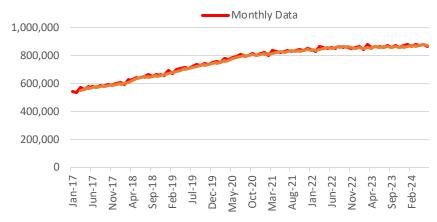
Gail D'Onofrio, MD; Andrew A. Herring, MD; Jeanmarie Perrone, MD; Kathryn Hawk, MD; Elizabeth A. Samuels, MD; Ethan Cowan, MD; Erik Anderson, MD; Ryan McCormack, MD; Kristen Huntley, PhD; Patricia Owens, MS; Shara Martel, MPH; Mark Schactman, MHS; Michele R. Lofwall, MD; Sharon L. Walsh, PhD; James Dziura, PhD; David A. Fiellin, MD

- CAM2038 24mg (16 mg buprenorphine q/d equivalent)
- Remained in ED for 4 hours after injection to monitor withdrawal.

		Patients, No. (%) [95% CI] <sup>b</sup>						
COWS score <sup>a</sup>	Patients enrolled, No.	≥5-Point increase in COWS score within 4 h of extended-release buprenorphine	Transition to moderate or greater withdrawal within 4 h of extended- release buprenorphine <sup>c</sup>	Precipitated withdrawal within 1 h of extended-release buprenorphine	Precipitated withdrawal within 4 h of extended- release buprenorphine <sup>d</sup>			
At baseline <sup>e</sup>								
4 to 7	63	4 (6.3) [1.7-15.5]	2 (3.2) [0.4-11.0]	1 (1.6) [0-8.5]	2 (3.2) [0.4-11.0]			
0 to 3	37	6 (16.2) [6.2-32.0]	5 (13.5) [4.5-28.8]	1 (2.7) [0.1-14.2]	5 (13.5) [4.5-28.8]			
With or without fentanyl								
4 to 7 Without	21	0 (0) [0-16.1]	0 (0) [0-16.1]	0 (0) [0-16.1]	0 (0) [0-16.1]			
4 to 7 With	42	4 (9.5) [2.7-22.6]	2 (4.8) [0.6-16.2]	1 (2.4) [0.1-12.6]	2 (4.8) [0.6-16.2]			
0 to 3 Without	9	0 (0) [0-33.6]	0 (0) [0-33.6]	0 (0) [0-33.6]	0 (0) [0-33.6]			
0 to 3 With	28	6 (21.4) [8.3-41.0]	5 (17.9) [6.1-36.9]	1 (3.6) [0.1-18.4]	5 (17.9) [6.1-36.9]			
Total	100	10 (10.0) [4.9-17.6]	7 (7.0) [2.9-13.9]	2 (2.0) [0.2-7.0]	7 (7.0) [2.9-13.9]			

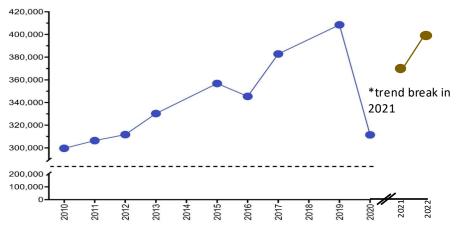
# Receipt of buprenorphine or methadone over time

#### Patients receiving buprenorphine (IQVIA)



IQVIA Total Patient Tracker. Data Retrieved August 23, 2024. TPT measures prescriptions dispensed through retail channel only.

