ALCOHOL USE DISORDER

WITHDRAWAL MANAGEMENT AND LONG TERM TREATMENT

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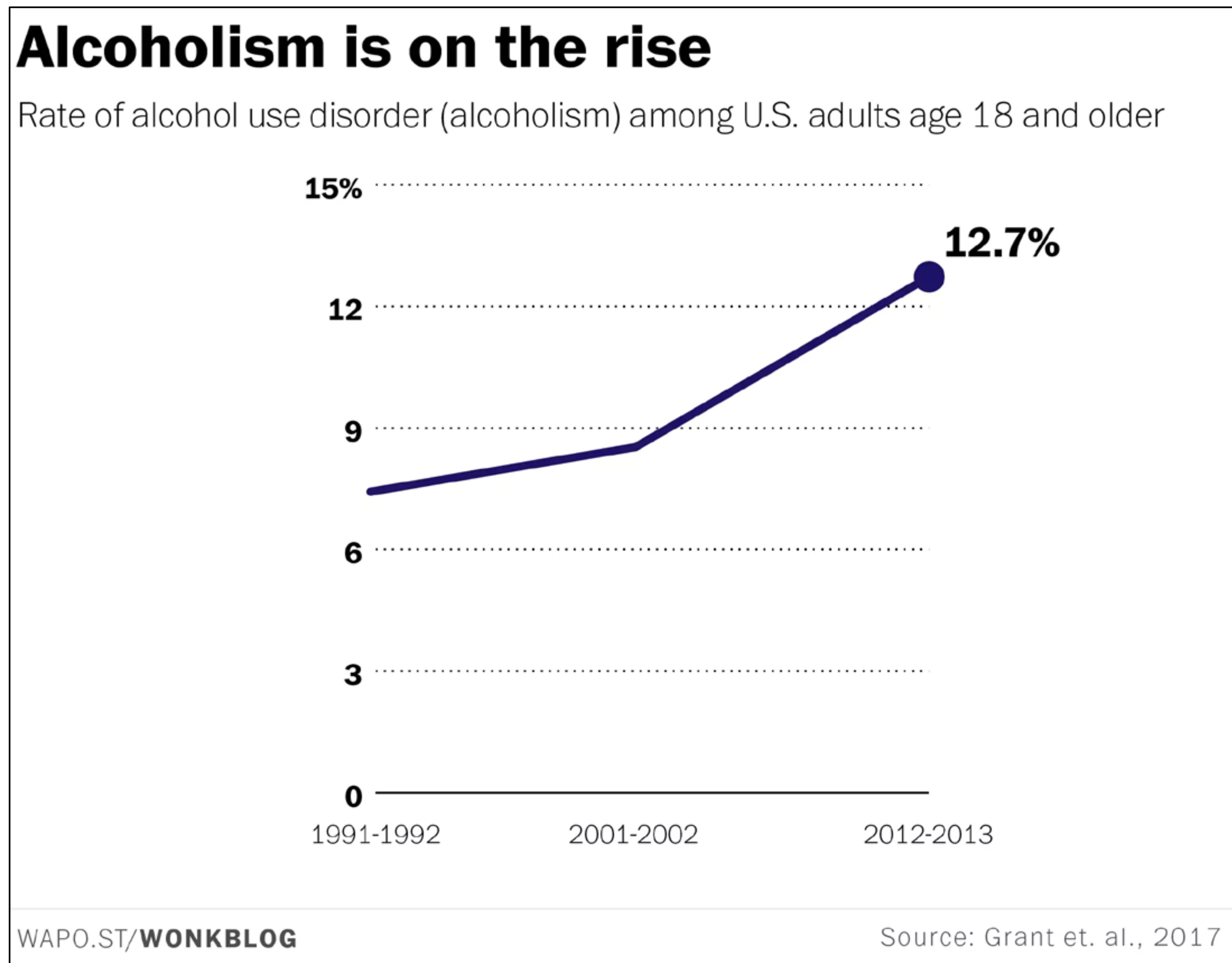
Prevalence of 12-Month Alcohol Use, High-Risk Drinking, and *DSM-IV* Alcohol Use Disorder in the United States, 2001-2002 to 2012-2013



