Alcohol Use Disorder

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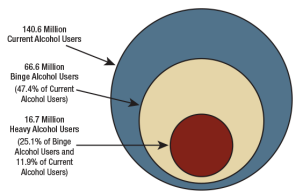
Diagnosing Alcohol Use Disorder

Alcohol Use Disorder (AUD)

Figure 5. Current, Binge, and Heavy Alcohol Use among People Aged 12 or Older: 2017



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Note: Since 2015, the threshold for determining binge alcohol use for males is consuming five or more drinks on an occasion and for females is consuming four or more drinks on an occasion.

DSM–5	
In the past year, have you:	
The presence of at least 2 of these symptoms indicates **Alcohol Use Disorder (AUD).** The severity of the AUD is defined as: **Mild**: The presence of 2 to 3 symptoms **Moderate**: The presence of 4 to 5 symptoms **Severe**: The presence of 6 or more symptoms	Had times when you ended up drinking more, or longer, than you intended?
	More than once wanted to cut down or stop drinking, or tried to, but couldn't?
	Spent a lot of time drinking? Or being sick or getting over other aftereffects?
	Wanted a drink so badly you couldn't think of anything else? ****This is new to DSM–5****
	Found that drinking—or being sick from drinking—often interfered with taking care of your home or family? Or caused job troubles? Or school problems?
	Continued to drink even though it was causing trouble with your family or friends?
	Given up or cut back on activities that were important or interesting to you, or gave you pleasure, in order to drink?
	More than once gotten into situations while or after drinking that increased your chances of getting hurt (such as driving, swimming, using machinery, walking in a dangerous area, or having unsafe sex)?
	Continued to drink even though it was making you feel depressed or anxious or adding to another health problem? Or after having had a memory blackout?
	Had to drink much more than you once did to get the effect you want? Or found that your usual number of drinks had much less effect than before?
	Found that when the effects of alcohol were wearing off, you had withdrawal symptoms, such as trouble sleeping, shakiness, restlessness, nausea, sweating, a racing heart, or a seizure? Or sensed things that were not there?

Diagnosis of Alcohol Use Disorder

AUDIT-C Questionnaire

Patient Name ______________________ Date of Visit __________

1. **How often do you have a drink containing alcohol?**
   - ☐ a. Never
   - ☐ b. Monthly or less
   - ☐ c. 2-4 times a month
   - ☐ d. 2-3 times a week
   - ☐ e. 4 or more times a week

2. **How many standard drinks containing alcohol do you have on a typical day?**
   - ☐ a. 1 or 2
   - ☐ b. 3 or 4
   - ☐ c. 5 or 6
   - ☐ d. 7 to 9
   - ☐ e. 10 or more

3. **How often do you have six or more drinks on one occasion?**
   - ☐ a. Never
   - ☐ b. Less than monthly
   - ☐ c. Monthly
   - ☐ d. Weekly
   - ☐ e. Daily or almost daily

Step 1 – Quick Screen

NIDA Quick Screen V1.0[1]

Name: ………………………… **Sex ( ) F ( ) M Age……**

Interviewer…………………… **Date ……/……/……**

Introduction (Please read to patient)

Hi, I'm __________, nice to meet you. If it's okay with you, I'd like to ask you a few questions that will help me give you better medical care. The questions relate to your experience with alcohol, cigarettes, and other drugs. Some of the substances we'll talk about are prescribed by a doctor (like pain medications). But I will only record those if you have taken them for reasons or in doses other than prescribed. I'll also ask you about illicit or illegal drug use—but only to better diagnose and treat you.

Instructions: For each substance, mark in the appropriate column. For example, if the patient has used cocaine monthly in the past year, put a mark in the "Monthly" column in the "illegal drug" row.

NIDA *Quick Screen* Question: **In the past year, how often have you used the following?**	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
Alcohol • **For men, 5 or more drinks a day** • **For women, 4 or more drinks a day**					
Tobacco Products					
Prescription Drugs for Non-Medical Reasons					
Illegal Drugs					

- If the patient says **"NO"** for all drugs in the Quick Screen, reinforce abstinence. **Screening is complete.**
- If the patient says **"Yes"** to **one or more days of heavy drinking**, *patient is an at-risk drinker*. Please see NIAAA website "How to Help Patients Who Drink Too Much: A Clinical Approach" http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm, for information to **Assess, Advise, Assist, and Arrange** help for at risk drinkers or patients with alcohol use disorders
- If patient says **"Yes"** to **use of tobacco**: *Any* current tobacco use places a patient at risk. Advise *all tobacco users to quit*. For more information on smoking cessation, please see "Helping Smokers Quit: A Guide for Clinicians" http://www.ahrq.gov/clinic/tobacco/clinhlpsmksqt.htm
- If the patient says **"Yes"** to **use of illegal drugs or prescription drugs for non-medical reasons**, proceed to **Question 1** of the NIDA-Modified ASSIST.

