

Joint Meeting of the National Advisory Council on Alcohol Abuse and Alcoholism, National Advisory Council on Drug Abuse, and National Cancer Advisory Board



George F. Koob, Ph.D.
Director

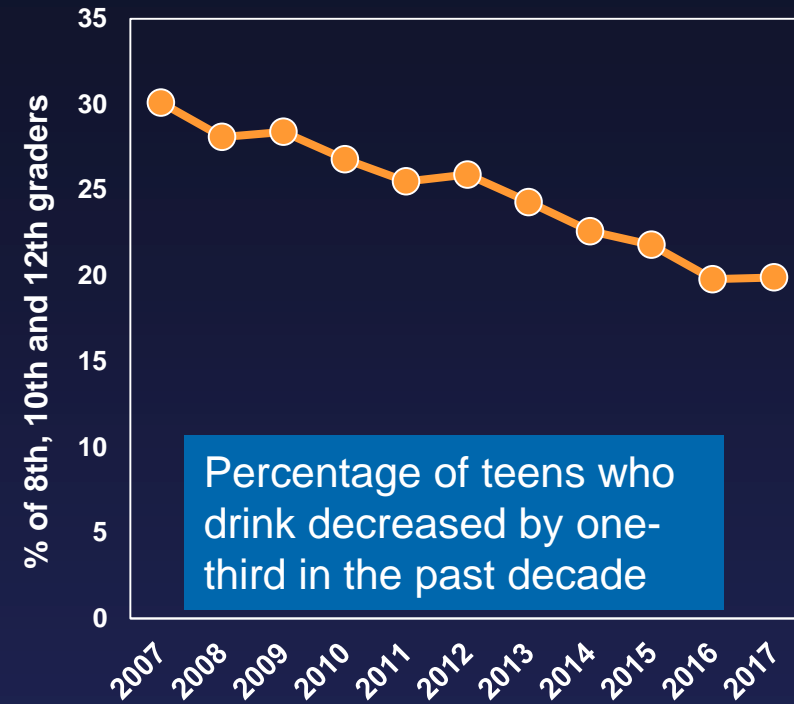
National Institute on Alcohol Abuse and Alcoholism

May 16, 2018

Progress: Reducing underage and college drinking

- Underage and young adult harmful drinking is a major focus at NIAAA
- Underage drinking prevention = 27 grants (\$8 million) in FY 17
- College-age drinking prevention = 47 grants (\$15 million) in FY 17
- *Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide*
- *CollegeAIM* — Resource for helping colleges address harmful and underage student drinking
- *National Consortium on Alcohol and Neurodevelopment in Adolescence* – Examined impact of alcohol on teen brain development in 831 subjects
- *Adolescent Brain Cognitive Development (ABCD)* study – Tracks brain development of roughly 10,000 kids aged 9-10 for 10 years

Alcohol use past 30 days



Source: *Monitoring the Future, 2017*

Note: Active grants include all grants except no cost extensions and supplements. In addition there were 58 grants (\$39 million) in FY 17 for research on alcohol and the adolescent brain

Progress: Alcohol Policy Research

- **NIAAA's Policy portfolio:**
 - **12 active grants (\$7.4 million) in FY 2014 and 18 active grants (\$9.5 million) in FY 2017**
 - **Policy grants = 10% of the budget in Division of Epidemiology and Prevention Research in 2014 and 10% in 2017**
- **NIAAA continues to encourage more applications on policy research via the Program Announcement “*Public Policy Effects of Alcohol, Marijuana, and Other Substance Related Behaviors and Outcomes*” (PA-17-132, 134, & 135) (Issued in 2017; NIDA and NCI also participate).**
- **NIAAA maintains the *Alcohol Policy Information System (APIS)*, a large searchable database of alcohol-related federal and state policies**
 - **In 2018 the contract supporting APIS was renewed for 5 years**
 - **Marijuana policies recently added**

Progress: Prevalence of Fetal Alcohol Spectrum Disorders in 4 U. S. Communities

In this study, active-case ascertainment, the most reliable approach for estimating the prevalence of fetal alcohol spectrum disorders (FASD), was used to determine new prevalence estimates among four U.S. communities (8 sites) with varied demographics. Prevalence estimates ranged from 1.1-5%. Although not necessarily generalizable to all U.S. communities, these estimates are likely more accurate than previously reported estimates for the United States. Given that children with FASD often go undiagnosed or misdiagnosed, it is important for clinicians and researchers to be aware of the prevalence of FASD.

Table 2. Conservative Prevalence Estimates for Specific Classifications of Fetal Alcohol Spectrum Disorders for 8 Samples at 4 Community Sites in the United States (Prevalence per 1000 Children)^a

Site and Sample No.	Sampling Method	Year Initiated	No. of Eligible Children ^b	Fetal Alcohol Syndrome		Partial Fetal Alcohol Syndrome		Alcohol-Related Neurodevelopmental Disorder		Total Fetal Alcohol Spectrum Disorders	
				No. of Cases	Prevalence (95% CI)	No. of Cases	Prevalence (95% CI)	No. of Cases	Prevalence (95% CI)	No. of Cases	Prevalence (95% CI)
Midwestern City											
1	1	2010	2033	11	5.4 (4.0-7.2)	21	10.3 (8.3-12.8)	4	2.0 (1.2-3.2)	36	17.7 (15.0-20.8)
2	2	2012	709 ^c	0	0.0 (0.0-4.2)	2	2.8 (1.3-5.5)	6	8.5 (5.5-12.5)	8	11.3 (7.8-15.8)
Rocky Mountain City											
3	1	2012	915	3	3.3 (1.8-5.7)	10	10.9 (7.9-14.8)	5	5.5 (3.4-8.4)	18	19.7 (15.5-24.7)
4	2	2013	400 ^c	1	2.5 (0.8-6.3)	12	30.0 (22.3-39.4)	7	17.5 (11.8-25.0)	20	50.0 (39.9-61.7)
Southeastern County^d											
5	1	2013	1339	3	2.2 (1.2-3.9)	10	7.5 (5.4-10.1)	15	11.2 (8.6-14.4)	28	20.9 (17.3-25.1)
6	1	2014	1548	5	3.2 (2.0-5.0)	6	3.9 (2.5-5.7)	10	6.5 (4.7-8.8)	21	13.6 (10.9-16.8)
Pacific Southwestern City											
7	3	2012	2238	1	0.4 (0.2-1.1)	19	8.5 (6.7-10.6)	22	9.8 (7.9-12.1)	42	18.8 (16.1-21.8)
8	3	2013	2171	3	1.4 (0.8-2.4)	24	11.1 (9.0-13.5)	22	10.1 (8.1-12.4)	49	22.6 (19.5-25.9)

^a Conservative prevalence estimated by number of cases per the number of eligible children × 1000.