JAMA Psychiatry. 2017;74(9):911-923. doi:10.1001/jamapsychiatry.2017.2161

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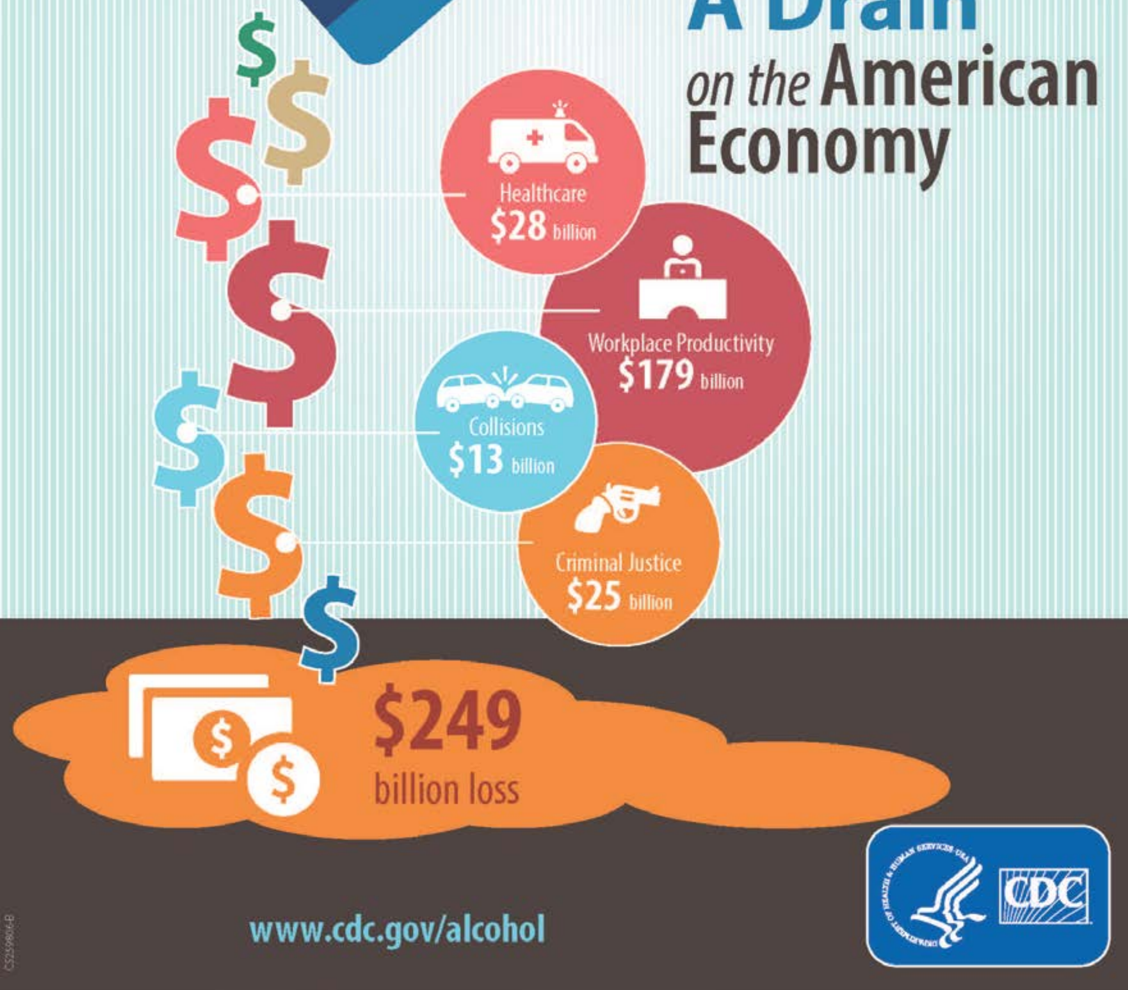

https://www.cdc.gov/alcohol/onlinemedia/infographics/cost-excessive-alcohol-use.html