[1] *This guide is designed to assist clinicians serving adult patients in screening for drug use. The NIDA Quick Screen was adapted from the single-question screen for drug use in primary care by Saitz et al. (available at http://archinte.ama-assn.org/cgi/reprint/170/13/1155) and the National Institute on Alcohol Abuse and Alcoholism's screening question on heavy drinking days (available at http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm). The NIDA-modified ASSIST was adapted from the World Health Organization (WHO) Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), Version 3.0, developed and published by WHO (available at http://www.who.int/substance_abuse/ activities/assist_v3_english.pdf).*

1

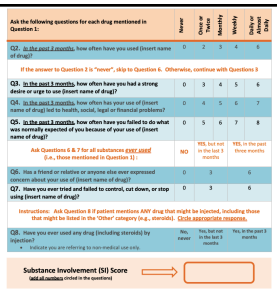
STEP 2 – Ask about any *lifetime* drug use (Question 1)

Instructions: Now ask the patient about any **lifetime** drug use. This form may be completed by your patient or any health care professional in your office. Screening personnel should offer to read the questions aloud in a private setting and complete the form for the patient. To preserve confidentiality, a protective sheet should be placed on top of the questionnaire so it will not be seen by other patients after it is completed.

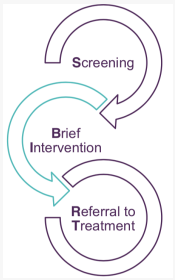
Q1. In your *LIFETIME*, which of the following substances have you ever used?	Yes	No
a. Cannabis (marijuana, pot, grass, hash, etc.)		
b. Cocaine (coke, crack, etc.)		
c. Prescription stimulants (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.)		
d. Methamphetamine (speed, crystal meth, ice, etc.)		
e. Inhalants (nitrous oxide, glue, gas, paint thinner, etc.)		
f. Sedatives or sleeping pills (Valium, Serepax, Ativan, Xanax, Librium,Rohypnol, GHB, etc.)		
g. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.)		
h. Street opioids (heroin, opium, etc.)		
i. Prescription opioids (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) • Please record **nonmedical use only**: *Non-medical use refers to using a substance either not prescribed to the patient or used in ways or amounts not prescribed by their doctor.*		
j. Other – specify:		

- Given the patient's response to the Quick Screen, the patient *should not indicate* **"NO"** for all drugs in Question 1. If they do, remind them that their answers to the Quick Screen indicated they used an illegal or prescription drug for nonmedical reasons within the past year and then **repeat Question 1**. If the patient indicates that the drug used is not listed, please mark **'Yes'** next to 'Other,' write in the name of the drug, and continue to **Question 2** of the NIDA-Modified ASSIST.
- If the patient says **"Yes"** to any of the drugs, proceed to **Question 2** of the NIDA-Modified ASSIST.

NMA –Assist – Step 3 (Recent Drug Use)



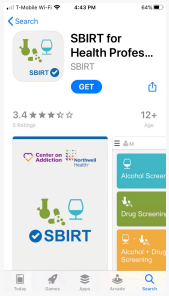
Ask the following questions for each drug mentioned in Question 1:	Never	Once or Twice	Monthly	Weekly	Daily or Almost Daily
Q2. In the past 3 months, how often have you used (insert name of drug)?	0	2	3	4	6
If the answer to Question 2 is "never", skip to Question 6. Otherwise, continue with Questions 3					
Q3. In the past 3 months, how often have you had a strong desire or urge to use (insert name of drug)?	0	3	4	5	6
Q4. In the past 3 months, how often has your use of (insert name of drug) led to health, social, legal or financial problems?	0	4	5	6	7
Q5. In the past 3 months, how often have you failed to do what was normally expected of you because of your use of (insert name of drug)?	0	5	6	7	8
Ask Questions 6 & 7 for all substances ever used (i.e., those mentioned in Question 1) :	NO	YES, but not in the last 3 months		YES, in the past three months	
Q6. Has a friend or relative or anyone else ever expressed concern about your use of (insert name of drug)?	0	3		6	
Q7. Have you ever tried and failed to control, cut down, or stop using (insert name of drug)?	0	3		6	
Instructions: Ask Question 8 if patient mentions ANY drug that might be injected, including those that might be listed in the 'Other' category (e.g., steroids). Circle appropriate response.					
Q8. Have you ever used any drug (including steroids) by injection? • Indicate you are referring to non-medical use only.	No, never	Yes, but not in the last 3 months		Yes, in the past 3 months	
Substance Involvement (SI) Score (add all numbers circled in the questions)					

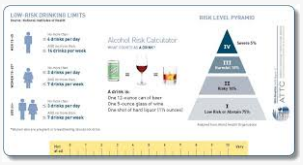


SBIRT

- **Screening** — a healthcare professional assesses a patient for risky substance use behaviors using standardized screening tools. Screening can occur in any healthcare setting
- **Brief Intervention** — a healthcare professional engages a patient showing risky substance use behaviors in a short conversation, providing feedback and advice
- **Referral to Treatment** — a healthcare professional provides a referral to brief therapy or additional treatment to patients who screen in need of additional services

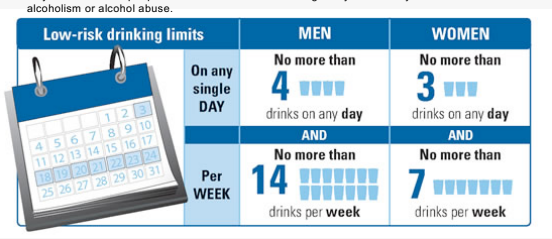
Anti-SBIRT and SBIRT





What's "low-risk" drinking?