^b Eligible children were defined as all children enrolled in first-grade classes for sampling methods 1 and 3 and all children enrolled in first-grade classes who were randomly selected for sampling method 2.

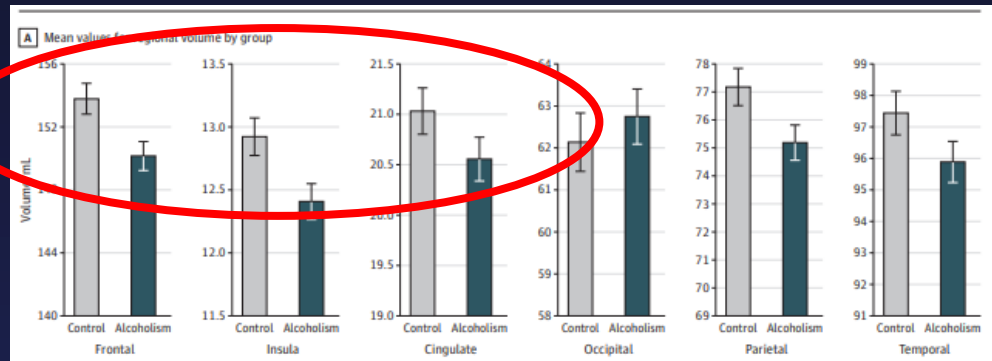
^c The total number of children enrolled in first grade for sample 2 was 2014, from which 709 were randomly selected for participation in the study; the total number of children enrolled in first grade for sample 4 was 888, from which 400 were randomly selected for participation in the study.

^d Consists of 1 county that included 3 mid-sized to small cities and rural areas.

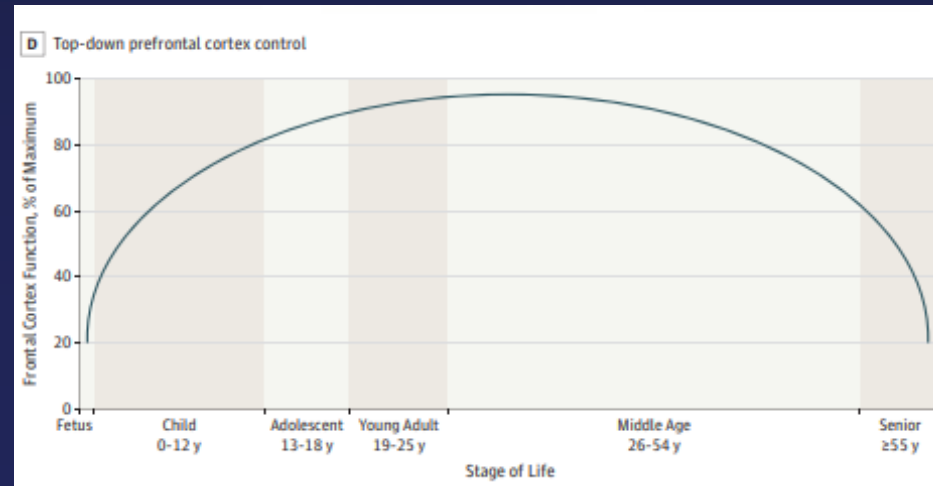
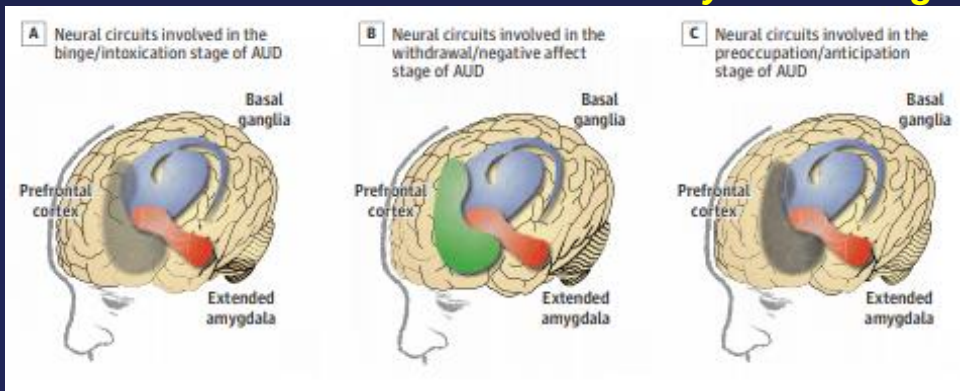
Estimates ranged from 11.3 – 50 cases per 1,000 children

Progress: AUD Facilitates Decreases in Frontal Cortex Brain Volumes with Aging

This study examined changes in regional brain volumes in alcohol-dependent individuals and age-matched controls, aged 25 to 75, who received one or more MRI scans over a 14-year period. Alcohol-dependent individuals had significant age-related decreases in brain volumes, most prominently in the frontal cortex. Drug dependence or HCV compounded the effects. **Regional brain volumes showing decreases in 222 alcohol-dependent subjects**

