



Alcohol Misuse in Older Adults

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A Little Background

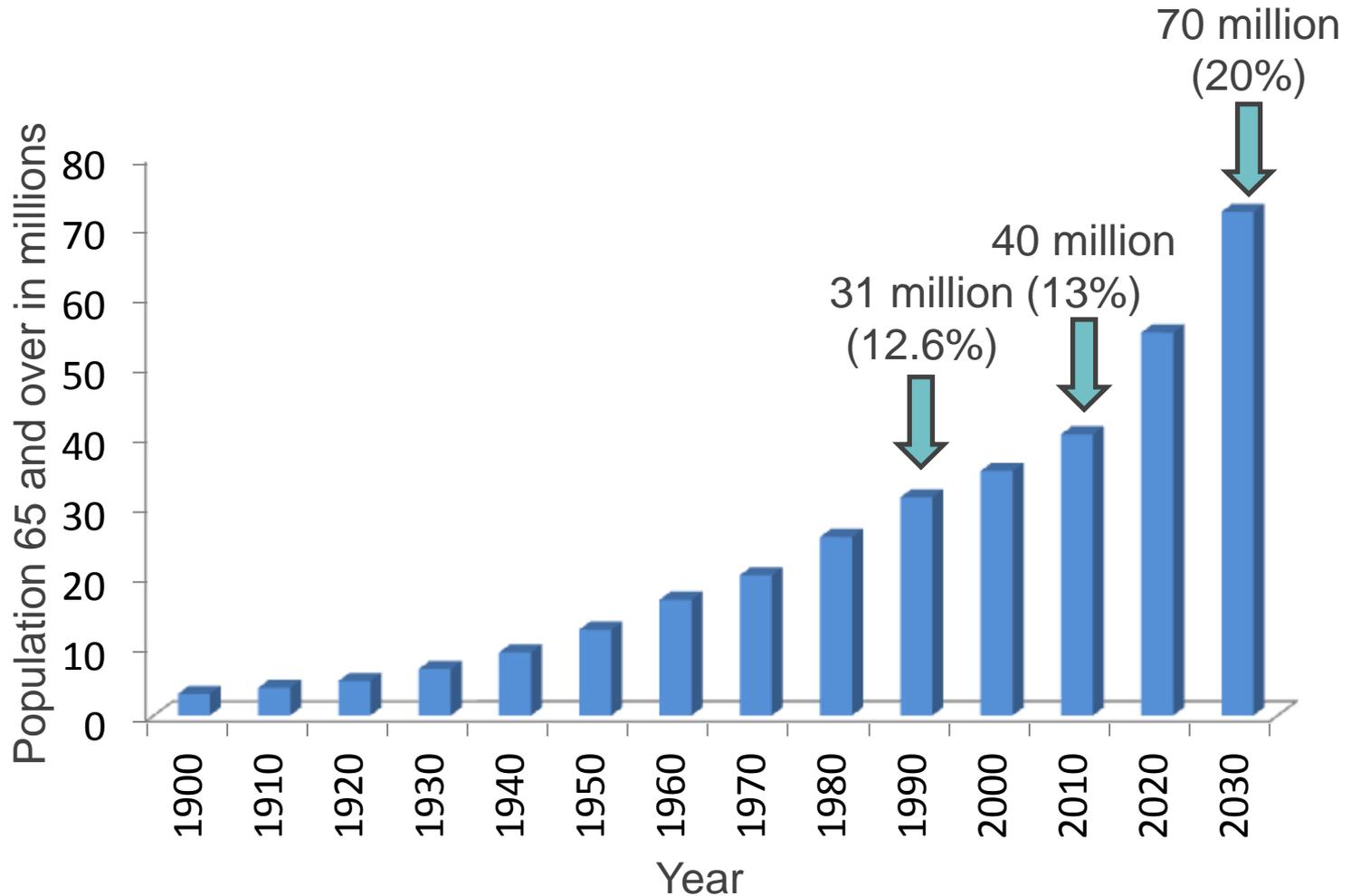




THE CHANGING DEMOGRAPHICS OF HEALTHCARE

Anticipated Growth in Older Population

- Adults age 85 and over are the fastest growing demographic



Older Adults in the ED by the Numbers: Currently



- 13% of the population



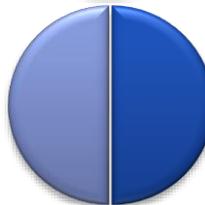
- 15% of ED visits



- 35% of EMS arrivals to ED



- 40% of ED hospital admissions

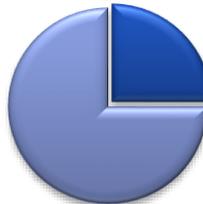


- 50% of ED critical care admissions

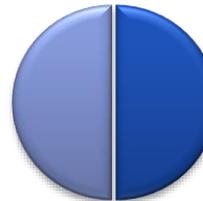
Older Adults in the ED by the Numbers: Expected 2030



- 20% of the population



- 25% of ED visits



- 50% of EMS arrivals to ED

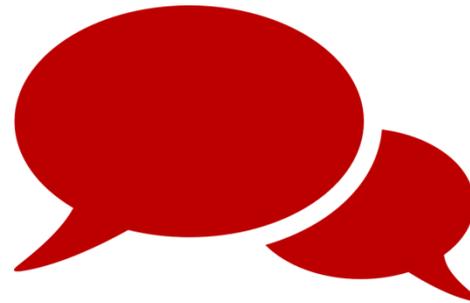
Substance Abuse

Motivation: Increase Awareness and Prevention

- Alcohol Misuse



- Brief Interventions

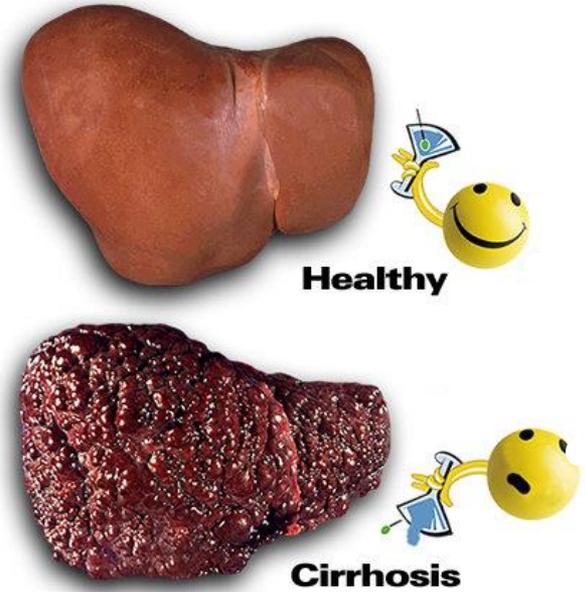
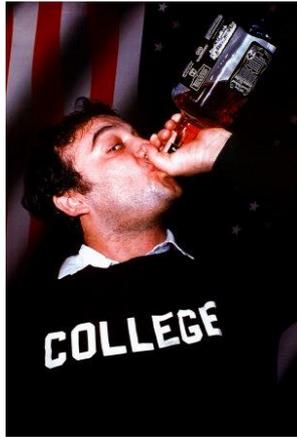


Motivation: Increase Awareness and Prevention



THINKING ABOUT ALCOHOL MISUSE

How Do We Think About Alcohol Misuse?



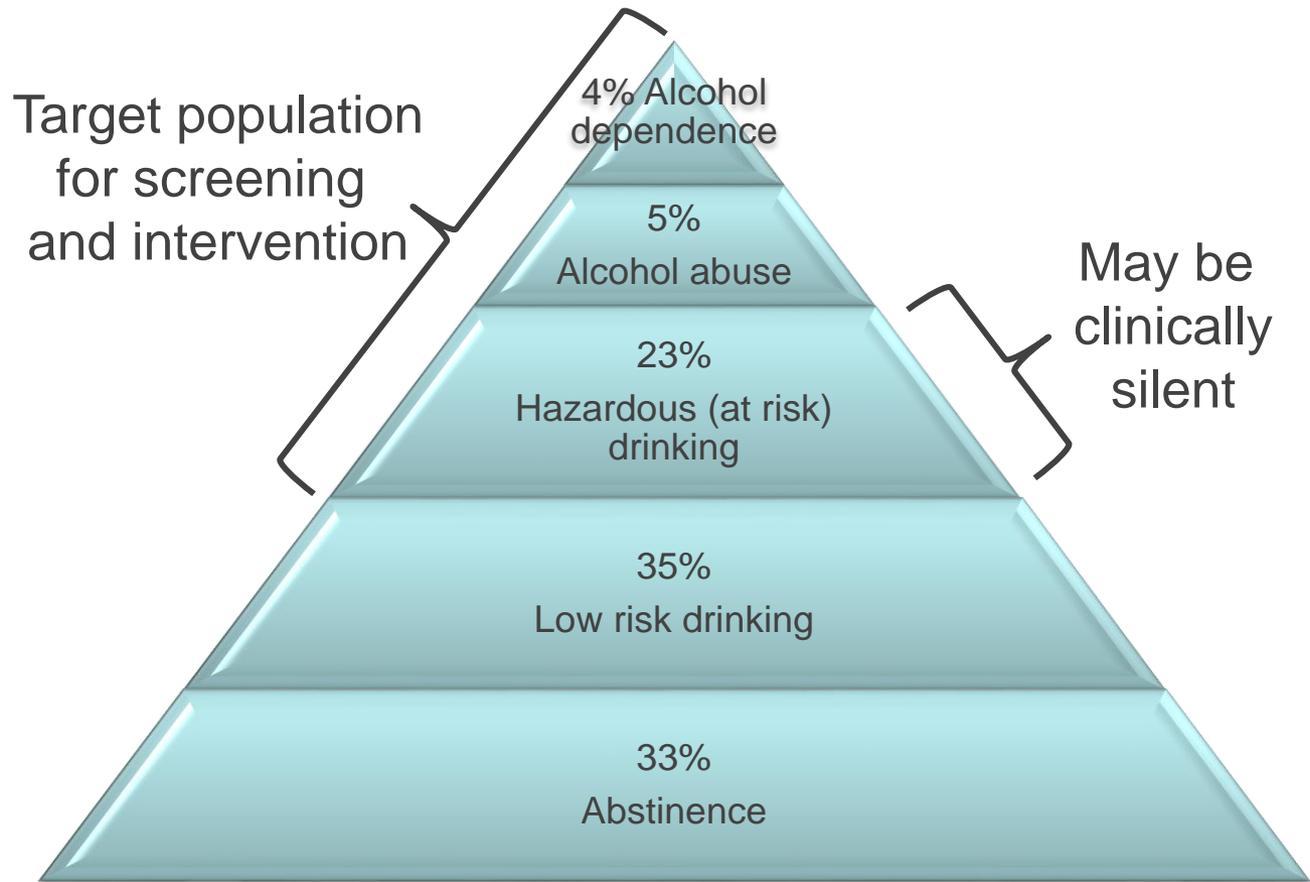
Drinking in Older Adults is Different

- Definitions of Hazardous Use
- Reasons
- Repercussions



DEFINITIONS OF ALCOHOL MISUSE

Spectrum of Alcohol Use/Misuse



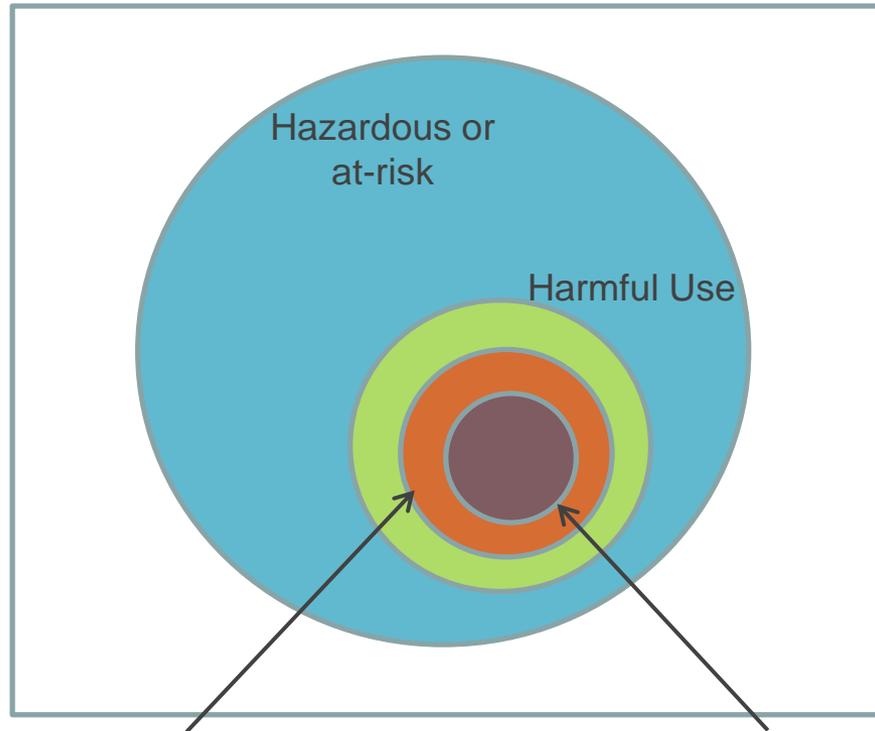
- Alcohol use contributes to 88,000 deaths annually in US
- 30-50% of traumatic injuries and drowning
- \$224 billion in excess societal costs in 2006