A major nationwide survey of 43,000 U.S. adults by the National Institutes of Health shows that only about 2 in 100 people who drink within both the single-day and weekly limits below have alcoholism or alcohol abuse.



At-Risk Drinking (NIAAA)

- It makes a difference both *how much* you drink on any day and *how often* you have a "heavy drinking day," that is, more than 4 drinks on any day for men or more than 3 drinks for women.

If your drinking pattern is:	% with alcoholism or alcohol abuse
1 heavy drinking day a month	
1 heavy drinking day a week	
2 or more heavy drinking days a week	

Alcohol Use Disorder - Canada

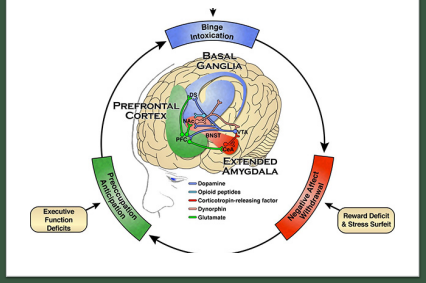
- 22 million / 80% of the population drank alcohol in the previous year.
  - 3.1 million drank enough to be at risk
  - 4.4 million at risk for chronic health effects (liver cirrhosis / cancer)
- Impact:
  - Risky drinking is on the rise among women (>35 y.o.)
  - 4528 deaths related to alcohol abuse = 1.9% of all deaths
  - $20.5 billion in alcohol was sold in Canada
  - In 2008, impaired driving was the leading cause of criminal death in Canada
  - Alcohol related disorders were the top cause of hospitalizations in 2011.
- Canadians drink more beer (51%), than spirits (17%) or wine (22%)

Australian Risky Drinking Limits

- To reduce the risk of harm from alcohol-related disease or injury for healthy men and women, **drink no more than 10 standard drinks per week and no more than 4 standard drinks on any one day.**
- The less you choose to drink, the lower your risk of alcohol-related harm. For some people, not drinking at all is the safest option.
- A standard drink contains 10g of alcohol. Many drinks have more than 1 standard drink in them. Check the label on your bottle or container to see how many standard drinks are in it.
- **Women who are pregnant and children under age 18 should not drink alcohol**
  - Health.gov.au

AUD Stats

- The 3rd leading risk factor for disease burden in developed countries worldwide
  - (Global status report: alcohol policy. World Health Organization; Geneva: 2004)
- **Globally AUD → 3 million deaths**
  - **Involved in > 200 disease and injury conditions**
  - **Ages 20-39 – Approximately 13.5% of deaths are alcohol related**
- **Genetics are responsible for about 50% of the risk for AUD**
- **Role of Epigenetics is being explored**
- Genes can also impact response to treatment with Naltrexone



3 Stages of AUD:

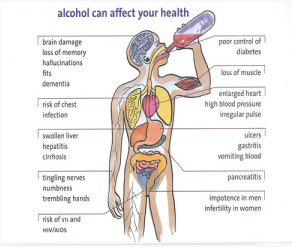
1. Binge Intoxication
2. Negative Affect / Withdrawal
3. Preoccupation / Anticipation

Clinical Opportunities

- 20-30% of patients in a primary care practice drink excessively
- 40—50% of trauma and burn units involve excessive alcohol
- Alcohol is the leading cause of preventable hypertension
- Alcohol significantly increases risk of heart attack and stroke
- **Health risks increase when drinking 2-3 drinks / day**
- **Chiropractic, Acupuncture, Naturopathic office**

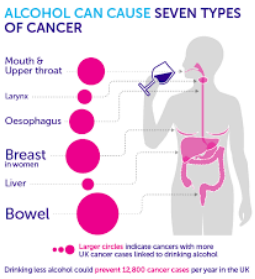
Alcohol Use Disorder – Medical Effects

- Brain –
  - Wernicke-Korsakoffs Syndrome / Psychosis
  - Alcohol neuropathy
  - Alcoholic cerebellar degeneration, myopathy
  - FASD
  - Dementia
- Pancreas – pancreatitis
- Liver
  - Fatty liver
  - Alcoholic hepatitis
  - Fibrosis
  - Cirrhosis
- Heart
  - Cardiomyopathy
  - Arrythmias
  - Stroke
  - High blood pressure

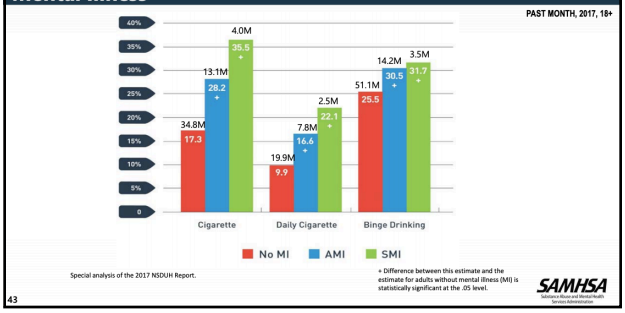


Alcohol Use Disorder – Medical effects

- There is a strong association between alcohol consumption and certain cancers
  - Head and neck cancers
  - Esophageal cancer
  - Liver cancer
  - Breast cancer
  - Colorectal cancer
- Immune system dysfunction



