

Alcoholism

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Objectives

- what is alcoholism?
- What is the difference between heavy drinking and alcoholism?
- How alcohol affects the body?
- Highlight the genetic, social and physiological factors that lead individuals down the path to alcoholism.
- How alcoholics can get treatment for their addiction?

Alcoholism :Introduction

- In the United States alone, alcoholism affects millions of people and costs an estimated **\$185** billion per year in medical expenses, crime, lost productivity and accidents.

what is alcoholism?

- Some people can enjoy the occasional glass of wine with dinner or beer out with friends.
- But for other people, one drink becomes two drinks, which becomes four drinks -- they are unable to stop drinking.
- *Not everyone who drinks alcohol heavily is considered an alcoholic.*
- People who drink regularly enough to affect their family or work responsibilities and who drink in a way that puts them in dangerous situations (for example, behind the wheel of a car while intoxicated) are said to **abuse alcohol.**

What is alcoholism?



- **Alcoholics**, on the other hand, have a **chronic disease**.
- They are physically dependent upon alcohol.
- They feel a need to drink, almost in the same way that most people feel the need to eat.
- And once alcoholics start drinking, they are unable to stop. They develop a **tolerance** to alcohol, requiring more and more drinks to feel the same effects.

alcoholism:

the urge to keep drinking

is the first sign of an

addiction.

you are not alone.

What is alcoholism? Cont'd

- When an alcoholic tries to cut down or stop drinking, he or she experiences the symptoms of **withdrawal**:
sweating, nausea, shakiness, anxiety and delirium tremens (seeing images, severe s, confusion).

Alcoholism

- More than 17 million Americans abuse alcohol or are alcoholics.

National Epidemiologic Survey on related conditions.2001-2002(NESARC).

- Alcoholism affects **men** more than **women**

Alcoholism

- Men who drink **14** or more drinks/ wk and women who drink more than **seven** drinks /wk are at risk for alcoholism.
- Alcoholism is more prevalent among younger people (ages 18-44) than among older people.

Prevalence of alcohol intake: USA

- Percent of adults 18 years of age and over who were current regular drinkers (at least 12 drinks in the past year): 52%
- Percent of adults 18 years of age and over who were current infrequent drinkers (1-11 drinks in the past year): 13%

Issues related to Alcohol Use

- **90% of date/acquaintance rapes involve alcohol**
- 44% of college students are less likely to remember their actions if they have been drinking.
- **31% of college students are less likely to use precautions against sexually transmitted disease or pregnancy if they are under the influence of alcohol .**
- In the U.S., 75% of unintentional injuries (the leading cause of death) are directly or indirectly related to alcohol, nicotine, and other drugs.
- **younger people between the ages of 15 and 24, have decreased life expectancy, is attributed to alcohol consumption.**

How Does Someone Become an Alcoholic?

1. **Genes** may be an important factor triggering the development of alcoholism. *Research has indicated that children of alcoholics are four times more likely to become alcoholics themselves.*
2. **Physiologically**, alcohol alters the balance of chemicals in the brain. It affects chemicals in the brain's reward center, such as dopamine. *The body eventually craves alcohol to restore pleasurable feelings and avoid negative feelings.*
3. **Psychological problems** such as low self esteem and depression are risk factors for developing alcoholism.



ALCOHOLISM

Guaranteed to help you forget your other problems

How Does Someone Become an Alcoholic?

4. **Social factors** such as peer pressure, advertising and environment also play an important role in the development of alcoholism.
- Young people often start drinking because their friends are doing so.
 - Beer and liquor ads on television tend to portray drinking as a glamorous, exciting
...

How Does Someone Become an Alcoholic?

