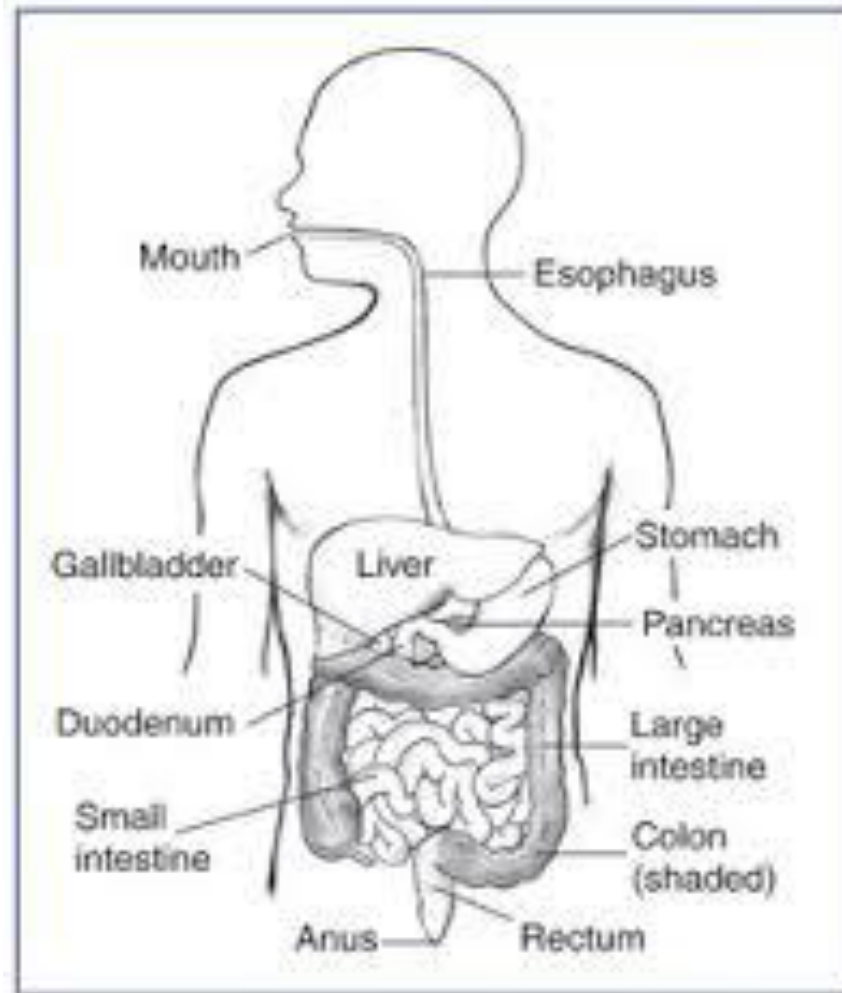


Alcohol and the Body

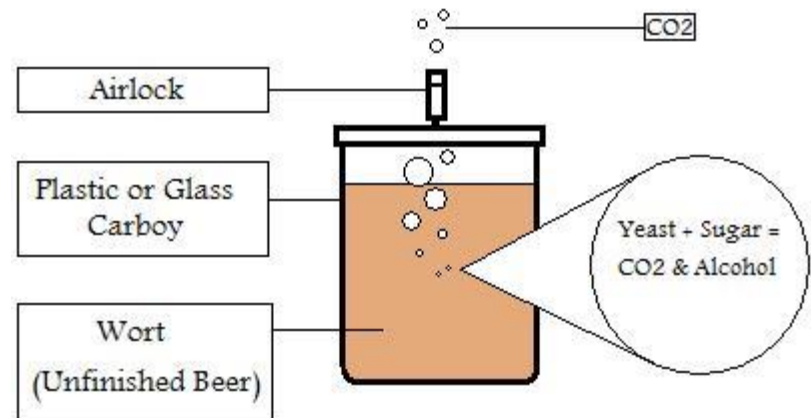


What is Alcohol

12 fl oz of regular beer = **8-9 fl oz of malt liquor** (shown in a 12 oz glass) = **5 fl oz of table wine** = **1.5 fl oz shot of 80-proof spirits** ("hard liquor"— whiskey, gin, rum, vodka, tequila, etc.)

about 5% alcohol about 7% alcohol about 12% alcohol about 40% alcohol

The percent of "pure" alcohol, expressed here as alcohol by volume (alc/vol), varies by beverage.



