

SMOKELESS

DOES NOT MEAN HARMLESS

PREPARED BY:

STEVEN KIPNIS, MD, FACP, FASAM

MEDICAL DIRECTOR – NYSOASAS

ROBERT KILLAR, CASAC

DIRECTOR OF THE COUNSELOR ASSISTANCE
PROGRAM

WHAT IS SMOKELESS TABACCO?

- The two main types are:
 - Chewing tobacco
 - Snuff
- Betel quid is not a tobacco product, though it is used in a similar fashion and is included at the end of this workbook

WHAT IS SMOKELESS TOBACCO?

- Chewing tobacco
 - Loose leaf
 - Processed cigar type tobacco loosely packed in small strips



WHAT IS SMOKELESS TOBACCO?

- Snuff (finely ground tobacco)
 - Moist
 - Used by “dipping”
 - Placing it between gum and cheek or under the upper or lower lip



WHAT IS SMOKELESS TABACCO?

- Chewing tobacco
 - Plug
 - Small oblong blocks of semi – soft tobacco
 - Place tobacco next to the gingival/buccal mucosa (cheek and gum)



WHAT IS SMOKELESS TABACCO?

- Snuff (finely ground tobacco)
 - Dry
 - Placed in oral cavity or sniffed through the nose



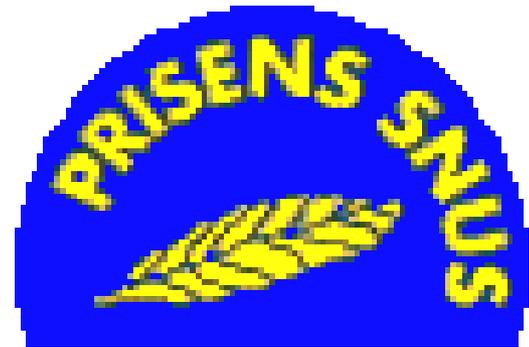
Applicator

SNUFF

- Can be dry (water content less than 10%) or moist (water content 40% to 60%)
- Not chewed
- Small amounts of flavoring agents or other additives (NA carbonate to adjust pH or acidity) are incorporated
- Sold in pocket size tins (50G) or tea -bag-like “sachets” containing 1.0G each

SNUFF

- Two methods of production
 - American (fermented)
 - Nitrosamines (proven carcinogens) are produced
 - Swedish (heat, no fermentation)
- Both methods produce:
 - Polynuclear aromatic hydrocarbons
 - Polonium -210 (very low levels)



Swedish Snuff
product

SNUFF

- Pharmacokinetics
 - Absorbed primarily through the oral cavity (small amount is swallowed)
 - Depends on how packed
 - Level of nicotine available
 - 3 to 4 times slower absorption than cigarette smoking

SNUFF

Toxicity:

One would think that this would cause higher incidence of oral cancer. Not proved in the Swedish studies.

HISTORY

Tobacco was introduced to Western culture by the Spanish explorers in the early 16th century.

Initial use was with a pipe.



HISTORY

- Smokeless tobacco was much more prevalent in the early 1900's
 - Male per capita consumption of smokeless tobacco was almost 2 kilograms/year (55% of total tobacco use)
- Communal Snuff Box in Congress until 1930's
- Advent of mass production, machine rolled cigarettes caused decline of smokeless tobacco use to approximately 4 % of total tobacco consumption in 1970

HISTORY

- 1972 to 1989
 - 3 fold increase in the production of smokeless tobacco in US
 - In 1986 US Dept of Health and Human Services reported
 - 6.5% of men and 0.7% of women were regular users
 - 30% of men and 4.8% of women had tried smokeless tobacco at least once

HISTORY

- 1972 to 1989
 - Surgeon General's report of 1986
 - First report on the health consequences of smokeless tobacco
 - Congress enacted the Comprehensive Smokeless Tobacco Health Education Act (1986)
 - Law requires manufacturers, packagers, and importers to place 3 warnings, on a periodic rotational basis, on all advertising and labeling for smokeless tobacco products
 - **Advertising spending has increased 2 fold since then**

HISTORY

- 1972 to 1989
 - 1989 Teenage Study (12 to 18 years old)
 - 12.7% tried smokeless tobacco and 4% were regular users over a 4 year follow up period

AT PRESENT

- Smokeless tobacco use is common in India and Central Asia
- Smokeless tobacco use is banned in
 - All European Union countries except Sweden
 - Australia
 - Israel
 - Japan
 - Hong Kong
 - New Zealand
 - Saudi Arabia
 - Singapore

