

KLOB Presentation: Alcohol & You

1. Hangovers

- a. 25-30% of drinkers are naturally resistant to experiencing hangovers
- b. Common symptoms: dehydration, nausea, headache, fatigue, fever, vomiting, diarrhea, flatulence, sensitivity to light and sound, trouble sleeping, difficulty concentrating, and poor depth perception
- c. Causes
 - i. Vasopressin Inhibition
 1. Kidneys send water directly to the bladder instead of reabsorbing it into the body
 2. Four times as much liquid lost as gained
 3. Body's organs try to make up for their own water loss by stealing water from the brain
 4. Sodium, potassium, glycogen loss
 - ii. Congeners
 1. Greatest amounts of these toxins are found in red wine and dark liquors
 2. Carbonation in beer actually speeds up the absorption of alcohol
 - iii. Acetaldehyde
 1. Created when the alcohol in the liver is broken down by an enzyme called **alcohol dehydrogenase** then attacked by **acetaldehyde dehydrogenase** and **glutathione**
 2. Liver's stores of glutathione quickly run out, acetaldehyde build up
 3. Body weight a factor
 - iv. Glutamine Rebound
 1. Alcohol inhibits **glutamine**, body overcompensates production
 2. Stimulates the brain while trying to sleep
 3. Promotes secretion of hydrochloric acid in the stomach, vomiting
- d. Prevention and Cures
 - i. Caffeine - reduces the size of blood vessels but also diuretic
 - ii. Fried or Fatty Foods - Good before drinking, coat stomach lining
 - iii. Eggs - **cysteine** breaks down acetaldehyde
 - iv. Bananas - electrolytes and potassium
 - v. Water - before and after
 - vi. Fruit juice and vitamins supplements - C and B vitamins
 - vii. Pain relievers - aspirin fine before and after but **never use acetaminophen** (Tylenol)

2. Calories and "Beer Gut"

- a. Process
 - i. A small portion of the alcohol is converted into fat.
 - ii. Your liver then converts most of the alcohol into acetate.
 - iii. The acetate is then released into your bloodstream, and *replaces* fat as a source of fuel.
- b. Increases appetite
- c. See appendix for "Calories by Beverage"

3. Intoxication

- a. Common measurements
 - i. 12 oz. 5% ABV beer
 - ii. 5 oz. 12% ABV wine
 - iii. 1.5 oz. 40% ABV liquor
- b. Human body can process 0.5 oz. (15 ml) alcohol per hour

- c. BAC increases when the body absorbs alcohol faster than it can eliminate it
- d. 20 oz. Two-Hearted (7% ABV) = 2.3 drinks

Resources

- Discovery Health “How Hangovers Work”, <http://health.howstuffworks.com/wellness/drugs-alcohol/hangover.htm>
- Hangover Remedies and Prevention, <http://chemistry.about.com/od/everydaychemistry/a/hangovers.htm>
- Beer 100: Beer Calories, Beer Alcohol, Beer Carb Content, <http://www.beer100.com/beercalories.htm>
- Real Beer: Calories, carbs, alcohol, <http://www.realbeer.com/edu/health/calories.php>
- Mr. Good Beer: Calculate Carbs and Calories in Your Home Brew, <http://www.mrgoodbeer.com/carb-cal.shtml>
- Facts About Fitness: Why Alcohol Calories Matter, <http://www.thefactsaboutfitness.com/research/alcohol.htm>

Appendix

Calories by Beverage

	ABV	Calories	Carbs	Carb Calories	Remainder	Est. Alcohol Cal Rate
Big Foot	9.2	330	32.1	128.4	201.6	21.91
Leinenkugel's Fireside	4.9	155	13.4	53.6	101.4	20.69
Budweiser	5	143	10.6	42.4	100.6	20.12
Bud Light	4.2	95	6.6	26.4	68.6	16.33
MGD 64	2.8	64	2.4	9.6	54.4	19.43
Flying Dog IPA	7.1	188	10	40	148	20.85
Guinness	4	125	10	40	85	21.25
Rum	40	780	0	0	780	19.50
Homebrew A (SG 1.050, FG 1.012)	5.1	165	16.7	66.8	98.2	19.25
Homebrew B (SG 1.080, FG 1.020)	8	264	27.4	109.6	154.4	19.30

* Assumes 12 oz. samples