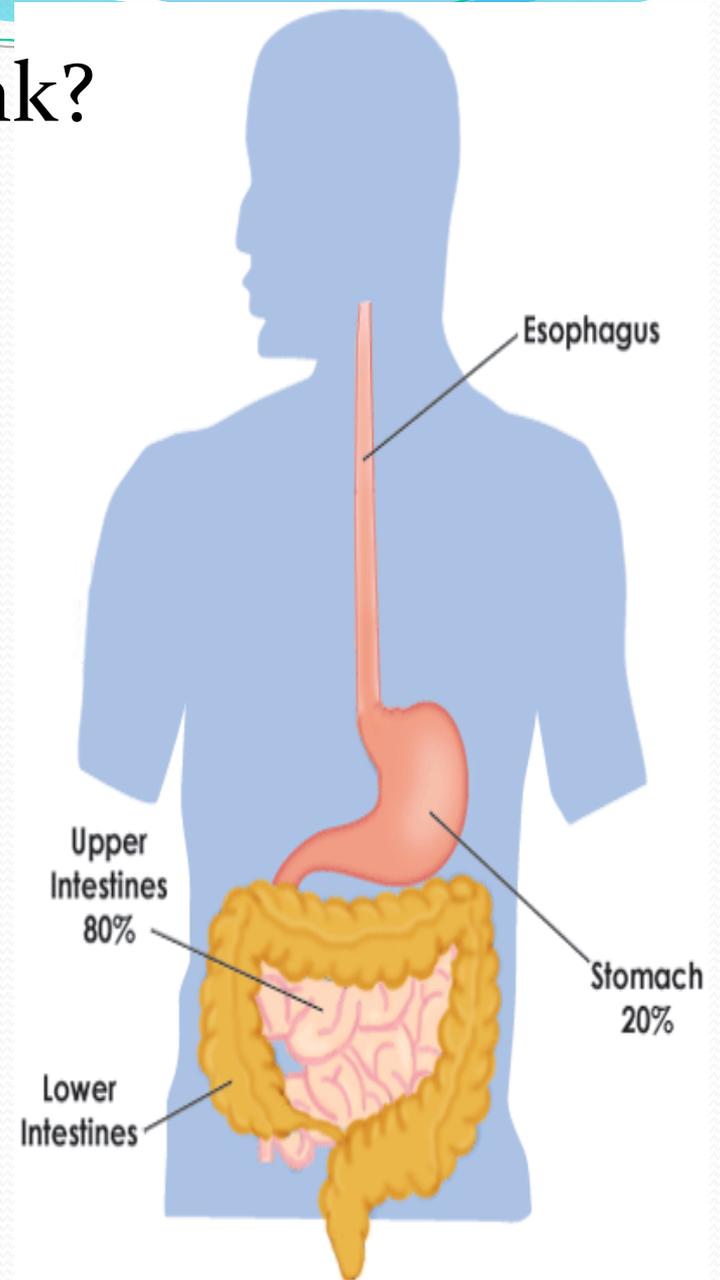
Signs that someone might be an alcoholic include:

- 1) Drinking to forget his or her problems
- 2) Drinking alone often
- 3) Lying about his or her drinking habits
- 4) Losing interest in food
- 5) Feeling unhappy or irritable when he or she is not drinking
- 6) Losing memories of certain events ("blacking out")

What Happens When You Drink?

- When you take a drink, about **20 %** of the alcohol is absorbed in your stomach;
- the remaining **80 %** is absorbed in the small intestine.
- How quickly the alcohol is absorbed depends upon the concentration of the alcohol in the drink (vodka, for example, will be absorbed faster than beer, because vodka has a higher alcohol concentration) and whether you've just eaten a big meal.
- A full stomach will slow down alcohol absorption.

What Happens When You Drink?

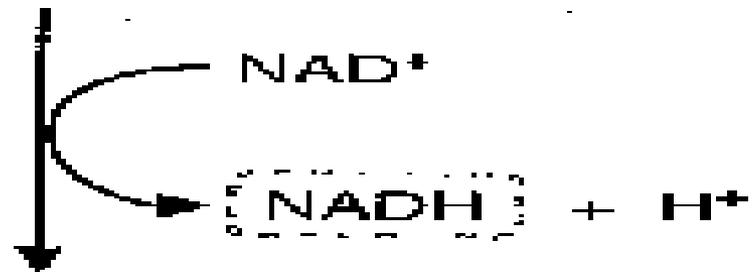


What Happens When You Drink?

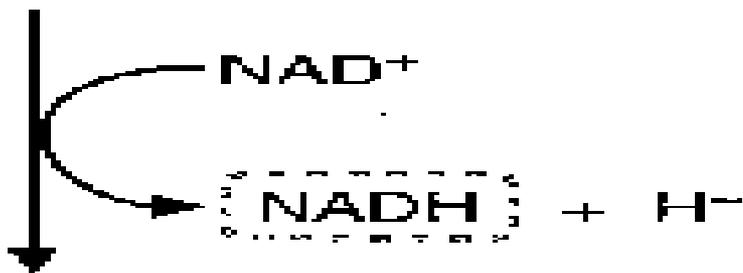
- After the alcohol is absorbed, it enters the bloodstream and is carried throughout the body.
- The Kidneys and lungs remove about **10 %** of the alcohol in the urine and the breath (which is why a breath-test can be used to measure a person's blood alcohol level).
- The liver breaks down the rest of the alcohol into **acetic acid**.
- After just a few drinks, the physical effects of alcohol become apparent.
- These effects are related to the **blood alcohol concentration (BAC)**.