Esophogus and Stomach

- Esophogus and the Stomach Swallow then goes through the esophogus to the stomach. Chemically Alcohol is a solvent (eats away at other chemicals) so the body tries to protect the lining of the stomach with extra HCL to get rid of the alcohol. Too much HCL can cause ulcers. About 20% of the alcohol is absorbed into the bloodstream through the capillaries in the stomach lining.

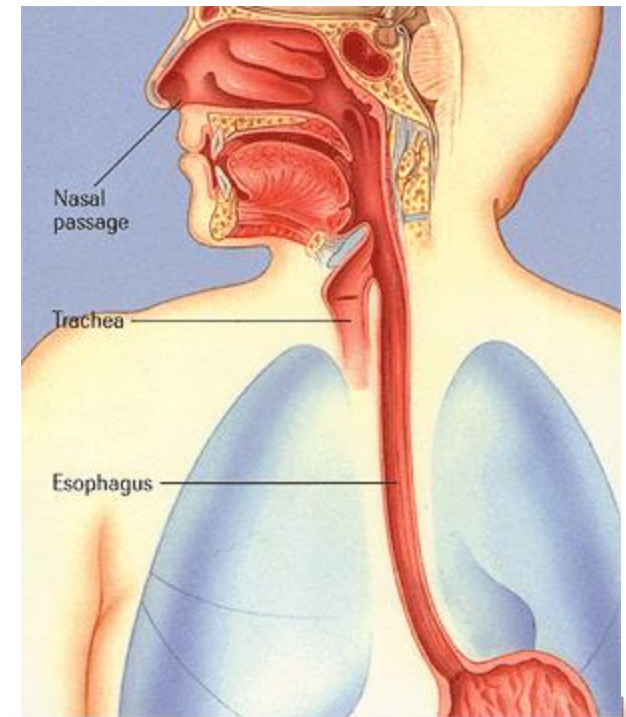
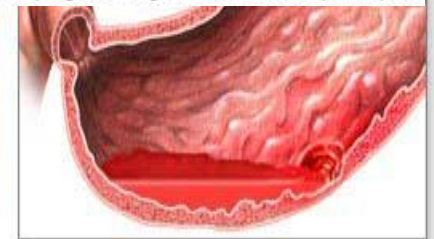
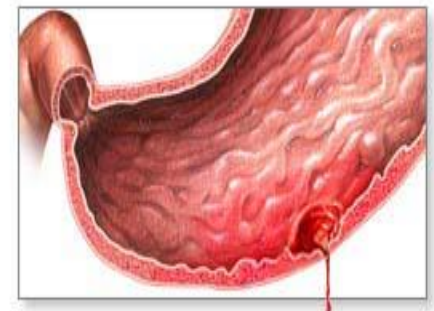