For Perspective

- \$224 billion annual excess societal costs from excessive alcohol use
 - » 72% \$161 billion lost workplace productivity
 - » 9% \$20 billion law enforcement and criminal justice
 - » 6% \$13 billion costs from MVCs
 - » 11% \$25 billion health care expenses
- \$42 billion annual cost for ESRD
- **Entire annual NIH budget: \$30 billion**

Spectrum of Alcohol Misuse

Hazardous use: based on age/gender and quantity consumed



Harmful use: experienced some negative consequences

Abuse: continued use despite significant negative consequences, engaging in risky behaviors

Dependence: tolerance, withdrawal, lack of control despite consequences, unsuccessful efforts to cut down.

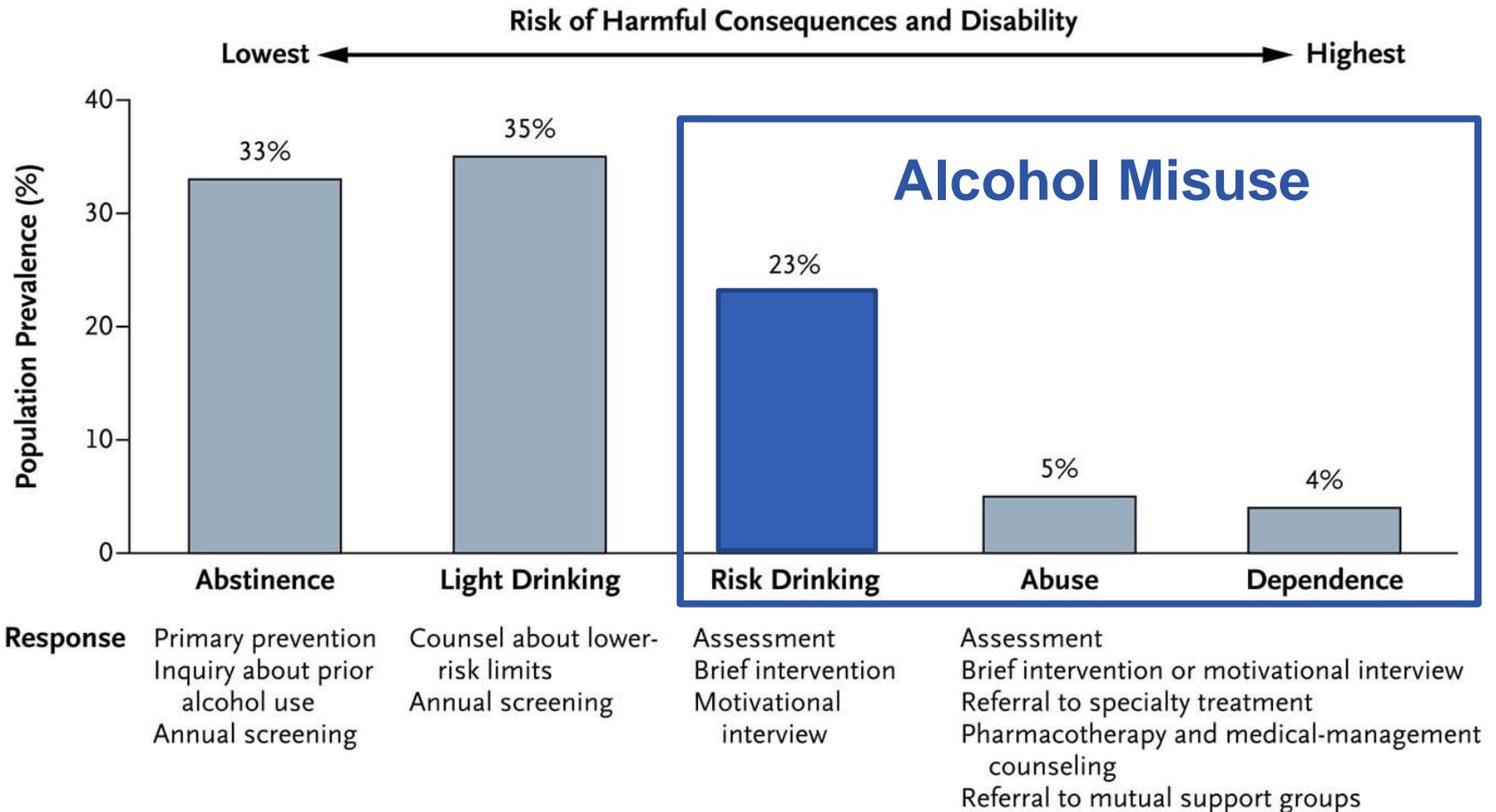
Kalapatapu 2010, Culberson 2006, Conigliaro 2000

Spectrum of Alcohol Misuse

Table 1. Definitions of the Spectrum of Alcohol Misuse

Term (Reference)	Definition
Risky or hazardous use (5)	Consumption of alcohol above recommended daily, weekly, or per-occasion amounts Consumption levels that increase the risk for health consequences
Harmful use (10, 11)	A pattern of drinking that is already causing damage to health; the damage may be either physical (e.g., liver damage from chronic drinking) or mental (e.g., depressive episodes secondary to drinking)
Alcohol abuse (12)	A maladaptive pattern of alcohol use leading to clinically significant impairment or distress, as manifested by ≥ 1 of the following within a 12-mo period: <ul style="list-style-type: none"> Recurrent alcohol use resulting in a failure to fulfill major obligations at work, school, or home (e.g., repeated absences or poor work performance related to alcohol use; alcohol-related absences, suspensions, or expulsions from school; or neglect of children or household) Recurrent alcohol use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine) Recurrent alcohol-related legal problems (e.g., arrests for alcohol-related disorderly conduct) Continued use despite persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol (e.g., arguments with spouse about consequences of intoxication or physical fights) The symptoms have never met the criteria for alcohol dependence
Alcohol dependence (alcoholism, alcohol addiction) (12)	A maladaptive pattern of alcohol use leading to clinically significant impairment or distress, as manifested by ≥ 3 of the following at any time in the same 12-mo period: <ul style="list-style-type: none"> Tolerance, as defined by either of the following: <ul style="list-style-type: none"> A need for markedly increased amounts of alcohol to achieve intoxication or desired effect Markedly diminished effect with continued use of the same amount of alcohol Withdrawal, as manifested by either of the following: <ul style="list-style-type: none"> The characteristic withdrawal syndrome for alcohol Alcohol (or a closely related drug) is taken to relieve or avoid withdrawal symptoms Alcohol is often taken in larger amounts or over a longer period than was intended A persistent desire or unsuccessful efforts to cut down or control alcohol use A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects Important social, occupational, or recreational activities are given up or reduced because of alcohol use Use continues despite knowledge of a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol (e.g., continued drinking despite recognition that an ulcer was made worse by alcohol consumption)

Spectrum of Alcohol Misuse



Clinical Response

Primary prevention
Inquiry about prior alcohol use
Annual screening

Counsel about lower-risk limits
Annual screening

Assessment
Brief intervention
Motivational interview

Assessment
Brief intervention or motivational interview
Referral to specialty treatment
Pharmacotherapy and medical-management counseling
Referral to mutual support groups

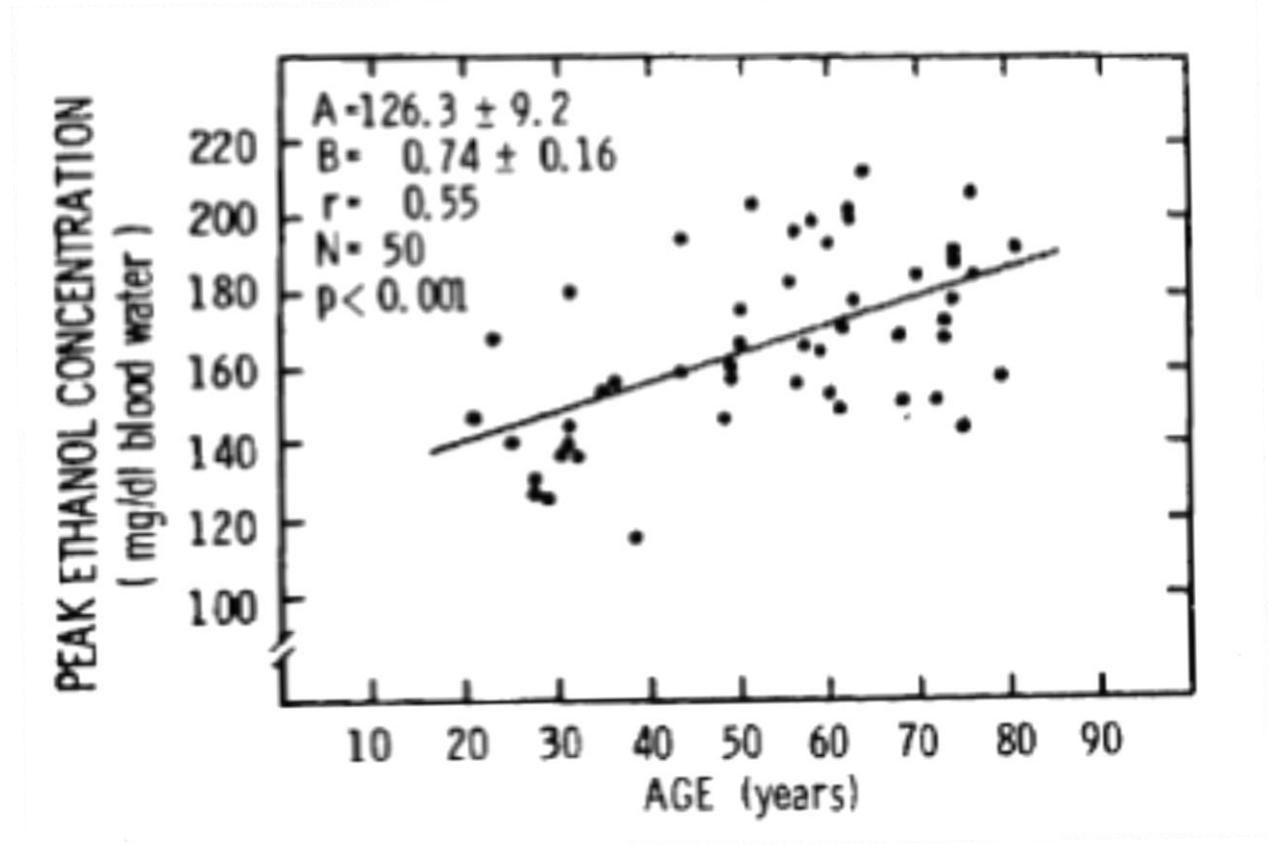
Hazardous Alcohol Use: NIAAA Definitions