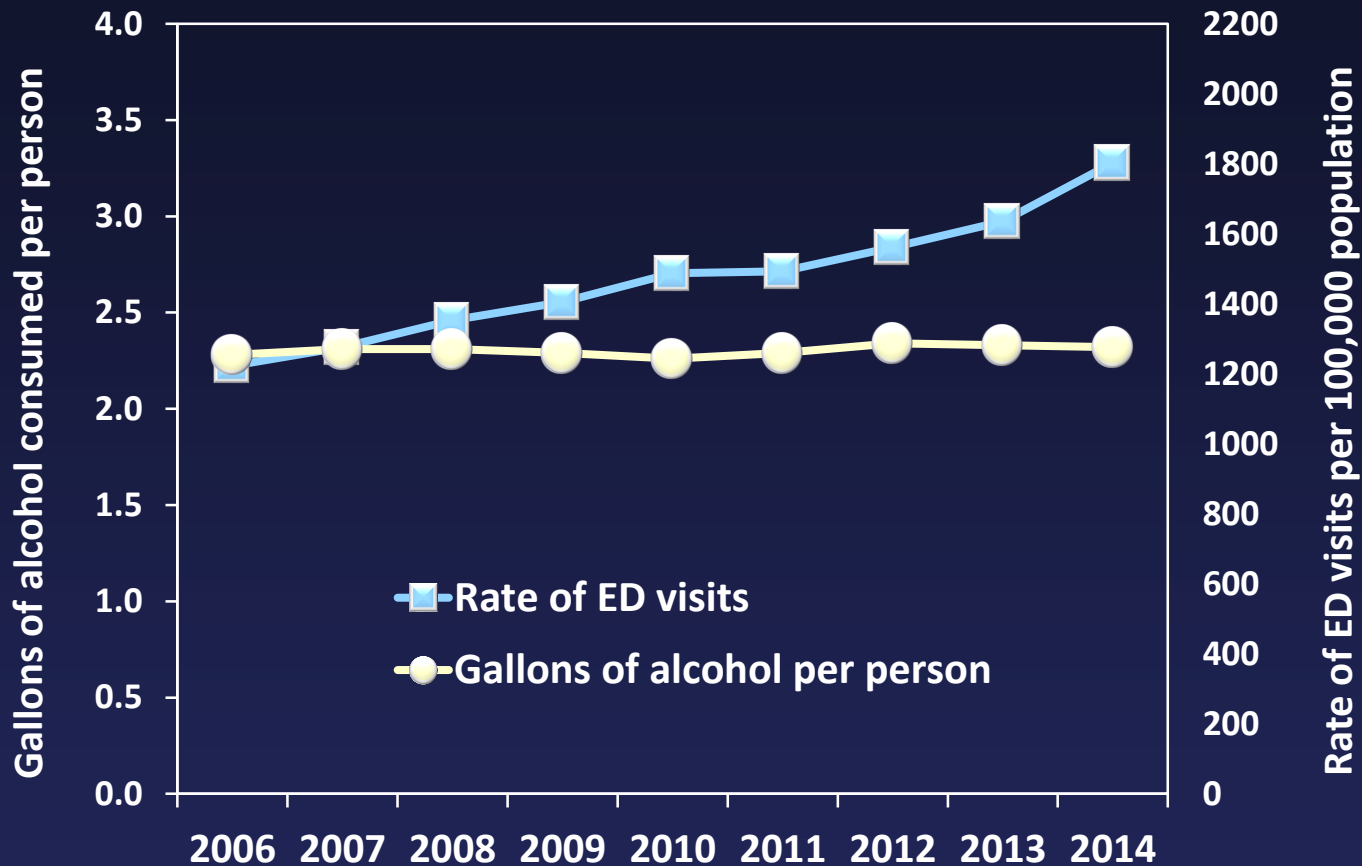


Age-associated declines in top-down control may interact with impairments in top-down control caused by chronic high-dose alcohol use



Sullivan EV, Zahr NM, Sasso SA, Thompson WK, Kwon D, Pohl KM, Pfefferbaum A. *JAMA Psychiatry* 2018;75(5):474-483 and Koob GF. *JAMA Psychiatry* 2018;75(5):422 (editorial)

Emerging Issue: Increase in Alcohol-Related Emergency Department Visits



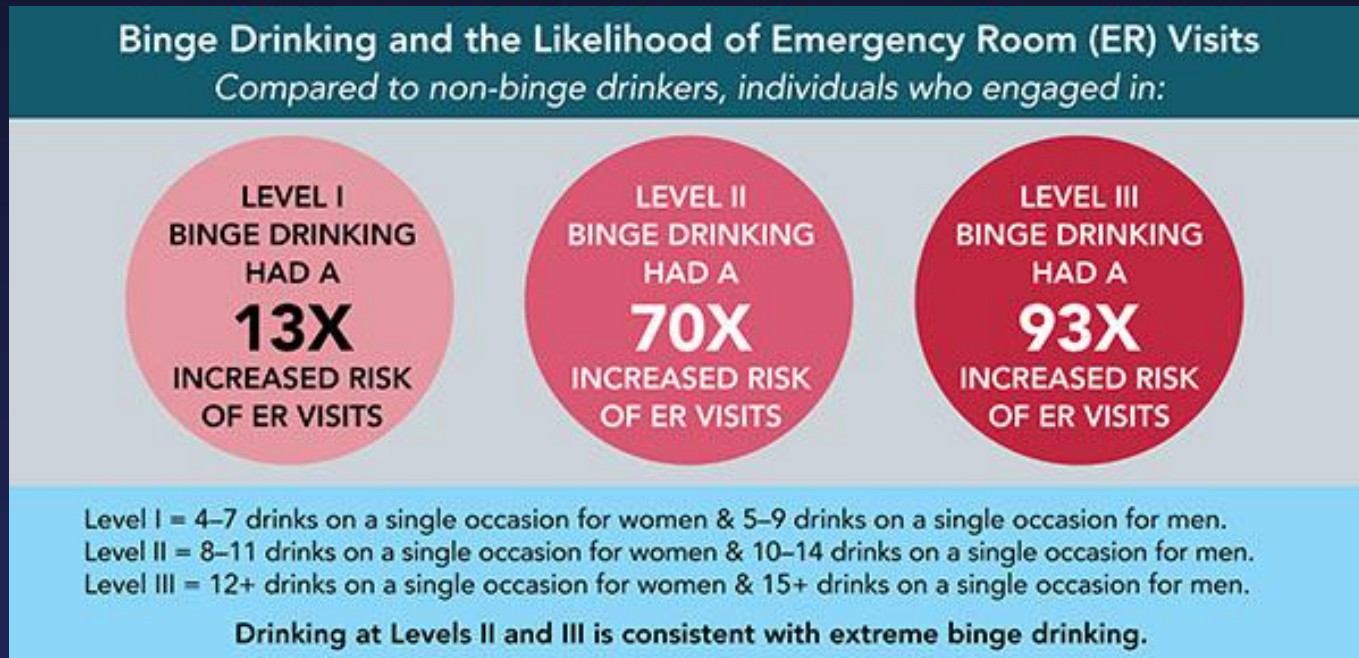
The rate of ED visits due to acute and chronic alcohol misuse increased 47% from 2006-2014 while per capita alcohol consumption increased <2%. The number of alcohol-related ED visits increased from 3,080,214 to 4,976,136. Increases were larger for women and older drinkers.