#### Patients receiving methadone in OTPs (N-SSATS, N-SUMHSS)

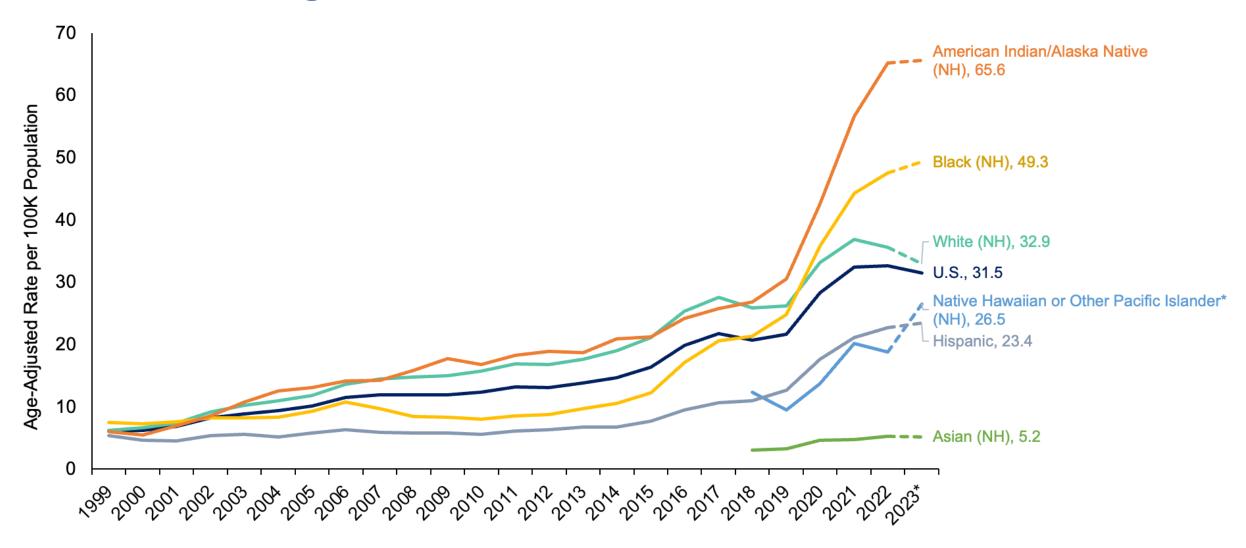


### **MOUD Treatment in Primary Care**

- Retention in office-based buprenorphine (BUP) is sub-optimal
- Methadone is associated with greater retention compared to BUP
- Methadone delivery in US is characterized by:
  - Restriction to opioid treatment programs (OTP)
  - Racial disparities
  - Geographic disparities
  - Stigma
- CTN-0131 Office-based methadone with pharmacy administration and/or dispensing versus office-based BUP on retention in MOUD treatment (as randomized)

\*new reporting in 2021 prevents comparisons with prior years Kennalley et al. (2023)

## Among All Ages, Drug Overdose Deaths Are Highest in Al/AN NH and Black/AA NH



Native Collective Research Effort to Enhance Wellness (N CREW)

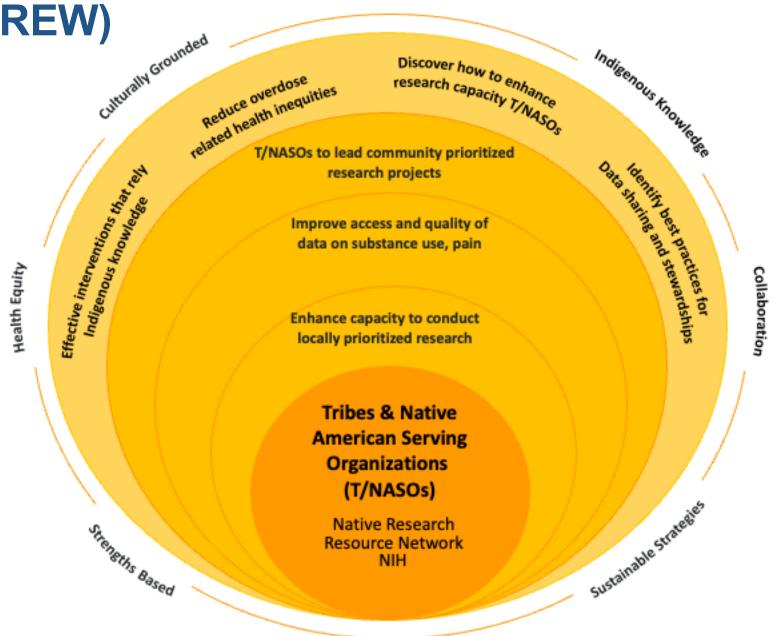
Phase I Development and Planning FY24-25 \$~25 million

- ROA OTA 23-007: T/NASOs plan, develop, pilot, and/or implement research and/or data improvement projects.
- ROA OTA 23-008: T/NASOs and Ally Organizations form a Native Research Resource Network (NRRN) to provide training, resources and program coordination.