Co-Occurring Issues: Substance Use among Adults with Mental Illness



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Co-Occurring AUD and Mental illness

Depression

- **Most common**
- Individuals with AUD are **2.3 times more likely** to have a depressive disorder
- 1.7 times more likely to have dysthymia
- Less than 1% are substance induced
- **Women** with AUD are **more likely** than man to have a **depressive disorder**
  - Depression predicts AUD in women but not men

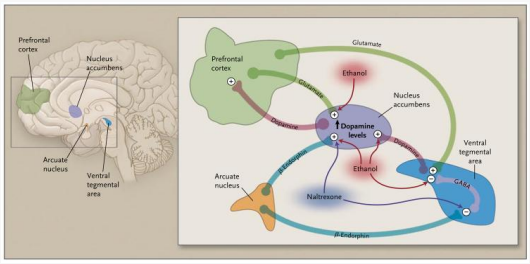
Anxiety

- Affects up to **50%** of those with AUD (vs. 11% in those without AUD
- People with anxiety but who do not drink are not at increased risk for AUD

Stress and Alcohol Use

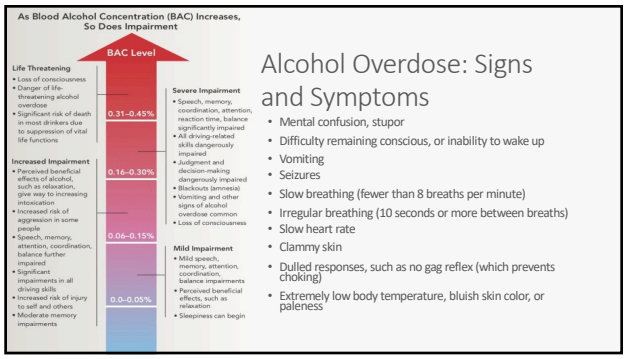
- Stress increases alcohol drinking
- The number of **past year stressors** is positively associated with the prevalence of current drinking, current binge drinking and AUD diagnosis
- Animal models show that **stress exposure is associated with increased risk for AUD**
  - Stress may trigger relapse
  - Stress exposure may facilitate the development of AUD in humans

Mechanism of action of alcohol on brain



Risks for Alcohol Overdose

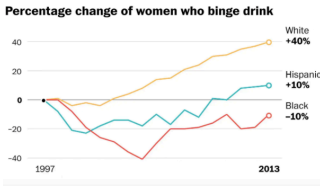
- Binge drinking which increases blood alcohol concentration to 0.08 percent of higher
  - 4 drinks for a woman or 5 drinks for a man in about 2 hours
- Extreme binge drinking – drinking two times or more of the binge drinking limits
- Teenagers and young adults who often engage in high intensity or extreme binge drinking which can lead to impairment of brain and body functions
- Alcohol use along with certain medications:
  - Sleep meds: Ambien, Lunesta
  - Anti anxiety meds: Xanax, Valium, etc.
  - Pain medications or heroin
  - Anti-histamines



Alcohol Overdose: Signs and Symptoms

- Mental confusion, stupor
- Difficulty remaining conscious, or inability to wake up
- Vomiting
- Seizures
- Slow breathing (fewer than 8 breaths per minute)
- Irregular breathing (10 seconds or more between breaths)
- Slow heart rate
- Clammy skin
- Dulled responses, such as no gag reflex (which prevents choking)
- Extremely low body temperature, bluish skin color, or paleness

Women and Alcohol Use Disorder



Women and Alcohol Use Disorder

- 1/3 of alcohol related cancer deaths in women were related to less than 2 drinks per day
  - Jennie Connor - New Zealand study
- Highest rate of deaths in women in 2017 is in aged 55 to 64, 2nd highest in ages 45 to 54
- Death rates for women increased 5.2% a year from 2010-2017 (previously 2.1%/year from 1999-2010

Women and AUD

- More than 40% of 9th grade girls say they've had alcohol in the last month
  - 20% of them have had 5 or more drinks on an occasion
- There is an increase in the number of women drivers in fatal car crashes
- The younger a woman drinks, the more likely she is to have alcohol problems later in life
- Alcohol-related deaths haye increased 85% in women from 1999-2017
  - Aaron White, NIAAA

Case: 52 Year Old White Female

- Patient is a 52 y.o. white female who comes in with her father. Patient reports she has a history of "heavy drinking" when she was in her 30's but has not been drinking lately. She had a DUI when she was 35. She said she was working at a hospital in the billing department
- In the initial intake, it was clear that patient was not tracking the conversation and was repeatedly asking the same question. Her father was asked to join the intake.
- Father reports patient was recently diagnosed with Wernicke-Korsakoff's Syndrome. He reports no one has seen her drunk so they assume she is drinking at home alone. She has recently been laid off from her job because of inability to complete cognitive tasks.
- Patient also with history of having had bariatric surgery 20 years ago.