Demographic	Drinks Per Week	Drinks per Occasion
Male ≤ 64	> 14	> 4
Female ≤ 64	> 7	> 3
Male or Female > 64	> 7	> 3

- Lower limits in older adults:
 - » Higher sensitivity to alcohol
 - » Baseline gait instability
 - » Interplay with other medications

Alcohol Levels in Older Adults

- In older adults – same quantity of alcohol per m² BSA leads to higher blood alcohol levels



Vestal 1977

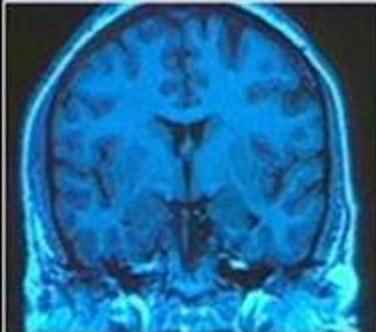


IMPORTANCE OF ALCOHOL MISUSE IN OLDER ADULTS

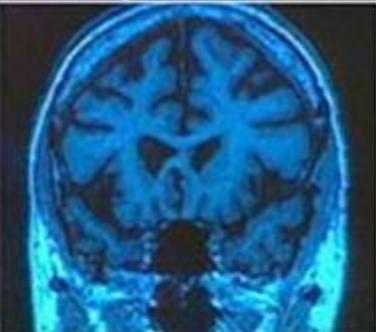
Alcohol

Chronic Effects

Acute Effects



Normal
43-year-old



Alcoholic
43-year-old

Memory impairment
dementia

Confusion, lethargy,
Coma, imbalance

Head and neck cancer

Slurred speech

Cardiomyopathy

Reduced respiratory
rate, aspiration

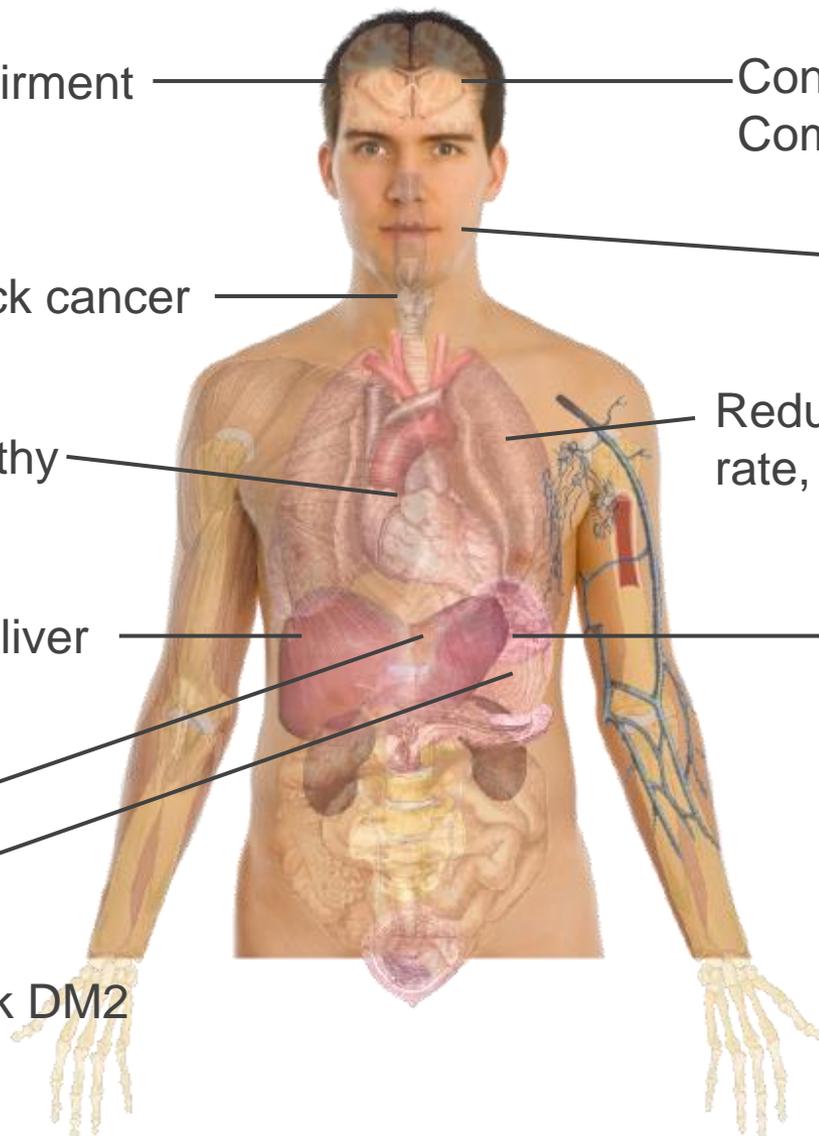
Hepatitis,
cirrhosis and liver
failure

Vomiting

Pancreatitis

Gastritis

Increased risk DM2



Alcohol Misuse is an Important Cause of Morbidity and Mortality

- Alcohol-related hospitalizations in older adults are a significant, costly, and preventable problem, **occurring at rates similar to hospitalization for myocardial infarction**



Adams 1993

Alcohol Misuse is an Important Cause of Morbidity and Mortality: Trauma

- Fatal injuries of all types are more common in adults who drink alcohol.



MacLeod 2011, Chen 2005, Higgins 1996, Rivara 1993, Gentilello 1999

Alcohol Misuse is an Important Cause of Morbidity and Mortality: Trauma

- Of admitted trauma patients:
 - » Percent with positive blood alcohol test:



MacLeod 2011, Chen 2005, Higgins 1996, Rivara 1993, Gentilello 1999

Alcohol Misuse is an Important Cause of Morbidity and Mortality: Trauma

- For men over 60yo who were drivers admitted after MVC:
 - » Percent with a positive blood alcohol level (BAL):



MacLeod 2011, Chen 2005, Higgins 1996, Rivara 1993, Gentilello 1999

Alcohol Misuse is an Important Cause of Morbidity and Mortality: Trauma

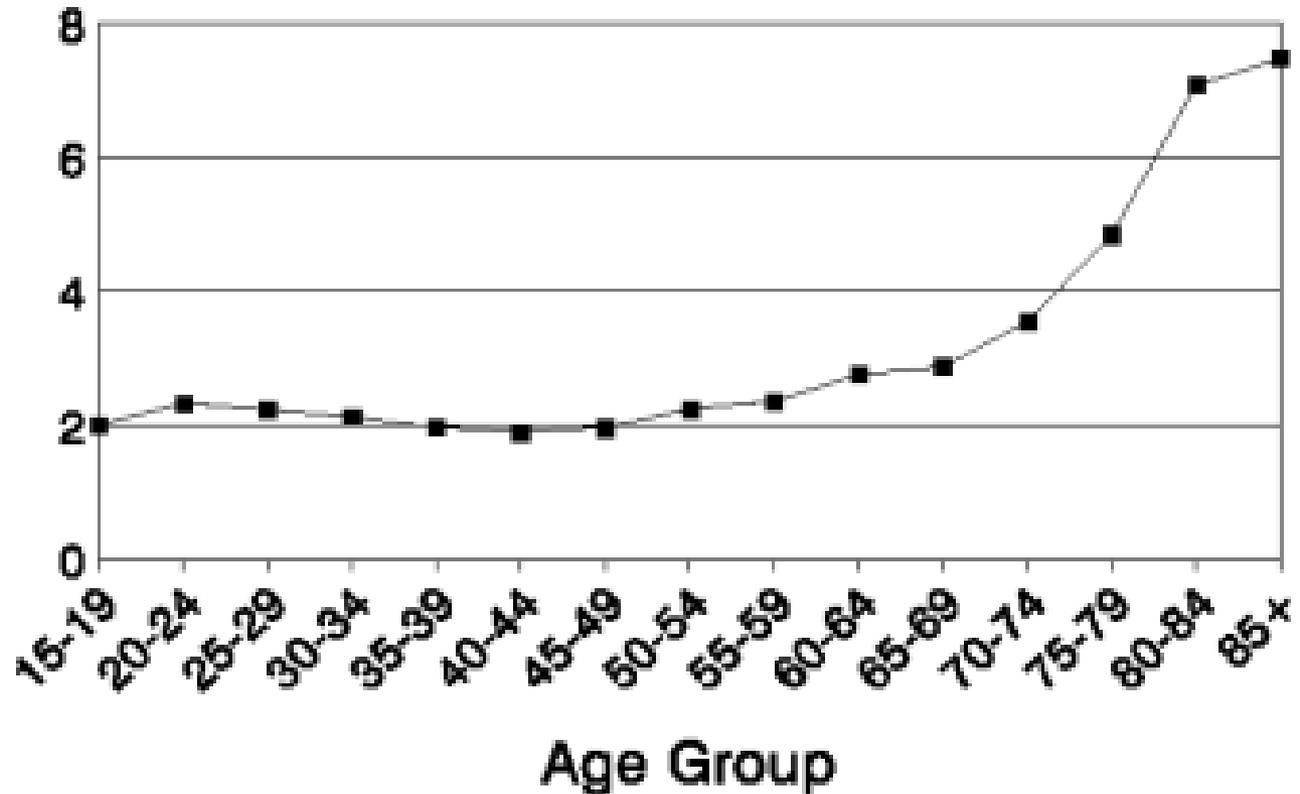
- Older adults seen in ED for trauma
 - » Percent with BAL over 100mg/dl:



MacLeod 2011, Chen 2005, Higgins 1996, Rivara 1993, Gentilello 1999

Fatalities from MVCs and Age

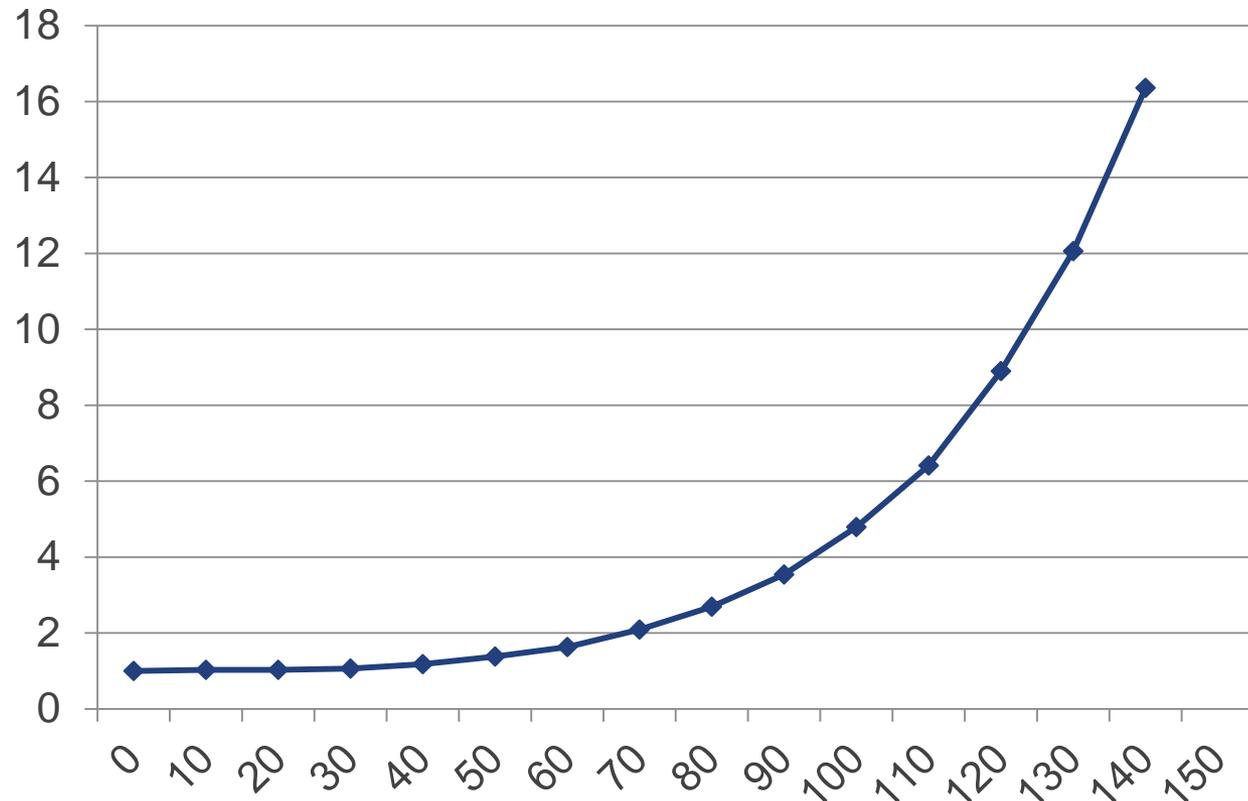
Fatalities per 1000 crashes by age



<http://www.nhtsa.gov/people/injury/olddrive/pub/Chapter1.html>

MVCs and Blood Alcohol Level

- Relative risk of being in an accident and blood alcohol level.

