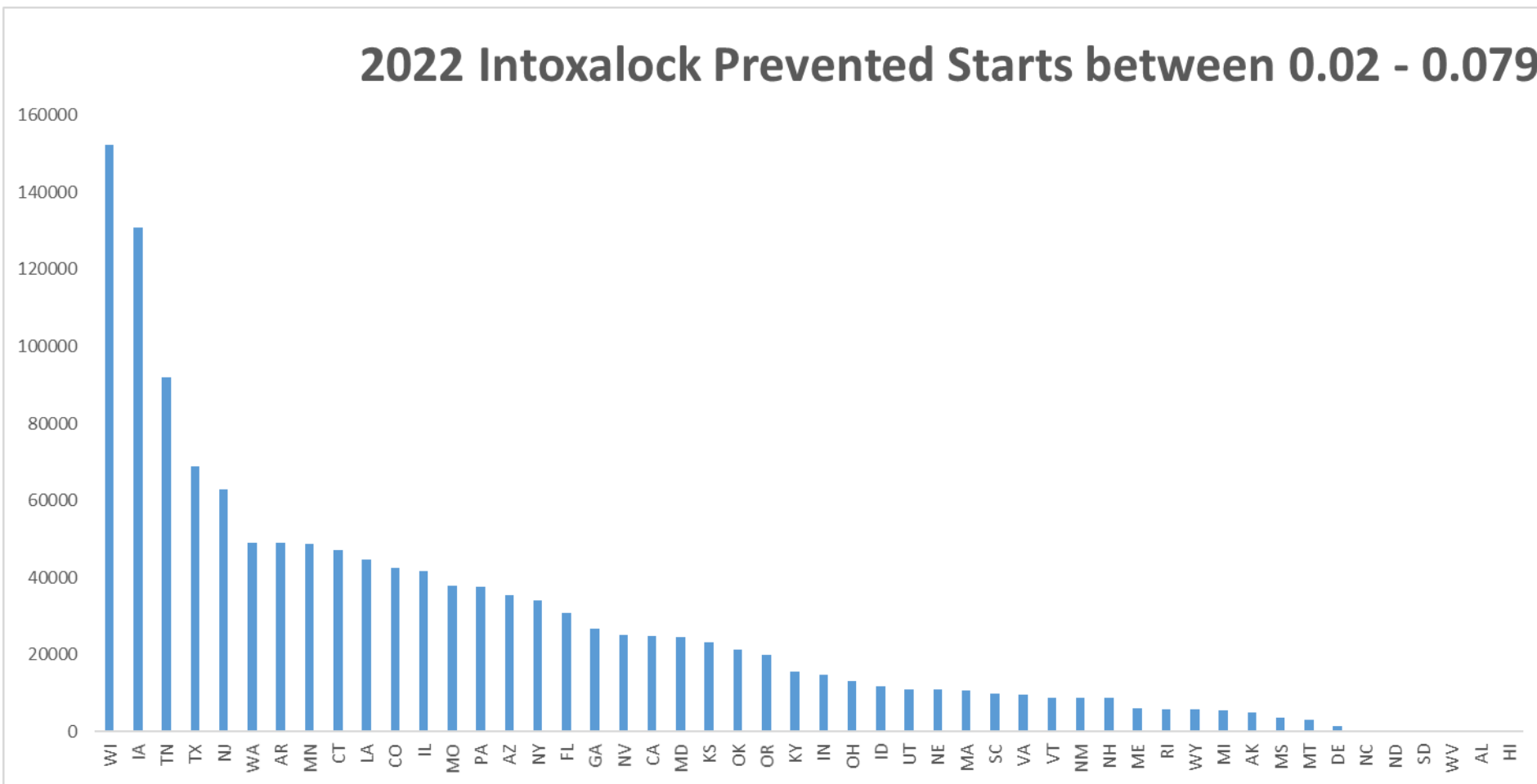


▶ 5 Myths Debunked: Lowering the Legal Limit to 0.05

AIIPA 2023

► Intoxalock Prevented Starts

Total Intoxalock Prevented Starts between 0.02 – 0.079 in 2022 = 1,342,987



MYTHS

- 1. Initiative isn't supported by National Associations and the American public**
- 2. Many people are not impaired at 0.05**
- 3. Lowering the Legal Limit will have little effect on fatal crashes**
- 4. 0.05 BAC laws will overwhelm police and clog the Criminal Justice System**
- 5. Countries most like the US still use 0.08**



The Case for a .05 g/dL BAC Limit for Driving

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OVERVIEW AND RATIONALE

Alcohol Ignition Interlock Program Administrators

Charleston, SC

May 22, 2023

BAC *Per Se* Limits in the United States

All States and the District of Columbia have enacted per se BAC laws for adults (age 21+) operating noncommercial motor vehicles (currently at .08 BAC).

A per se BAC statute establishes a BAC limit for a violation. If the operator has a BAC level at or above the per se limit, a violation has occurred without regard to other evidence of intoxication or sobriety. In other words, exceeding the BAC limit established in a per se statute is itself a violation. Only the validity of the BAC measurement itself is at issue.

Only Utah has enacted a .05 BAC limit thus far. All other states use .08 g/dL.

History of BAC Limits for Driving

- 1936 – Norway adopts first illegal per se law based upon **BAC at .05**
- 1938 – AMA recommends **.15 BAC** as under the influence
- 1939 – IN enacts first illegal per se law at **.15 BAC**
- 1960 – AMA recommends DUI at **.10 BAC**
- 1983 – Oregon and Utah adopt **.08 BAC**
- 1997 – AMA recommends **.05 BAC** for DUI
- 2000 - **.08 BAC** National standard adopted by Congress
- 2005 – All States have **.08 BAC** laws
- 2013 – NTSB recommends **.05 BAC** limit
- 2018 – NASEM recommends **.05 BAC** limit
- 2018 – Utah **.05 BAC** law goes into effect (12-30-18)

Year Countries Adopted .05

- Victoria, Australia – **1976**
- New South Wales and Queensland, Australia – **1982**
- All states in Australia - **1991**
- Netherlands – **1994**
- France – **1995**
- Austria – **1998**
- Spain – **1999**
- Germany – **2001**
- Italy - **2003**

The Evidence:

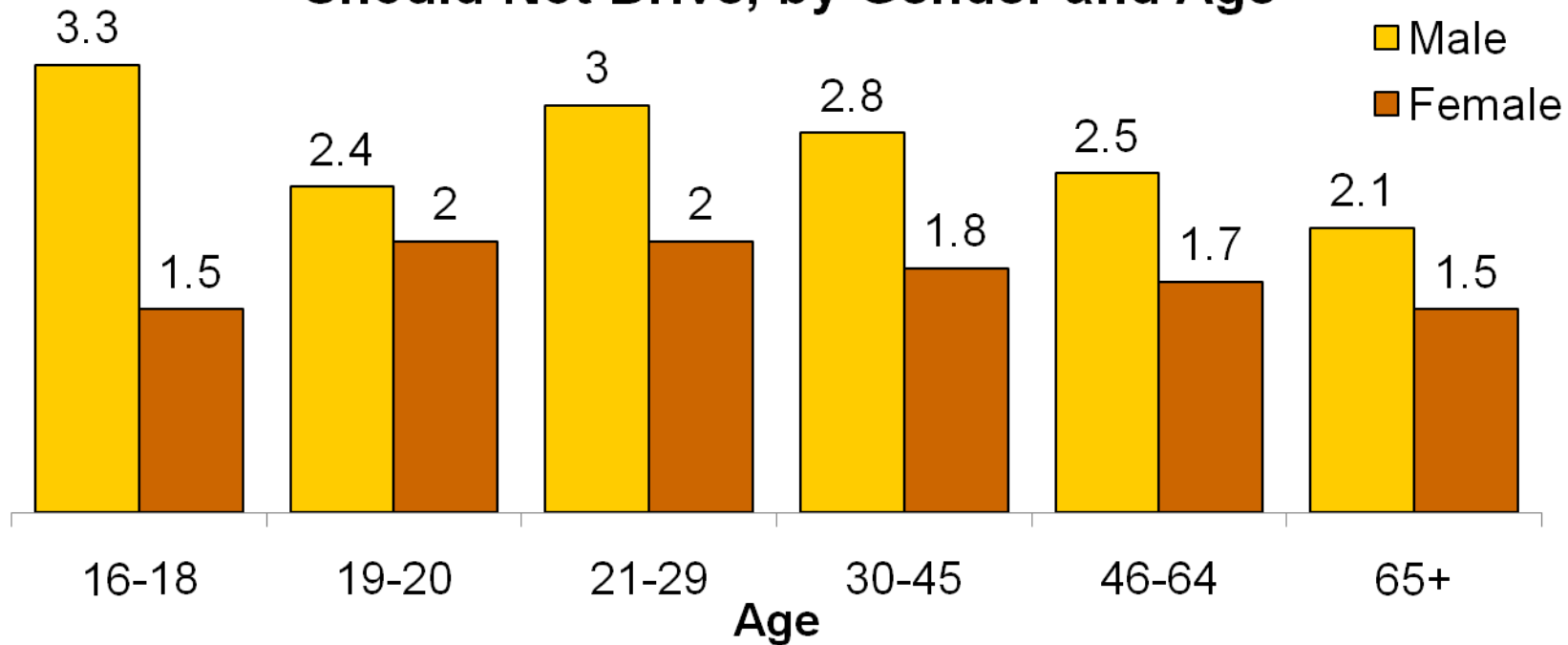
- Lowering BAC limits in the past reduces drinking driver fatal crashes in the US:
 - from .15 to .10
 - from .10 to .08.
 - from adult limit to .02 for youth.
- General public does not think anyone should drive after two or three drinks.
- Most people are impaired at .05 BAC.
- Relative risk of crash is statistically significant at .05 BAC.
- Effective policy that reduces impaired driving

Drinking in America

- About 6 out of 10 adults report drinking alcohol in the past year
- About 20% of U.S. drivers report driving within 2 hours of drinking alcohol in the past year
- Of the 20% who report drinking and driving, about a third report driving at least once in the past year when they thought they were over the illegal limit
- 67% think it would take 1-3 beers within 2 hours to reach the illegal BAC limit

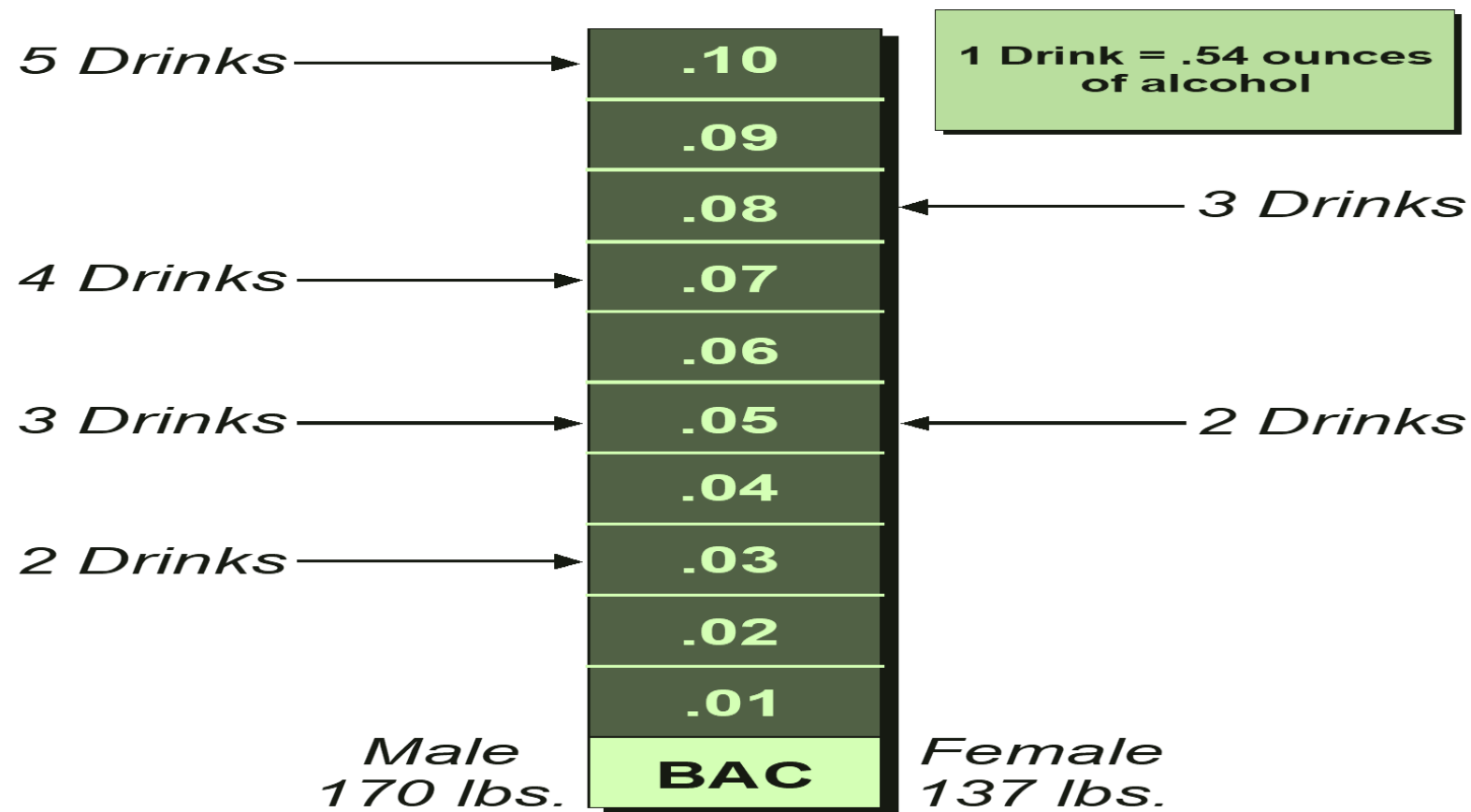
National Survey of Drinking & Driving-2001