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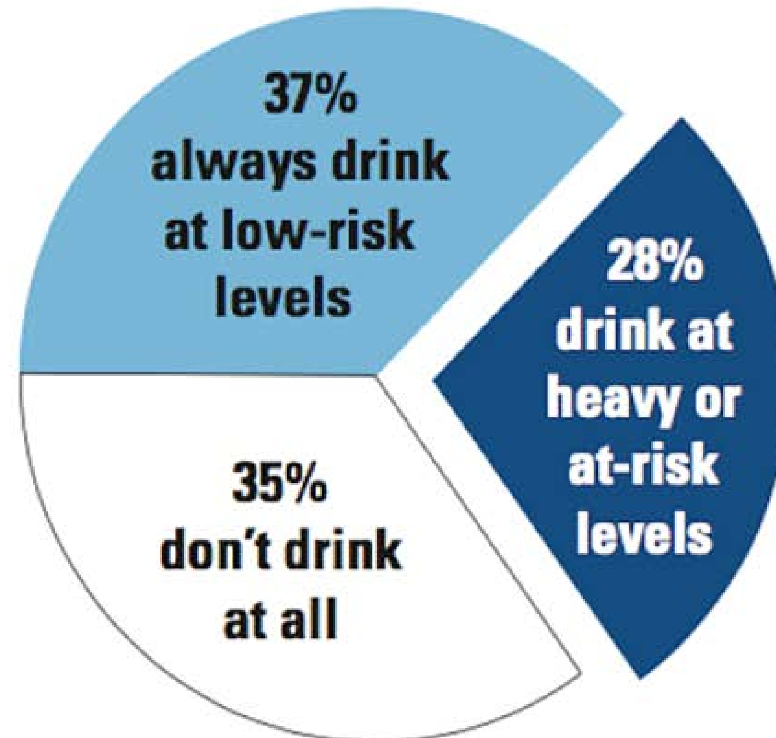
Alcohol use by adults in the United States*

7 in 10 adults always drink at low-risk levels

or

do not drink at all



3 in 10 adults drink at levels that put them at risk for alcoholism, liver disease, and other problems

NIH National Institute on Alcohol Abuse and Alcoholism

*Although the minimum legal drinking age in the U.S. is 21, this survey included people aged 18 or older.

https://sobernation.com/addiction-treatment/understanding-alcoholism/

https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/alcohol-facts-and-statistics

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DSM-5

- Uses 11 criteria (excluding "legal problems")
- 2 – 3 positive criteria = mild disease
- 4 – 5 positive criteria = moderate disease
- 6 or more criteria = severe disease
- Modifiers: early remission (3-12 months), sustained remission (>12 months), "controlled environment" (restricted access)

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DSM-5 CRITERIA

- Alcohol is often taken in larger amounts over longer periods than was intended
- There is a persistent desire or unsuccessful efforts to cut down or control alcohol use
- A great deal of time is spent in activities attempting to obtain alcohol, use alcohol or recovering from its effects
- Craving for alcohol
- Recurrent use resulting in failure to fulfill obligations

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DSM-5 CRITERIA (CONT'D)

- Continued use despite persistent or recurrent interpersonal problems resulting from or exacerbated by alcohol
- Important activities given up because of alcohol use
- Recurrent use in situations in which it is physically hazardous
- Use is continued despite having physical or psychological problems either worsened or likely due to alcohol use
- Tolerance
- Withdrawals

