

Unit 4: Alcohol, Tobacco and Other Drugs

Medicines and Drugs

Tobacco

Alcohol

Illegal Drugs

Medicines and Drugs

- New Vocabulary
 - Medicines
 - Drugs
 - Vaccine
 - Side effects
 - Additive interaction
 - Prescription medicines
 - Over-the-counter (OTC) medicines
 - Medicine misuse
 - Medicine abuse
 - Drug overdose

Lesson 1: The Role of Medicines

- Medicines are classified based on how they work in your body

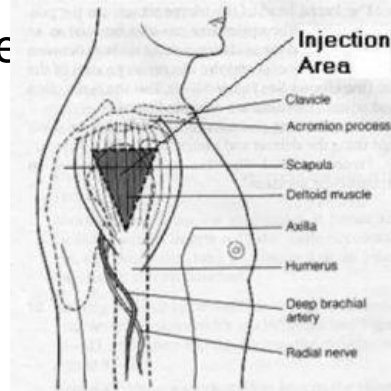
- **Medicines:** Drugs that are used to treat or prevent diseases or other conditions

- Four categories:
 - Prevent disease
 - Fight pathogens
 - Relieve pain
 - Manage chronic conditions or restore health

- **Drugs:** Substances other than food that change the structure or function of the body or mind

- Effective in treating illness when taken as directed by a physician or according to the label instructions

All medicines are drugs, but not all drugs are medicines.



- Preventing Disease:

- **Vaccines:** Preparation that prevents a person from contracting a specific disease

- 95% of children receive vaccines
- Contain weakened or dead pathogens that cause the disease
- When injected, the body creates antibodies that fight those pathogens
- Memory cells are produced creating long-lasting protection
- Protection can fade:
 - Flu: needed annually
 - Tetanus: every 10 years

The Role of Medicines cont.

- Fighting Pathogens:

- **Antibiotics:** class of drug that destroy disease-causing micro-organisms, bacteria
 - Penicillin

- Relieving Pain:

- **Analgesics:** pain relievers
 - May also reduce:

| | |
|----------------|--------------|
| Antibiotic | or |
| Penicillin G | Inflammation |
| Sulfadiazin | ness |
| Amoxicillin | |
| Ceftiofur | |
| Cloxacillin | |
| Oxytetracyclin | |
| Erythromycin | |



- Pain Reliever Dependence:

- Can be addictive
- Narcotics
- Require a prescription

- Managing Chronic Conditions:

- Allergy Medicine:
 - Antihistamines
 - Block the chemicals released by the immune system that cause an allergic response
 - Epinephrine
- Body-Regulating Medicine
 - Insulin
 - Regulates the amount of sugar in the blood
 - Blood pressure



The Role of Medicines cont.

- Taking Medications:

- Medicines enter the body in a variety of ways:

- Oral:

- Tablets, capsules liquids
- Digestive system to bloodstream



- Topical:

- Applied to the skin
- Transdermal skin patches

- Inhaled:

- Asthma medicines
- Fine mist or powder



- Injected:

- Shot
- Directly to the bloodstream



- Reactions to Medications:

- **Side effects:** Reactions to medicine other than the one intended

- Mild to severe, can even cause death

- Medicine Interactions:

- **Additive interaction:** Occurs when medicines work together in a positive way

- Anti-inflammatory and muscle relaxant

- **Synergistic effect:** the interaction of two or more medicines that results in a greater effect than when each medicine is taken alone

- **Antagonistic interaction:** the effect of one medicine is canceled or reduced when taken with another medicine



Lesson 2: Using Medicines Safely

- Standards for Medicines
 - Medicines are regulated to make them safe
 - All new medicines in the US must meet standards set by the **FDA:**
 - Chemical composition
 - Intended use
 - Effects
 - Possible side effects
 - Drug manufacturers test new drugs according to FDA guidelines
 - At least 3 clinical trials

- Human volunteers
- If not completed, people with
ning illnesses may
to use the drug
as experimental

- **Prescription medicines:** Medicines that are dispensed only with the written approval of a licensed physician or nurse practitioner

- A licensed pharmacist dispenses these meds
- Prescription meds should be taken only by the person who's name appears on the label

- **Over-the-counter (OTC) medicines:** Medicines you can buy without a doctor's prescription

- FDA considers these meds to be safe if they are used as directed
- Distribution of some OTC may be controlled
 - Cold medications that contain pseudoephedrine (sudafed)



Using Medicines Safely cont.

