

Chapter Nine
*Alcohol and ending Tobacco Use
(including caffeine)*

13th edition, pp. 241-269

12th edition: pp. 231-261 (chapter eight)



Alcohol - an overview

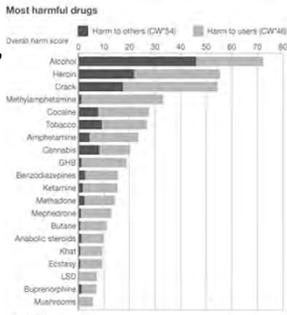
13th pp. 239-240; 12th pp. 232-223

- alcohol is the most widely used drug in the United States
- 86% of Americans consume alcohol
- 10% are heavy drinkers...who consume half of all the alcohol produced
- no other form of addiction or disability costs the US more than alcohol use/abuse annually
Excessive alcohol use causes 88,000 deaths annually twice as many as illicit drugs
- lost work time, illness, insurance, accidents, medical costs take a toll on all of us...25% of all medical costs in the US are alcohol related

Alcohol: The world's most dangerous drug?

The Lancet Medical Journal - 1 November, 2016

- In a recent article published in the British medical journal *The Lancet*, when considering the drug's damage to:
 - one's self
 - one's family
 - the environment
 - economic cost
- Alcohol is the world's most damaging drug to individuals and society



what is alcohol?

13th pp. 239-240; 12th pp. 232-233

- alcohol is a byproduct of fermentation of vegetable or fruit pulp or 'mash' this produces a concentration of alcohol up to 14%
- distillation is a further process by capturing the vapors from heating the mash, and mix this with water
- proof is the measure of % of alcohol, which means the % of alcohol is half of the 'proof rating'
- some alcohol is 152 proof, or 71% alcohol most beers are 8 proof, or 4% alcohol.



alcohol and calorie content

not in books

Beverage	Alcohol by Volume (approx. %)	Calories (per serving approx.)
Nonalcoholic Beer	0.5	75
Beer, regular	4.5	170
Beer, light	3	70-134
Wine, light beverage	10-14	90 calories per 4 fluid ounces
Sherry and other fortified wines	17-21	140 calories per 3.5 fluid ounces
Champagne	11-12	71 calories per 3 fluid ounces
Sake Wine	14-16	39 calories per 1 fluid ounce
Gin	40	120 calories per 1.5 fluid ounces
Brandy	35-40	60 calories per 4 fluid ounces
Vodka	40	95 calories per 1.5 fluid ounces
Rum	40	135 calories per 1.5 fluid ounces
Whiskey	40-54	130 calories per 1.5 fluid ounces

alcohol consumption and its effects

13th pp. 240-242; 12th pp. 233-235

- the amount of alcohol absorbed into person's blood is called **blood alcohol concentration (BAC)**.
- in California, the BAC for adults is .08 and .01 for those under 21 yrs old.
- .08 is normally two beers, 2 glasses of wine, or two drinks over a one hour period
- BAC is effected by body weight, food consumed, temperature and mix in drink, and gender as women have half of the enzymes to break down alcohol than men, meaning they're BAC will be 30% higher than a man's on average



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BAC and its effects

13th pp. 240-242; 12th pp. 233-235 (figure 9.3)

Blood Alcohol Concentration (BAC)	Psychological and Physical Effects
Not Impaired	
<0.01%	Negligible
Sometimes Impaired	
0.01–0.04%	Slight muscle relaxation, mild euphoria, slight body warmth, increased sociability and talkativeness
Usually Impaired	
0.05–0.07%	Lowered alertness, impaired judgment, lowered inhibitions, exaggerated behavior, loss of small muscle control
Always Impaired	
0.08–0.14%	Slowed reaction time, poor muscle coordination, short-term memory loss, judgment impaired, inability to focus
0.15–0.24%	Blurred vision, lack of motor skills, sedation, slowed reactions, difficulty standing and walking, passing out
0.25–0.34%	Impaired consciousness, disorientation, loss of motor function, severely impaired or no reflexes, impaired circulation and respiration, uncontrolled urination, slurred speech, possible death
0.35% and up	Unconsciousness, coma, extremely slow heartbeat and respiration, non-responsiveness, probable death