Case: 52 Year Old White Female

Which vitamin deficiency is the cause of Wernicke-Kosakoff's syndrome

1. Thiamine deficiency
2. Vitamin C deficiency
3. SAMe deficiency

Case: 52 Year-Old White Female

What makes this patient at higher risk for Wernicke-Korsakoff's syndrome besides her drinking?

1. She is overweight
2. She has had bariatric surgery
3. She drinks alone

Maternal Drinking

- 20-30% of women report drinking at some point during pregnancy – usually during the 1st trimester
- Greater than 8% with binge drinking (usually during 1st trimester)
- 10% of pregnant women report drinking within the last month
- 5% report binge drinking - drinking 4 or more drinks on one occasion within the last month

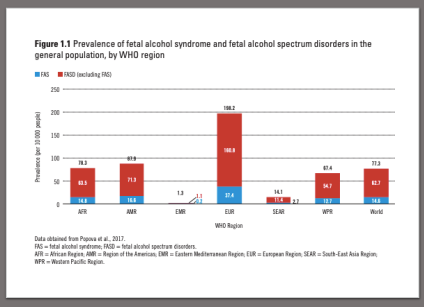
Fetal Alcohol Spectrum Syndrome

- FASS includes: (Institute of Medicine Criteria)
  - Fetal alcohol syndrome
  - Partial FAS (pFAS)
  - Alcohol-related neurodevelopmental Syndrome (ARND)
  - Alcohol-related birth defects (ARBD)
- DSM-V – Neurobehavioral disorder associated with prenatal alcohol exposure (ND-PAE) –
- FASD = ND-PAE – shared factors are prenatal alcohol exposure and central nervous system (CNS) involvement.

FASD-Related Problems

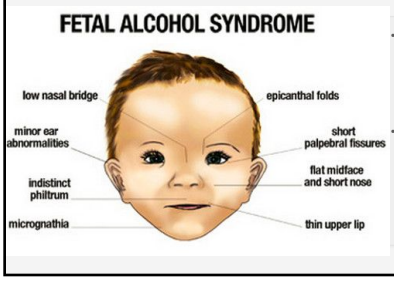
- Learning and remembering
- Understanding and following directions
- Shifting attention
- Controlling emotions and impulsivity
- Communicating and socializing
- Performing daily life skills, including feeding, bathing, counting money, telling time, and minding personal safety

- Mental health problems:
  - Attention Deficit Hyperactivity Disorder (ADHD)
  - Depression and anxiety
  - Problems with hyperactivity, conduct, and impulse control
  - Increased incidence of alcohol and other substance use disorders



Fetal Alcohol Spectrum Disorders

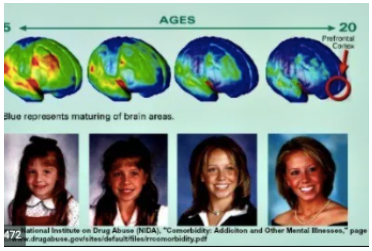
Fetal Alcohol Syndrome



- Facial abnormalities:
  - narrow eye openings
  - a smooth area between the lip and the nose (vs. the normal ridge)
  - a thin upper lip
- **Neurobehavioral Disorder Associated with Prenatal Alcohol Exposure (ND-PAE)**
  - impairments in the following three areas: cognition, self-regulation, and adaptive functioning.

Underage Drinking

- Drink 5 or more drinks on at least one occasion in the past month
  - Half of 12- to 15-year olds
  - 2/3 of 16- to 20-year olds
- Estimated binge drinking levels
  - Boys
    - Ages 9-13 = 3 drinks
    - Ages 14-15 = 4 drinks
    - Ages 16+ = 5 drinks
  - Girls ages 9-17 = 3 drinks

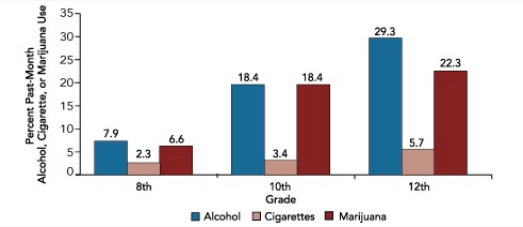


Underage Drinking

Underage Drinking

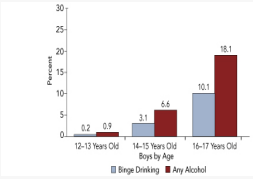
- By age 15, 30% of teens have had at least 1 drink
- By age 18, 58% have had at least 1 drink
- 2018 Statistics show: 7.1 million people 12-20 years old reported drinking more than "just a few sips" in the past month
- People ages 12-20 drink 11 % of alcohol consumed in the US.
  - Drink less often but drink more
  - Teens consume more than 90% of their alcohol as binge drinking
- 4.3 million binge drink at least once in the past month (5 0r > for men, 4 or > for women)
- 861,000 report binge drinking 5 or more days in the past month

UNDERAGE DRINKING

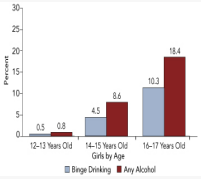


Drinking Patterns in Teens

Alcohol use in boys



Alcohol use in girls



Underage Drinking

- Is a cause of many deaths. Alcohol is a factor in the deaths of 4,358 young people under age 21 each year
  - 1580 motor vehicle crashes
  - 1269 homicides
  - 245 alcohol poisoning deaths, falls, burns, drownings
  - 492 suicides
- Increases the risk for physical and sexual assaults
- Increases the risk of alcohol problems as adults
  - Research shows that people who start drinking before the age of 15 are 4 times more likely to meet the criteria for alcohol dependence at some point in their lives.
- Causes many injuries
  - In 2011 alone, about 188,000 people under age 21 visited an emergency room for alcohol-related injuries.