**Mean Number of Drinks in 2 Hours Before
Should Not Drive, by Gender and Age**

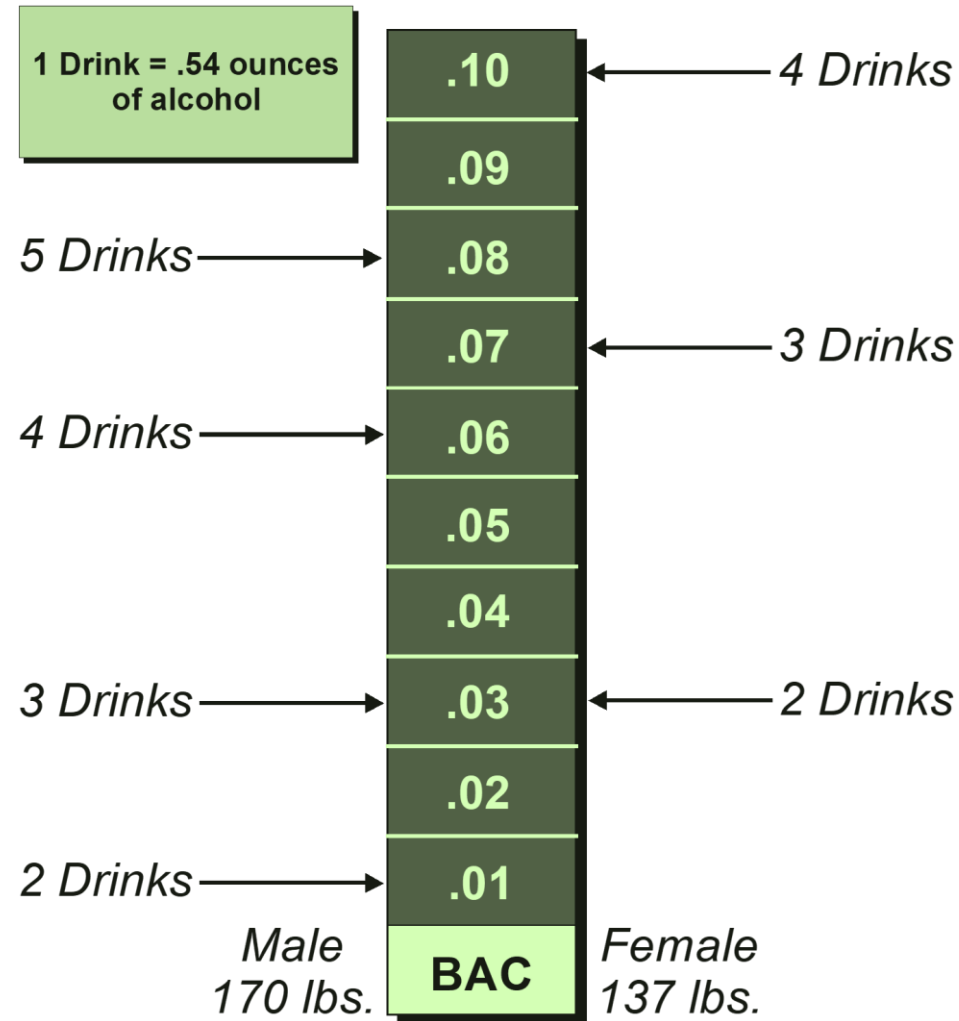


Q31: How many [drinks of alcoholic beverages drunk most often] could you drink in two hours before you should not drive? [Base: drivers who drink**]

Number of Drinks and BAC in One Hour of Drinking



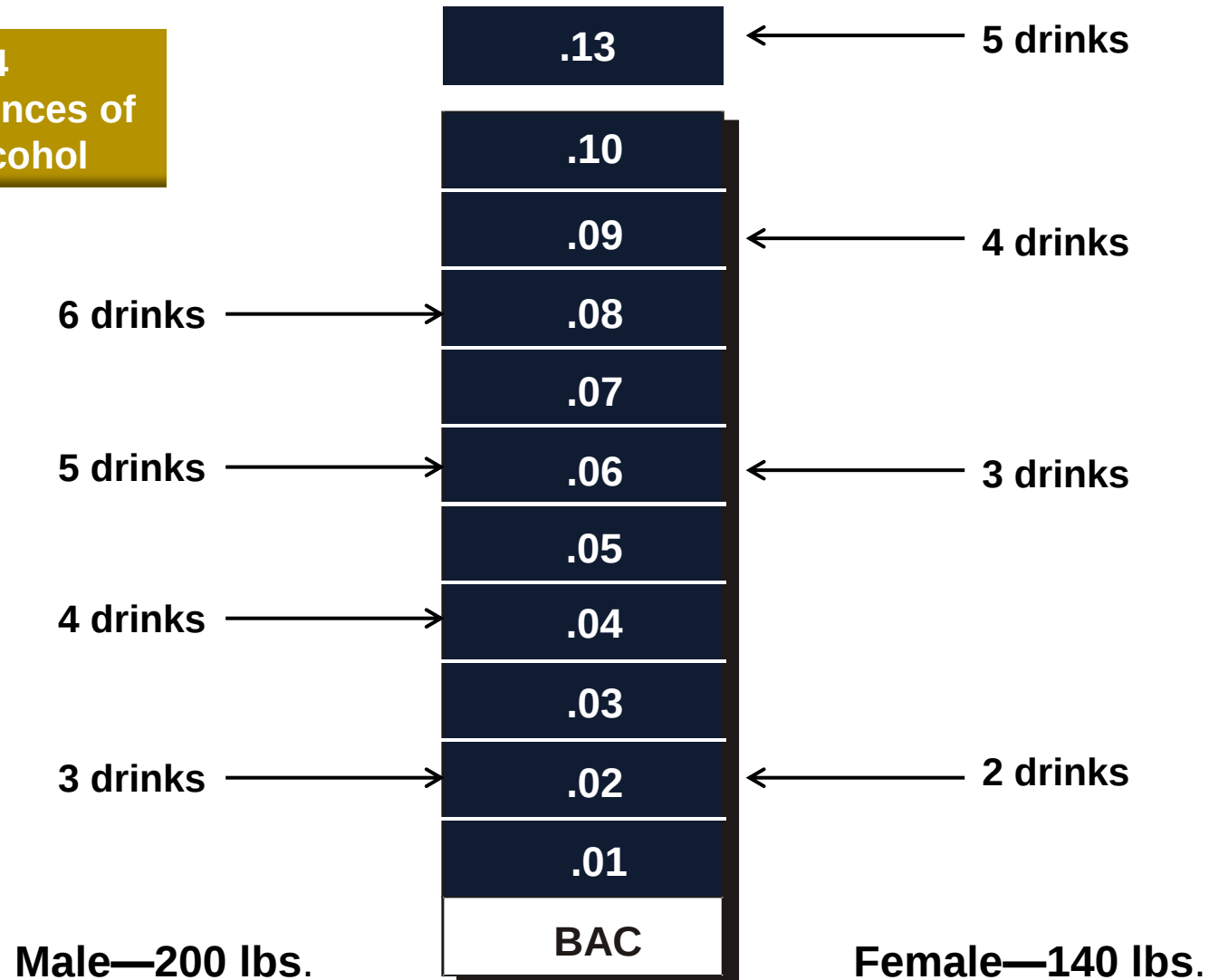
Number of Drinks and BAC in Two Hours of Drinking