short term effects of alcohol

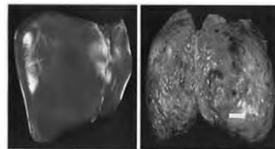
13th pp. 242-247; 12th pp. 235-236

- alcohol is a depressant, reducing the speed of nerve transmissions
- dehydration of the brain and central nervous system
- irritation of the stomach and digestive system
- 'hangovers'
- potential for unwanted situations and accidents
nearly 20% of college students engaged in sexual activity primarily as a result of alcohol
- **Fact:** one night of heavy drinking can reduce your ability to think abstractly for up to 30 days
- **Athletes:**
- 1 night of binge drinking can cause the loss of 14 days of training effect
- Binge drinking lowers performance potential by 11.4% for a minimum of 14 days.

the long term effects of alcohol

13th pp. 245-247; 12th pp. 238-239

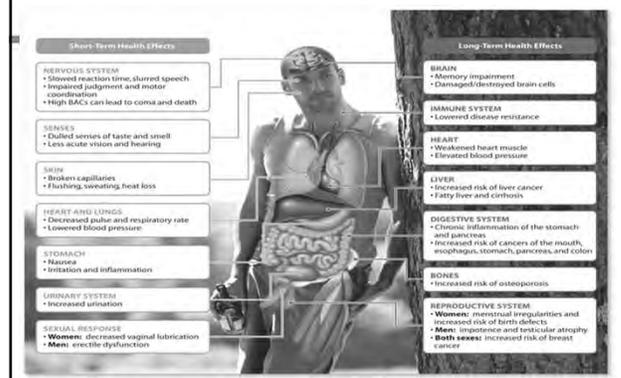
- damages the central nervous system and shrinks the brain over time
- raises blood pressure
- cirrhosis and diseases of the liver
- related cancers of the stomach, liver, mouth and linked to breast cancer in women
- reduction in immune system defenses



(a) A normal liver (b) A liver with cirrhosis

effects of alcohol

13th p. 234; 12th p. 236 (figure 9.4)



alcohol and pregnancy

13th pp. 246-247; 12th pp. 239-240

- even small amounts of alcohol can harm the fetus during any stage of pregnancy
- Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE) occurs when alcohol passes from the mother to the fetus
- FAE-FAS behaviors include:
 - Poor memory
 - Impulsive and troubled behaviors
 - Impaired learning
- FAE-FAS is the single most preventable form of mental impairment in the western world



related benefits from antioxidants, and alcohol's ability to increase HDL or 'good cholesterol' not in books

Amount	Overall Death Rate	Heart Disease Death Rate	Cancer Death Rate
1 drink/week	16% lower than average	11% lower than average	21% lower than average
2-4 drinks/week	22% lower than average	20% lower than average	5% lower than average
5-6 drinks/week	21% lower than average	46% lower than average	7% higher than average
1 drink/day	1% higher than average	4% lower than average	12% higher than average
2 or more/day	63% higher than average	62% higher than average	123% higher than average

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13th pp. 250-251; 12th pp. 242-243

WHAT CAUSES ALCOHOL DEPENDENCE AND ABUSE?

Genetics - Though scientists have not yet been able to identify conclusively a specific gene that puts people at risk for alcoholism, epidemiological studies have shown evidence of heredity's role.

Stress and traumatic experiences - Many people start drinking heavily as a way of coping with psychological problems. About half of all individuals who abuse or are dependent on alcohol also have another mental disorder.

Parental alcoholism - According to researchers, alcoholism is four to five times more common among the children of alcoholics, who may be influenced by the behavior they see in their parents.

Drug abuse - Alcoholism is also associated with the abuse of other psychoactive drugs, including marijuana, cocaine, heroin, amphetamines, and various anti-anxiety medications.