AT PRESENT

- 12 million people in US use smokeless tobacco
 - 3.5% of adults are current users (6.7% men and 0.5% women)
 - 9.3% Native American Indian/Alaskan Natives
 - 4.4% White
 - 1.8% African American
 - 0.6% Hispanic
 - 0.2% Asian American

AT PRESENT

- Highest rates of smokeless tobacco use are in:
 - 8 to 17 year old young white men
 - People in southern and north central states
 - People in blue collar occupations

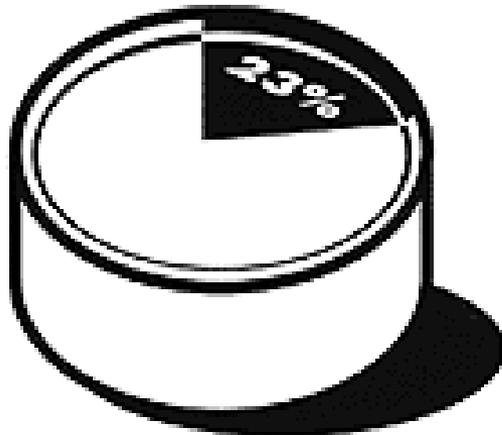
AT PRESENT

- 6.7% of HS students use regularly
 - 11% male and 2.2% female
- 3.7% of middle school students use regularly

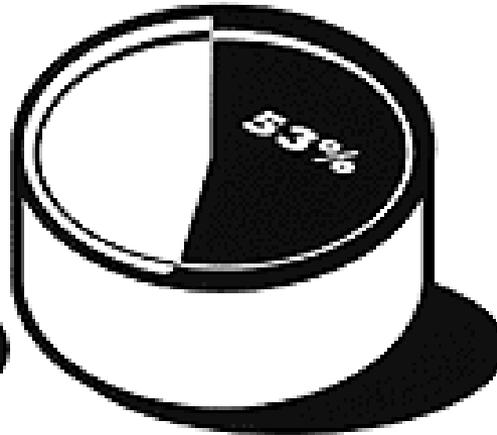
AT PRESENT

**AMONG TEENS USING SMOKELESS TOBACCO,*
ALMOST THREE-FOURTHS BEGAN BEFORE 9TH GRADE**

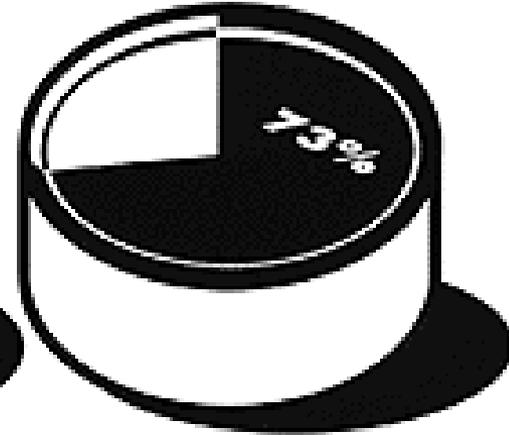
CUMULATIVE PERCENTAGES



First used by 6th grade - 23%



First used by 8th grade - 53%



First used by 9th grade - 73%

MARKETING TO KIDS

- US Tobacco – internal document showing strategy for hooking new smokeless – tobacco users
 - “new users of smokeless tobacco...attracted to the product for a variety of reasons...are most likely to begin with products that are milder tasting, more flavored, and/or easier to control in the mouth. After a period of time, there is a natural progression of product switching to brands that are more full bodied, less flavored, have more concentrated “tobacco taste” than the entry brand”

MARKETING

- Smokeless tobacco producers use innovative measures
 - New delivery systems
 - Small tea bag pouches
 - Varying nicotine levels
 - Different flavors
 - Cherry
 - Spearmint
 - Names that appeal to kids
 - Cougar, Kodiak, Roosters, Bandits

SMOKELESS TABACO AND SPORTS

- Baseball players are the heaviest users
 - Walsh in Tobacco Control (2000) surveyed 1226 high school ball players in California
 - 46% had tried smokeless tobacco and 15% were currently using it
- Survey of 7 Major League Baseball Teams
 - 34% use total
 - 55% of white males

ANTI – USE CAMPAIGN

Smokeless Tobacco: A New Epidemic?