Phase II will build on Phase I FY26-30 \$~240 million

Contact: NCREW@NIH.GOV

T/NASOs: Tribes and Native American Serving Organizations



# Native Collective Research Effort to Enhance Wellness (N CREW): First Awards Made

- . ABSENTEE SHAWNEE TRIBE OF OKLAHOMA
- ALASKA NATIVE TRIBAL HEALTH CONSORTIUM
- ALBUQUERQUE AREA INDIAN HEALTH BOARD
- . CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION
- EASTERN SHOSHONE TRIBE
- GREAT LAKES INTER-TRIBAL COUNCIL, INC.
- LUMBEE LAND DEVELOPMENT, INC.
- . MONTANA CONSORTIUM FOR URBAN INDIAN HEALTH
- NORTHWEST INDIAN COLLEGE
- NORTHWEST PORTLAND AREA INDIAN HEALTH BOARD
- SOUTHCENTRAL FOUNDATION
- . UNIVERSITY OF WASHINGTON

- UTAH NAVAJO HEALTH SYSTEM, INC.
- WABANAKI HEALTH AND WELLNESS
- WASHINGTON STATE UNIVERSITY



# **Example SUD Research & Activities**



Culturally adapt and test preventive, treatment, or recovery interventions



Leverage service infrastructures to develop Indigenous healthcare frameworks & research programs



Enhance data on opioids and other substances (e.g., data dashboards, story boards)



Conduct regional/community assessments to examine patient journeys or care cascades

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# **Example Research Capacity Building**



Research internships and community research trainings



Development of research review processes (e.g., Tribal IRBs, community research boards)



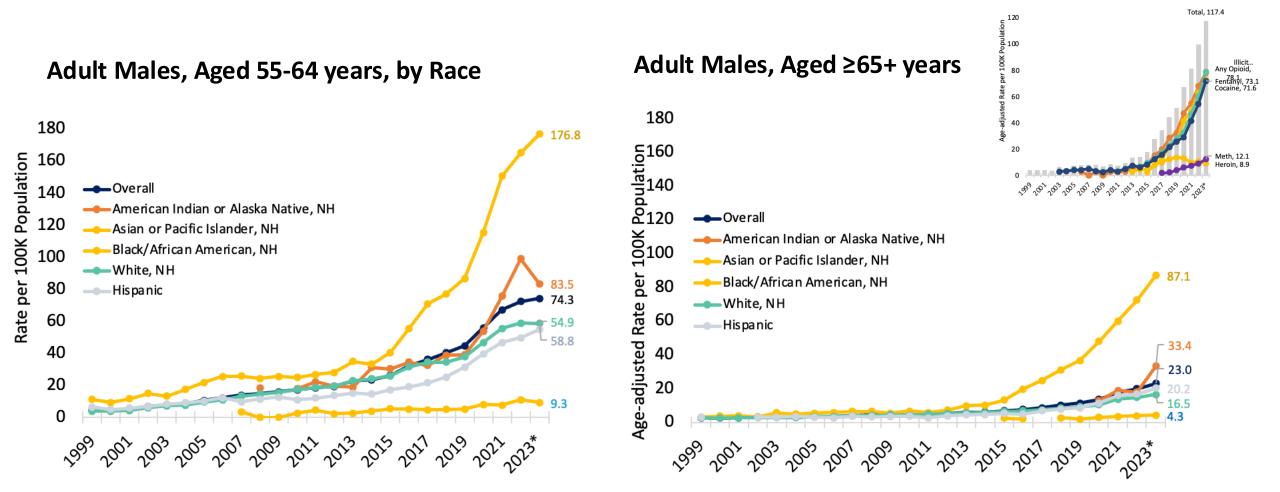
Enhance data capture and use and develop research and data policies and procedures