13th pp. 249-250; 12th pp. 243-244

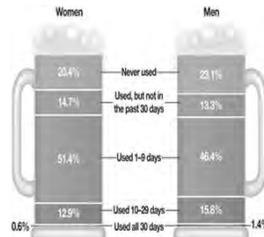
RECOGNIZING THE WARNING SIGNS OF ALCOHOLISM

- Experiencing the following symptoms after drinking: frequent headaches, nausea, stomach pain, gas, fatigue, weakness, muscle cramps, or irregular or rapid heartbeats.
- Needing a drink in the morning to start the day.
- Denying any problem with alcohol.
- Doing things while drinking that are regretted afterward.
- Dramatic mood swings, from anger to laughter to anxiety.
- Sleep problems.
- Depression and paranoia.
- Forgetting what happened during a drinking episode.
- Changing brands or going on the wagon to control drinking.
- Having five or more drinks a day.
- Going to a party to get drunk

alcohol and the college student

13th pp. 247-249; 12th pp. 240-241

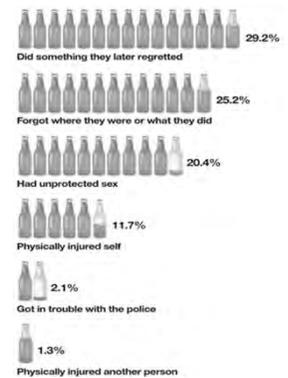
- approximately 64% of college students drink
- 24.4% of students abstain, and the number is rising
- over 38% are classified as 'heavy or binge drinkers'
- 1,825 college students die each year while intoxicated
- First year college students drink to cope with stress, boredom, anxiety, and pressure created by academic and social demands under the guise of having fun.
- Drunkorexia current term to describe disordered drinking and binge drinking leading to weight gain and risky behavior.



high risk drinking and college students

13th pp. 246-249; 12th pp. 240-241

- Binge drinking is defined 5 drinks in a row for men, and 4 drinks in a row for women in a single occasion
- Alcohol kills more under 21 yr. olds: more than cocaine, weed, and heroin combined
- Alcohol is involved in:
 - 95% of crimes on campuses
 - 90% of rapes or assaults
 - 66% of college student suicides
- Of 1st year students: 159,000 will drop out of college next year due to alcohol or drug related problems.



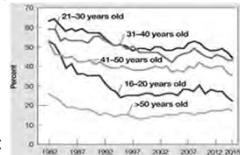
strategies to not drink n' drive

13th pp. 244-248; 12th pp. 237-238

Alcohol is responsible for 30% of car accidents, resulting in nearly 10,000 deaths annually

- If you're going to drink, don't drive
- Establish a designated driver and backup plan
- Eat a full meal and drink non-alcoholic beverages before drinking
- Mix your own drinks, and water them down
- Moderate your pace...know your limits...alternate with non-alcoholic drinks
- Don't participate in drinking games
- Think twice before going to a party with heavy drinking
- If in doubt, call a cab/Uber, call a friend, call your parents, or sleep over

Don't take the chance to change your life forever!



drinking responsibly and cutting back

13th pp. 248-251 and 241; 12th p. 243 and 233

- Don't drink before a party
- Avoid drinking if you are angry, anxious, stressed or depressed
- Stay with the same group of friends the entire time
- Determine the number of drinks you'll have ahead of time, and learn to say NO
- Limit alcohol in your living space
- Assess your peer group drinking patterns and change groups if they prioritize alcohol over your personal priorities

Alcohol-Energy Drinks = dangerous mix

- Mixing often hides immediate affects of alcohol
- Higher consumption of alcohol when mixed with energy drinks
- 42% of energy room admissions due to alcohol involved energy drinks.



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getting help for alcohol dependence

13th pp. 252-253; 12th p. 245

- alcoholics exhibit the same characteristics as many addicts
- often less visible often due to the acceptance of alcohol in our society
- 43% of American have been exposed to some form of alcohol abuse in their family
- types of intervention:
 - community treatment facilities
 - resident treatment facilities
 - support groups such as AA or women for sobriety
- Over 70% of alcoholics relapse with-in 1 year... alcoholics need to break the pattern of addiction. Never fully 'cured'.



tobacco consumption the U.S.