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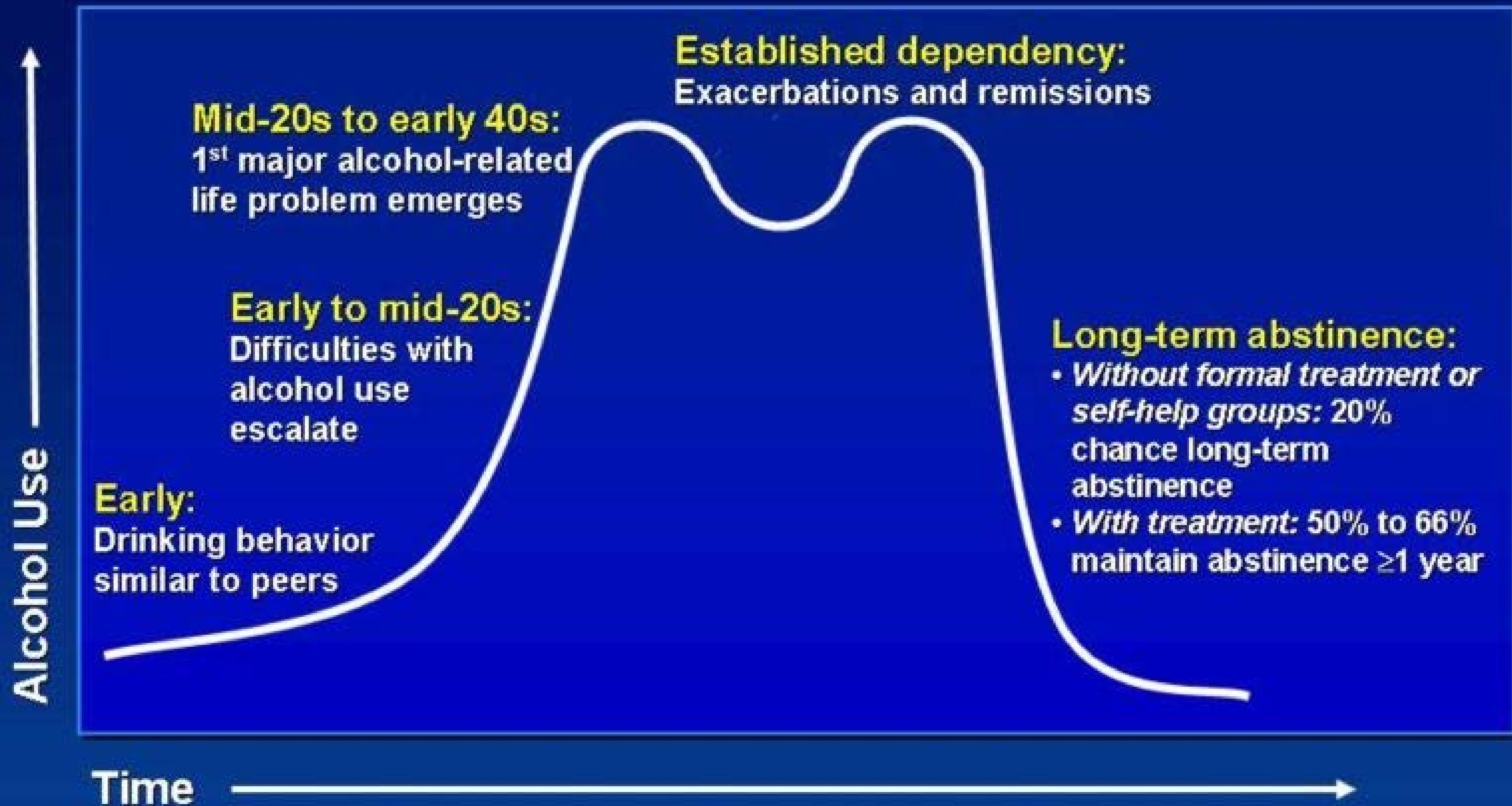

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WHAT DOES ETOH DO?

CNS AND NEUROTRANSMITTER ACTIONS OF ETOH

- Indirectly increases dopamine levels, resulting in pleasurable effects of acute alcohol use. Chronic use increases dopamine receptors
- Stimulates endogenous opiate-like compounds (beta-endorphins) which produce pleasurable effects of alcohol by disinhibition of dopamine neurons
- GABA inhibition increased in acute EtOH use
- Inhibits the effects of glutamate, the major excitatory neurotransmitter in the brain

