

FORMs of TOBACCO

2nd of 3

Prep for Session I



FORMS of TOBACCO

- Cigarettes
- Spit tobacco (chewing tobacco, oral snuff)
- Pipes
- Cigars
- Clove cigarettes
- Bidis
- Hookah (waterpipe)
- Dissolvable tobacco
- E-cigarettes

**All
forms of
tobacco
are
harmful.**



Image courtesy of the Centers for Disease Control and Prevention / Rick Ward



AMERICAN CIGARETTES

Most common form of tobacco in U.S.

Sold in packs (20 cigarettes/pack)

Total nicotine content, per cigarette:

- Average 13.5 mg (range, 11.9 to 14.5 mg)

Machine-measured nicotine yield:

| Type of cigarette | Yield per cigarette |
|-----------------------------|---------------------|
| Full-flavor (regular) | 1.1 mg |
| Light | 0.8 mg |
| Ultra-light | 0.4 mg |
| Average (all brands) | 0.9 mg |

Smoker's nicotine yield, per cigarette: ~ 1-2 mg

“Light” cigarettes: Nicotine exposure may be higher



Marlboro and Marlboro Light are registered trademarks of Philip Morris, Inc.



SPIT TOBACCO

Chewing tobacco

- Looseleaf
- Plug
- Twist

Snuff

- Moist
- Dry



The Copenhagen and Skoal logos are registered trademarks of U.S. Smokeless Tobacco Company, and Red Man is a registered trademark of Swedish Match.



NICOTINE CONTENT in SMOKELESS TOBACCO PRODUCTS

| Dose | Product | pH | Total free nicotine (mg/g) |
|--------|---------------------------|-----------|----------------------------|
| Low | Hawken Wintergreen | 5.2 – 5.7 | 0.01 – 0.02 |
| | Skoal Bandits Wintergreen | 6.9 – 7.1 | 0.5 – 1.0 |
| Medium | Skoal Long Cut Straight | 7.5 – 7.6 | 2.4 – 3.7 |
| High | Kodiak Wintergreen | 8.2 – 8.4 | 5.8 – 6.5 |
| | Copenhagen | 7.6 – 8.6 | 3.1 – 9.4 |

Data from Hatsukami et al. (2007). *Am J Prev Med* 33(6S):S368–78.



HEALTH CONSEQUENCES of SMOKELESS TOBACCO USE

Periodontal effects

- Gingival recession
- Bone attachment loss
- Dental caries

Oral leukoplakia

Cancer

- Oral cancer
- Pharyngeal cancer



Oral Leukoplakia
*Image courtesy of Dr. Sol Silverman -
University of California San Francisco*



PIPE TOBACCO

- Prevalence of pipe smoking in the U.S. is less than 1%
- Pipe smokers have an increased risk of death due to:
 - Cancer (lung, oral cavity, esophagus, larynx)
 - Chronic obstructive pulmonary disease
- Risk of smoking tobacco-related death: cigarettes > pipes ≈ cigars



CIGARS

- Tobacco content of cigars varies greatly
- One cigar can deliver enough nicotine to establish and maintain dependence
- Cigar smoking is not a safe alternative to cigarette smoking



CLOVE CIGARETTES (also known as KRETEKS)

- Mixture of tobacco and cloves
- Imported from Indonesia
- Use is more prevalent among young smokers
- Two times the tar and nicotine content of standard cigarettes
- Hazards of ordinary tobacco cigarettes *plus* others due to cloves



BIDIS

- Imported from India
- Resemble marijuana joints
- Available in candy flavors
- Deliver 3-fold higher levels of carbon monoxide and nicotine and 5-fold higher levels of tar when compared to standard cigarettes
- “Cigarettes with training wheels”

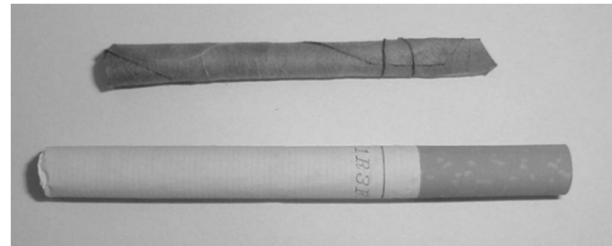


Image courtesy of the Centers for Disease Control and Prevention / Dr. Clifford H. Watson



HOOKAH (WATERPIPE SMOKING)

- Also known as Shisha, Narghile, Goza, Hubble bubble
- Tobacco flavored with fruit pulp, honey, and molasses
- Increasingly popular among young adults in coffee houses, bars, and lounges
- Nicotine, tar and carbon monoxide levels comparable to or higher than those in cigarette smoke
- A 1-hr hookah smoking session ~ 200 puffs, (avg cigarette ~ 20 puffs). Volume of smoke inhaled = 90,000 milliliters (ml), compared with 500-600ml when smoking a cigarette.