Emerging Issue: Extreme Binge Drinking

Binge drinking – 4+ drinks for women, 5+ drinks for men, on an occasion

Extreme binge drinking – consuming 2 or more times these thresholds

- Nearly 32 million adults engaged in extreme binge drinking

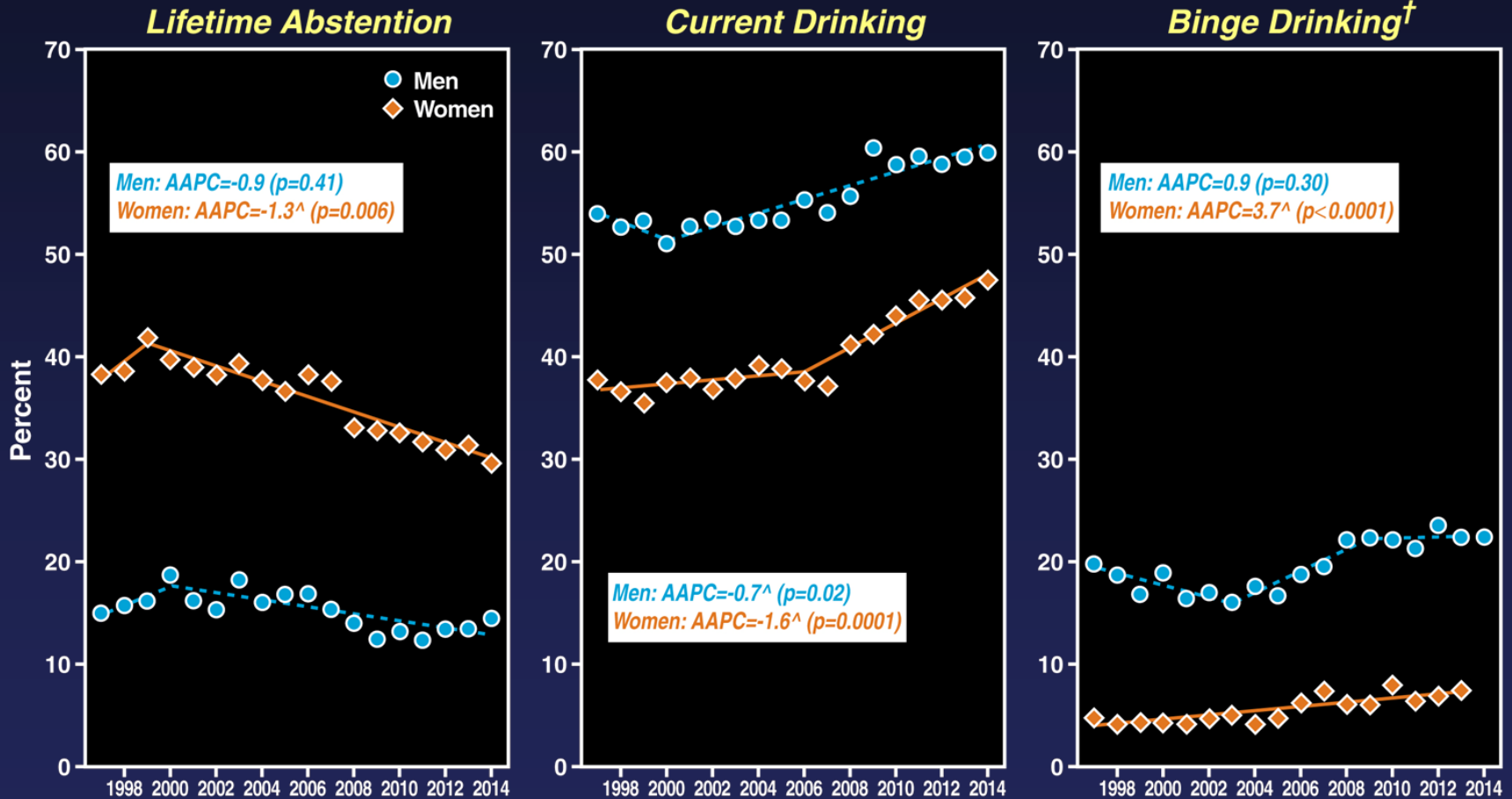


NIAAA is forming a working group of external experts to better understand the social and cultural determinants of extreme binge drinking to inform the development of improved interventions.