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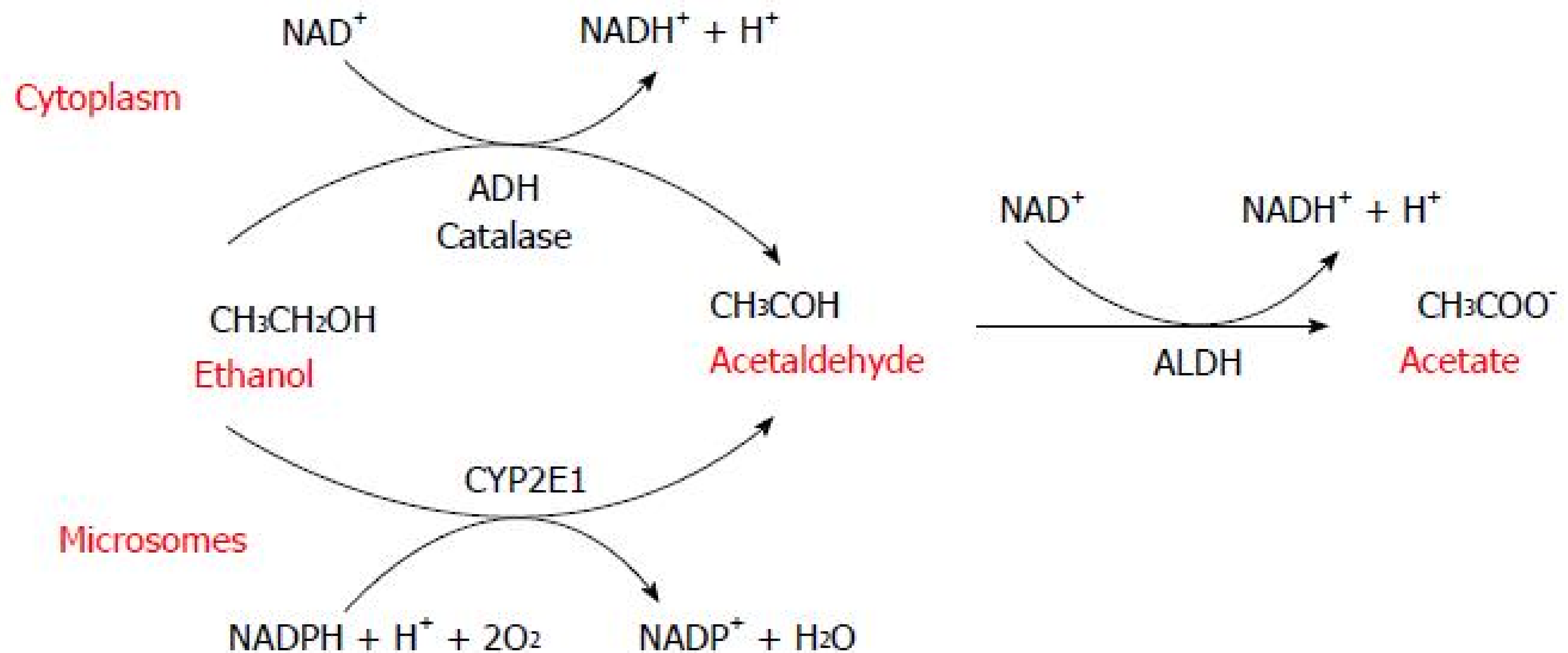
MAJOR ALCOHOL METABOLIC PATHWAY (~90%)



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METABOLISM RATE (ZERO ORDER KINETICS)

- 80% adult population will metabolize at 0.015 g/dl/hour; for moderate to heavy drinkers this will increase to 0.017-0.020 g/dl/hr
- What are the differences in metabolism between men and women?
  - Women are smaller than men
  - Gastric ADH lower in women
  - Fluctuations in hormonal levels during menstrual cycle may affect rate of metabolism
  - Women have a lower total body water content than men of comparable size

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IS THERE A PROBLEM?

- **Alcohol Dependence Scale** – 25 items – copyrighted
- **Alcohol Use Disorders Identification Test (AUDIT)**- 10 item screening questionnaire copyrighted by WHO and it's FREE
    - Each item worth 4 points with the usual cutoff greater than or equal to 8
    - Identifies problem drinking – sensitivity 57-95% and specificity 78-96%
    - Abuse and dependence – sensitivity 61-96% and specificity 85-96%
    - May miss past problems

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1 Standard Drink = 0.6 fluid oz. of 100% alcohol

Beer	Wine	Liquor
12 oz. 5% alcohol	5 oz. 12% alcohol	1.5 oz. 80 proof

Equivalency

*Lines indicate approximate measurements

Alcohol percentage and container volume will determine number of standard drinks.

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https://gordiecenter.studenthealth.virginia.edu/alcohol-drugs

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POSSIBLE BEHAVIORS WITH ALCOHOL INGESTION IN A NON-DEPENDENT PERSON

BAC (g/dL)	# OF DRINKS	BEHAVIORS
0.01 – 0.05	1 – 2	Euphoria and perceived reduction in anxiety
0.06 – 0.10	3 – 5	Impaired judgment and motor coordination
0.20 – 0.25	10 – 13	Sedation
0.30 – 0.40	---	Memory impairment with possible LOC
0.40 – 0.60	---	Depressed respiration, coma, death

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AUDIT-C

Please circle the answer that is correct for you.