Hiring and partnership development

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# Drug Overdose Deaths Among Older Americans are Highest in Black/AA NH Males



Source: NH=non-Hispanic. The Multiple Cause of Death final data are reported by NCHS, CDC. Estimates are based on final data through 2022. \*Data for 2023 are based on provisional data. From 1999, data specifies Asian NH or Pacific Islander NH as one race category. From 2018, this race category was separated into Asian NH and Native Hawaiian or Other Pacific Islander NH (NHOPI). In this graph, these races were combined since data for NHOPI were suppressed because of counts <10 or noted as unreliable for counts <20. Data is also omitted for American Indian and Alaska Native NH death for years in which rates are suppressed or unreliable.

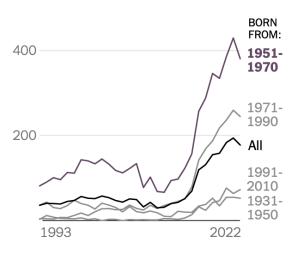
## The New York Times

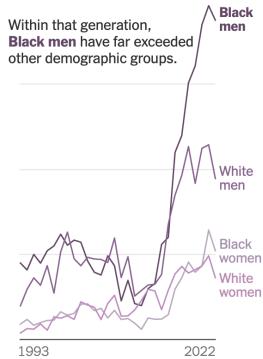
#### A generation devastated by drugs

800 deaths per 100,000

People **born from 1951 to 1970** have fatally overdosed at the highest rates in Baltimore.

600





Source: Centers for Disease Control and Prevention • By Molly Cook Escobar

•Published June 3, 2024

Nora's Blog

#### Older Black men are disproportionately affected by the overdose crisis

August 30, 2024 By Dr. Nora Volkow

Saturday, August 31, is International Overdose
Awareness Day 127, when we collectively remember those who have lost their lives to drug overdose, support those who grieve those losses, and offer encouragement to those who seek recovery from addiction. It is also an opportunity to share new knowledge about the



©Getty Images/xavierarnau ☑

overdose crisis and strategies for confronting it. There is some very good news this year: Provisional data from the <u>CDC</u> show that, overall, overdose deaths dropped by 7.5% in the 12 months ending March, 2024, the largest decline in decades. It is cause for optimism. But unfortunately, for some groups, we continue to see only greater escalation of the overdose crisis.

66 Cite this article

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# Advancing Research to Address Overdoses in Black Americans Including Older AA

J Clin Psychiatry. 2023 Nov 27;85(1):23m15068. doi: 10.4088/JCP.23m15068.

#### Significant Decrease in Alcohol Use Disorder Symptoms Secondary to Semaglutide Therapy for Weight Loss: A Case Series

Jesse R Richards <sup>1 2</sup>, Madisen Fae Dorand <sup>1</sup>, Kyleigh Royal <sup>3</sup>, Lana Mnajjed <sup>3</sup>, Maria Paszkowiak <sup>3</sup>. W Kyle Simmons <sup>4</sup> <sup>5</sup>

Sci Rep. 2023; 13: 20998. PMCID: PMC1068

Published online 2023 Nov 28. doi: 10.1038/s41598-023-48267-2

Semaglutide and Tirzepatide reduce alcohol consumption in individuals with obesity

Fatima Quddos, 1,2 Zachary Hubshman, 1,3 Allison Tegge, 1 Daniel Sane, 1,3 Erin Marti, 1 Anita S. Kablinger, 4 Kirstin M. Gatchalian, <sup>1</sup> Amber L. Kelly, <sup>1,2</sup> Alexandra G. DiFeliceantonio, <sup>1</sup> and Warren K. Bickel<sup>№1</sup>