Emerging Issue: Alcohol and Women's Health

- **Gaps between women and men are narrowing for prevalence, frequency and intensity of drinking, early onset drinking, having AUD, drunk driving, and self-reported consequences** (Slade et al., 2016; White et al, 2017)
- **Women more likely to experience blackouts, liver inflammation, brain atrophy, cognitive deficits, certain cancers, and to experience negative affect during withdrawal and stress or anxiety-induced relapse** (Becker and Koob, 2016)
- **But we still know very little about why**
- **Out of 230 structural neuroimaging studies on substance use over 23 years only 26% evaluated sex differences** (Lind et al., 2017)

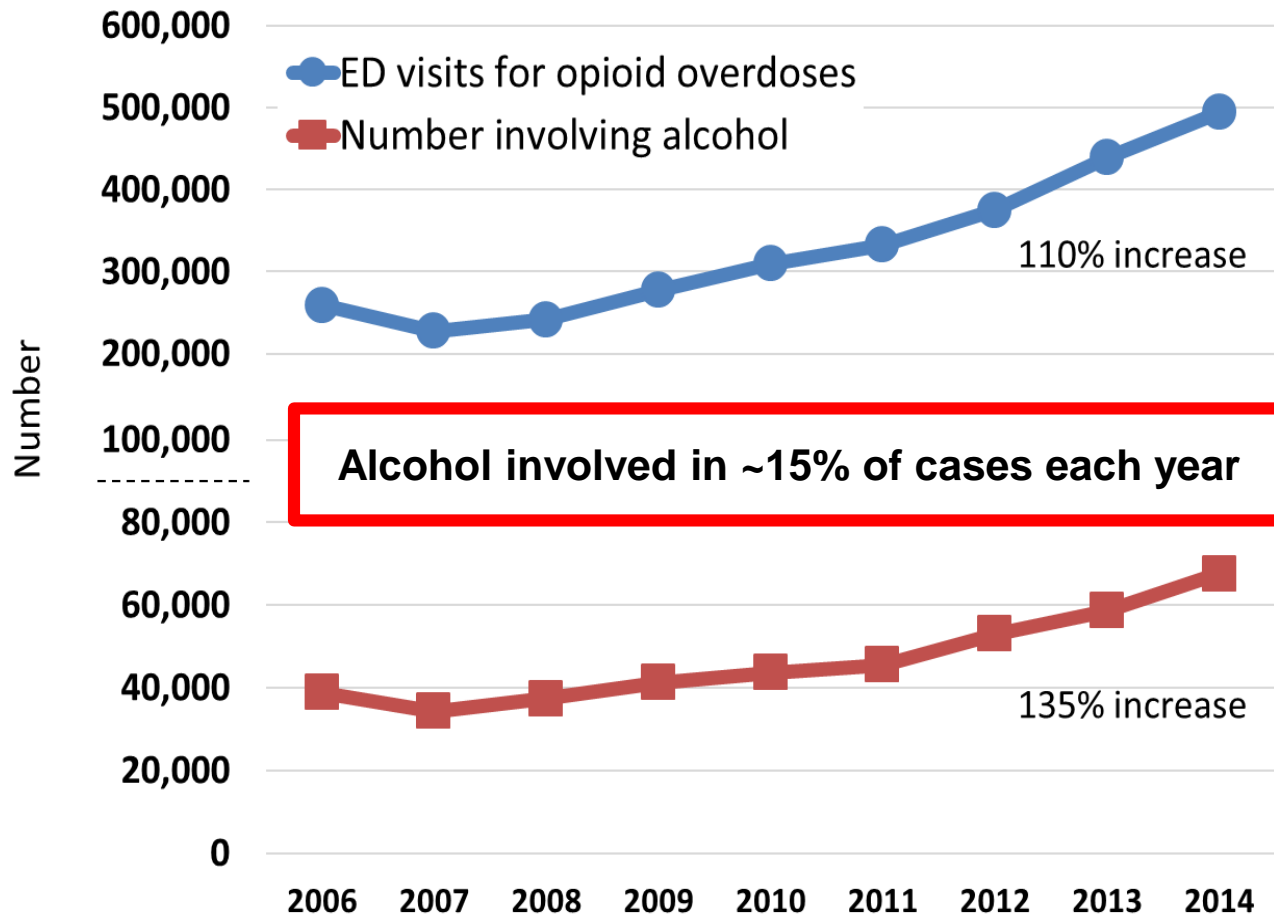
Emerging Issue: More People Aged 65+ Are Drinking and Binge Drinking



AAPC = average annual percentage change; ^p<0.025; †among current drinkers.

Emerging Issue:

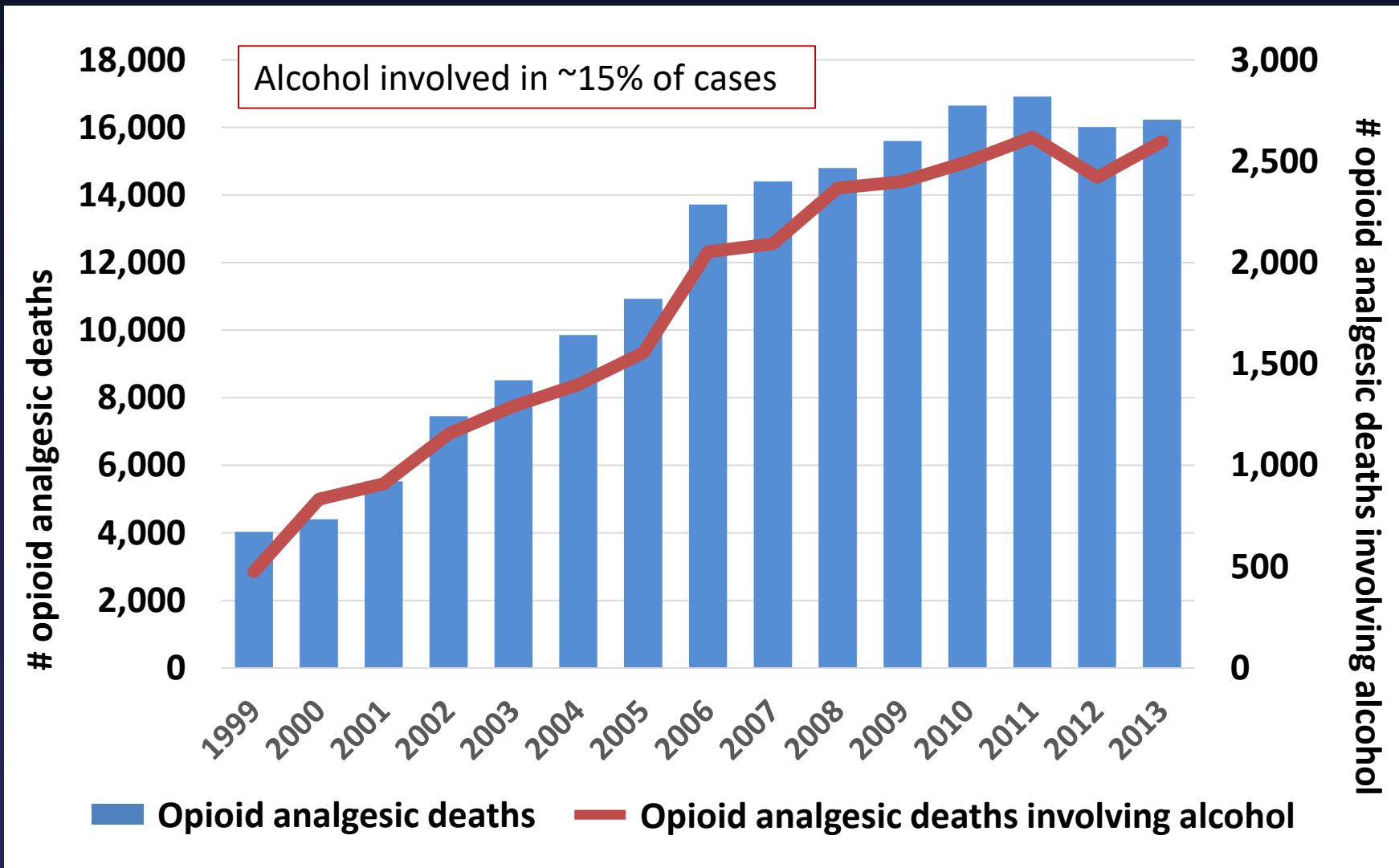
Alcohol and Opioids: A Dangerous Combination Increase in Emergency Department Visits



Source: Nationwide Emergency Department Sample (NEDS), unpublished

Alcohol and Opioids: A Dangerous Combination

Increase in Prescription Opioid Overdose Deaths



Martha Woodroof: Alcohol Provided Relief from My Emotional Pain

I grew up professionally focused and personally adrift. There's a long history of depression in my family, and my childhood home was dominated by my mother's mental illness that was not recognized, let alone treated. Sometime in my mid-thirties I started using alcohol to provide relief from the pain of childhood damage and organic depression. Bourbon was the only thing that would make the loop tape of despair in my head pipe down.