Ethanol



Acetaldehyde



Acetate

Alcohol and the Brain

- **The stumbling walk, slurred words and memory lapses** describe the signs of heavy drinking.
- People who have been drinking have trouble with their **balance, judgment and coordination.**
- They react slowly to stimuli, which is why drinking before driving is so dangerous.
- Although sexual urge may increase, sexual performance decreases.
- alcohol induces **sleepiness.** It can also slow breathing and **lower body temperature,** which can be life threatening.

Alcohol and the Brain

- Short term effects: “**Blackouts**”
- Long term effects:
- Wernicke-Korsakoff Syndrom: Vit. **B1- defeciency**

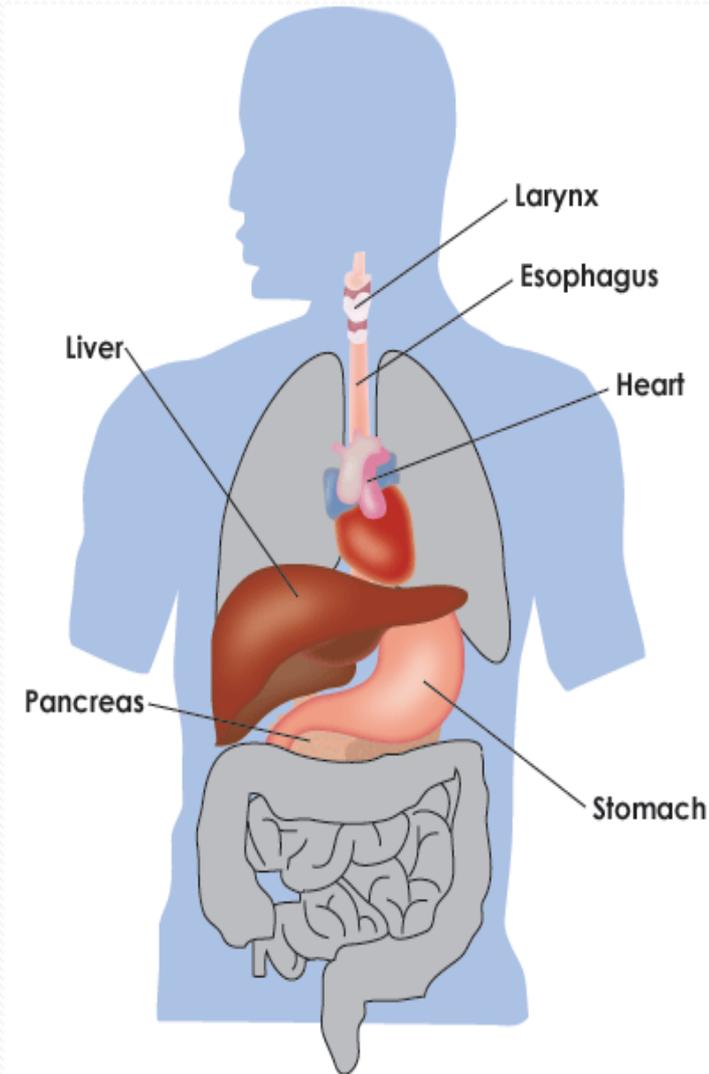
Confusion, lack of coordination, memory loss.

- **When alcohol is suddenly stopped, the brain tries to readjust its chemistry.**

-withdrawal include disorientation, hallucinations, delirium tremens (DTs), nausea, sweating and seizures.

Alcohol and the Rest of the Body

- Up to 70 percent of people with alcoholic hepatitis develop **cirrhosis**. (Liver failure).
- **Heart:** Muscle dysfunction
- **Stomach:** Alcohol irritates the lining of the stomach and intestines, causing vomiting, nausea and eventually ulcers.
- **Pancreas:** inflammation of the pancreas (pancreatitis).
- **Cancer:** Research indicates that long-term drinking increases the risk of cancers of the mouth, throat, larynx and esophagus





Alcohol and the heart

- **Moderate Drinking and the Heart** !!!!!!!!!??????
- Reduction of plaque deposits in arteries (atherosclerosis)
- Protection against blood clot formation (protects against heart attack and stroke.?)
- **Heavy Drinking and the Heart**
- Increased risk for hemorrhagic stroke
- Increased risk for high blood pressure
- Increased risk for disturbed heart rhythm (arrhythmia)
- Increased risk for heart muscle disease (weakness) (cardiomyopathy)

Alcohol and Death



- Alcohol is a poison, and it can kill. A person with a blood alcohol concentration between **0.35** and **0.50** percent can fall into a coma.
- *Anyone with a blood alcohol concentration over **0.50** can die.*
- People have died after drinking too much at once, as well as after consuming large amounts of alcohol steadily over a long period of time.