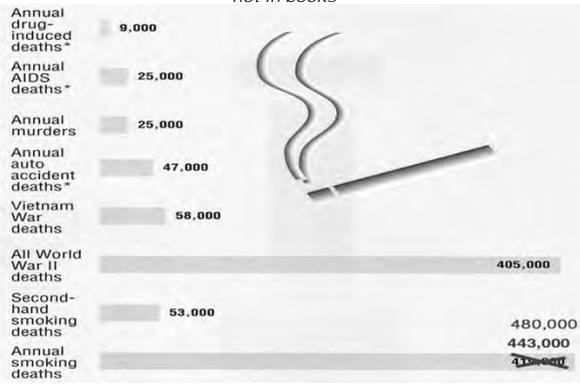
13th pp. 253-254; 12th pp. 246-247

- tobacco use is the single most preventable cause of death in the U.S.
- nearly 480,000 Americans die every year from tobacco, 50 times that of all illegal drug use combined
- 1 in 5 deaths in the US is caused by tobacco. Tobacco is known to cause 20 different diseases
- yet it's big business, we spend billions subsidizing tobacco farmers, yet billions more in related health issues: \$96 billion in medical costs, between \$289-333 billion in annual health related losses annually
- Economic cost is \$3100 per smoker annually



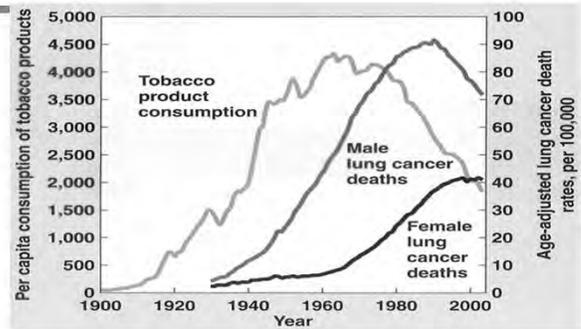
tobacco's death toll

not in books



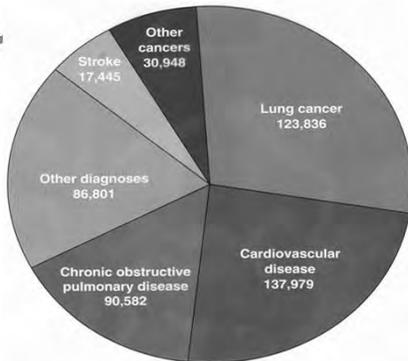
tobacco use and subsequent death rates from 1900-2014

not in books



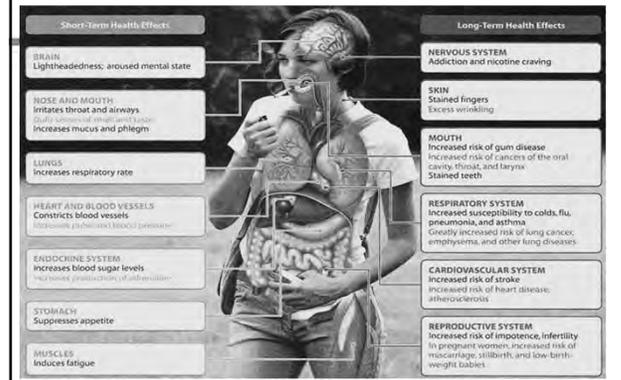
how tobacco kills a smoker

13th edition, pp. 259-262; 12th pp. 252-254



effects of smoking

13th edition, pp. 260; 12th p. 253 (figure 9.12)



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how inhaled tobacco damages your lungs