- **Medicine misuse:** Using a medicine in ways other than the intended use
 - Taking meds unnecessarily or without following the label instructions in dangerous
 - Misuse includes:
 - Not following directions
 - Taking other people's meds
 - Taking too much/too little
 - Taking for longer/shorter period of time
 - Discontinuing without telling healthcare provider
 - Mixing meds
- **Medicine abuse:** Intentionally taking medications for nonmedical reasons
 - 96% of teens use meds correctly
 - Avoid using drugs to:
 - Lose weight
 - Stay awake
 - Fit in with peers

- **Drug overdose:** Strong, sometimes fatal reaction to taking a large amount of a drug



Tobacco

- New Vocabulary:
 - Addictive drug
 - Nicotine
 - Stimulant
 - Carcinogen
 - Tar
 - Carbon monoxide
 - Smokeless tobacco
 - Leukoplakia
 - Nicotine withdrawal
 - Nicotine substitutes
 - Tobacco cessation program
 - Environmental tobacco smoke (ETS)
 - Mainstream smoke
 - Sidestream smoke

Lesson 1: The Health Risks of Tobacco Use

- Health Risks of Tobacco Use:
 - All forms of tobacco contain chemicals that are dangerous to your health
 - **Nicotine:** The addictive drug found in tobacco leaves
 - **Addictive drug:** Substance that causes physiological or psychological dependence
 - Reason why tobacco users have a hard time quitting
 - **Stimulant:** Drug that increases the action of the central nervous system, the heart and other organs



The Health Risks of Tobacco Use cont.

- Poisonous Substances in Tobacco Smoke:
 - Tobacco is considered a **carcinogen**:
 - Cancer-causing substance
 - Contains the same poisonous compounds found in:
 - Paint
 - Rat poison
 - Toilet cleaner
 - **Tar**: Thick, sticky, dark fluid produced when tobacco burns
 - Damages the lungs
 - Makes smokers more susceptible to diseases such as:
 - Bronchitis
 - Pneumonia
 - Emphysema
 - Heart disease
 - Cancer
 - 87% of cancer deaths result from smoking
 - **Carbon Monoxide**: Colorless, odorless, poisonous gas
 - Absorbed more easily than oxygen



The Health Risks of Tobacco Use cont.

- Pipes, Cigars and Smokeless Tobacco

- Cigars:

- Contain significantly more tar and carbon monoxide than cigarettes
 - One cigar can contain as much nicotine as a whole pack of cigarettes (20)

- **Smokeless Tobacco:** Tobacco that is sniffed through the nose, held in the mouth or chewed

- Not a safe alternative to smoking
 - Absorbed into the blood through the mucous membranes in the mouth or digestive tract
 - Up to 3x the amount of nicotine as a single cigarette
 - **Leukoplakia:** Thickened, white, leathery-looking spots on the inside of the mouth that can develop into oral cancer



The Health Risks of Tobacco Use cont.