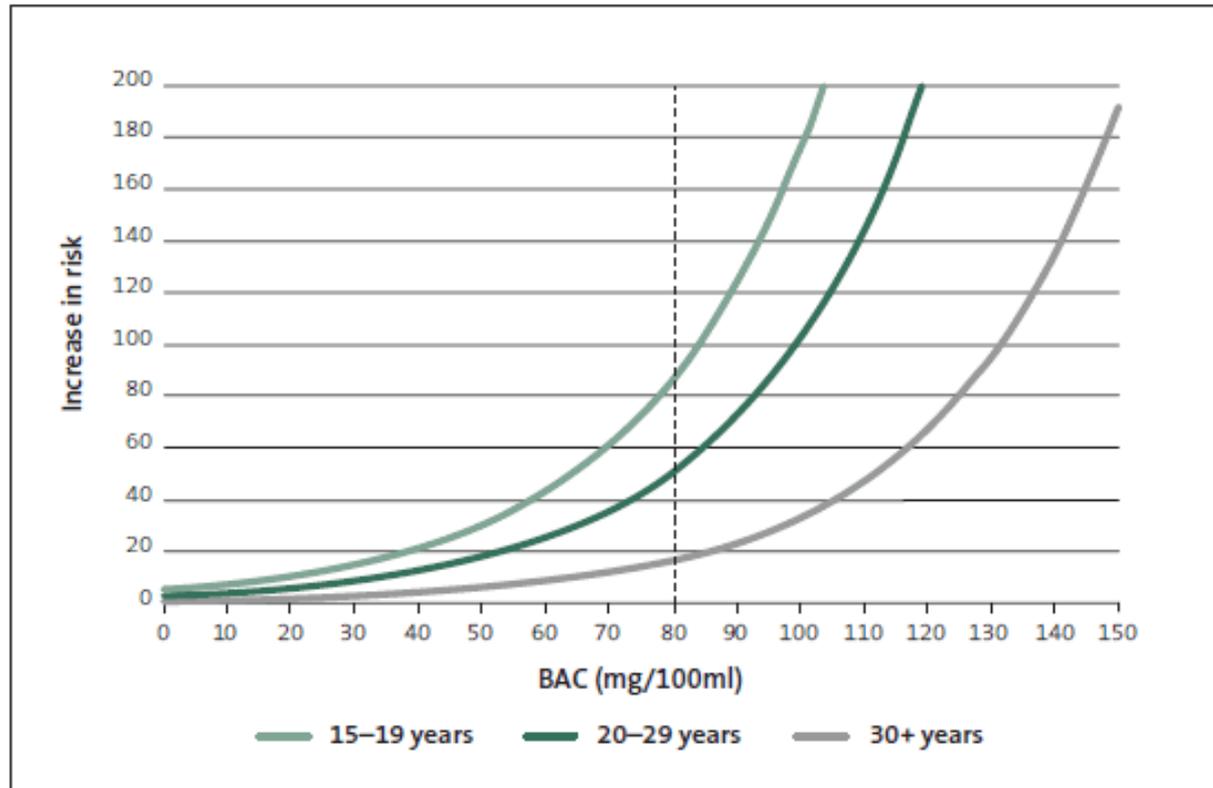


<http://pubs.niaaa.nih.gov/publications/arh342/225-235.htm>

Adapted from Blomberg et al. 2009.

MVCs and Blood Alcohol Level

- Relative risk of being in a fatal car crash



Motivation: An Ounce of Prevention



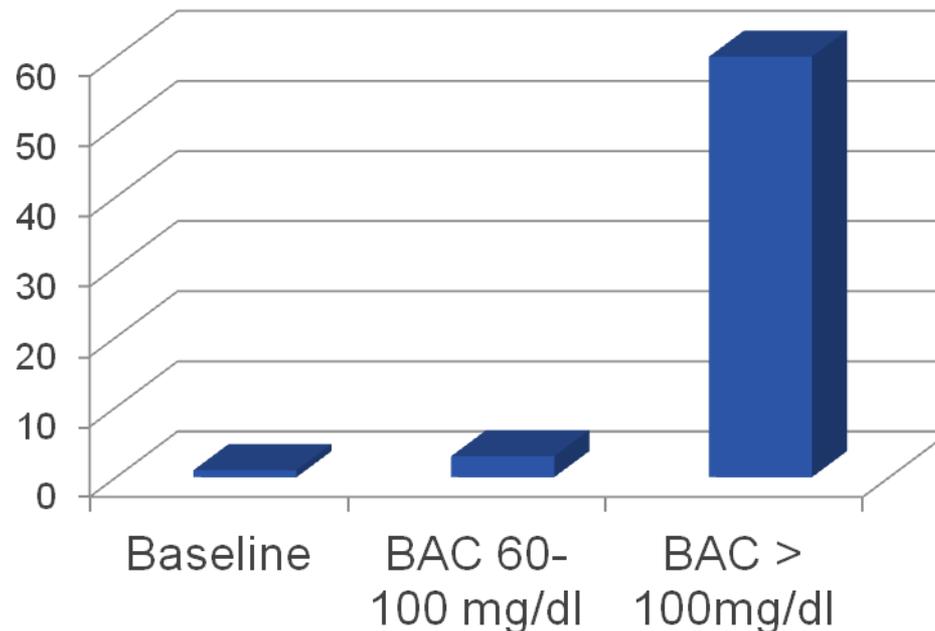
Motivation: An Ounce of Prevention



Every 18 seconds an older adult is in the emergency room because of a fall

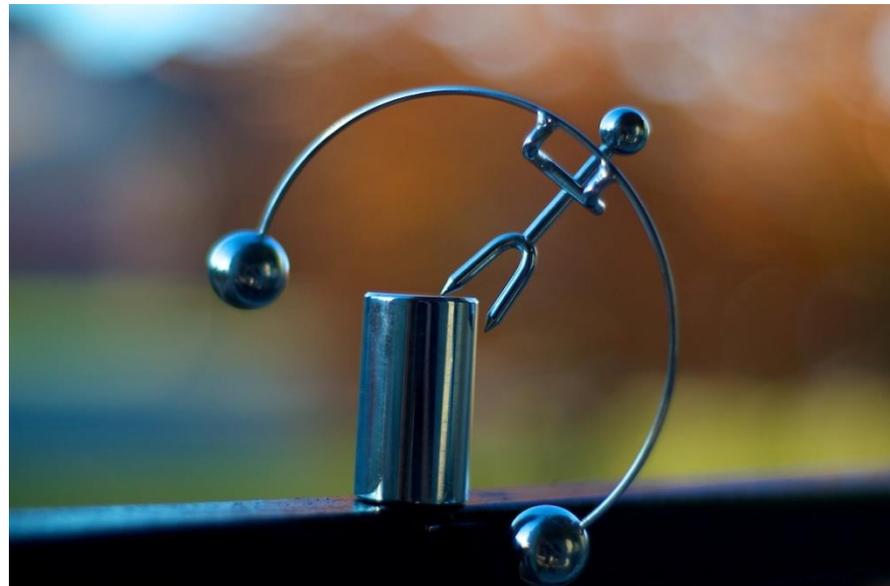
Alcohol Misuse is an Important Cause of Morbidity and Mortality: Falls

- In the general adult population alcohol use is a significant contributor to falls.
 - » RR of 3 for a fall with BAC 60-100mg/dl
 - » RR of 60 for fall with BAC >100mg/dl



Alcohol Misuse is an Important Cause of Morbidity and Mortality: Falls

- Approximately 6-24% of falls resulting in fractures in community-dwelling older adults are associated with alcohol use.
- **Alcohol can cause:**
 - » Worse balance, poor judgment



Heuberger 2009, Ostbye 2004, Resnick 2004, Adams 1998, Felson 1988, Mukamal 2004, Glynn 1991, Nelson 1992, Hingson 1993, Malmivaara 1993

Alcohol Misuse is an Important Cause of Morbidity and Mortality: Falls

- **Caveat:** Studies of falls have been mixed and the relationship between alcohol use, health, and injuries is particularly complicated in older adults.
- **Complications include:**
 - » Varied screening methods
 - » Varied definitions of misuse
 - » Inability to control for many confounders

PREVALENCE AND DETECTION OF ALCOHOL MISUSE

Prevalence of Alcohol Misuse Among All Adults

- ▶ In whole population, prevalence is 32%:
 - ▶ Hazardous use: 23%
 - ▶ Abuse: 5%
 - ▶ Dependence: 4%
- ▶ Prevalence of alcohol misuse in specific populations:
 - ▶ In ED patients: 30-40%
 - ▶ Among trauma patients: 50%

Alcohol Consumption Among Older Adults: Primary Care Setting

Table 1.—Weekly Alcohol Consumption by Age and Sex*

Mean Drinks/wk	61-65 y		66-75 y		>75 y	
	Men	Women	Men	Women	Men	Women
<1	320 (40.3)	567 (58.5)	530 (49.8)	930 (70.3)	172 (57.3)	381 (80.5)
1-7	197 (24.8)	252 (26.0)	225 (21.1)	250 (18.9)	54 (18.0)	49 (10.4)
8-14	144 (18.1)	110 (11.3)	157 (14.7)	97 (7.3)	41 (13.7)	29 (6.1)
15-21	44 (5.5)	17 (1.8)	59 (5.5)	21 (1.6)	13 (4.3)	7 (1.5)
>21	89 (11.2)	24 (2.5)	94 (8.8)	25 (1.9)	20 (6.7)	7 (1.5)

Total %	29	10.8	24.7	9.1
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Prevalence of Alcohol Misuse Among Older Adults: Inpatients

- Medical inpatients screening positive for alcohol misuse:
 - » 21% over age 60
 - » 15% over age 70

Detection of Alcohol Misuse: Inpatients

- About 37% of older adults with alcohol problems are identified by house staff.
 - » Compared with 60% of younger adults ($p < 0.05$)
- Of those identified, house officers recommended intervention/care for 24% of the older patients.
 - » Compared with 50% of younger adults

SCREENING FOR ALCOHOL MISUSE

Identification of Alcohol Misuse

- Criterion standard for alcohol use disorders: DSM IV criteria and Diagnostic Interview Schedule Alcohol Module (DIS)
- Screening tools/questions are faster and easier to administer.
- Identification of harmful use, abuse, or dependence:
 - » CAGE
 - » MAST-G
 - » SMAST-G
 - » AUDIT
- Identification of hazardous use:
 - » Quantity/frequency questions
 - » AUDIT-C
- Identification of all forms of misuse:
 - » ARPS

Problems with Screening Tools

- They were developed and validated in younger adults
- Certain questions are less applicable to older adults
- The cut-offs for a 'positive' screen may be different in older adults
- The tools may not differentiate between current and lifetime problems.
- Short term memory loss may impair recall of alcohol-related consequences.
- Different 'gold standards' are used in different studies

Screening Tools: CAGE

- CAGE
 - » Cut Down
 - » Annoyed
 - » Guilty
 - » Eye-opener

Screening Tools: CAGE

- CAGE in older adults:
 - » Cutoff of ≥ 1 : Sens 86% Spec 78%
 - » Cutoff of ≥ 2 : Sens 70% Spec 91%
- Area under ROC: 0.86
 - » PPV: Score 0-4: 33%, 66%, 79%, 82%, 94%
- Used DIS for alcohol abuse, or dependence as criterion standard.
- **Does not distinguish between current and prior alcohol problems**
- **Does not detect hazardous or at-risk drinking**

Screening Tools: CAGE

- CAGE does not perform well to detect heavy or hazardous drinking

Table 3.—Performance of the CAGE Questionnaire in Detecting Problem Drinking*

CAGE Results	Sensitivity, %	Specificity, %	PPV, %	NPV, %	Likelihood Ratio
1 CAGE question positive					
> Recommended limits†	31	92	57	80	4.2
>21 Drinks/wk	63	90	25	98	5.9
Binge drinking	59	89	24	97	5.3
2 CAGE questions positive					
> Recommended limits†	14	97	65	78	5.7
>21 Drinks/wk	40	96	38	97	11.1
Binge drinking	35	96	34	96	8.9

*CAGE indicates cut down, annoyed by criticism, guilty about drinking, eye-opener drinks (test for alcoholism); PPV, positive predictive value; and NPV, negative predictive value.