#### Association of semaglutide with reduced incidence and relapse of cannabis use disorder in real-world populations: a retrospective cohort study

William Wang, Nora D. Volkow ☑, Nathan A. Berger, Pamela B. Davis, David C. Kaelber & Rong Xu ☑

Molecular Psychiatry (2024) Cite this article

Published online 2024 Jul 27. doi: 10.1186/s13722-024-00481-7

Addict Sci Clin Pract. 2024; 19: 56. PMCID: PMC11282646 PMID: 39061093

Ecological momentary assessment and cue-elicited drug craving as primary endpoints: study protocol for a randomized, double-blind, placebo-controlled clinical trial testing the efficacy of a GLP-1 receptor agonist in opioid use disorder

Christopher S. Freet, Brianna Evans, Timothy R. Brick, 4 Erin Deneke, Emily J. Wasserman, Sarah M. Ballard, 2 Dean M. Stankoski, Lan Kong, Nazia Raja-Khan, 1,7,8 Jennifer E. Nyland, Amy C. Arnold, 2 Venkatesh Basappa Krishnamurthy, 10 Julio Fernandez-Mendoza, 1 H. Harrington Cleveland, 3 Adam D. Scioli, 5 Amanda Molchanow, 11 Amy E. Messner, 11 Hasan Ayaz, 9 Patricia S. Grigson, 2 and Scott C. Bunce 1,12



#### Physiology & Behavior Volume 281, 1 July 2024, 114565



Targeting GLP-1 receptors to reduce nicotine use disorder: Preclinical and clinical evidence

Rae 1. Herman a, Heath D. Schmidt b c ≥ ⊠

> Ann Intern Med. 2024 Aug;177(8):1016-1027, doi: 10.7326/M23-2718. Epub 2024 Jul 30.

#### **Association of Semaglutide With Tobacco Use** Disorder in Patients With Type 2 Diabetes: Target **Trial Emulation Using Real-World Data**

William Wang <sup>1</sup>, Nora D Volkow <sup>2</sup>, Nathan A Berger <sup>1</sup>, Pamela B Davis <sup>3</sup>, David C Kaelber <sup>4</sup>, Rong Xu 5

> Science. 2023 Sep;381(6661):930-931. doi: 10.1126/science.adk5720. Epub 2023 Aug 31.

#### Hot weight loss drugs tested against addiction

Mitch Leslie

PMID: 3801

PMID: 37651529 DOI: 10.1126/science.adk5720

> J Addict Med. 2024 Aug 2. doi: 10.1097/ADM.00000000001347. Online ahead of print.

#### The Efficacy of GLP-1 Agonists in Treating Substance **Use Disorder in Patients: A Scoping Review**

Mary R Shen 1, Kwadwo Owusu-Boaitey, Laura M Holsen, Joji Suzuki

> Nat Med. 2023 Dec;29(12):2993-2995. doi: 10.1038/s41591-023-02634-8.

#### GLP-1 receptor agonists are promising but unproven treatments for alcohol and substance use disorders

Lorenzo Leggio <sup>1</sup>, Christian S Hendershot <sup>2</sup>, Mehdi Farokhnia <sup>3</sup>, Anders Fink-Jensen <sup>4</sup> <sup>5</sup>, Mette Kruse Klausen <sup>4</sup>, Joseph P Schacht <sup>6</sup>, W Kyle Simmons <sup>7</sup> <sup>8</sup>

## Use of a GLP-1 Agonist to Treat Opioid Use Disorder in Rats and Man. 4UH3DA050325-03

Effects of semaglutide in subjects maintained on MOUD, with a primary endpoint of abstinence from illicit opioids and secondary endpoints of craving and stimulant abstinence Sample: n=200

Randomized Controlled Trial of Exenatide as an Adjunct to Nicotine Patch for Smoking Cessation and Prevention of Post-Cessation Weight Gain 5R01DA053241-03

Exenatide combined with nicotine patch for smoking cessation and post-cessation weight. n=216

**Human Laboratory Study of Exenatide for Reducing Reinforcing Effects of Cocaine** 5R21DA057411-02

Double-blind, RCT 6-week laboratory study to assess safety and potential efficacy of exenatide vs. placebo to reduce cocaine self-administration and subjective effects. N=44.