[Source: NHTSA 1994]

Number of Drinks and BAC in Three Hours of Drinking

1 Drink = .54
ounces of
alcohol



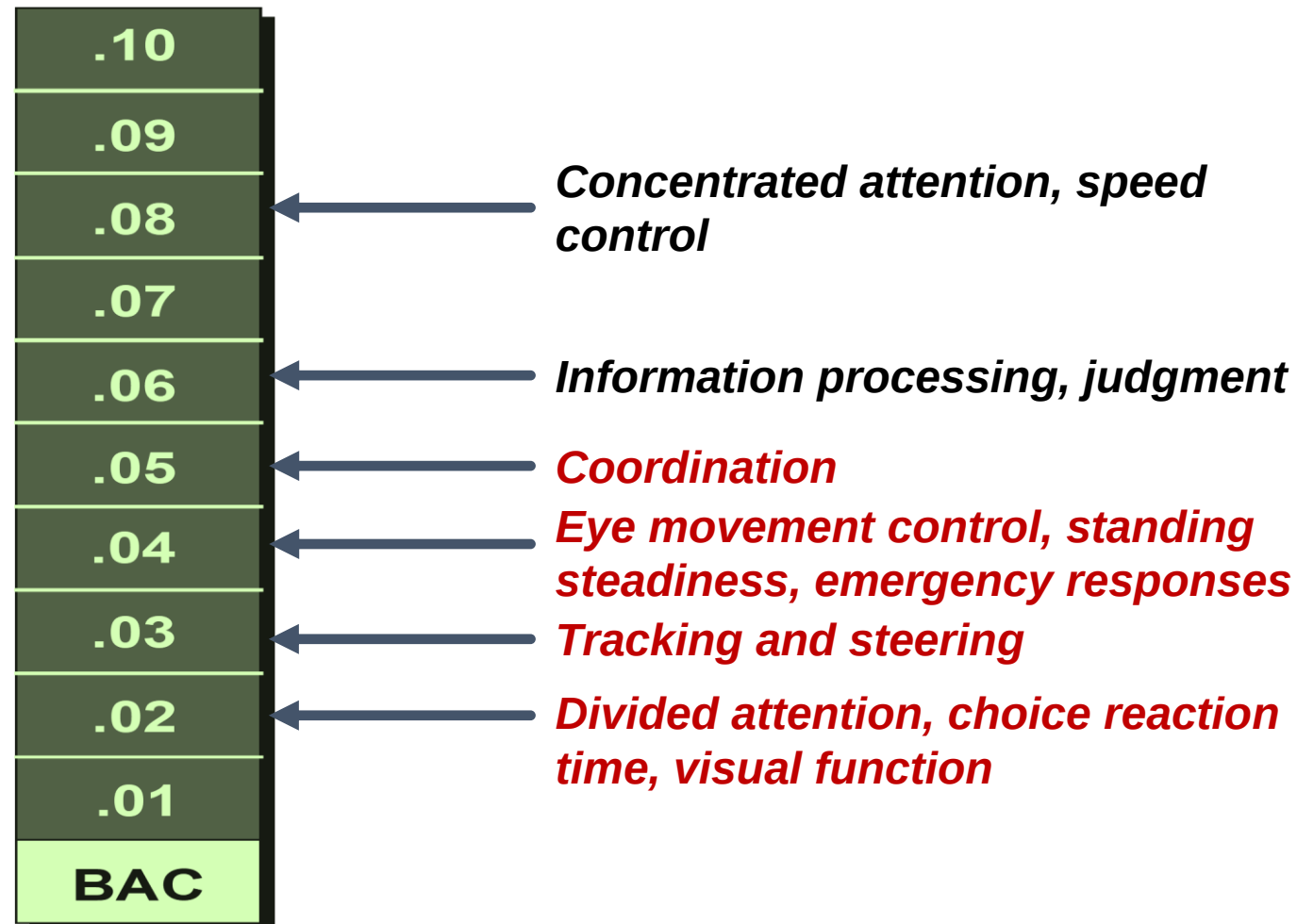
The ABCs of BAC

(NHTSA, Feb 2005, DOT HS 809 844)

What affects BAC?

- Number of drinks
 - Greater # -- higher BAC.
- How fast you drink
 - Consume quickly -- high BAC.
 - Metabolize at about .015 BAC per hour
- Gender
 - Women -- less water and greater % body fat per pound.
- Same weight & number of drinks.
 - Women -- higher BAC.
- Weight
 - Greater # lbs, more water, lower BAC.
- Food in stomach
 - Food absorbs alcohol.
 - More food -- lower BAC.