†Recommended limits are 14 drinks per week for men and 7 drinks per week for women.

Screening Tools: Michigan Alcohol Screening Tool – Geriatric Version (MAST-G)

- MAST-G (24-items) with a cutoff of ≥ 5
 - » Sensitivity 70%
 - » Specificity 81%
 - » For alcohol abuse or dependence

Screening Tools: Short Michigan Alcohol Screening Tool – Geriatric Version (SMAST-G)

YES (1) NO (0)

1. When talking with others, do you ever underestimate how much you actually drink?
2. After a few drinks, have you sometimes not eaten or been able to skip a meal because you didn't feel hungry?
3. Does having a few drinks help decrease your shakiness or tremors?
4. Does alcohol sometimes make it hard for you to remember parts of the day or night?
5. Do you usually take a drink to relax or calm your nerves?

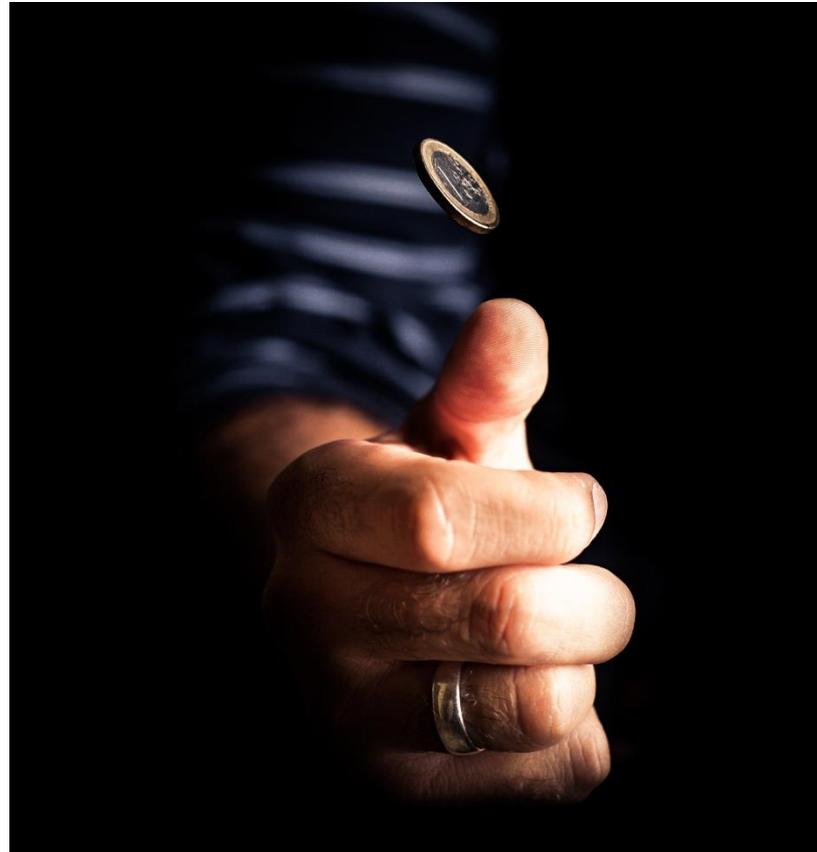
Screening Tools: Short Michigan Alcohol Screening Tool – Geriatric Version (SMAST-G)

6. Do you drink to take your mind off your problems?
7. Have you ever increased your drinking after experiencing a loss in your life?
8. Has a doctor or nurse ever said they were worried or concerned about your drinking?
9. Have you ever made rules to manage your drinking?
10. When you feel lonely, does having a drink help?

- TOTAL S-MAST-G SCORE (0-10) _____
- Scoring: 2 or more “yes” responses indicative of alcohol problem.

Comparing SMAST-G and CAGE

- < 50% of older adults who screen positive by one test screen positive on the other.



Screening Tools: Alcohol Use Disorders Identification Test (AUDIT)

- Developed to identify current alcohol problems, asking about:
 - » alcohol consumption
 - » dependence symptoms
 - » loss of control

1 unit is typically:

Half-pint of regular beer, lager or cider; 1 small glass of low ABV wine (9%); 1 single measure of spirits (25ml)

UNIT GUIDE



The following drinks have more than one unit:

A pint of regular beer, lager or cider, a pint of strong /premium beer, lager or cider, 440ml regular can cider/lager, 440ml “super” lager, 175ml glass of wine (12%)



Screening Tools: Alcohol Use Disorders Identification Test (AUDIT)

Questions	Scoring system					Your score
	0	1	2	3	4	
How often do you have a drink containing alcohol?	Never	Monthly or less	2 - 4 times per month	2 - 3 times per week	4+ times per week	
How many units of alcohol do you drink on a typical day when you are drinking?	1 - 2	3 - 4	5 - 6	7 - 9	10+	
How often have you had 6 or more units if female, or 8 or more if male, on a single occasion in the last year?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	

Screening Tools: Alcohol Use Disorders Identification Test (AUDIT)

How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you failed to do what was normally expected from you because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
How often during the last year have you been unable to remember what happened the night before because you had been drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
Have you or somebody else been injured as a result of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down?	No		Yes, but not in the last year		Yes, during the last year	

Scoring: 0 – 7 Lower risk, 8 – 15 Increasing risk, 16 – 19 Higher risk, 20+ Possible dependence



U
SC

Screening Tools: Alcohol Use Disorders Identification Test (AUDIT)

- AUDIT for older adults area under ROC 0.94
- Cutoff of ≥ 8
 - » Sens 0.48 and Spec 0.97
- Cutoff of ≥ 5 :
 - » Sens 0.86 and Spec 0.87

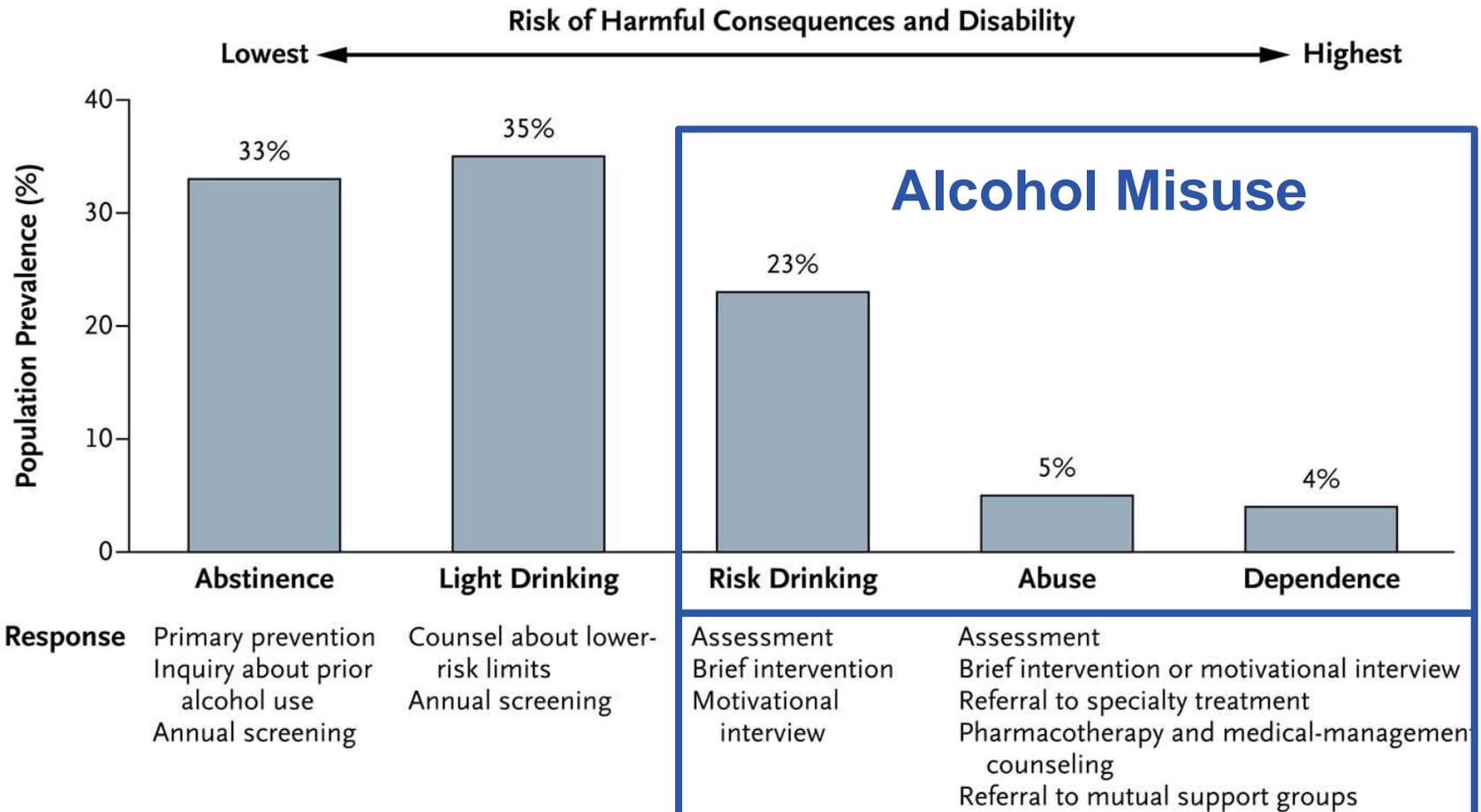
Screening Tools: Alcohol Use Disorders Identification Test (AUDIT)

Table 2 Performance of questionnaires for screening heavy drinking in the elderly ($n = 517$)^a

Cut point	Sensitivity	Specificity
AUDIT		
≥4	0.97	0.77
≥5	0.86	0.87
≥6	0.75	0.92
≥7	0.61	0.95
≥8	0.48	0.97
AUROC (95% CI)	0.936 (0.914–0.957)	
AUDIT-C		
≥3	0.99	0.63
≥4	0.94	0.80
≥5	0.75	0.92
≥6	0.55	0.97
AUROC (95% CI)	0.935 (0.914–0.957)	

WAYS TO INTERVENE

Ways to Screen and Intervene



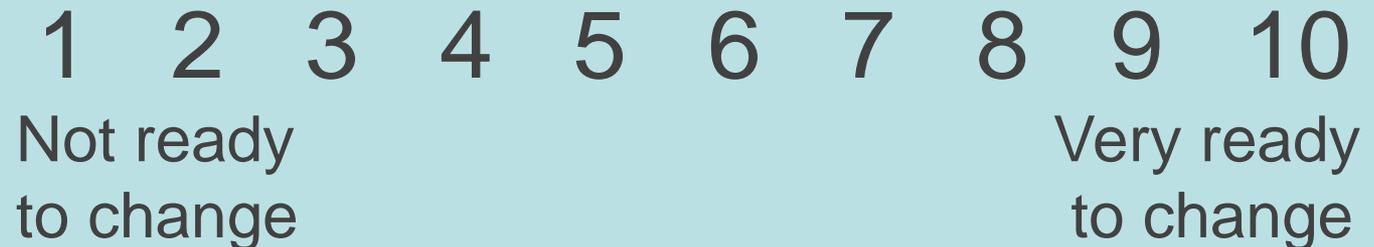
Ways to Screen and Intervene

- **S**creen
 - **B**rief **I**ntervention
 - **R**efers for **T**reatment
-
- Brief interventions can reduce alcohol misuse



Brief Negotiation Interview

1. Raise the subject
2. Provide feedback: give screening results, ask if patient makes connection between drinking and medical problems, show NIAAA guidelines.
3. Enhance motivation: explore pros/cons of drinking, check readiness to change and enhance motivation.