# CTN: Tirzepatide as Adjunct to buprenorphine for the treatment of OUD

- Primary objective: Evaluate effect of tirzepatide, relative to placebo, as an adjunct to BUP on retention (primary outcome) and substance use and sleep
- Study subjects: N=310 (155 per treatment arm); 12 Sites, 26 weeks of tirzepatide or placebo, Randomization 1:1, stratified:
- Assessment: Weekly research visits through 6 months post-randomization with longer visits at 1, 3, and 6 months; follow-up visit at week 30
- **Timeline:** Expected enrollment start Sept/2025 to July/2026. study ends Feb/2027

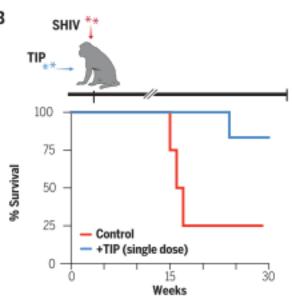
#### RESEARCH ARTICLE SUMMARY

#### HIV

# Engineered deletions of HIV replicate conditionally to reduce disease in nonhuman primates

Fathima N. Nagoor Pitchai†, Elizabeth J. Tanner†, Neha Khetan, Gustavo Vasen, Clara Levrel, Arjun J. Kumar, Shilpi Pandey, Tracy Ordonez, Philip Barnette, David Spencer, Seung-Yong Jung, Joshua Glazier, Cassandra Thompson, Alicia Harvey-Vera, Hye-In Son, Steffanie A. Strathdee, Leo Holguin, Ryan Urak, John Burnett, William Burgess, Kathleen Busman-Sahay, Jacob D. Estes, Ann Hessell, Christine M. Fennessey, Brandon F. Keele, Nancy L. Haigwood, Leor S. Weinberger\*

# A HIV Infection HIV + TIP = reduced viral load, reduced disease HIV RNAs (Nonpathogenic) (Nonpathogenic) TIP RNAs



# Engineered Virus Steals Proteins From H.I.V., Pointing to New Therapy

After promising results in monkeys, scientists plan to test the new treatment in a few people with H.I.V.



## **Congressional Engagements**

#### NIDA 50th Anniversary Event. May. 14, 2024

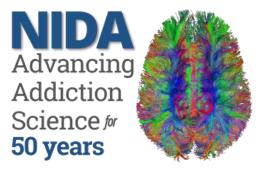
- Cosponsored by Sen. Kaine (VA), CPDD, Friends of NIDA, APA, and others.
- Representatives Rogers (KY) and Tonko (NY); Senators Hassan (NH) and Kaine (VA) provided remarks
- Drs. Gail D'Onofrio, Sandy Comer, Hansel Tookes and Mr. Jeremy Byard discussed progress and promise of addiction research

#### Justice Community Opioid Innovation Network Briefing. Jun. 13, 2024

- Cosponsored by Bipartisan Mental Health and Substance Use Disorder Task Force and Friends of NIDA
- Drs. Josh Lee, Lisa Marsch, Peter Friedmann, and Michele Staton presented research on expanded access to EBPs for OUD in carceral settings.