Image courtesy of Mr. Sami Romman / www.hookah-shisha.com



DISSOLVABLE TOBACCO

- Pellet, film, sticks, strips
- Cured tobacco and flavorings
- Melt within 3-30 min
- 0.6 – 3.1 mg NIC delivered



ELECTRONIC CIGARETTES

- Devices similar in appearance to cigarettes, cigars, pipes, or pens
- Battery-operated devices that create a vapor for inhalation
 - Simulates smoking but does not involve combustion of tobacco
- Also known as
 - E-cigarette
 - E-hookah, Hookah pen,
 - Vapes, Vape pen, Vape pipe
 - Electronic nicotine delivery system (ENDS)

Cigarette



e-Cigarettes



Njoy
Traditional Flavor



Blu
Regular

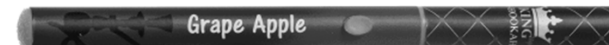
Flavors come in a variety of "smoke juices"

e-Hookahs



Imperial Hookah
Strawberry Margarita

Label states nicotine content



King eHookah
Grape Apple

Label says "This product contains nicotine" and later "no nicotine"



Logic Hookah
Blueberry

Label boasts "kissable breath" and "satisfies nicotine cravings"

Vape Pens



Image from: <http://www.nytimes.com/2014/03/05/business/e-cigarettes-under-aliases-elude-the-authorities.html>



ELECTRONIC CIGARETTES: Components

- Power source
 - Rechargeable or disposable battery
- Cartridge containing liquid solution
 - Propylene glycol
 - Glycerin
 - Flavorings (tobacco, fruit, chocolate, mint, cola, candy, etc.)
 - Nicotine (0-36 mg/mL)
- Electronic atomizer/vaporizer
 - Heating element vaporizes liquid at temperatures 65-120 °C



ELECTRONIC CIGARETTES:

Potential health risks

- Propylene glycol may cause respiratory irritation and increase the risk for asthma
- Glycerin may cause lipoid pneumonia on inhalation
- Nicotine is highly addictive and can be harmful
 - Refill cartridges with high concentrations of nicotine are a poisoning risk, especially in children
- Carcinogenic substances are found in some aerosols
- Use of e-cigarettes leads to emission of propylene glycol, particles, nicotine, and carcinogens into indoor air
 - Long-term safety of second hand exposure to e-cigarette aerosols is unknown

Electronic cigarettes are not proven to be safe.



ELECTRONIC CIGARETTES: Indoor Air Pollution

- E-cigarettes are not emission-free
- During vaping sessions, compounds and particles emitted into the indoor air include
 - Propylene glycol
 - Glycerin
 - Heavy metals
 - Nicotine
 - Flavoring agents
 - Polycyclic aromatic hydrocarbons
- Levels of most substances lower than conventional cigarettes
- Long-term safety of second hand exposure to e-cigarette aerosols is unknown



ELECTRONIC CIGARETTES: Current Trends and Evidence

- Predominantly used by smokers and smokers who are considering quitting
- Used as an alternative to cigarette smoking and as an aid for cessation
 - Perceived as less harmful than conventional cigarettes
- Use is increasing among adolescents and young adults



ELECTRONIC CIGARETTES: Current Trends and Evidence, cont' d

- Can reduce the desire (craving) to smoke cigarettes and alleviate nicotine withdrawal symptoms
- Some smokers reduce the number of cigarettes smoked or quit smoking as a result of using e-cigarettes
- Have not been proven effective as an aid sustained smoking cessation



Long-term safety and efficacy data are lacking.



FORMS of TOBACCO: SUMMARY

- Cigarettes are, by far, the most common form of tobacco used in the U.S.
- Other forms of tobacco exist and are increasing in popularity.
- All forms of tobacco are harmful.
- The safety/efficacy of e-cigarettes is not established.
- Attention to all forms of tobacco is needed.