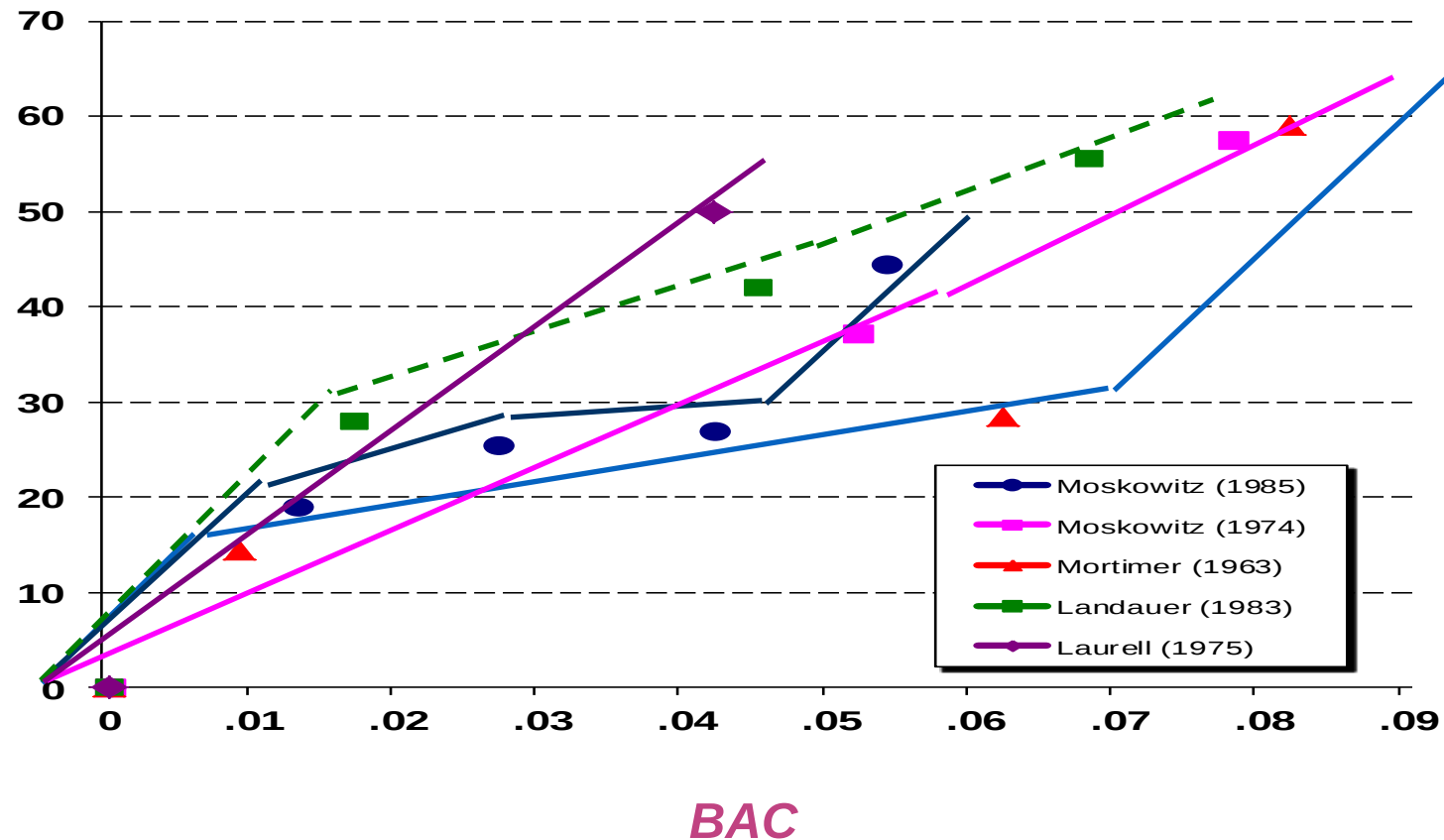
BAC and Impairment



[Source: NHTSA 2001]

Experimental Studies of Impairment and BAC

Percent Decrement in Performance Measure



Relative Risk* of Being Involved in a Fatal Crash by BAC

Driver Age	BAC		
	.05 - .079	.08 - .099	>.15
16-20	6.24	12.61	490.41
21-34	4.78	8.74	200.03
35+	4.03	6.89	111.94

*Risk relative to BAC=.00 for same age group

Relative risks are the same for men and women at a given BAC.
Relative risk for 16-20 year old women are now the same as 16-20 year old men at a given BAC (a change from 1996).

ALCOHOL and THC

- The odds of being in a crash for drivers with **THC (marijuana) in their systems is 1.05** (adjusted for age & gender) compared to drivers with no THC.
- The odds of being in a crash for a driver with a **BAC = .05 is 2.07** (adjusted for age & gender) compared to drivers with a BAC = .00. **Statistically significant.**
- The odds of being in a crash for drivers with a BAC = .08 is 3.93 (adjusted for age & gender) compared to drivers with a BAC = .00.
- The odds of being in a crash for drivers with a BAC = .15 is 12.18 (adjusted for age & gender) compared to drivers with a BAC = .00.

Studies of the Effects of Lowering the Illegal BAC Limit to .05

Australia (Homel, 1994)	Percent drivers with positive BACs in weekend fatal crashes decreased 13% pre-post law implementation but did not affect weekday fatal crashes
Australia (Henstridge et al., 1997)	Lowering the BAC limit to .05 resulted in an 11% decrease in alcohol-related fatal crashes and significant reductions in the number of non-fatal crashes
Japan (Nagata, et al., 2008)	Resulted in 38% decrease in alcohol-related crashes of all severities
Sweden (Norstrom, 1997)	10% reduction in alcohol-related fatal crashes and significant reductions in single vehicle crashes and all crashes associated with lowering limit to .05

Studies of the Effects of Lowering the Illegal BAC Limit to .05

Netherlands (Noordzij, 1994)	Percent drivers with BACs $\geq .05$ from roadside surveys decreased from 15% to 2% in first year (then 12% for 10 years post)
France (Mercier-Guyon, 1998)	Alcohol-related fatalities decreased from 100 to 64 after law change in one French province
Austria (Bartl & Esberger, 2000)	Resulted in 9.4% decrease in alcohol-related crashes
Australia (Henstridge, Homel, & Mackay, 1997)	18% reduction in fatal crashes and 14% reduction in serious crashes associated with lowering limit to .05

Illegal Per Se BAC Limits for Driving

Country	BAC Limit
Australia	.05
Austria	.05
Belgium	.05
Denmark	.05
Finland	.05
France	.05
Germany	.05
Italy	.05
Spain	.05