4. Negotiate a goal, give advice, summarize, write agreement, and give follow-up.

Saitz 2005

Additional Open-Ended Questions

- “What are some things you like about your current level of drinking?”
- “What are some not so good things about your drinking?”
- “How does your current pattern of drinking fit with what matters to you most?”
- “How would you know if your drinking were becoming a problem?”
- “Let’s say you *did* decide to cut back on your drinking, how would you go about doing it?”
- “What are your thoughts about what we’ve discussed? “
- “What are some steps you plan to take?”

Effect of Interventions: Primary Care

- Interventions in primary care setting can reduce alcohol consumption among adults.
- 723 adults with “problem drinking” (Fleming 1997):
 - » Intervention group mean drinks/week 19.1 → 11.5
 - » Control group mean drinks/week 18.9 → 15.5 after 1 year ($p < 0.001$)
- 554 adults with “hazardous/harmful” alcohol use (Wutzke 2002):
 - » Intervention group median drinks/week 25 → 16
 - » Control group median drinks/week 24 → 20 after 9 months ($p < 0.0001$)
- 338 adults with “at risk” alcohol use (Nilsson 2004):
 - » 50% reduction in consumption in intervention group
 - » 20% increase in control group after 1 year

Effect of Interventions: Primary Care

- Study in adults **65 and over**.
- Older adults included if:
 - » >11 drinks/wk for men or >8 drinks/wk for women OR
 - » >4 drinks/occasion for men or >3 drinks/occasion for women (2 'binge' occasions within 3 months) OR
 - » ≥ 2 positive CAGE questions
- 158 enrollees randomized to control or intervention:
 - » Intervention: Two 10-15min sessions
- Outcome at 12 months ($p < 0.005$):
 - » Intervention group 15.54 \rightarrow 9.92
 - » Control: 16.6 \rightarrow 16.27

Meta-analysis of Interventions in Primary Care

Appendix Table 3. Characteristics of Included Trials Comparing Behavioral Counseling Interventions With Control Groups

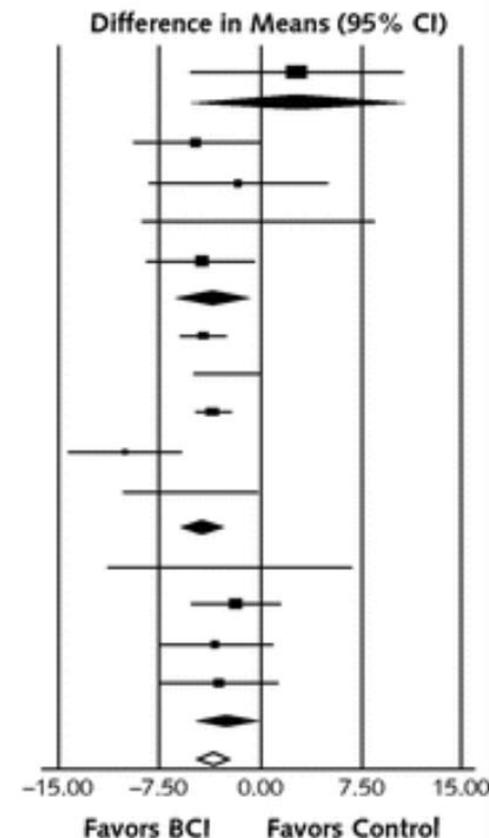
Study, Year (Reference)	Participants (Alcohol-Dependent), n (%)	Duration, mo	Country or State	Setting	Mean Age, y*	Women, %*	Nonwhite, %*	Baseline Alcohol Consumption, drinks/wk*	Quality
Adults									
Anderson and Scott, 1992 (29)	154 (NR)	12	United Kingdom	8 PC group practices	43–45.1	0	NR	37.9–38.8	Fair
WHO BISG, 1996 (63)	1559 (0)	9	8, including United States	Outpatient medical settings	35.9–36.9	19.2	NR	NR	Fair
SIP Trial (55–57)	408 (30.4)	12	Germany	85 general practices	35.9–36.8	31.9	NR	21–25.2	Fair
Curry et al, 2003 (31)	307 (NR)	12	Washington	23 PCPs in an HMO and an urban clinic	47	35	20	14.2	Fair
Project TrEAT (33, 35–37, 39)	774 (NR)†	48	Wisconsin	17 community PC practices	NR†	38	5.6–11.9	18.9–19.1	Good
Fleming et al, 2008 (51), and Wilton et al, 2009 (54)	235 (NR)	6	Wisconsin	34 obstetric practices	Median, 28	100	18.3	8–8.5	Good
Lock et al, 2006 (52)	127 (0)	12	United Kingdom	General practices	44.1	50	NR	23–26.48	Fair
ELM Trial (59–61)	301 (NR)	12	Pennsylvania	12 PC clinics	45.6	30.2	23.3	15.5–18.6	Fair
Noknoy et al, 2010 (53)	117 (13.8–15.3)§	6	Thailand	Rural PC units	37	8.5	100 (Thai)	15.15	Fair
Project Health (42–44)	530 (2)	48	Massachusetts	4 PC sites (93 clinicians)	43.5–44.2	32.1–38.7	4.3–6.6	16.6–18.9	Fair
Richmond et al, 1995 (45)	378 (35)	12	Australia	40 PC practices	37.7	43	NR	38.5	Fair
Rubio et al, 2010 (46)	752 (0)	12	Spain	20 PC centers in Madrid	NR; >70% were 31–40	34.7	NR	26.90–27.42	Fair
Saitz et al, 2003 (47)	312 (NR)	6	Massachusetts	Urban academic PC practice	42.2–43.7	29–43	80–82	Mean, 5.5–5.6 drinks per drinking day	Fair
Scott and Anderson, 1991 (49)	72 (NR)	12	United Kingdom	8 PC group practices	44.4–47.2	100	NR	25.8–26.7	Fair
Freeborn et al, 2000 (58), and Senft et al, 1997 (62)	516 (0)	24	Oregon	3 PC clinics in an HMO	41.9–43	28.1–31.1	17.4–18.7	16.5	Fair
Wallace et al, 1988 (50)	909 (NR)	12	United Kingdom	47 group practices	41.7–44.6	29.1–29.8	NR	35.1 (women) and 62.2 (men)	Fair
Older adults									
Fleming et al, 1999 (34), and Mundt et al, 2005 (41)	158 (0)	24	Wisconsin	24 PC practices	NR; >92% were 65–75	33.5	NR	15.5–16.6	Fair
Lin et al, 2010 (38), and Moore et al, 2011 (40)	631 (NR)	12	California	PC practices (145 PCPs)	68.4	29	13	15.2	Fair
Young adults/college students									
Fleming et al, 2010 (32)	986 (0)	12	United States and Canada	5 college health clinics	21	50.5–51.3	8.1–10.5	17.3–17.8	Good
Grossberg et al, 2004 (37)	226 (NR)¶	48	Wisconsin	17 community PC practices	NR**	51	14	16.2–18.3	Good¶
Kypri et al, 2007 (64), and Kypri et al, 2008 (65)	576 (NR)	12	New Zealand	University primary health care service	20.1–20.3	52	NR	NR	Good
Kypri et al, 2004 (66)	104 (NR)	6	New Zealand	University student health service	19.9–20.4	50	NR	NR	Fair
Schaus et al, 2009 (48)	363 (0)	12	Florida	College student health center	20.6	52	22	8.4–9.6	Fair
Pregnant women									
Chang et al, 1999 (30)	250 (0 current)††	About 6	Massachusetts	Obstetric practices	30.7	100	22	Mean, 0.6–0.9 drinks per drinking day††	Fair

Forest Plot of Interventions in Primary Care

Change in Alcohol Consumption From Baseline to 12 mo (drinks/wk)

Study (Reference)	BCI Subgroup	Difference in Means (95% CI)	P Value
Richmond et al (45)	Very brief	2.700 (-5.212 to 10.612)	0.50
Subgroup total		2.700 (-5.212 to 10.612)	0.50
Anderson and Scott (29)	Brief	-4.740 (-9.544 to 0.064)	0.053
Scott and Anderson (49)	Brief	-1.600 (-8.227 to 5.027)	0.64
Lock et al (52)	Brief	-0.190 (-8.935 to 8.555)	0.97
ELM trial (59-61)	Brief	-4.430 (-8.545 to -0.315)	0.035
Subgroup total		-3.660 (-6.349 to -0.970)	0.008
Project TrEAT (33, 35-37, 39)	Brief, multicontact	-4.180 (-5.887 to -2.473)	0.000
Project Health (42-44)	Brief, multicontact	-2.700 (-5.156 to -0.244)	0.031
Rubio et al (46)	Brief, multicontact	-3.560 (-4.898 to -2.222)	0.000
Wallace et al (50) (men)	Brief, multicontact	-10.100 (-14.400 to -5.800)	0.000
Wallace et al (50) (women)	Brief, multicontact	-5.200 (-10.252 to -0.148)	0.044
Subgroup total		-4.407 (-6.084 to -2.730)	0.000
Richmond et al (45)	Extended, multicontact	-2.200 (-11.331 to 6.931)	0.64
ELM trial (59-61)	Extended, multicontact	-1.811 (-5.182 to 1.560)	0.29
SIP trial (55-57) (full care)	Extended, multicontact	-3.420 (-7.826 to 0.986)	0.128
SIP trial (55-57) (stepped care)	Extended, multicontact	-3.010 (-7.430 to 1.410)	0.182
Subgroup total		-2.546 (-4.767 to -0.325)	0.025
Total		-3.573 (-4.758 to -2.389)	0.000

Heterogeneity statistics: $Q = 15.066$; $P = 0.303$; $I^2 = 13.714$



Outcomes of Interventions

Jonas 2012

Table 3. Effectiveness and Strength of Evidence of Behavioral Interventions Compared With Controls for Improving Health, Utilization, and Other Outcomes, by Population*

Outcomes	Adults		Older Adults	Young Adults/College Students	
	Results	Strength of Evidence		Results	Strength of Evidence
Health outcomes					
Mortality	Rate ratio, 0.64 (95% CI, 0.24 to 1.7); 4 trials; 2006 participants†	Low	Insufficient	1 death reported in a control group	Insufficient
Alcohol-related accidents‡	–	Insufficient	Insufficient	Fewer motor vehicle crashes with nonfatal injuries (9 vs. 20 crashes; $P < 0.05$) and fewer total motor vehicle events (114 vs. 149 events; $P < 0.05$) after 48 mo§	Low
Alcohol-related liver problems	–	Insufficient	Insufficient	–	Insufficient
Utilization outcomes					
Hospitalization	Fewer hospital days in the past 6 mo at 6, 12, and 48 mo: 35 vs. 180 d, 91 vs. 146 d, and 420 vs. 664 d, respectively; all $P < 0.05$ §	Low	Insufficient	Fewer hospital days but no statistically significant difference (131 vs. 150 d; $P =$ not significant)§	Low
Emergency visits	No statistically significant difference	Low	Insufficient	Fewer emergency department visits (103 vs. 177 visits; $P < 0.01$)§	Low
Primary care visits	No significant difference (weighted mean difference, -0.14 visits [95% CI, -0.5 to 0.2 visits]; 4 trials; 946 participants)	Low	Insufficient	–	Insufficient
Other outcomes					
Academic problems	–	–	–	Fewer consequences related to academic role expectations: rate ratio between 0.70 and 0.80¶	Moderate
Legal problems**	No significant difference over 48 mo for most legal problems but fewer controlled substance/liquor violations (2 vs. 11 violations; $P < 0.05$)§	Low	Insufficient	No significant difference for most legal problems but fewer controlled substance/liquor violations (0 vs. 8 violations; $P < 0.01$)§	Low
Quality of life	No difference found in 3 trials (353 participants)	Low	Insufficient	–	Insufficient



Effect of Interventions: Primary Care

- Meta-analysis suggested that the brief intervention *with* follow up counseling or repeat brief interventions is more effective.
- Cochrane review concluded extended intervention had little additional value over brief intervention.