#### Marijuana Research Lunch & Learn. Aug. 16, 2024

- Virtual meeting open to all Congressional Members and staff to discuss the science around marijuana research.
- ~40 Congressional staff in attendance



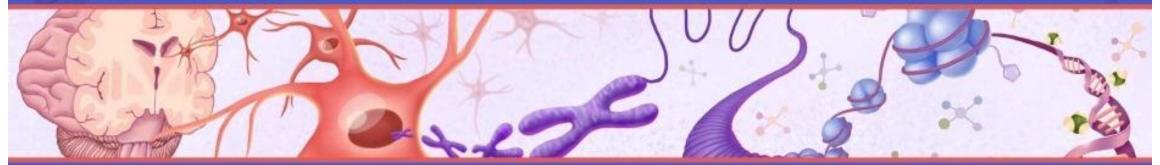






2024 NIDA-NIAAA MINI-CONVENTION

### FRONTIERS IN ADDICTION RESEARCH









October 4, 2024 • Marriott Marquis Chicago



Abstract submission and registration are now open at <u>ABCDStudy.org/meeting</u>. **Abstract submissions are due by midnight ET on November 1.** 



## **THANK YOU!**

# Myelin plasticity in the ventral tegmental area is required for opioid reward

Belgin Yalçın, Matthew B. Pomrenze, Karen Malacon, Richard Drexler, Abigail E. Rogers, Kiarash

Shamardani, Isabelle J. Chau, Kathryn R. Taylor, Lijun Ni, Daniel Contreras-Esquivel, Robert C. Malenka

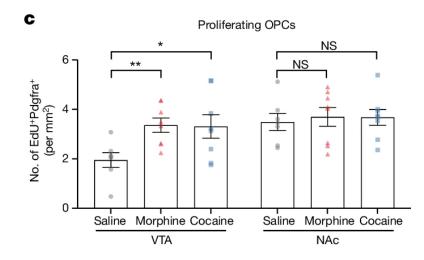
& Michelle Monje 

✓

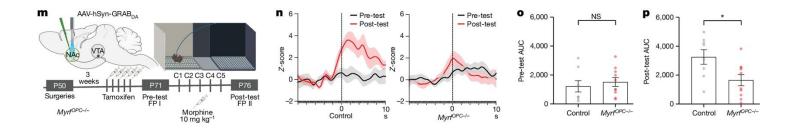
#### DA neuron activity in VTA regulates myelination

# AAV-Effa-DIO-YFP AAV-Ef

#### Morphine and Cocaine promote VTA oligodendrogenesis



#### Genetic blockade of oligodendrogenesis abrogates morphine-reward learning by attenuating DA release



## Few Behavioral Based Interventions for Nicotine Vaping Cessation have been Tested

#### RCT: Effectiveness of a Vaping Cessation Text Message Program Among Young Adult e-Cigarette Users

#### **POPULATION**

1253 Men, 1303 Women26 Nonbinary or other gender



Young adults aged 18-24 y who vaped nicotine in the past 30 d and were interested in quitting

Mean (SD) age, 20.4 (1.7) y

#### **INTERVENTION**

**2588** Individuals randomized



#### **1284** Assessment-only control

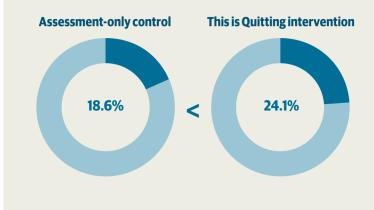
Monthly assessment of e-cigarette use and abstinence via incentivized text message for 6 mo

#### 1304 This is Quitting intervention

Assessment-only control plus automated, youth-tailored, interactive text message program for vaping cessation that delivers social support and cognitive and behavioral coping skills training

#### **FINDINGS**

Young adults who received the This is Quitting intervention had significantly higher vaping abstinence rates at 7 mo compared with those in the control group (odds ratio, 1.39; 95% CI, 1.15-1.68)



#### **PRIMARY OUTCOME**

30-d Point prevalence abstinence from vaping, as measured by self-reported abstinence from e-cigarette use 7 mo after randomization, analyzed under intent to treat

#### Point prevalence abstinence at 7 mo:

Assessment-only control: 18.6% (95% CI, 16.7%-20.8%)

This is Quitting intervention: 24.1% (95% CI, 21.8%-26.5%)