Medication for Alcohol Use Disorder

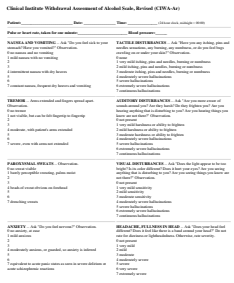
- Detox / alcohol withdrawal
- Use of Medication Assisted Treatment

Treatment of Alcohol Withdrawal

- Long-acting Benzodiazepines are preferred except in patients with impaired liver function
  - Reduce withdrawal symptoms
  - Prevent seizures and delirium
- Dosage is dependent on severity of withdrawal
- Treatment should be given from 3-7 days after cessation of alcohol
- Do NOT use antipsychotics alone
- BZD are preferable to anticonvulsants after an alcohol withdrawal seizure to prevent further seizures

CIWA-Ar

Cumulative score	Approach
0 – 8	No medication needed
9 – 14	Medication is optional
15 – 20	Definitely needs medication
>20	Increased risk of complications



Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar)

Patient:_____ Date:_____ Time:_____ (24-hour clock, midnight = 0000)

Pulse or heart rate, taken for one minute:_____ Blood pressure:_____

NAUSEA AND VOMITING — Ask "Do you feel sick to your stomach? Have you vomited?" Observation.
0 no nausea and no vomiting
1
2
3
4 intermittent nausea with dry heaves
5
6
7 constant nausea, frequent dry heaves and vomiting

TREMOR — Arms extended and fingers spread apart. Observation.
0 no tremor
1 not visible, but can be felt fingertip to fingertip
2
3
4 moderate, with patient's arms extended
5
6
7 severe, even with arms not extended

PAROXYSMAL SWEATS — Observation.
0 no sweat visible
1 barely perceptible sweating, palms moist
2
3
4 beads of sweat obvious on forehead
5
6
7 drenching sweats

ANXIETY — Ask "Do you feel nervous?" Observation.
0 no anxiety, at ease
1 mild nervous
2
3
4 moderately anxious, or guarded, so anxiety is inferred
5
6
7 equivalent to severe panic states as seen in severe delirium or acute schizophrenic reactions

TACTILE DISTURBANCES — Ask "Have you any itching, pins and needles sensations, any burning, any numbness, or do you feel bugs crawling on or under your skin?" Observation.
0 none
1 very mild itching, pins and needles, burning or numbness
2 mild itching, pins and needles, burning or numbness
3 moderate itching, pins and needles, burning or numbness
4 moderately severe hallucinations
5 severe hallucinations
6 extremely severe hallucinations
7 continuous hallucinations

AUDITORY DISTURBANCES — Ask "Are you more aware of sounds around you? Are they harsh? Do they frighten you? Are you hearing anything that is disturbing to you? Are you hearing things you know are not there?" Observation.
0 not present
1 very mild harshness or ability to frighten
2 mild harshness or ability to frighten
3 moderate harshness or ability to frighten
4 moderately severe hallucinations
5 severe hallucinations
6 extremely severe hallucinations
7 continuous hallucinations

VISUAL DISTURBANCES — Ask "Does the light appear to be too bright? Is its color different? Does it hurt your eyes? Are you seeing anything that is disturbing to you? Are you seeing things you know are not there?" Observation.
0 not present
1 very mild sensitivity
2 mild sensitivity
3 moderate sensitivity
4 moderately severe hallucinations
5 severe hallucinations
6 extremely severe hallucinations
7 continuous hallucinations

HEADACHE, FULLNESS IN HEAD — Ask "Does your head feel different? Does it feel like there is a band around your head?" Do not rate for dizziness or lightheadedness. Otherwise, rate severity.
0 not present
1 very mild
2 mild
3 moderate
4 moderately severe
5 severe
6 very severe
7 extremely severe

Treatment of Alcohol Withdrawal

- Patients at risk of severe withdrawal, or who have concurrent serious physical or psychiatric disorders, or who lack adequate support, should preferably be managed in an inpatient setting.
- For withdrawal management - all patients should receive oral thiamine
  - If malnourished or with severe withdrawal, give 3 days parenteral thiamine
  - If Wernicke's encephalopathy is suspected, give parenteral thiamine twice daily for 5 days
- CONSIDER – inpatient detox (short stay) in patients with AUD

Medication-Assisted Treatment

Medications for AUD – Disulfuram (Antabuse)