Effect of Interventions: Inpatients

- Intervention among trauma patients. For those with mild to moderate alcohol misuse (SMAST 3-8). At one year:
 - » Intervention group drank 22 fewer drinks per week
 - » Control group drank 2.3 more drinks per week ($p < 0.01$).
- Overall:
 - » Intervention group had 47% reduction in recurrent injuries requiring ED visit, hazard ratio 0.53 (0.26 to 1.07, $p = 0.07$)

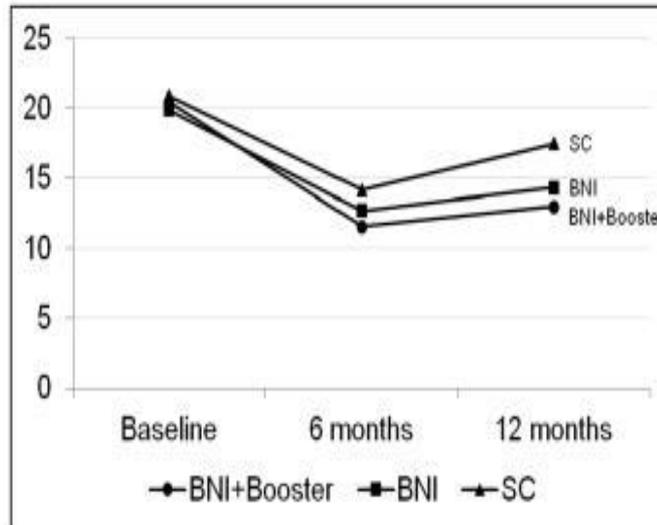
Effect of Interventions: Inpatients

- For admitted trauma patients who screen positive for alcohol misuse or had + BAL:
 - » \$3.81 in future hospital/ED visit costs saved per \$1 spent in screening and intervention.

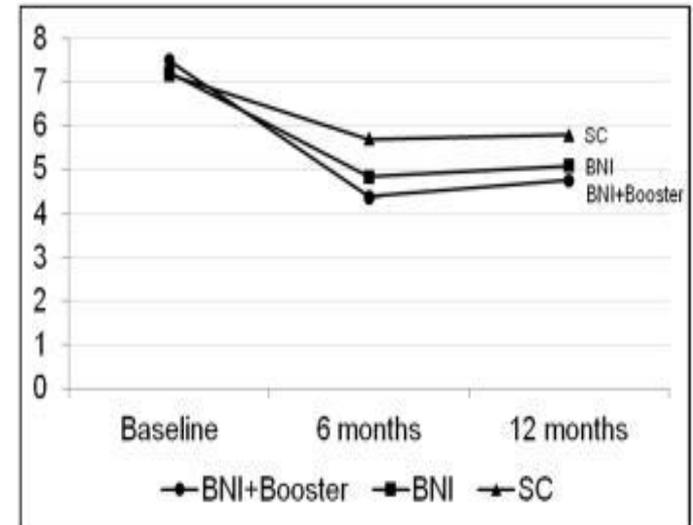
Effect of Interventions: Emergency Department

- Interventions in the ED can reduce alcohol consumption:
 - » Intervention group mean drinks/week 20 → 14
 - » Control group 21 → 18 after 12 months (p<0.001)

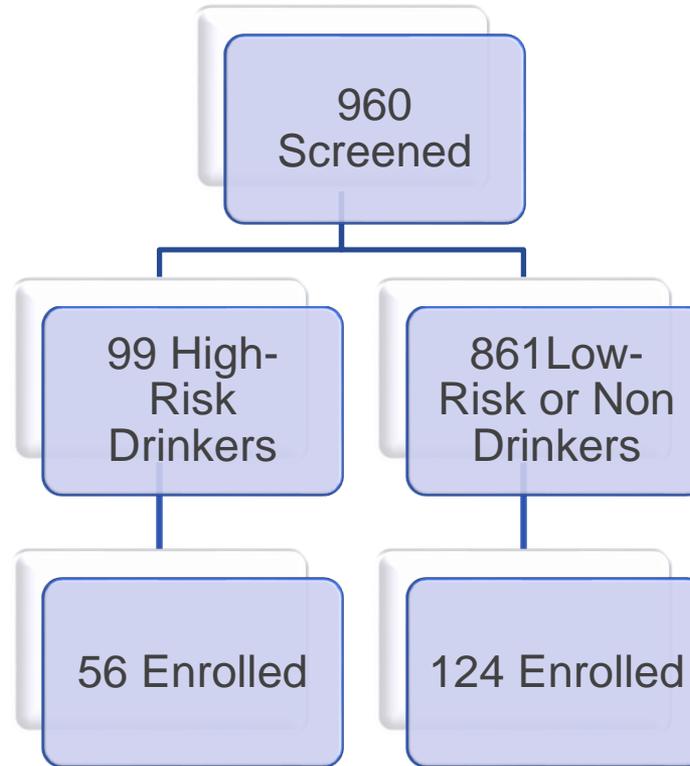
Mean # of Drinks/Week



Binge Episodes/Month



Ongoing Research in the ED



Of 99 who were offered enrollment:
11 Felt too sick to participate
7 Failed 6-item screener
6 Thought research would take too much time
4 Did not want to take part in study on alcohol
15 Other

662 screened during weeks when not enrolling for low-risk comparison group
Of 199 who were offered enrollment:
20 Felt too sick to participate
20 Failed 6-item screener
8 Thought research would take too much time
5 Did not want to take part in study on alcohol
5 Had concerns regarding confidentiality
17 other

Ongoing Research in the ED

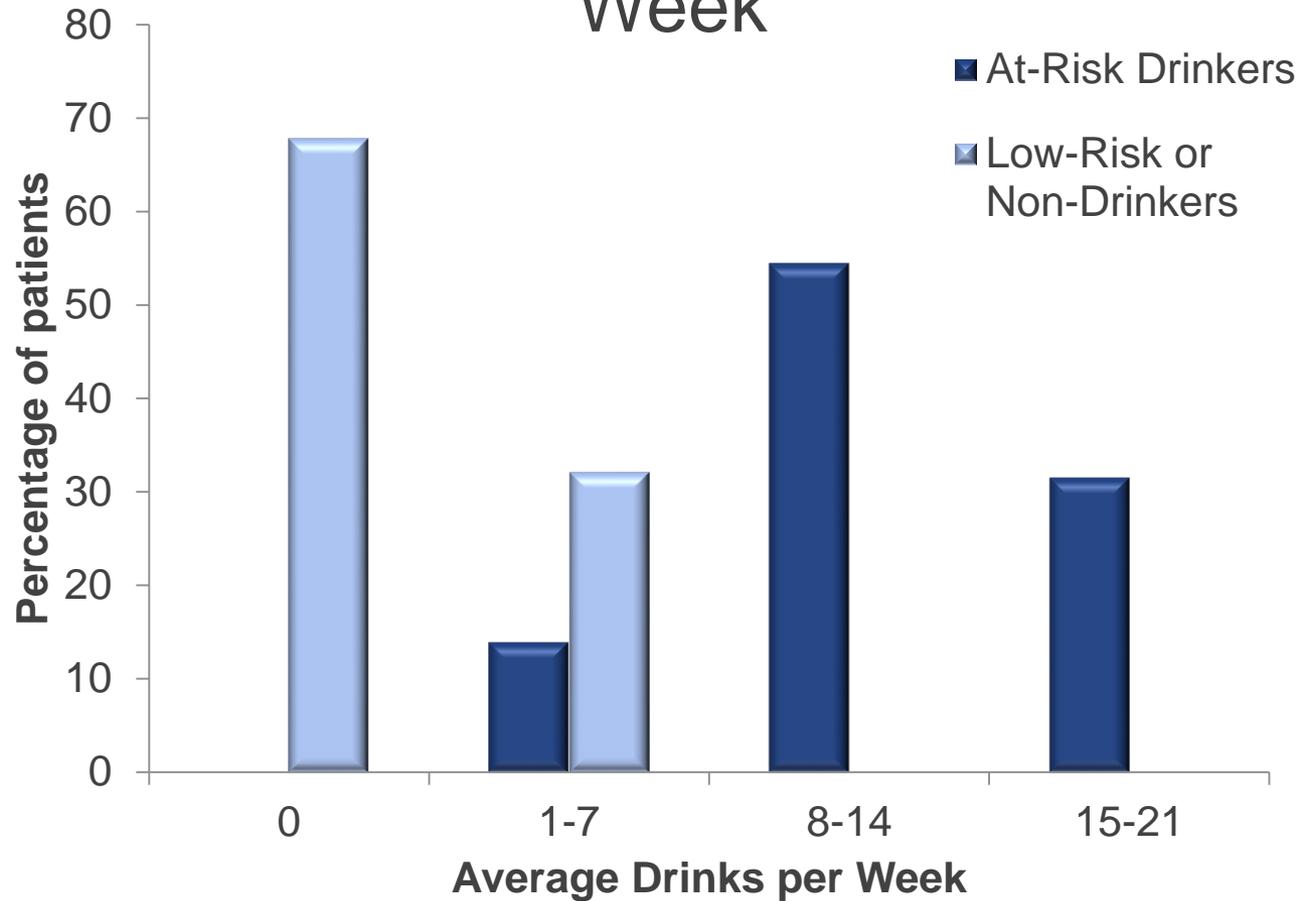
	High-Risk Drinkers	Low-Risk and Non-Drinkers
Age median (range)	71 (65-94)	74 (65-92)
Gender (% male)	64	35
Mean Drinks per week	18	1
Median Drinks per week	14	0
Range of Drinks per week	8-170	0-7
% with ≥ 1 binge episodes per month	55	0

Ongoing Research in the ED

	High-Risk Drinkers	Low-Risk and Non-Drinkers
% of patients with falls in the last 6 months [mean # falls]	45 [2.4]	47 [1]
% of patients hospitalized in the last 6 months [mean # hospitalizations]	27 [0.6]	39 [0.75]
% of patients with a motor vehicle collision in the last 6 months [mean # MVCs]	3.6 [0.04]	2.4 [0.02]
% able to walk 0.25 miles without difficulty	61	40
Mean Katz ADL score (Possible scores 0-6)	0.1	0.4
Mean PHQ2 depression score (Possible scores 0-6)	1.0	0.9
% of patients with chronic pain	57	64
% who reported health as fair	21	31
% who reported health as poor	5.4	8.1
% who reported they have a Primary Care Physician	93	94