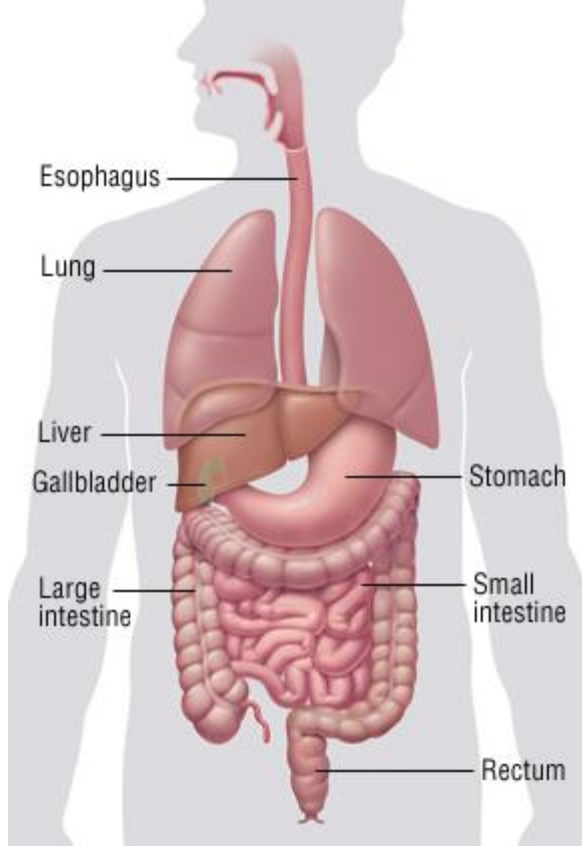
Image made available by a generous grant from Bristol-Myers Squibb



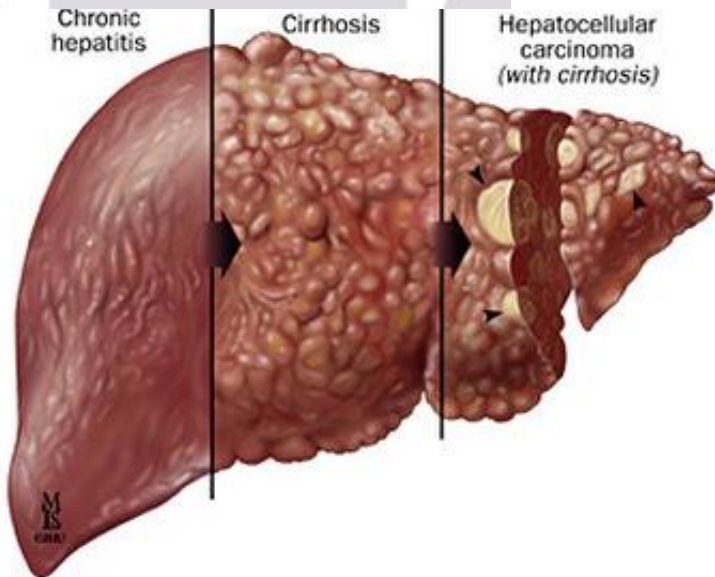
Peptic ulcers may lead to bleeding, perforation, or other emergencies



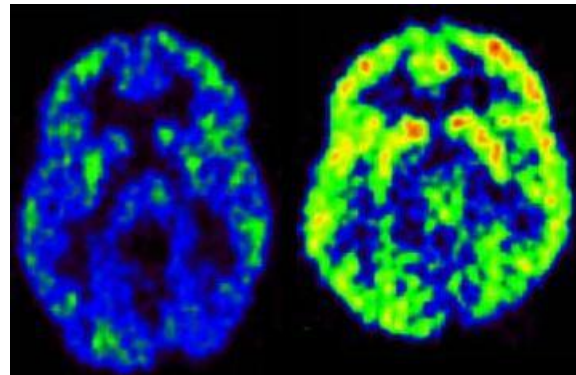
The Liver



- Liver As the blood saturated with alcohol passes through the liver, about 1/2 ounce of alcohol per hour is oxidized to detoxify it. (toxin is a "poison" for the body. Any excess continues to travel through the body. The liver must work harder to detoxify alcohol than to detoxify most other impurities. Repeated abuse of alcohol can cause scarring of the liver, preventing that part of the liver from working(cirrhosis of the liver). Alcohol also robs the liver of Vitamin "A" which the liver needs to repair itself. The process of breaking down alcohol into waste products (carbon dioxide and water) is called oxidation. Although alcohol is absorbed rapidly, it is slowly oxidized because the liver can oxidize only a small amount of alcohol at a time.