- Mechanism: interferes with the breakdown of alcohol which leads to an accumulation of acetaldehyde which causes: flushing, nausea, tachycardia, hypotension, weakness and palpitations if patient drinks
  - Treatment of Disulfuram reaction is supportive – fluids and oxygen
- Common Side Effects:
  - Metallic taste, sulfur-like odor
  - Rare: hepatotoxicity, neuropathy and psychosis
- Efficacy: utility is limited due to poor compliance

Disulfuram -

- Contraindications: cardiac disease, esophageal varices, pregnancy, impulsivity, psychotic disorders, severe cardiovascular, respiratory, or renal disease, severe hepatic dysfunction: transaminases > 3x upper level of normal
- Avoid alcohol and alcohol containing foods
- Clinical Dose: 250 mg daily (range: 125-500 mg/d)
- Adherence: problem; but if drug is taken it works well; good idea to start in a substance abuse treatment program

AUD - Acamprosate

- Mechanism: acts on the GABA and glutamate neurotransmitter systems and is thought to reduce symptoms of protracted abstinence such as insomnia, anxiety, restlessness, and dysphoria.
- Efficacy:
  - Increases maintenance of abstinence from several weeks to months
  - A meta-analysis reported that 36 percent of patients taking acamprosate were continuously abstinent at 6 months, compared with 23 percent of those taking a placebo
  - More recently, two large U.S. trials failed to confirm the efficacy of acamprosate

Case

- Patient is a 67 y.o. white female who was coerced into seeking treatment for her drinking
- Patient denies a history of AUD. She reports drinking socially in the past until her husband died 20 years ago. Then her mother died 2 years ago. Since that time, she has been drinking half of a fifth (25 ounces) of vodka daily
- Patient reports her kids hate her drinking. She drinks to the point of blacking out.
- She was recently diagnosed with depression six months ago and is taking Zoloft

AUD - Naltrexone

- Oral Naltrexone Hydrochloride
  - Dose: 50 mg per day
- Extended-Release Injectable Naltrexone (Garbutt et al, JAMA 2005) 1 injection per month/380 mg

Medications for AUD - Naltrexone

- Mechanism - blocks receptors that are involved in the rewarding effects of drinking alcohol and the craving for alcohol
  - Oral – Revia (daily)
  - Injectable – Vivitrol (once monthly)
- Efficacy
  - Reduces relapse to heavy drinking
    - ORAL
      - 3 months: (about **28 percent of patients taking naltrexone relapse versus about 43 percent of those taking a placebo**)
      - It is less effective in maintenance of abstinence
    - Injectable: **25 percent reduction in the proportion of heavy drinking days** compared with a placebo, with a higher rate of response in males and those with lead-in abstinence.

Naltrexone - Research

- A study involving veterans with chronic, severe AUD did not show that oral Naltrexone was better than placebo in increasing days to relapse or in decreasing drinking days (50 mg dose) for 3 mos. Or 12 mos.
- The COMBINE study – patients with alcohol dependence and 4 days of abstinence got 100 mg dose x 16 weeks – 15% increase in positive outcomes
- Cochrane review (prior to COMBINE study) showed – Naltrexone reduced heavy drinking (after an initial abstinent period and increased days of abstinence

Long Acting Naltrexone (Vivitrol)

- Dose comparison (190 mg vs. 380 mg) showed that higher dose reduced number of heavy drinking days by 25%
  - Best results were with patients who were abstinent 4 days prior to starting

Ideal Candidate for Naltrexone

Able to be abstinent for 4 days

Moderate to severe Alcohol Use Disorder

Drinks on more than 50% of days

Drinks more than 5 drinks a day

Alcohol related problems

Initiation of Naltrexone therapy

- Suggested to get liver enzymes (including GGT and carbohydrate deficient transferrin- if available) as a baselin
- Screen for other drugs of abuse
- Relative contraindication with LFTs – 4-5 times normal
  - Retest about 1 month after beginning treatment
- DO not use in opiate dependent patients
- Starting dose 50 mg/day.
  - Take after a meal to reduce N/V
  - Other common SE: sedation, headache, fatigue
  - Usually mild and self-limiting
- Increase dose to 100 mg if continued heavy drinking occurs or switch to injectable

Naltrexone concerns

- Hepatotoxicity
- Opiate use or expected use
- Length of treatment
- Should it be first line of treatment?

	Disulfiram	Naltrexone oral and extended release injectable formulations	Acamprosate delayed-release tablets
Contraindications	**Contraindicated** in the presence of severe myocardial disease or coronary occlusion, psychoses, pregnancy, and in those with high levels of impulsivity, suicidality, and hypersensitivity to disulfiram or to other thiuram derivatives used in pesticides and rubber vulcanization. **Patients** who are taking or have recently taken metronidazole, paraldehyde, alcohol, or alcohol-containing preparations (e.g., cough syrups, tonics) should not be given disulfiram. **Disulfiram** labeling also includes several important precautions regarding drug–drug interactions. See the package insert for specific contraindications.	**Contraindicated** in patients receiving opioid analgesics and those receiving long-term opioid therapy or anticipating a need for opioids (e.g., surgery), because it could precipitate a severe opioid withdrawal or block opioid analgesia; patients currently dependent on opioids, including those being maintained on opioid agonists such as methadone or partial agonists such as buprenorphine; patients in acute opioid withdrawal; patients who have failed the naloxone challenge test or whose urine tests positive for opioids. **Contraindicated** in patients with a history of sensitivity to polylactide-co-glycolide, carboxymethyl cellulose, or any components of the diluent used for the injectable medication. It should not be given to patients whose body mass precludes intramuscular (IM) injection with the 2-inch needle provided. Inadvertent subcutaneous injection may cause a severe injection-site reaction. **Although** not in current labeling, the consensus of the panel is that use should be avoided in patients with serum aminotransferase levels greater than five times the upper limit of normal, except where the benefits outweigh the risks.	**Contraindicated** in patients with severe renal impairment and in those who have a known hypersensitivity to the drug or its components.