13th pp. 261-262; 12th pp. 245-255

how nicotine works

13th p. 257; 12th pp. 249-250

- 1 - nicotine is ingested into the body through the lungs, or mucus membrane in the mouth if chewed
- 2 - attaches to the cerebral cortex releasing stimulates and increasing production of adrenaline
- 3 - increases heart rate, constricts muscles, relaxes stomach muscles (*eat less*)

inhaled tobacco in the form of cigarettes or cigars stimulate the heart while starving the lungs and heart of oxygen

health risks from tobacco

13th pp. 259-261; 12th pp. 252-255

- **Cancers**
 - Lung cancers (90-78% of cases are assoc. with smokers)
 - Lip, tongue, Esophagus, throat
- **Reparatory Disorders**
 - Chronic bronchitis
 - Emphysema
 - Pneumonia
- **Other ailments**
 - 70% higher risk of heart attacks
 - twice as likely to suffer a stroke
 - Males twice as like to suffer impotence
- **Environmental Tobacco Smoke**
 - Side stream or second-hand smoke
 - Caused cancers and respiratory disease
 - Children are more susceptible then adults

chewing tobacco

13th p. 359; 12th p. 252

- 10 times more cancer causing than smoking tobacco, as tobacco is released in a more concentrated form
- Holding chew or snuff in your mouth for 30min. is the equivalent to four cigarettes
- Resultant gum diseases, tooth loss
- 75% of all oral cancers were diagnosed from those who used smokeless or chewing tobacco

This 25-year-old cancer survivor has undergone surgery to remove neck muscles, lymph nodes, and his tongue. He began using smokeless tobacco at age 13; by age 17, he was diagnosed with squamous cell carcinoma. He now speaks out about the dangers of chewing tobacco.

E-cigs or VAPING

13th pp. 258-259; 12th p. 251

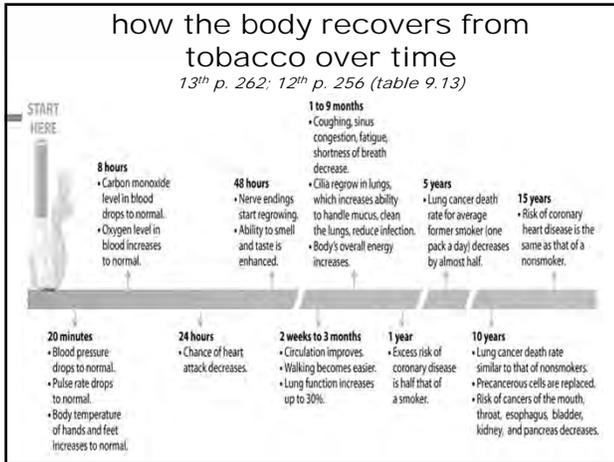
- Began in early 2000's as an alternative to tobacco smoking, and used to quit regular tobacco products
- Delivers nicotine/flavourings with aerosol vapors (VAPES)
- Big tobacco took over industry in 2013 Currently unregulated by FDA, and little data presently available, though increasing deaths/lung injuries
- Being marketed to youth with adverts/flavourings via internet, VAPE shops
- Little known of long term effects, though concern on contents of aerosols with related deaths
- Traditional cigs deliver 50ml. of smoke, while e-cigs deliver 250ml of smoke and double the amount of nicotine
- Federal and state governments moving to better regulate and outlaw flavoured e-cigs.

quitting tobacco

13th pp. 262-264; 12th pp. 255-256

- nicotine is as addictive as heroin
- nearly 44% of users attempt to quit each year
- 93-96% fail. Often involves several unsuccessful attempts
- any programs help with quitting:
 - *chemical aversion therapy*
 - *hypnosis*
 - *self control*
 - *nicotine replacement products gum, patches, cessation pills increase chances of quitting from 17% to 30%*

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caffeine use

13th pp. 223-224 (chapter 8); 12th pp. 217-218



1971-first Starbucks in Seattle

- Caffeine is also one of the most used drugs in our society, popularly recently with the growth of coffee shops. 85% of Americans drink at least on caffeinated drink a day.
- 1-5 cups, (1-3 U.S. mugs) or 200-400mg of coffee per day should not harm a person
- Energy drinks have high levels of caffeine 3 x SpikeShooter = 15 cups of reg. coffee!