- **Martha Woodroof**, former public radio journalist and late-blooming novelist

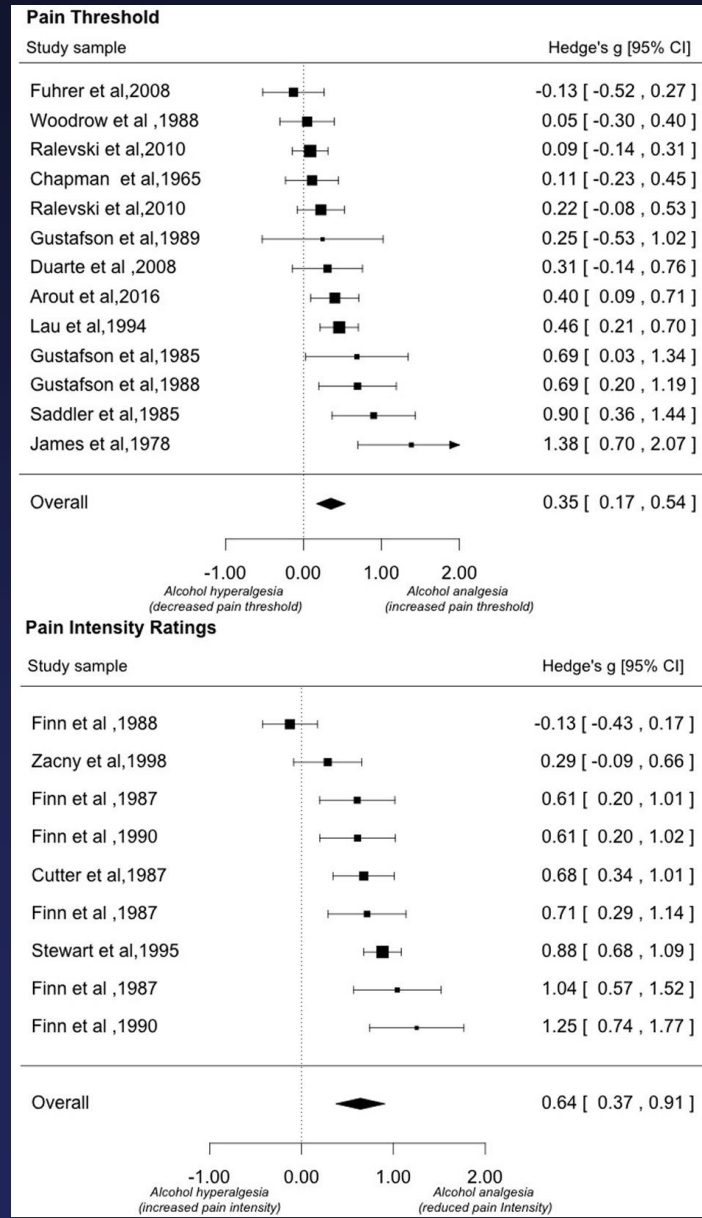


Alcohol Reduces Pain Sensitivity at Doses that Exceed Low- Risk Drinking

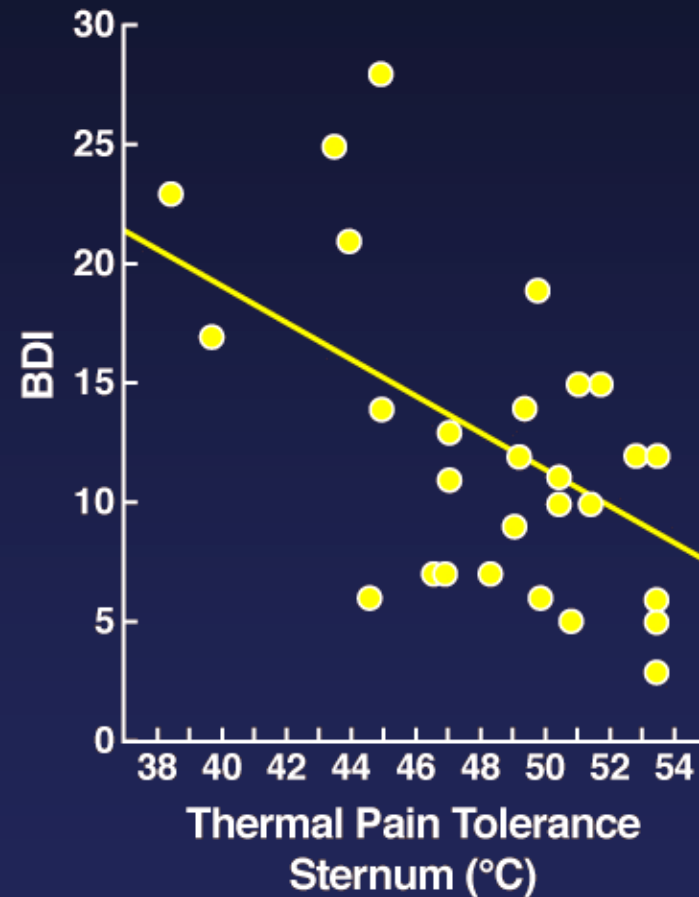
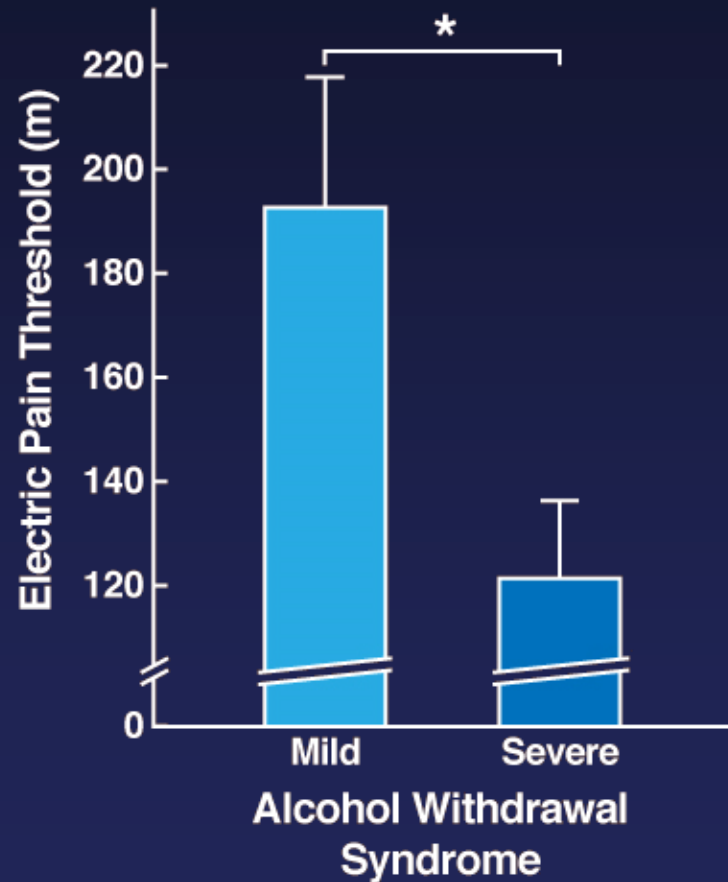
Highlights

- Meta-analysis of 18 controlled experiments comparing pain in people given alcohol versus no-alcohol
- Findings support the pain reducing effects of alcohol
- A mean BAC of ~0.08% (legal driving limit) produced a small elevation in pain threshold and a significant reduction in pain intensity
- Higher BAC is associated with greater pain insensitivity
- These effects could explain alcohol misuse in those with persistent pain despite its potential consequences for long-term health