Alcohol and the Brain

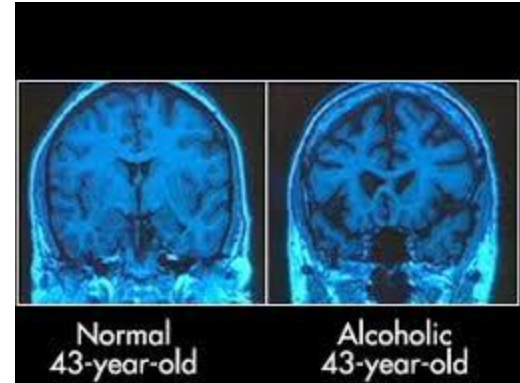


Alcoholic

Darker Colouring
indicates depressed
brain activity

Normal

Healthy levels of
brain activity

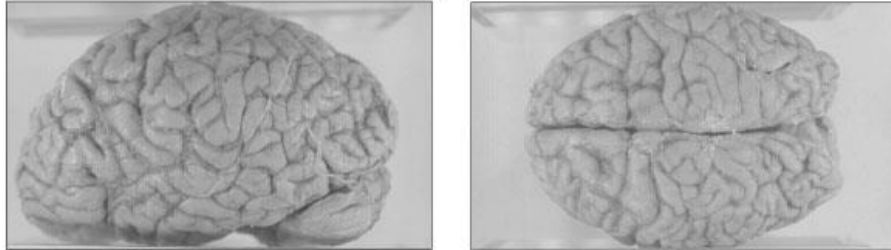


Normal
43-year-old

Alcoholic
43-year-old

Deterioration of the Brain

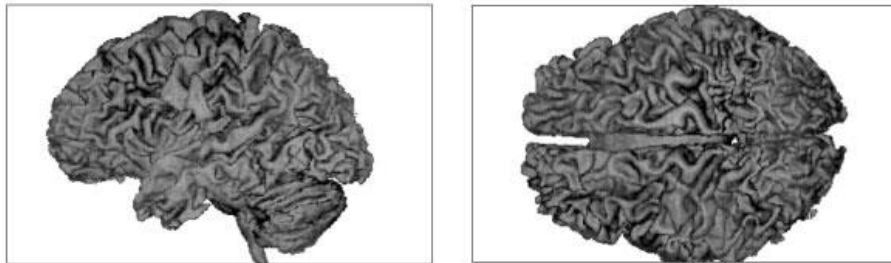
A. The brain of a normal elderly person



B. The brain of a person with Alzheimer's disease



C. The brain of a person with alcoholism



It puts the brain to sleep

How Alcohol Hijacks the Brain...

Alcohol in moderation...normal neural network – good feeling / reward for the behavior of drinking; activates the same neural networks as those linked to behaviors for survival (eat when hungry...)

Alcohol Abuse... triggers rapid surges in dopamine causing brain to reduce dopamine production, in time, to reduce dopamine receptors



Leaves brain wanting more alcohol to get the “feel good” feeling (the one it associates with drinking); something it can't get because the brain has turned down the radio dial on dopamine production



If abuse continues and brain crosses invisible line to addiction... person experiences **craving, loss of control, physical dependence and tolerance** – cravings can be 3-5 times stronger than those hardwired for survival, e.g., eating when hungry

Effects for Teens

What are 3 reasons alcohol has a stronger effect on Teens than adults?

- 1) Usually smaller body weight
- 2) Less psychological tolerance for teens
- 3) More stress in teen lives
- 4) Liver does not completely mature until early 20's-can't oxidize alcohol as fast as a result.



4 Factors that influence how alcohol affects people

- 1) Body weight-
more body weight-
more alcohol to get
the same effects.