Mortality: USA

- Number of alcoholic liver disease deaths:
14,406
- Number of alcohol-induced deaths, excluding
accidents and homicides: 23,199

What's one drink?

One drink is defined as:

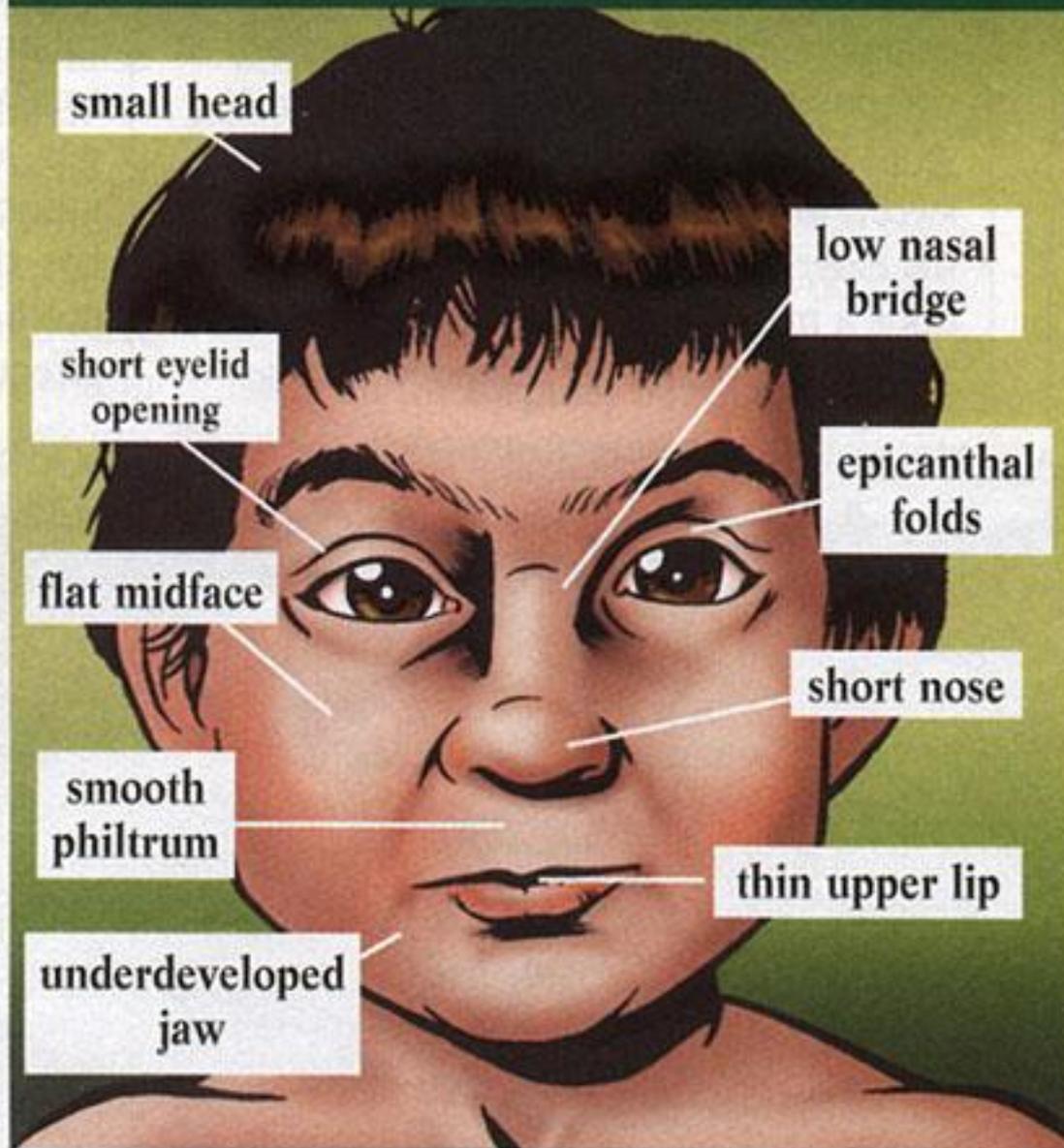
- 12 ounces (one bottle/can) of beer or wine cooler
- 5 ounces (one glass) of wine
- 1.5 ounces (one shot) of 80-proof distilled spirits