1. How often do you have a drink containing alcohol?					**SCORE**
Never (0)	Monthly or less (1)	Two to four times a month (2)	Two to three times per week (3)	Four or more times a week (4)	______
2. How many drinks containing alcohol do you have on a typical day when you are drinking?					
1 or 2 (0)	3 or 4 (1)	5 or 6 (2)	7 to 9 (3)	10 or more (4)	______
3. How often do you have six or more drinks on one occasion?					
Never (0)	Less than Monthly (1)	Monthly (2)	Two to three times per week (3)	Four or more times a week (4)	______
TOTAL SCORE Add the number for each question to get your total score.					______

Maximum score is 12. A score of $\geq$ 4 identifies 86% of men who report drinking above recommended levels or meets criteria for alcohol use disorders. A score of > 2 identifies 84% of women who report hazardous drinking or alcohol use disorders.

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East Midlands Ambulance Service NHS Trust NHS

CAGE Questionnaire

C **Have you ever felt you should Cut down on your drinking?**

A **Have people Annoyed you by criticising your drinking?**

G **Ever felt bad or Guilty about your drinking?**

E **Ever had an Eye opener to steady nerves in the morning?**

Yes to $\geq$ 2 is quite good at detecting alcohol abuse and dependence

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WHAT DO I DO NOW?
DOES MY PATIENT FIRST NEED DETOX?

- Treatment should be individualized

- Detox implies separating the patient from the toxic effect of the drug. In order to do this safely it may require pharmacological assistance.

- GOAL: prevent harmful sequelae

  - Who and where

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ALCOHOL WITHDRAWAL: DSM-5 CRITERIA

A. Cessation of (or reduction in) alcohol use that has been heavy and prolonged

B. Two (or more) of the following developing within several hours to days following A.
   - Autonomic instability
   - Increased hand tremor
   - Insomnia
   - N/V
   - Transient visual, tactile or auditory hallucinations
   - Psychomotor agitation
   - Grand mal seizures

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ALCOHOL WITHDRAWAL: DSM-5 CRITERIA (CONT'D)

C. Symptoms in criterion B cause significant distress or impairment in important areas of functioning

D. Symptoms are not due to a general medical condition and are not accounted for by another mental disorder

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OK, IS THIS PATIENT SAFE FOR DETOX OUTPATIENT? WHAT MEDICATIONS CAN I USE?

OUTPATIENT

- Gabapentin – 300 mg QID on days 1-3 then 300 mg TID on day 4, 300 mg BID on day 5 and 300 mg qhs on day 6
- Carbamazepine – 200 mg QID on day 1 and 2, then 200 mg TID day 3 and 4, then BID day 5 and qd day 6

INPATIENT

- Benzodiazepines or phenobarbital work best for moderate to severe withdrawal. Show protective benefit against seizures.
- Thiamine administration may prevent Wernike-Korsakoff's in patients at high risk.

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Clinical Institute Withdrawal Assessment of Alcohol Scale

(CIWA-Ar)

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

Nausea and Vomiting
0 – No nausea or vomiting
1
2
3
4 – Intermittent nausea with dry heaves
5
6
7 – Constant nausea, frequent dry heaves and vomiting

Paroxysmal Sweats
0 – No sweat visible
1 – Barely perceptible sweating, palms moist
2
3
4 – Beads of sweat obvious on forehead
5
6
7 – Drenching sweats

Agitation
0 – Normal activity
1 – Somewhat more than normal activity
2
3
4 – Moderate fidgety and restless
5
6
7 – Paces back and forth during most of the interview or constantly thrashes about

Visual Disturbances
0 – Not present
1 – Very mild photosensitivity
2 – Mild photosensitivity
3 – Moderate photosensitivity
4 – Moderately severe visual hallucinations
5 – Severe visual hallucinations
6 – Extreme severe visual hallucinations
7 – Continuous visual hallucinations

Tremor
0 – No tremor
1 – Not visible, but can be felt at finger tips
2
3
4 – Moderate when patient's hands extended
5
6
7 – Severe, even with arms not extended

Tactile Disturbances
0 - None
1 – Very mild paraesthesias
2 – Mild paraesthesias
3 – Moderate paraesthesias
4 – Moderately severe hallucinations
5 – Severe hallucinations
6 – Extremely severe hallucinations
7 – Continuous hallucinations