- ***Short Term Effects:***

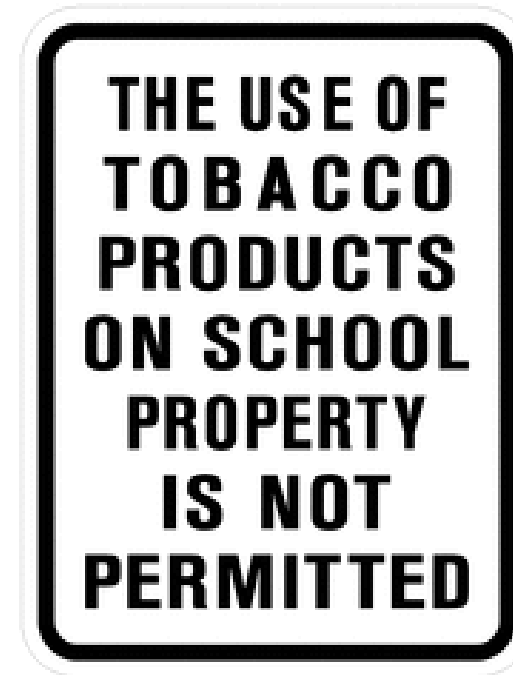
- Brain chemistry changes:
 - Cravings
 - Withdrawal symptoms
- Respiration and heart rate increase:
 - Breathing during physical activity becomes difficult
 - Decreased endurance
- Taste buds are dulled and appetite is reduced:
 - Lose ability to enjoy food
- Bad breath, yellowed teeth, smelly hair, skin and clothes:
 - Can become permanent

- ***Long Term Effects:***

- Chronic bronchitis:
 - Build up of tar in the lungs causing chronic coughing and excessive mucus secretion
- Emphysema:
 - More difficult for the person to absorb oxygen
 - Person with emphysema can use 80% of their energy just to breathe
- Lung cancer:
 - 90% of lung cancer deaths are caused by smoking
- Coronary heart disease and stroke:
 - Can be caused by nicotine (nicotine constricts blood vessels)
 - Hardened arteries (arteriosclerosis)
- Weakened immune system:
 - Long-term smoking makes the body more vulnerable to disease

The Health Risks of Tobacco Use cont.

- Tobacco use is costly:
 - Costs to society:
 - Tobacco related illnesses cost the US \$165 billion/yr
 - Cost to individuals:
 - A person smoking one pack of cigarettes a day will spend \$1,500/yr
 - Legal consequences:
 - Selling tobacco products to people under 18 is illegal
 - Using tobacco products on school property may lead to suspension or expulsion





MONEY ISSUES: CIGARETTES

- Average cost of a pack of cigarettes in the U.S. = **\$4.32**
 - Lowest: \$3.43 (Missouri)
 - Highest: \$6.46 (Maine)
- One pack of cigarettes per day = **\$30.24 per week**
- Cost per year at one pack a day = **almost \$1600**
- **Smokers pay more for life & health insurance**
- **Lose resale value on homes and cars**
- Can even be fired or not hired for being a smoker

TOBACCO AND TEENS

- Average age to start smoking is 12 years.
- More than 4,000 kids try smoking every day.
- Only takes 1-3 cigarettes to become addicted.
- Most (2 out of every 3) teen smokers want to quit, only 1% are successful.



HEALTH PROBLEMS: LUNG CANCER

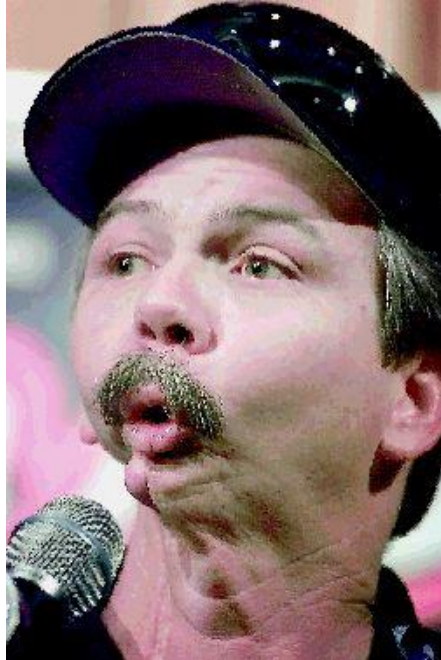


- 1 out of 3 smokers will die from smoking
- 4000 chemicals in tobacco smoke
 - At least 60 of them are known to cause cancer