SETTINGS / LOCATIONS



National recruitment to an online study in the US

#### **MOUD Treatment in Infectious Disease Clinics**

#### ARTICLE

#### **Annals of Internal Medicine**

#### Clinic-Based Treatment of Opioid-Dependent HIV-Infected Patients Versus Referral to an Opioid Treatment Program

#### A Randomized Trial

Gregory M. Lucas, MD, PhD; Amina Chaudhry, MD, MPH; Jeffrey Hsu, MD; Tanita Woodson, CRNP; Bryan Lau, PhD; Yngvild Olsen, MD; Jeanne C. Keruly, CRNP; David A. Fiellin, MD; Ruth Finkelstein, ScD; Patricia Barditch-Crovo, MD; Katie Cook, BA; and Richard D. Moore, MD





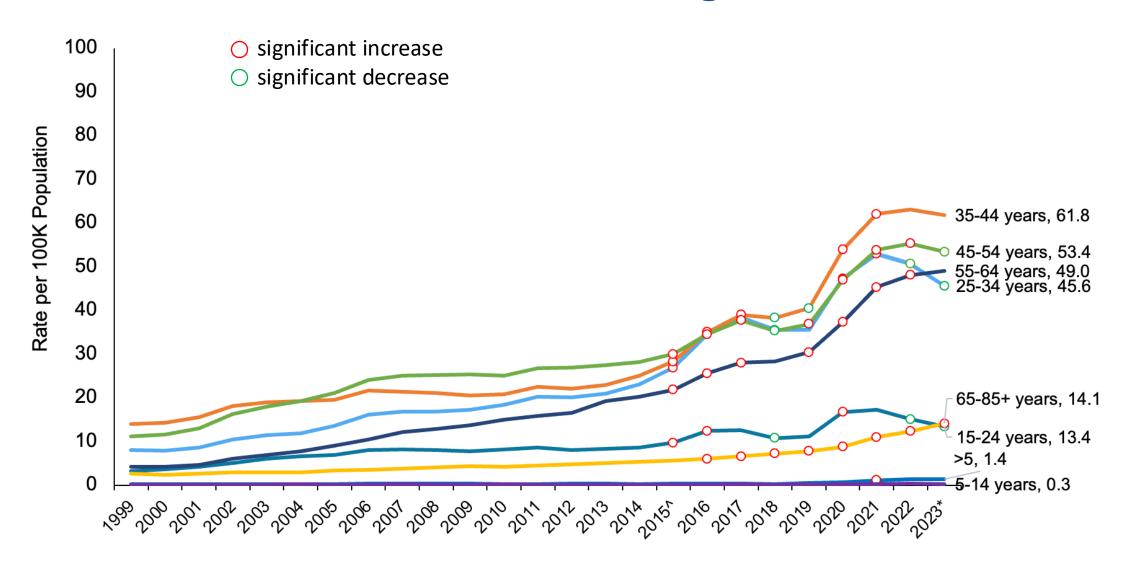
Original Investigation | Substance Use and Addiction

Effect of Implementation Facilitation to Promote Adoption of Medications for Addiction Treatment in US HIV Clinics

A Randomized Clinical Trial

E. Jennifer Edelman, MD, MHS; Geliang Gan, MPH; James Dziura, PhD; Denise Esserman, PhD; Elizabeth Porter, MBA; William C. Becker, MD; Philip A. Chan, MD; Deborah H. Comman, PhD; Christian D. Helfrich, MPH, PhD; Jesse Reynolds, MS; Jessica E. Yager, MD; Kenneth L. Morford, MD; Srinivas B. Muvvala, MD; David A. Fiellin, MD

# Drug Overdose Deaths Have Steadily Increased in Older Americans, Aged 65+



NCHS, National Vital Statistics System. Estimates are based on final data through 2022. \*Data for 2023 are based on provisional data. 
^Beginning in 2015, markings show statistically significant change compared with the previous year (95% Cl's, p-value of 0.05).