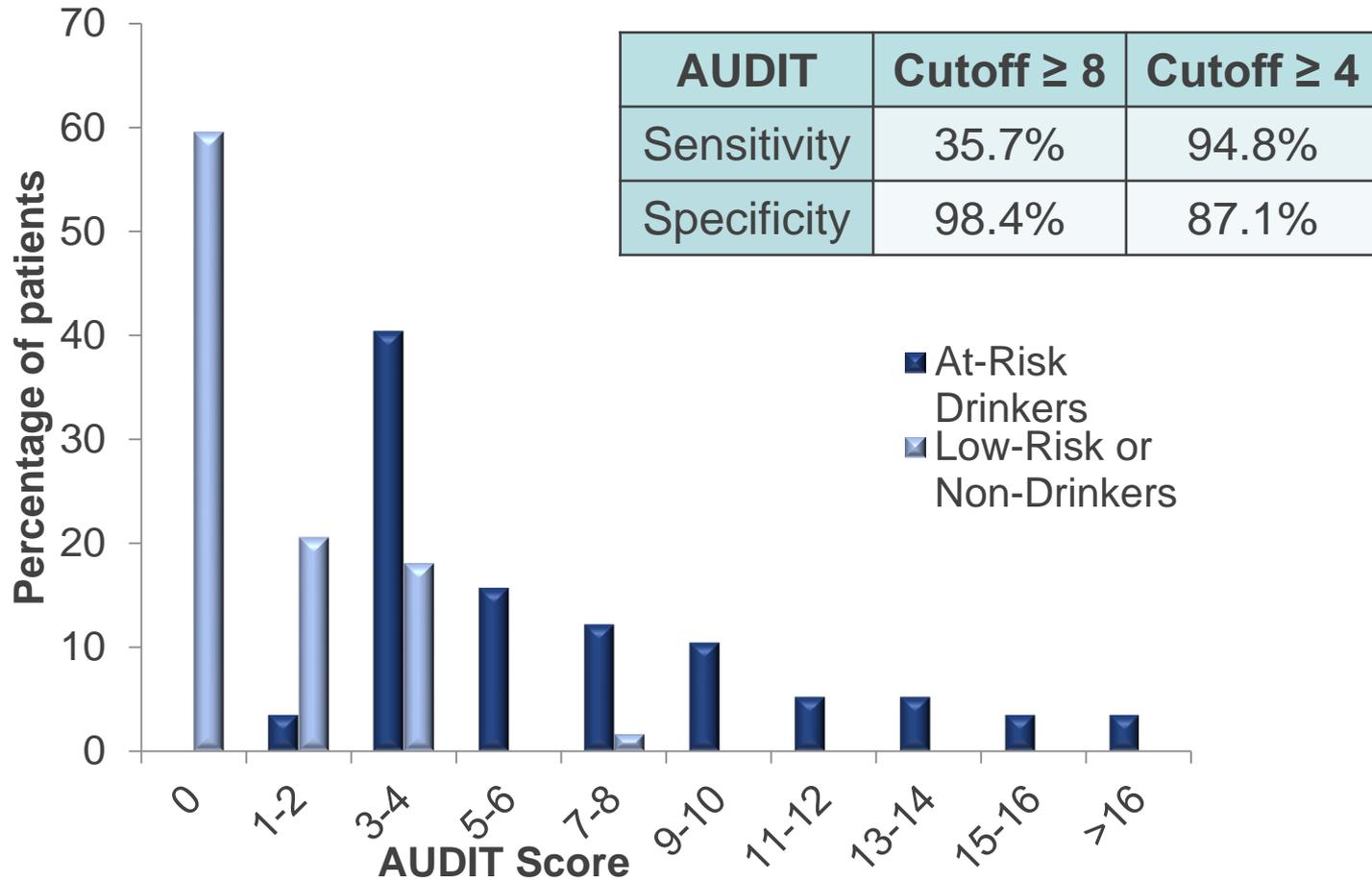
Ongoing Research in the ED

Reported Average Drinks per Week



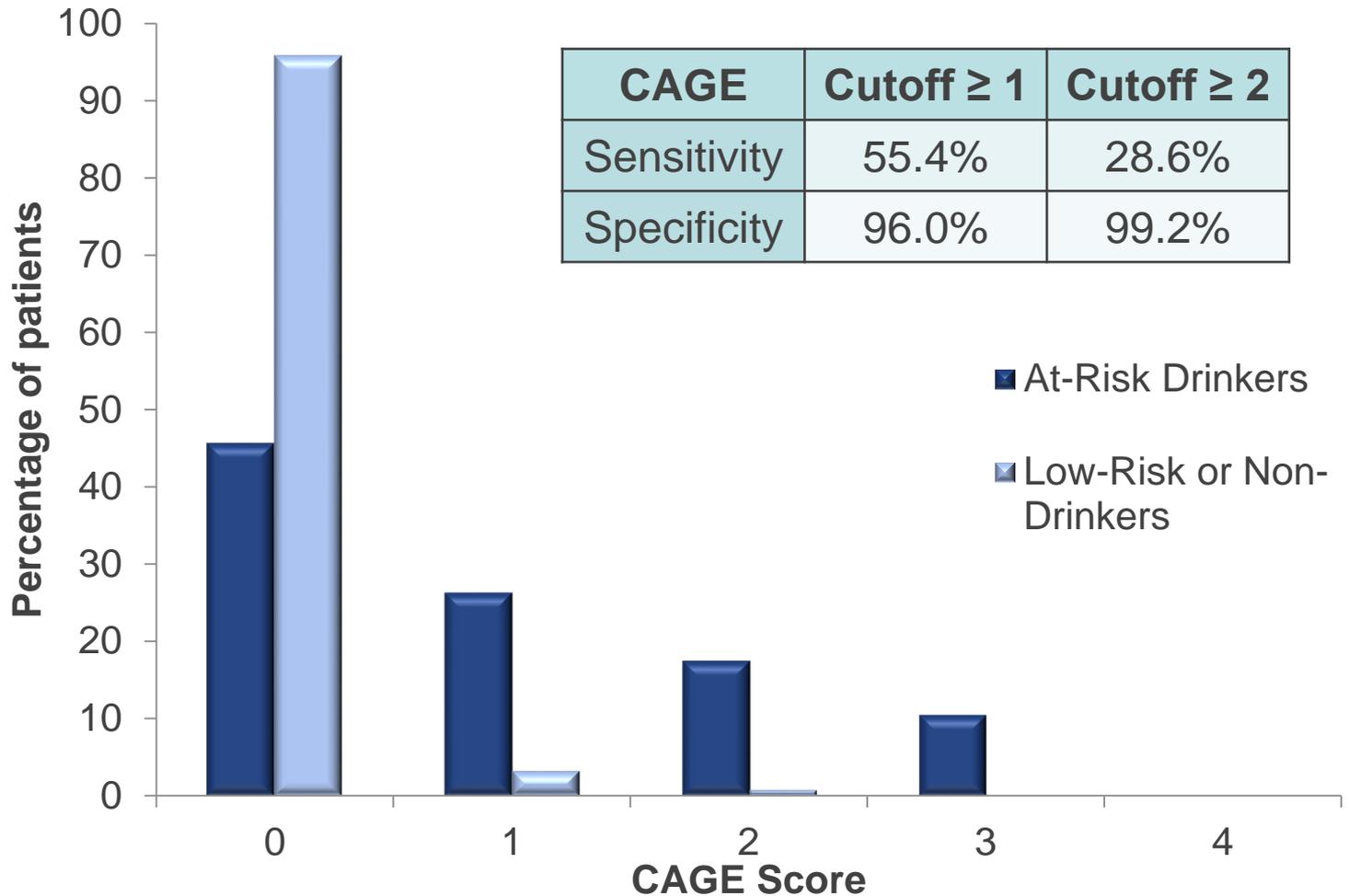
Ongoing Research in the ED

AUDIT Score Frequency



Ongoing Research in the ED

CAGE Score Frequency



Holistic Assessment and Intervention

- **Repercussions**

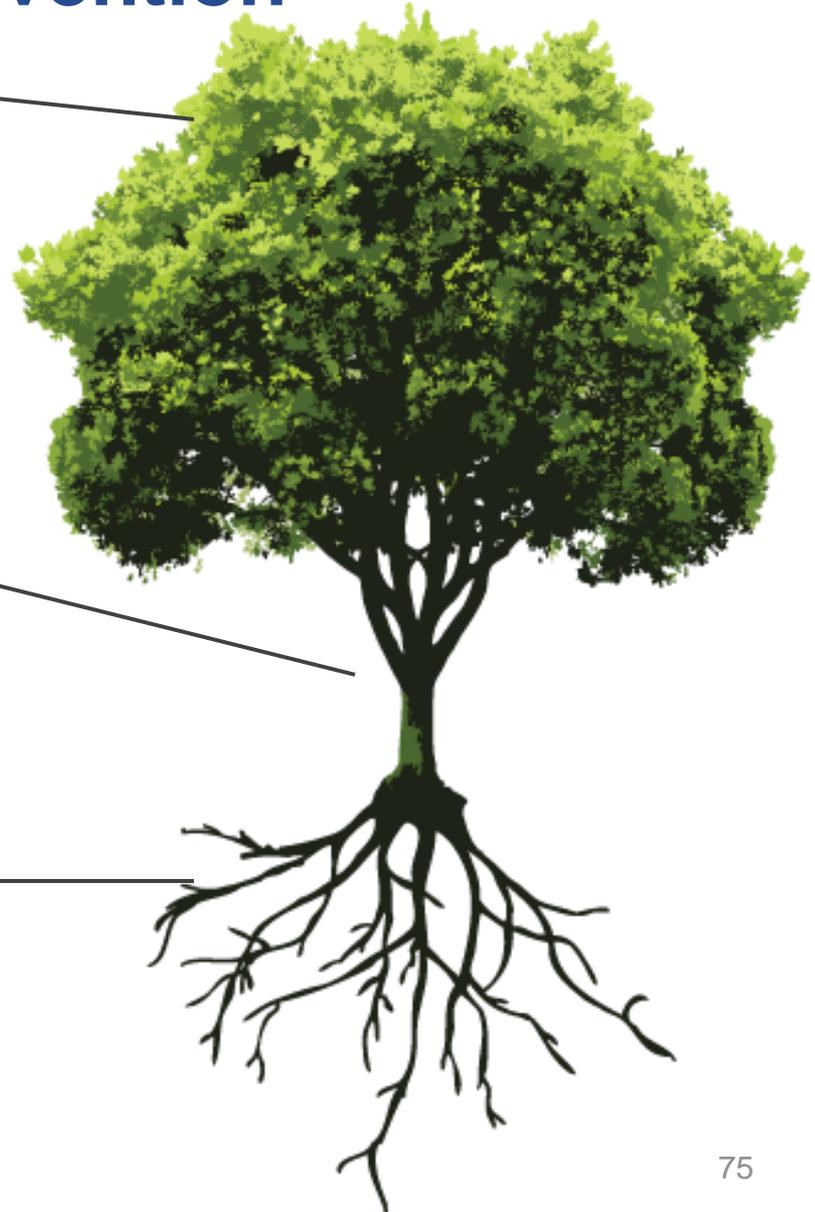
Address and educate about the negative consequences

- **Resource**

Source of access for substance abuse

- **Roots**

Reasons for drinking or substance abuse



Long Term Goals

- Test SBIRT in ED and clinic setting
- Measure patient-centered outcomes such as
 - » Falls
 - » MVCs
 - » Hospitalizations and ED visits

SUMMARY

Summary Points

- Alcohol misuse in the elderly:
 - » Prevalent
 - » Dangerous
 - » Costly
 - » Under-recognized
 - » Can be detected with simple screening tools
 - » May be improved with brief interventions



Summary Points

- Consider screening all your older patients with the AUDIT, AUDIT-C, or based on consumption levels (NIAAA recommends annual screening)
 - » >7 drinks per week
 - » >3 drinks per occasion
- Think about whether alcohol has contributed to their ED, clinic, or inpatient visit
- Try a brief intervention
- Refer for treatment in cases of abuse/dependence



THANK YOU



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