Cancer From Tobacco



Mouth Cancer



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Cancers

Mouth & Lips

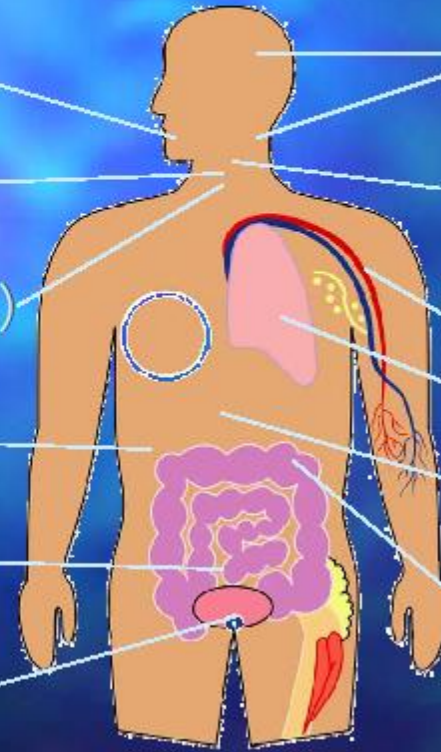
Esophagus

Larynx (voicebox)

Kidney

Bladder

Cervix (women)



Head & Neck

Throat (windpipe)

Leukemia

Lung

Stomach

Pancreas

SOCIAL CONSEQUENCES

Smokers Cough

Smokers
Breath



Yellow Teeth



**Kent III taste.
Experience it!**



Offensive Odor
on Clothes,
Hair, Skin



Yellow Fingers



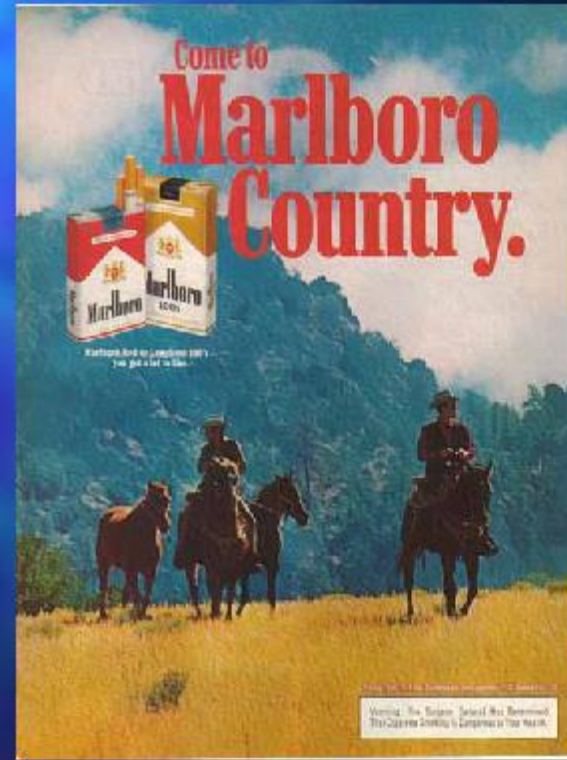
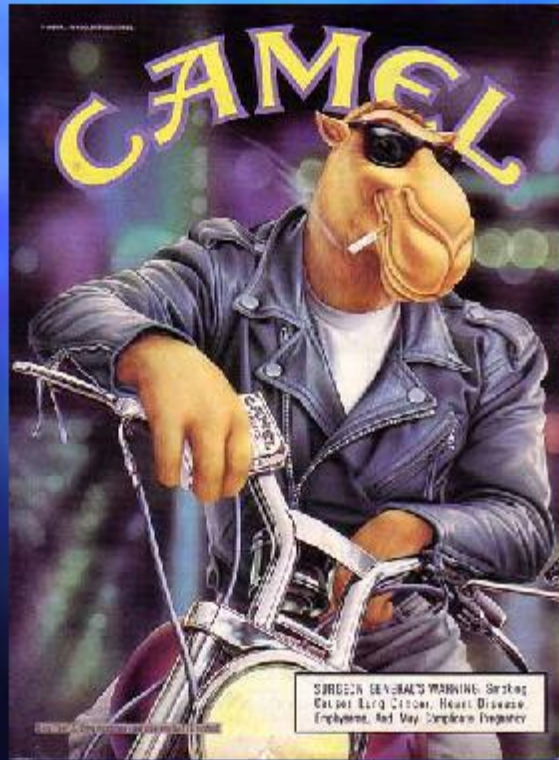
Fast-Aging Skin