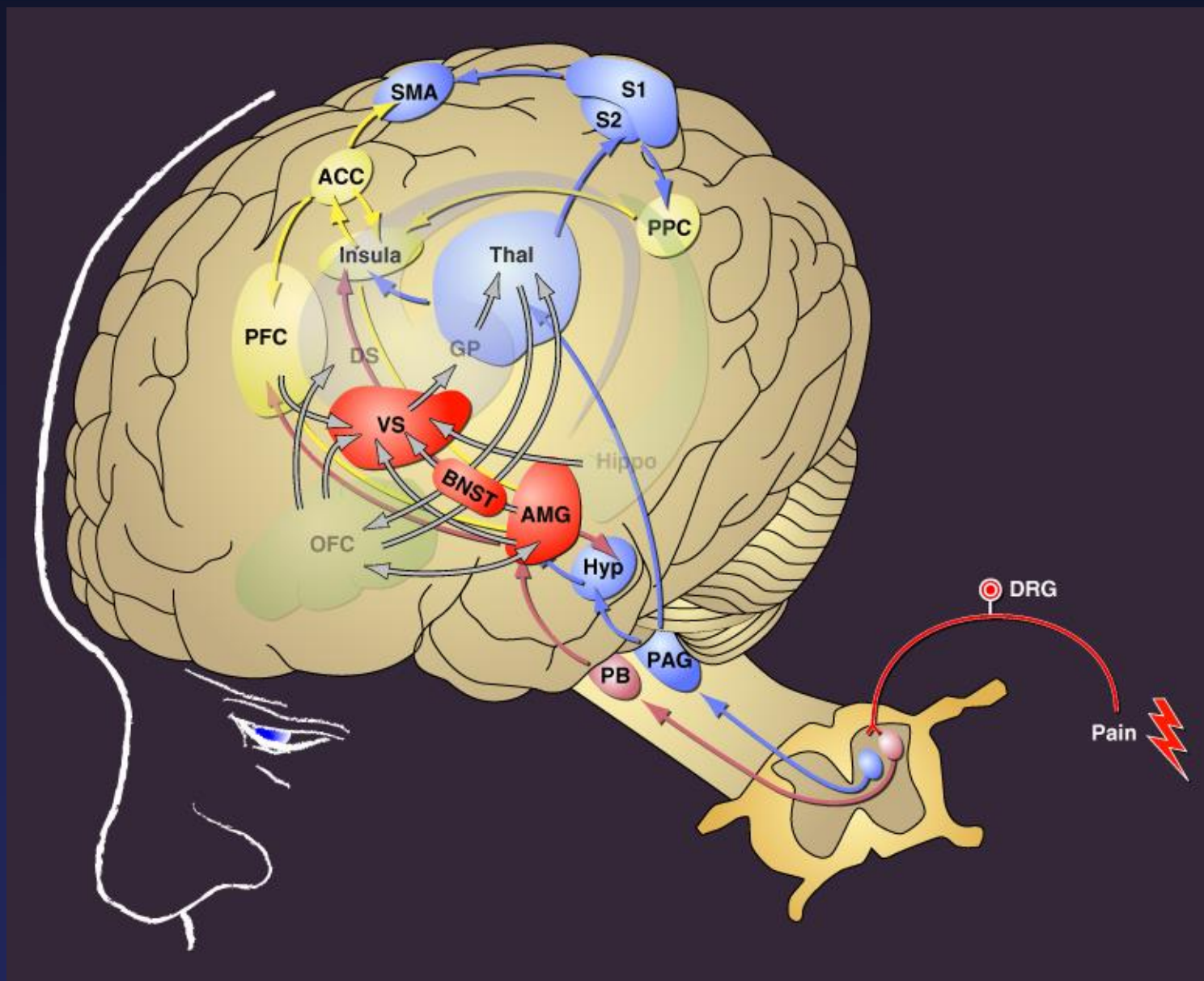
Source: Thomsson et al (2017) *The Journal of Pain*, 18, 499-510.



Increased Pain Sensitivity in Alcohol Withdrawal



Neurobiological Circuitry of the Overlap of Pain and Addiction



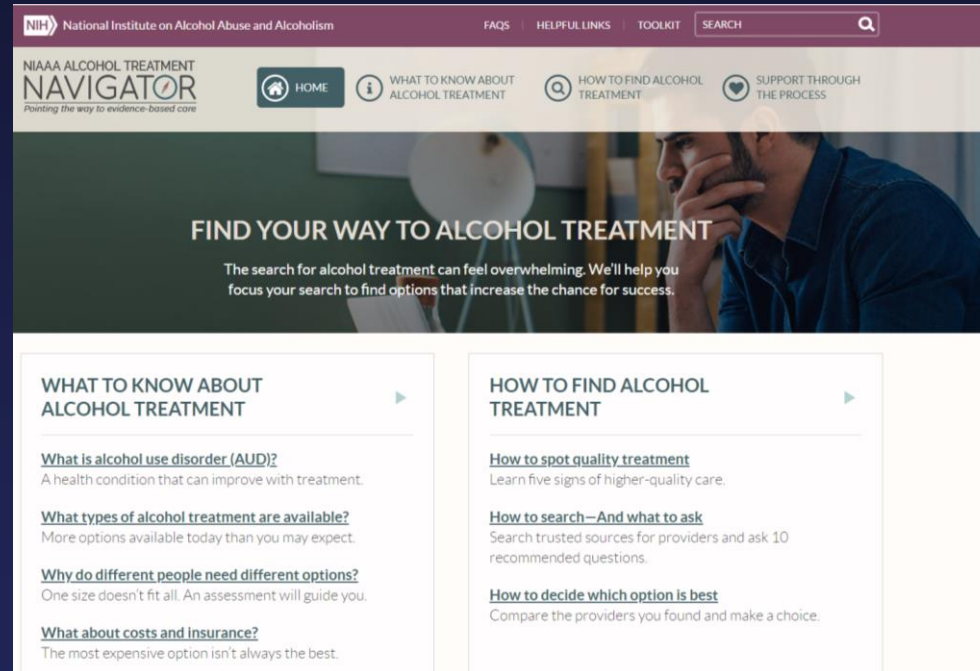
Emerging Issue: Urgent Need to Grow the Addiction Medicine Workforce

- Many **providers do not perform screening**, are not aware of evidence-based treatments or where to refer people
- A study of 54 primary care clinics found 88% **had no policies or requirements to ask patients about alcohol use**, and those with policies had **no consistent evidence-based methods** for screening or referral (Mertens et al., 2015)
- **Goals:**
 - **Improve physician training in substance use prevention and treatment at all levels**, from undergraduate and graduate medical education through residency, fellowship, and beyond
 - **Integrate prevention, early intervention, and treatment into routine medical care**



Emerging Issue: NIAAA Treatment Navigator

- To assist people in finding AUD treatment, NIAAA has developed the **NIAAA Alcohol Treatment NavigatorSM**
- One-of-a kind resource that:
 - ✓ Outlines the features of evidence-based AUD treatment
 - ✓ Describes the varied routes to recovery
 - ✓ Provides a strategy for locating qualified treatment specialists
- Launched October 3, 2017



AlcoholTreatment.niaaa.nih.gov

Thank You!

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