Headache
0 – Not present
1 – Very mild
2 - Mild
3 - Moderate
4 – Moderately severe
5 - Severe
6 – Very severe
7 – Extremely severe

Auditory Disturbances
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

Orientation and Clouding of the Sensorium
0 – Oriented and can do serial additions
1 – Cannot do serial additions
2 – Disoriented for date but not more than 2 calendar days
3 - Disoriented for date by more than 2 calendar days
4 – Disoriented for place/person

Cumulative scoring

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

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Table 4. Referral Resources for Patients with Substance Use Disorders

Treatment modality	*Examples and resources*	*Appropriate patients*	*Characteristics*
Mutual help meetings	Alcoholics Anonymous (http://www.aa.org) Narcotics Anonymous (http://www.na.org) Rational Recovery (http://www.rational.org) SMART Recovery (http://www.smartrecovery.org)	Patients at any stage of readiness, including ongoing substance use	Usually based on a 12-step model of recovery; peer-led groups that support all stages of recovery; free and available in most communities
Medically supervised withdrawal ("detoxification")	Outpatient or inpatient treatment American Society of Addiction Medicine Physician Finder (http://community.asam.org/search/default.asp?m=basic) Buprenorphine Physician and Treatment Program Locator (http://buprenorphine.samhsa.gov/bwns_locator) SAMHSA Treatment Locator (http://www.findtreatment.samhsa.gov)	Patients with physical dependence on alcohol, opioids, benzodiazepines, barbiturates, and other substances, and who have an associated withdrawal syndrome	A precursor to drug treatment that addresses the acute effects of stopping drug use; inpatient treatment is appropriate for patients at risk of severe withdrawal or with significant comorbid medical and psychiatric conditions; length of treatment is generally days to weeks; patients transition to mutual help meetings or outpatient or residential treatment
Outpatient treatment	Outpatient drug-free treatment, opioid agonist therapy (office-based or drug treatment program), naltrexone therapy American Society of Addiction Medicine Physician Finder (http://community.asam.org/search/default.asp?m=basic) Buprenorphine Physician and Treatment Program Locator (http://buprenorphine.samhsa.gov/bwns_locator) SAMHSA Treatment Locator (http://www.findtreatment.samhsa.gov)	Patients with relatively stable and safe living environments	Services can include group and individual counseling in a variety of modalities, as well as pharmacotherapy; variable intensity and duration of services; some providers have dual diagnosis services; patients can continue to work and participate in family and social life
Residential treatment	Therapeutic community model, short-term residential treatment, 12-step residential treatment, intensive inpatient treatment SAMHSA Treatment Locator (http://www.findtreatment.samhsa.gov)	Patients who need a stable and safe living environment; patients generally have more severe addiction and more comorbidities than those in an outpatient setting, and may be at high risk of relapse, mental health crisis, or behavioral problems	24-hour-per-day care and a stable living environment; longer treatment periods of weeks to months; treatment is more highly structured than outpatient treatment; intensive inpatient treatment provides medically managed care in a general medical or psychiatric hospital

SAMHSA = Substance Abuse and Mental Health Services Administration.

Information from reference 39.

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TREATMENT FOLLOWING DETOX

- The goal is to enhance function, optimize motivation, restructure life without alcohol and prevent relapse.

- What does the FDA approve?
  - Disulfiram
  - Naltrexone
  - Acamprosate

- Other non-FDA approved options?
  - Gabapentin
  - SSRIs

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DISULFIRAM

- Inhibits aldehyde dehydrogenase – with alcohol intake the patient will experience N/V, headache and flushing
- Effective therapy – typically dose around 250 mg qday
- LFT's must be monitored weekly for first 4 wks, then biweekly for 4 wks and then monthly
  - Has been associated with idiosyncratic acute liver failure.
- Network therapy

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NALTREXONE

- Comes in both oral and injectable form
- Reduces reward from alcohol by blocking opioid receptors
- Oral dose is 50 mg qday
- Injectable dose is given q28 days
- Patients should carry a Naltrexone card

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ACAMPROSATE

- Mechanism of action not completely understood

- Usual dose is 666 mg TID

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WHAT ELSE?
NON-PHARMACOLOGIC TREATMENT

- 12 step meetings
- Intensive outpatient programs
- Residential treatment centers
- CBT
- SMART recovery, LifeRing, Women for Sobriety, Secular groups

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