Gives off
Secondhand
Smoke that is a
Danger to
Others

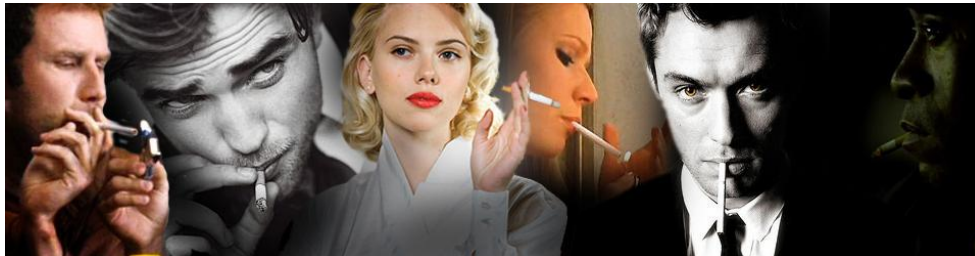


Have Tobacco Companies Ever Targeted Children?



Lesson 2: Choosing to Live Tobacco-Free

- Teens and Tobacco:
 - Why some teens use tobacco:
 - Believe smoking will control their weight or help cope with **stress**
 - Seem mature or independent
 - Influenced by movies, TV, ads
 - Think it is glamorous
 - Truth:
 - Reduces body's capability for physical activity
 - Weight gain
 - Dependency on tobacco may increase **stress** levels
- Reduced Tobacco Use Among Teens:
 - CDC reports that 77% of HS students nationwide DO NOT smoke
 - Several factors contribute to this:
 - Tobacco legislation:
 - Advertising to young people is restricted
 - Illegal for purchase 18 years or younger
 - No-smoking policies:
 - Public places and businesses
 - Family values:
 - Teens whose parents who avoid tobacco are more likely to avoid it too
 - Positive peer pressure:
 - Healthy role models
 - Health risks:
 - Health education 😊



Choosing to Live Tobacco-Free cont.

- Benefits of Living Tobacco-Free
 - Better cardiovascular endurance and lung function
 - Able to improve your fitness level and athletic performance
 - Reduce risk of:
 - Lung cancer
 - Heart disease
 - Stroke
 - Mental/Emotional and Social Benefits:
 - Sense of freedom
 - Less **stress**
 - More confidence
- Strategies for Avoiding Tobacco:
 - Surround yourself with positive influences
 - Reduce peer pressure
 - Be prepared with refusal skills



- Quitting Tobacco Use:
 - What are some reasons why teens/adults might quit using tobacco?
 - Ending the Addiction Cycle

- **Nicotine withdrawal:** the process that occurs in the body when nicotine is no longer used

- Symptoms:

- Irritability
- Difficulty concentrating
- Anxiety
- Sleep disturbances
- Craving for tobacco

- Relieve symptoms:

- **Nicotine substitutes:** Products that deliver small amounts of nicotine into the user's system while he/she is trying to give up tobacco

- Gum
- Patches
- Nasal sprays
- Inhalers

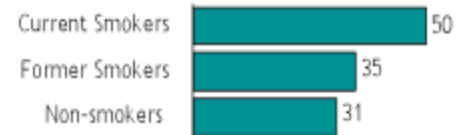


- Smoking while using nicotine substitutes is dangerous due to increased nicotine exposure



Smoking and Stress

% of respondents who say they are "frequently" stressed.