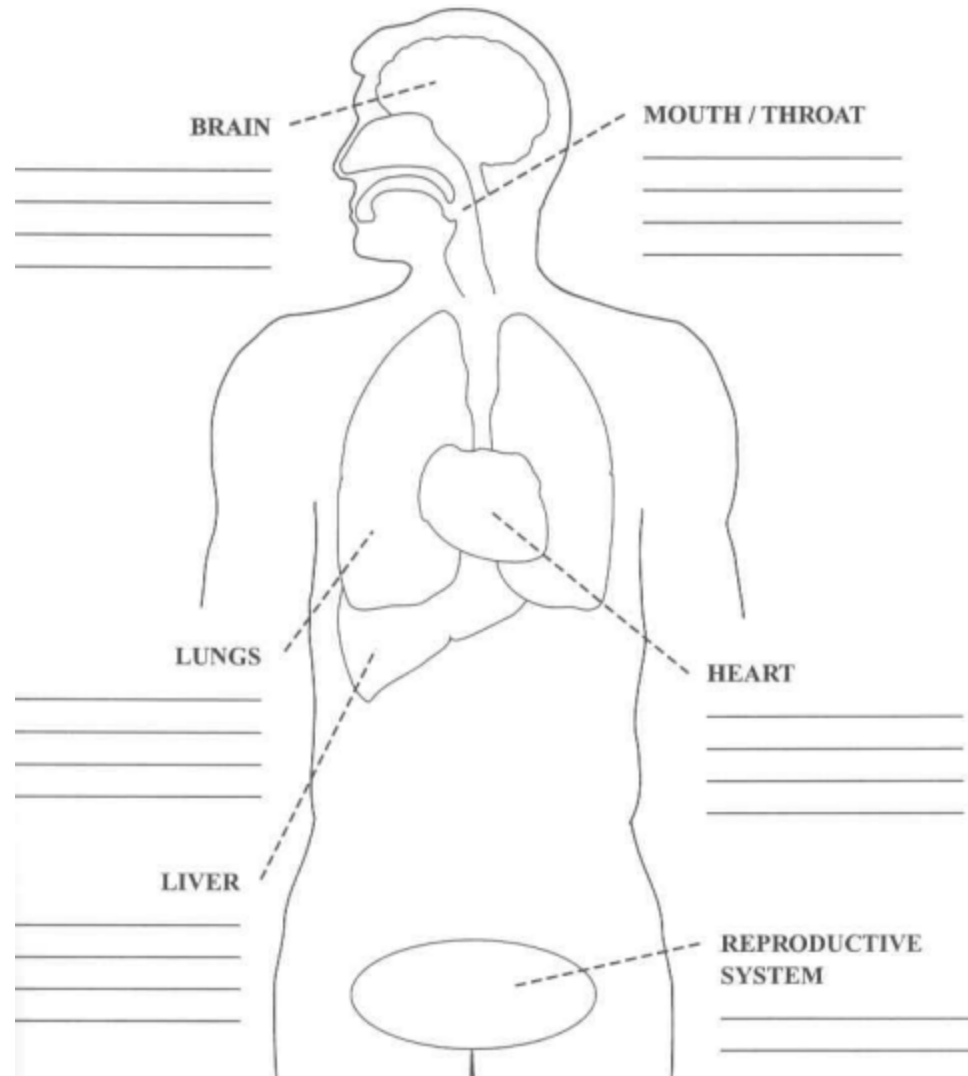


Vs.



- 2) If one has had
anything to eat
before or during
drinking





- **The hangover is the body's way of telling you that you drank too much alcohol last night. Despite all the stories you have heard and will hear, the only real way to avoid a hangover is not to drink.**
- 17 million working days are lost to hangovers each year, costing employers a massive £6.4 billion.
- Alcohol is broken down in the liver, first to acetaldehyde, and then to ethanoic acid, or vinegar. Acetaldehyde can cause sweats, flushes, nausea, vomiting, and a rapid pulse. The other symptoms may include dehydration, headache, aches and pains, fatigue and restlessness.
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