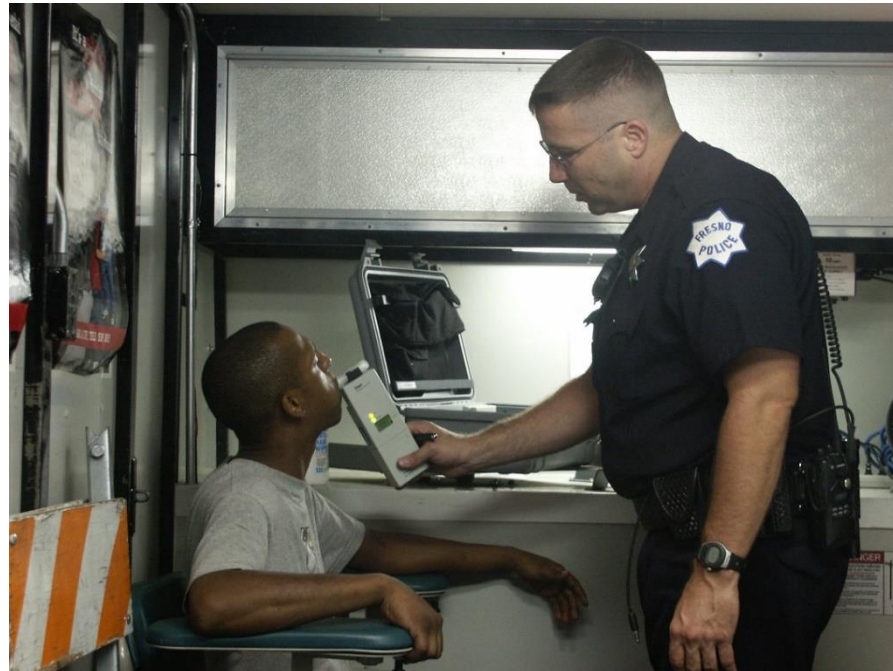
[Source: WHO 2012]

Illegal Per Se BAC Limits for Driving

- **~100** countries with illegal BAC limits of .05 g/dL or less
- **~50** countries with .06-.12 g/dL BAC limits

Objective of Recent Study Funded by NIAAA (Fell & Scherer, 2017)

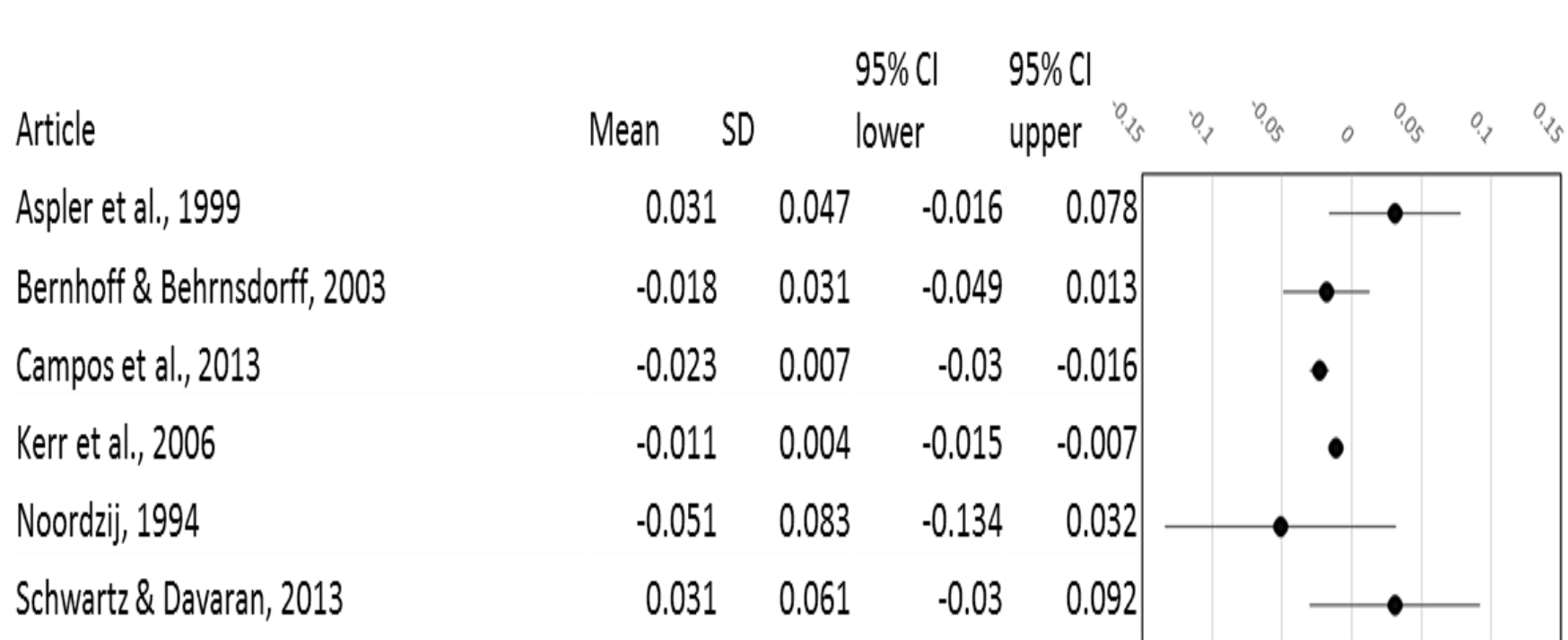
Determine whether lowering the BAC limit from .08 g/dL to .05 g/dL will be an effective policy in the United States.