Choosing to Live Tobacco-Free cont.

- Getting Help to Quit Tobacco Use:
 - Prepare for the quit day
 - Get support and encouragement
 - Access professional health services
 - **Tobacco cessation program**: a course that provides info and help to people who want to stop using tobacco
 - Replace tobacco use with healthy behaviors

- What are some healthy behaviors that could replace tobacco use?



Lesson 3: Promoting a Smoke-Free Environment

- Health Risks of Tobacco Smoke:
 - Tobacco smoke can harm nonsmokers
 - **Environmental tobacco smoke (ETS):** Second hand smoke; air that has been contaminated by tobacco smoke
 - 4,000 chemical compounds
 - More than 50 of those are cancer-causing
 - Infants and young children who are exposed to ETS are more likely to develop asthma
 - **Mainstream smoke:** Smoke exhaled from the lungs of a smoker
 - Lower concentration of carcinogens, nicotine and tar
 - **Sidestream smoke:** The smoke from the burning end of a cigarette, pipe or cigar
 - More dangerous than mainstream smoke



The children of smokers are more than twice as likely to smoke themselves.

Promoting a Smoke-Free Environment cont.

- Reducing your risk:
 - What are some ways to reduce your risk of inhaling second-hand smoke?
- Creating a Smoke-Free Society:
 - According to the US Surgeon General, the only way to fully protect people from the damaging health effects of ETS is to prohibit smoking in public places.

Alcohol

- New Vocabulary
 - Ethanol
 - Fermentation
 - Depressant
 - Intoxication
 - Binge drinking
 - Alcohol poisoning
 - Psychological dependence
 - Physiological dependence
- Alcohol abuse
- Alcoholism
- Blood alcohol concentration (BAC)
- Fetal Alcohol Syndrome (FAS)
- Alcoholic
- Recovery
- Sobriety

Lesson 1: The health Risks of Alcohol

- Alcohol is an addictive drug
 - What do the advertisements for alcoholic beverages look like?
- **Ethanol:** The type of alcohol in alcoholic beverages
- **Fermentation:** The chemical action of yeast on sugars
 - Water, flavoring and minerals are mixed with ethanol to produce beverages such as beer and wine
 - Alcohol can be processed to create whiskey and vodka



The Health Risks of Alcohol Use cont.

- ***Short Term Effects:***

- ***Depressant:*** Drug that slows the central nervous system down
- Slows reaction time
- Impairs vision
- Diminishes judgment
- ***Intoxication:*** the body is poisoned by alcohol or another substance and the person's physical/mental control is significantly reduced

- ***Long Term Effects:***

- Damage to brain cells
- Increase in blood pressure leading to heart attack or stroke
- Buildup of fat cells in the liver
- Damage to digestive lining of the stomach
- Destruction of the pancreas

- **Factors that Influence Alcohol's Effects:**

- *Body Size*
- *Gender*
- *Food*
- *Rate of intake:* if a person drinks alcohol faster than the liver can break it down, the person becomes intoxicated
- *Amount*
- *Medicine:* medicines can heighten the effects of alcohol

The Health Risks of Alcohol Use cont.

- Binge Drinking and Alcohol Poisoning
 - **Binge drinking:** Drinking 5 or more drinks at one sitting
 - Rapid binge drinking is sometimes done on a bet or a dare

Binge Drinking

A Serious, Under-Recognized Problem among Women and Girls



1 in 8

Nearly 14 million US women binge drink about 3 times a month.



1 in 5

1 in 5 high school girls binge drink.

6 YYYYYY

Women average 6 drinks per binge.