*Source: NIAAA

Fetal alcohol syndrome

- Exposure to alcohol in the womb can lead to fetal alcohol syndrome, the number one preventable cause of mental impairment.
- *Alcohol exposure in the womb can impairs the development of several structures in the brain.*
- Many are also born with a smaller-than-normal head and facial abnormalities.
-
- **Pregnant women should abstain from drinking alcohol during pregnancy. (not dose related).**

FAS Facial Characteristics



Among children with FAE: Fetal alcohol effects

- **95% will have mental health problems**
- 68% will have “disrupted school experience”
- 68% will experience trouble with the law
- **55% will be confined in prison, drug or alcohol treatment centers or mental institutions**
- 52% will exhibit “inappropriate sexual behavior”
- 50% of males and 70% of females will have alcohol and drug problems
- 82% will not be able to live independently
- 70% will have problems with employment

Hangover

- The **Bible** even makes mention of the pain that follows a night of heavy drinking:

"Woe unto them that rise up early in the morning, that they may follow strong drink" (Isaiah 5:11).

- **Shakespeare** knew the unwanted effects of alcohol, as shown in his play Macbeth (Act 2 scene 3):

Macduff: What three things does drink especially promote?

Porter: Marry sir, nose-painting, sleep, and urine.

Hangover



Drinking aftermath: hangover

- **Headache**
- Loss of appetite
- **Nausea**
- Fatigue
- **Dehydration**(dry mouth, extreme thirst, dry eyes)
- Difficulty sleeping
- Weakness

Treatment:

- Hydration (water)
- Sugar
- Panadol for headache
- Rest
- No alcohol

How long does alcohol stay in your system?

- Alcohol is broken down by the liver at the rate of approximately one unit per hour (a pint= 473 ml of normal strength beer = two units).
- To exercise caution, the following alcohol calculation can be used to estimate your level of risk after having drunk the night before.
- **1 Unit of alcohol = ½ Pint ordinary strength beer, or**
- 1 standard glass of table wine, or
- 1 standard glass of sherry, or
- 1 single measure of spirits.

It is advised that you allow a minimum of **1 hour per 1 unit** of alcohol consumed before driving or operating heavy machinery or electrical equipment in order to ensure that you are not under the influence of alcohol.

Alcohol in blood

- *Number of units drunk - Number of hours since last drink = Alcohol content*
- For example: A person drinks 6 pints of an ordinary strength beer (12 units) finishing drinking at 11pm. They start work at 8am the following day. (9 Hours later).
- **12 Units - 9 hours = 3.** In this scenario, the person could still have 3-4 units of alcohol left in their body whilst driving to work the following day - risking both Police prosecution and the safety of others. 3-4 Units will bring most people to the UK legal driving limit.

Alcohol and driving

- In fact, every year in Britain over 25,000 people lose their driving licenses the morning after a night's drinking.

Conclusions:

- Although alcohol is a legal substance used by many people
- **There is clear and undisputed evidence that it impairs the user and can often be abused or misused.**
- **Accordingly, there is a legal drink-driving limit of 80 mg/dl or 0.08% BAC (Blood Alcohol Concentration) enforced by law in the UK and USA.**
- Alcohol facts and information on alcohol awareness and the associated policies were diffused for the public, so people know the risks and the legal consequences of alcohol intake.

Treatment for Alcoholism

- 1. Detoxification:** This involves abstaining from alcohol in order to get alcohol completely out of a person's system, and it takes anywhere from four to seven days. People who undergo detoxification often take medications to control withdrawal.
- 2. Pharmaceuticals:** Naltrexone reduces the desire to drink by blocking the centers in the brain that feel pleasure when alcohol is consumed.
 - Disulfiram causes a severe physical reaction to alcohol that includes nausea, vomiting and headaches.

Treatment for Alcoholism

3. **Counseling:** Individual or group counseling sessions. One of the most recognizable alcoholic recovery programs is

Alcoholics Anonymous (AA). In this 12-step program, recovering alcoholics meet regularly to support one another through the recovery process.

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