How caffeine works

13th pp. 223-224 (chapter 8); 12th pp. 217-218

- Caffeine's active ingredient xanthine increases production of adrenaline
- Resulting in faster heart rate, higher blood pressure, dilated pupils, increased blood sugar, though dehydrates the body

caffeine content in products

13th pp. 223-224 (chapter 8); 12th pp. 217-218

Product (Serving Size)	Caffeine Content (mg)	Product (Serving Size)	Caffeine Content (mg)
Coffee		Coca-Cola Classic (12 oz.)	35 (20 oz. = 58)
Starbucks Brewed Coffee (Grand) (16 oz.)	320	Banjo Root Beer, regular or diet (12 oz.)	25 (20 oz. = 58)
Coffee, generic brewed (8 oz.)	133 (range: 102 - 200)	Energy Drinks	
Coffee, generic instant (8 oz.)	93 (range: 27 - 173)	Spike Shooter (8.4 oz.)	500
Starbucks Espresso (1 oz.)	75	Full Throttle (16 oz.)	144
Espresso, generic (1 oz.)	40 (range: 30 - 90)	Solus No Fear (8 oz.)	93
Coffee, generic decaffeinated (8 oz.)	5 (range: 3 - 12)	Red Bull (8.3 oz.)	80
Starbucks Espresso decaffeinated (1 oz.)	4	Rockstar Energy Drink (8 oz.)	80
Tea		GlaxoSmithKline Vitamin Energy Citrus (20 oz.)	50
Starbucks Tazo Chai Tea Latte (Grand) (16 oz.)	100	Frozen Desserts	
Tea, brewed (8 oz.)	53 (range: 40 - 120)	Ben & Jerry's Coffee Heath Bar Crunch Ice Cream (8 R. oz.)	84
Snapple Lemon, Peach, Raspberry (and diet versions) (16 oz.)	42	Ben & Jerry's Coffee Flavored Ice Cream (8 R. oz.)	68
Arizona Iced Tea, black (16 oz.)	32	Häagen-Dazs Coffee Ice Cream (8 R. oz.)	58
Nestle (12 oz.)	26	Häagen-Dazs Coffee Frozen Yogurt (8 R. oz.)	58
Arizona Iced Tea, green (16 oz.)	15	Starbucks Coffee Ice Cream (8 R. oz.)	50-60
Soft Drinks		Chocolate	
FDA official limit for cola and energy soft drinks (12 oz.)	72	Hershey's Special Dark Chocolate Bar (1.45 oz.)	31
Diet Coke (12 oz.)	22	Hershey's Chocolate Bar (1.55 oz.)	9
Mountain Dew, regular or diet (12 oz.)	54 (20 oz. = 90)	Hershey's Kisses (8.9 g pieces)	9
Peppi One (12 oz.)	54 (20 oz. = 90)	Hot cocoa (Box)	9 (range: 3 - 13)
Diet Coke (12 oz.)	47 (20 oz. = 78)	Over-the-Counter Drugs	
Diet Pepsi (12 oz.)	41 (20 oz. = 68)	NuDoze (Maximum Strength) (1 tablet)	200
Peppi (12 oz.)	58 (20 oz. = 63)	Vivarin (1 tablet)	200
Diet Pepsi (12 oz.)	36 (20 oz. = 60)	Excedrin (Extra Strength) (2 tablets)	150

There are over 500 'energy drinks' on the market with 34% of 18-24 yr. olds consuming. 20,000 ER visits, and 10 deaths were reported in 2012 from caffeine poisoning

caffeine addiction concerns

13th pp. 223-224 (chapter 8); 12th pp. 217-218

- Drinking too much caffeine (caffeinism) can lead to:**
 - Insomnia in some
 - Irregular heart beat
 - Dizziness
 - Nausea
 - Indigestion
 - Jitters, muscle twitches
- Withdrawal may produce headaches**