FAQs

1. How long should medications be maintained?
2. If one medication doesn't work, should another be prescribed?
3. Is there any benefit to combining medications?
4. Should patients receiving medications also receive specialized alcohol counseling or a referral to mutual help groups?

Summary

- Don't forget Alcohol
- Use SBIRT
- See attached CIWA
- Familiarize yourself with Naltrexone – oral and injectable
- Get office set up for Vivitrol injection in advance
- Be wary of alcohol withdrawal syndrome

References

- www.niaaa.nih.gov/guide
- O'Malley SS, Garbutt JC, Gastfriend DR, Dong Q, Kranzler HR. Efficacy of extended-release naltrexone in alcohol-dependent patients who are abstinent before treatment. J Clin Psychopharmacol. 2007;27:507–12.
- Pettinati HM, Weiss RD, Dundon W, et al. A structured approach to medical management: a psychosocial intervention to support pharmacotherapy in the treatment of alcohol dependence. J Stud Alcohol Suppl. 2005;15:170–8.
- Williams SH. Medications for treating alcohol dependence. Am Fam Physician. 2005;72:1775–80.
- Practice guideline for the treatment of patients with substance use disorders. Am J Psychiatry. 2nd ed. 2007. pp. A5–A124.
- Donovan DM, Anton RF, Miller WR, et al. Combined pharmacotherapies and behavioral interventions for alcohol dependence (the COMBINE Study): examination of posttreatment drinking outcomes. J Stud Alcohol Drugs. 2008;69:5–13.
- O'Malley SS, Rounsaville BJ, Farren C, et al. Initial and maintenance naltrexone treatment for alcohol dependence using primary care vs specialty care: a nested sequence of 3 randomized trials. Arch Intern Med. 2003;163:1695–704.

References

- Maier, S.E., and West, J.R. Drinking patterns and alcohol-related birth defects. *Alcohol Research and Health* 25(3):168–169, 2001.
- [2] Hamilton, D.A., Barto, D., Rodriguez, C.I., Magcalas, C.M., Fink, B.C., Rice, J.P., Bird, C.W., Davies, S., and Savage, D.D. Effects of moderate prenatal alcohol exposure and age on social behavior, spatial response perseveration errors and motor behavior. *Behavioral Brain Research* 269: 44–54, 2014.
- [3] Day N.L., Helsel, A., Sonon, K., and Goldschmidt, L. The association between prenatal alcohol exposure and behavior at 22 years of age. *Alcoholism: Clinical and Experimental Research* 37(7):1171–1178, 2013.
- [4] Stratton, K., Howe, C., and Battaglia, F. (eds.) *Fetal Alcohol Syndrome: Diagnosis, Epidemiology, Prevention, and Treatment*. The Institute of Medicine Report. Washington, DC: National Academy Press, 1996.
- [5] American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (pp. 86, 798–801). Washington, DC: American Psychiatric Association, 2013.
- [6] Moore, E.M., Migliorini, R., Infante, M.A., and Riley, E.P. Fetal alcohol spectrum disorders: Recent neuroimaging findings. *Current Developmental Disorders Reports* 1(3):161–172, 2014.
- [7] Mattson, S. N., Crocker, N., and Nguyen, T.T. Fetal alcohol spectrum disorders: Neuropsychological and behavioral features. *Neuropsychology Review* 21(2):81–100, 2011.
- [8] O'Connor, M.J. Mental health outcomes associated with prenatal alcohol exposure: Genetic and environmental factors. *Current Developmental Disorders Reports* 1(3):181–188, 2014.

References

- White, A. https://www.niaaa.nih.gov/news-events/news-releases/alcohol-related-deaths-increasing-united-states. Accessed 4/18/20
- Miech, R.A.; Schulenberg, J.E.; Johnston, L.D.; et al. *Monitoring the Future National Survey: Trends in 30-Day Prevalence of Use of Various Drugs in Grades 8, 10, and 12.* Table 3. Ann Arbor, MI: Institute for Social Research, University of Michigan, 2019. Available at: http://monitoringthefuture.org/data/19data/19drtbl3.pdf Accessed 1/13/20.
- Center for Behavioral Health Statistics and Quality. *2018 National Survey on Drug Use and Health Public Use File Codebook.* Rockville, MD: Substance Abuse and Mental Health Services Administration, 2019.
- Helping patients who drink too much: a clinician's guide: updated 2005 edition. National Institute on Alcohol Abuse and Alcoholism; Rockville, MD: 2007. Accessed Feb 21, 2020, at http://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/guide.pdf.