Methods

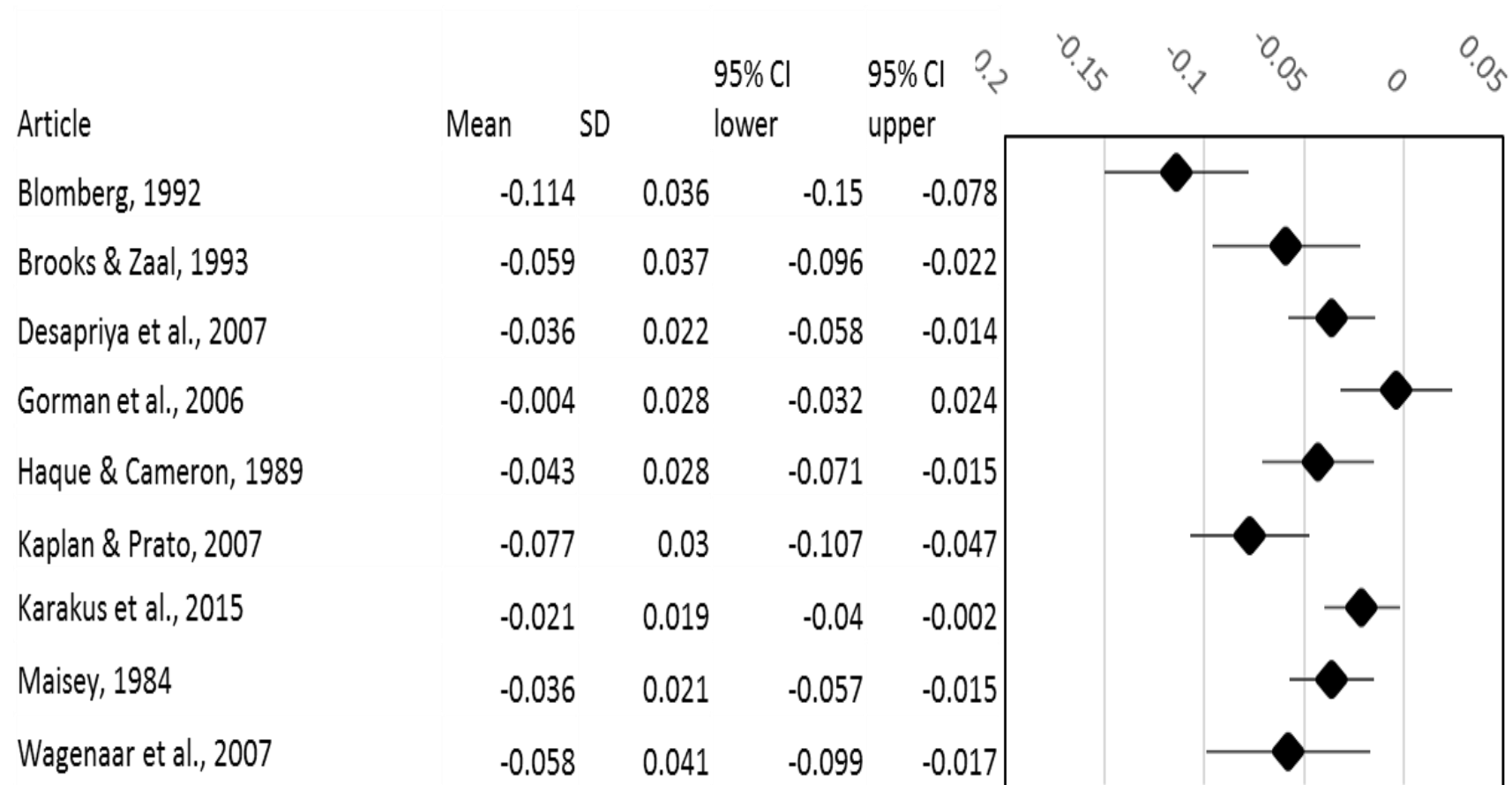
- Conduct a meta-analysis of qualifying international studies to estimate the range and distribution of the most likely effect size from a reduction in BAC to .05.
- Translate the synthesis toward estimating the effects of reducing the current .08 BAC limit to .05 BAC in the U.S.
- Estimate the life-saving benefits of the proposed reduction in the BAC limit from .08 to .05 (a .03 reduction in BAC)

6 Studies of the Effects of Lowering the BAC Limit on Alcohol Consumption



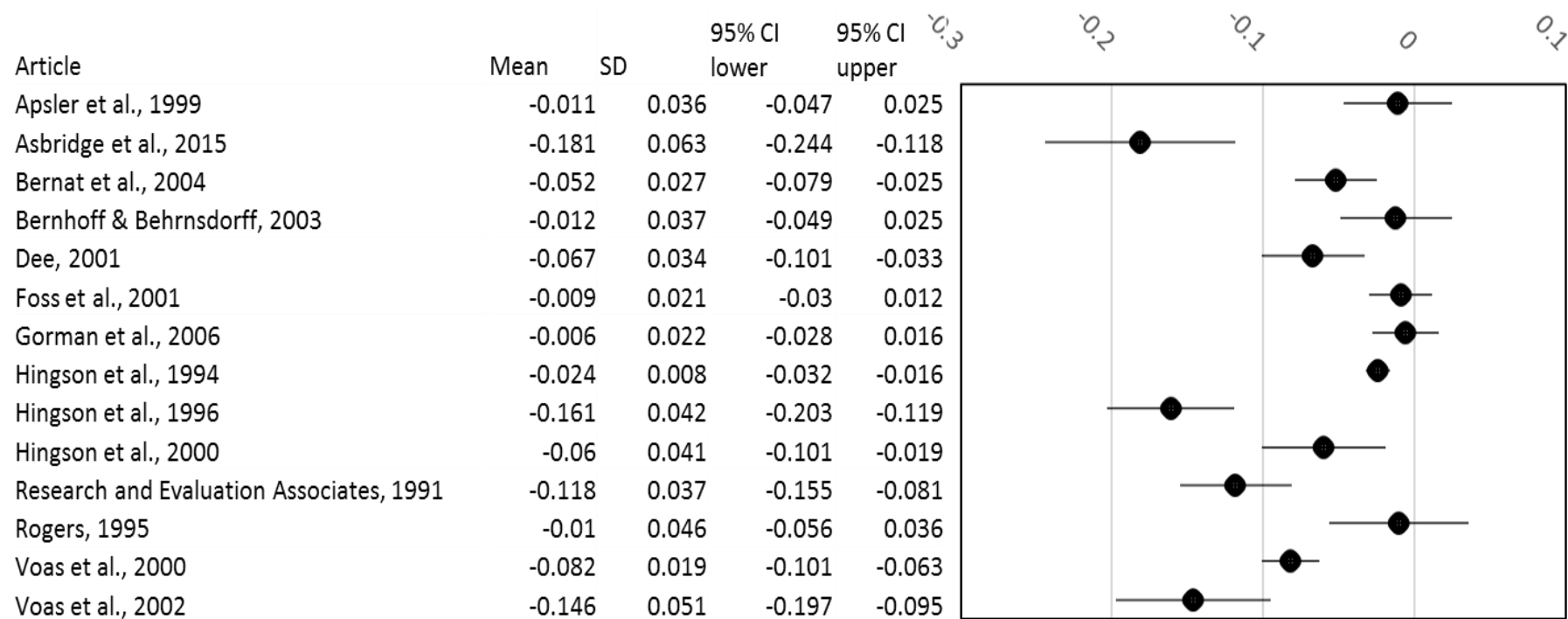
Forest plot of articles examining alcohol consumption related outcomes