Source: CDC Vital Signs, January 2013



- **Alcohol poisoning:** Severe and potentially fatal physical reaction to an alcohol overdose
 - Involuntary actions such as breathing and gag reflex that prevents choking may be impaired
 - Effects of Alcohol Poisoning:
 - Mental confusion
 - Coma
 - Vomiting and seizures
 - Slow respiration
 - Irregular heartbeat
 - Low body temperature
 - Pale or bluish skin color
 - Even if a person is unconscious a person's blood alcohol level can still continue to increase

Lesson 2: Choosing to Live Alcohol-Free

- Alcohol Use:

- ***Psychological dependence:***

- Condition where a person believes that a drug is needed in order to feel good or to function normally

- ***Physiological dependence:***

- Condition where the user has a chemical need for a drug



- Factors that Influence Alcohol Use:

- *Peer pressure*
 - *Family*
 - *Media messages*

- Advertising Techniques:

- Billions of dollars spent
 - Associate products with youthful, healthy people who seem to be having fun
 - Sponsor sporting events
 - Never show consumers the negative side of alcohol use

Choosing to Live Alcohol-Free cont.

- Health Risks of Alcohol Use:

- In the US nearly 50 people/day die as a result of alcohol related traffic collisions.
- Alcohol use is linked to deaths from drowning, fire, suicide and homicide



- *Alcohol and the Law:*

- Illegal for anyone under the age of 21 to buy, possess or consume alcohol

- *Alcohol and Violence:*

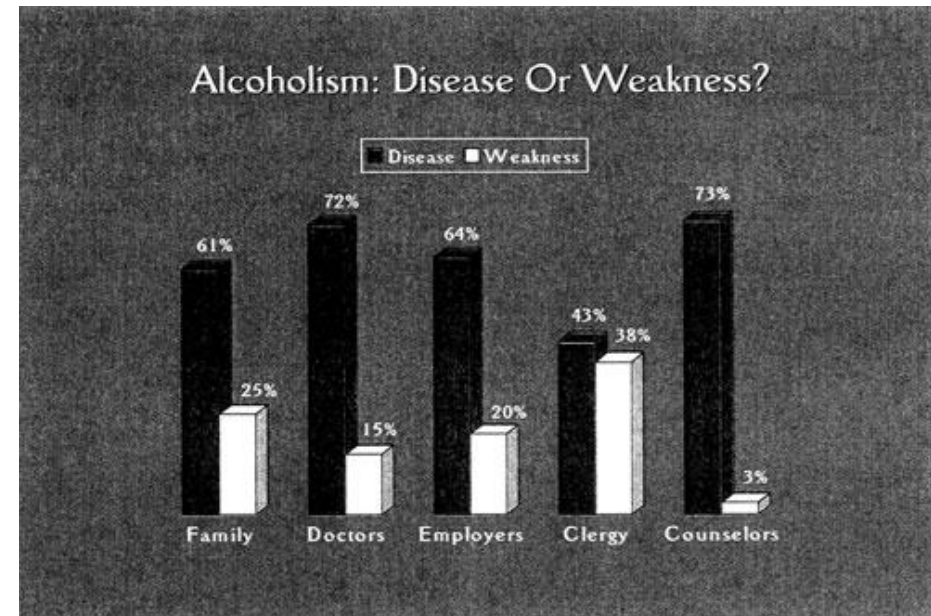
- Fights are more likely to break out at parties where alcohol is present

- *Alcohol and Sexual Activity:*

- More likely to become sexually active at an earlier age
- Approx 25% of sexually active teens use alcohol or drugs

Choosing to Live Alcohol-Free cont.

- *Alcohol and the Family:*
 - Estimated that 25% of all youth are exposed to **alcohol abuse**: Excessive use of alcohol
 - High risk for:
 - Neglect, abuse or social isolation
 - Economic hardship
 - Personal use of alcohol
 - Mental illness
 - Studies show that a person who begins drinking alcohol as a teen is 4x more likely to develop alcohol dependence.
 - **Alcoholism**: Disease in which a person has a physical or psychological dependence on drinks that contain alcohol



Choosing to Live Alcohol-Free cont.