9 Studies of the Change in Non-Fatal Alcohol-Related Crash Rate After Lowering BAC to .08



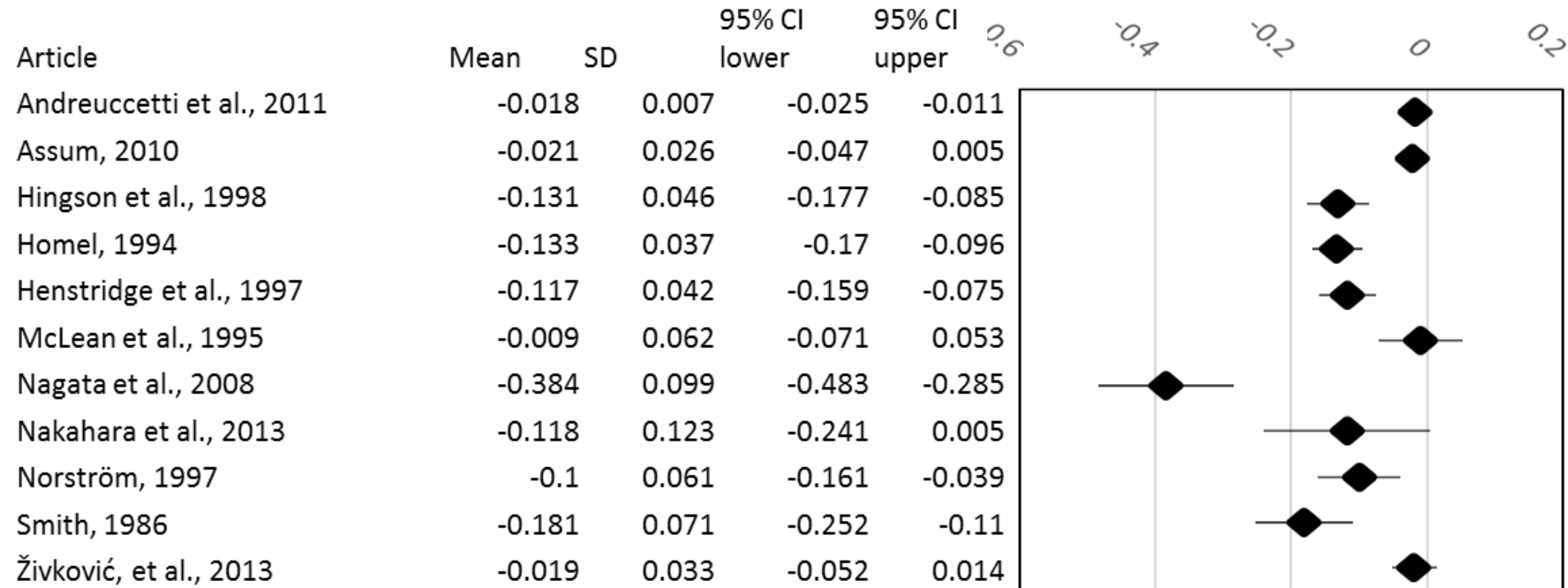
Forest plot of articles examining non-fatal alcohol-related crash outcomes

14 Studies of the Change in Alcohol-Related Fatal Crashes After Lowering BAC to .08



Forest plot of articles examining alcohol-related fatal crash outcomes associated with lowering BAC limit to .08

11 Studies of the Change in Alcohol-Related Fatal Crash Rates After Lowering the BAC to .05 or lower



Forest plot of articles examining alcohol-related fatal crash outcomes associated with lowering BAC limit to .05 or lower

Summary of Results

Outcome	Number of Studies	Estimated Impact	Standard Deviation
Alcohol consumption-related outcomes	6	-1.4	2.3
Non-fatal alcohol-related crashes	9	-5.0*	2.6
Lowering BAC to .08— fatal alcohol-related crashes	14	-9.2*	4.5
Lowering BAC to .05 or lower— fatal alcohol-related crashes	11	-11.1*	5.5

*indicates significance at $p < .05$

Conclusions

- The meta-analysis found no significant effect of lowering the BAC limit on *alcohol consumption*



Conclusions

- Lowering the BAC Limit resulted in a significant **5% decline** in *non-fatal alcohol-related crashes*



Conclusions

- Lowering the BAC Limit to .08 resulted in a significant **9.2% decline** in ***fatal alcohol-related crashes***



Conclusions

- Lowering the BAC limit to .05 (or lower) resulted in a significant **11.1%** decline in ***fatal alcohol-related crashes*** according to the meta-analysis.



Conclusions

- It is estimated that **1790 lives could be saved** each year if ***all states lowered the BAC limit to .05 in the U.S.***



Evaluation of Utah's .05 Per Se Law

- The fatal crash rate reduction from 2016 to 2019 in Utah was **19.8%.**
- In comparison, the rest of the United States showed a **5.6%** fatal crash rate reduction from 2016-2019.
- No significant change in **DUI arrests** and alcohol sales and tourism measures continued to **increase.**
- The report concluded: **“Overall, ...05 per se law had demonstrably positive impacts on highway safety in Utah.”**

Arguments Against .05 Per Se

Point:

Lowering the limit from .08 BAC to .05 BAC will just distract us from the real problem—high BAC, chronic drinking drivers.

Counterpoint:

The studies of the effectiveness of .08 BAC laws indicate that these laws are **just as effective in reducing** alcohol-related fatalities involving **high BAC drivers as they are in reducing fatalities involving low BAC drivers** ([Hingson, Heeren, & Winter, 1996](#); [Wagenaar, et al., 2007](#)). To reduce alcohol-impaired driving, it is essential to pursue both a **broad preventive approach** (of which a .05 BAC law is but one component) as well as a more **specific approach** that deals primarily with those **chronic, heavy drinkers** who are apprehended and identified by the system.

Implications for .05 BAC

- Progress in reducing impaired drivers in fatal crashes has **stalled** since 1997
- Impaired driving fatalities **increased** in 2020 and 2021.
- It will be at least 10 years before technological solutions can be implemented (e.g. **DADSS**, autonomous cars)
- ~10,000 deaths each year due to impaired driving. **100,000** more people will die in the next 10 years if the status quo is maintained
- **A .05 BAC limit is a countermeasure that is proven to have a significant effect on the problem**

Potential .05 BAC Law Issues

- Costs to implement (**should be minimal**).
- DWI Arrests (should be a **small increase** in arrests, but not enough to overburden the courts)
- Can it be enforced? (**same rules** of enforcement apply) [McKnight et al 2003]
- Will it deter high BAC drivers (lowering the limit to .08 **did affect drivers at .15+ BACs**)

[Sources: Wagenaar et al, 2007; Hingson et al, 1996, 2000]

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