- Alcohol and School:
 - Zero-tolerance policies



- Avoiding Alcohol:
 - It is a choice!
 - Benefits:
 - Maintaining a healthy body
 - Establishing healthy relationships
 - Avoiding risky behavior
 - Avoiding illegal activities
 - Achieving goals
- Refusing Alcohol:
 - “I don’t like the taste”
 - “I don’t drink alcohol, besides, it’s time for me to leave.”
 - Plan alcohol free activities

Lesson 3: The Impact of Alcohol Abuse

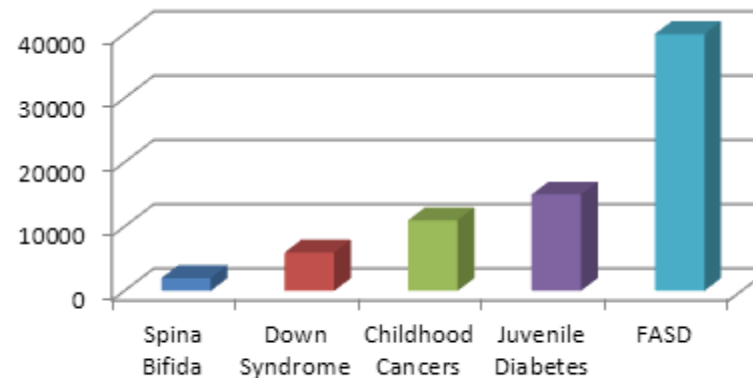
- Alcohol and Driving:
 - Drinking and Driving is very dangerous.
 - **Blood alcohol concentration (BAC):** The amount of alcohol in a person's blood, expressed as a percentage.
 - Depends on:
 - Quantity and type of alcohol that was consumed
 - The rate of consumption
 - Body size
 - Gender
 - Any amount of alcohol in the blood can cause:
 - Slow reflexes
 - Reduced ability to judge distances and speeds
 - Increase in risk-taking behaviors
 - Reduced concentration and increased forgetfulness
- Driving while intoxicated (DWI) or driving under the influence (DUI) is illegal.
 - Adult drivers who have a BAC of 0.08 percent can be charged with drunk driving
 - *For those under 21, what is the BAC limit?*
 - Consequences include:
 - Injuries or death to the driver and others
 - Arrest, jail time, court appearances, etc...
 - Restricted driving privileges and/or immediate confiscation of driver's license
 - Higher auto insurance rates or a canceled auto insurance policy

The Impact of Alcohol Abuse cont.

- Alcohol and Pregnancy
 - A female who drinks during pregnancy can harm her fetus
 - When a pregnant female drinks, alcohol passes directly from her body into the bloodstream of the fetus
 - A fetus processes alcohol much slower than the mother.
 - Thus there is more alcohol in the fetus' system for a longer period of time
- **Fetal alcohol syndrome (FAS)**
 - A group of alcohol related birth defects that include physical and mental problem



- Effects of Fetal Alcohol Syndrome (FAS):
 - Small head and deformities of the face, hands of feet
 - Heart, liver and kidney defects
 - Vision and hearing problems
 - Central nervous system problems, developmental disabilities and poor coordination
 - Difficulties learning and short attention span
 - Hyperactivity, anxiety and



Illegal Drugs

- New Vocabulary:
 - Substance abuse
 - Illegal drugs
 - Illicit drug use
 - Overdose
 - Addiction
 - Marijuana
 - Paranoia
 - Inhalants
 - Anabolic-androgenic steroids
 - Psychoactive drugs
 - Designer drugs
 - Hallucinogens
 - Euphoria
 - Depressants
 - Stimulants
 - Opiates
 - Drug-free school zones
 - Drug watches
 - Rehabilitation
- You will need to find these definitions on your own!***