Smokeless forms of tobacco include chewing tobacco, snuff (a powdered variety of chewing tobacco) and most recently a synthetic cigarette which is not lit but only "puffed" on. Until recently such forms of tobacco were used primarily by a relatively small percentage of the U.S. population located mainly in the southeastern states. However, in recent years smokeless tobacco sales have been increasing at a rate of better than 10 percent per year, and evidence suggests that many of the new users are in their teens and younger. In particular, many male teenagers, hearing of the dangers of smoking and influenced by the example of well-known athletes, have turned to smokeless tobacco products. From 1970 to 1986, males between the ages of 17 and 19 increased their use of snuff fifteenfold and their chewing tobacco use fourfold.

Smokeless tobacco can cause oral cancer and other forms of mouth disease, and like cigarettes, can result in dependence. In addition, the use of smokeless tobacco may produce blood nicotine levels similar to those caused by cigarette smoking. Advertising that uses popular athletes and entertainers to promote these products is considered partly responsible for this most recent "epidemic," as are packaging and labeling with specific youth appeal. Ironically, increased awareness of the health hazards of cigarette smoking may also be a factor in the turn to smokeless tobacco products by people who are unaware of their hazards.

Although smokeless tobacco's popularity tapered off slightly in the late 1980s following the highly publicized death of Sean Marsee, an Oklahoma high school track star who used smokeless tobacco, these products are again increasing in popularity. Doctors who specialize in treating the disfiguring oral cancer linked to chewing tobacco believe that young boys are influenced by advertisements for the product that appear in publications about sports and outdoor activities.



It appears that a growing number of young people, influenced by the example of well-known athletes, are using smokeless tobacco. The result can be oral cancer and other types of mouth disease.



Anti – tobacco speaker
Rick Bender at training
camps

ANTI – USE CAMPAIGN

Bill Tuttle Poster

Question: What does chewing or dipping tobacco do for a baseball player?

Answer: Ask Bill Tuttle.



Glory Days **Gory Days**

If you use spit tobacco or loose tobacco who does, get the facts for your dentist or physician for help in quitting. If you'd like more information about your cancer or quitting tips, call the National Cancer Institute's Cancer Information Service at 1-800-4-A-CANCER.



PRO – USE CAMPAIGN

1976 Walt Garrison Poster

I love tobacco. I don't smoke.

If I'm a guy who loves tobacco, how come I never take a puff?
Well, because I use "smokeless tobacco."

All it takes is a pinch of "smokeless" in between my cheek and gum. Feels real relaxin' in there. And I get full, rich tobacco pleasure.

Another thing is, "smokeless tobacco" can't tie up my hands. So I can use it no matter what I'm doing.

If you'd like to go "smokeless," here's what you do. Just look for three great brands.

There's Skoal, my favorite, which has a wintergreen taste. Copenhagen, a straight tobacco.

And Happy Days Mint. All three dated for freshness.

They'll each give you the tobacco pleasure you're looking for.

**Smokeless tobacco.
A pinch is all it takes.**

**Walt Garrison,
football and rodeo star.**



For a free booklet that explains how to get the full enjoyment of "smokeless tobacco" —as well as a few free pinches that you can try for yourself—write to "Smokeless Tobacco," United States Tobacco Company, Dept. T33, Greenwich, Connecticut 06830.

1976

PRO – USE CAMPAIGN

Scratch Off Cards

DISTINCTLY DIFFERENT

U.S. Smokeless TOBACCO CO.

90-POINT Scratch & Win Game

WIN A:

- GRAND PRIZE \$16,000
- SECOND PRIZE \$10,000
- THIRD PRIZE \$5,000
- FOURTH PRIZE \$1,000

OR ANY OF THE 90 POINTS

SCRATCH ONLY ONE "RIDER BOX" AND ONE "SCORE BOX" FROM THE COLUMNS BELOW

| | RIDER | SCORE |
|---|---------------|---------------|
| + | [Scratch Off] | [Scratch Off] |
| + | [Scratch Off] | [Scratch Off] |
| + | [Scratch Off] | [Scratch Off] |

If the "Rider" and the "Score" chosen, exactly match the final score of the Rider in any PRO 2004 Built Ford Tough Series Event between 11/14/2003 and 10/31/04 YOU WIN!

Scratch star to the right to reveal the prize being played for.

No Purchase Necessary. Offer not available to minors. Rules and how to redeem prizes are located on the back of this game card.

TOBACCO PLANT



Nicotiana tabacum
from Cornell University

COMPONENTS OF TOBACCO

- Nicotine
 - Colorless
 - Water soluble
 - Oily
 - Pungent odor
 - Rapid absorption
 - Potent reinforcer (5 to 10 times more potent for euphoriant effect than cocaine if intravenous)

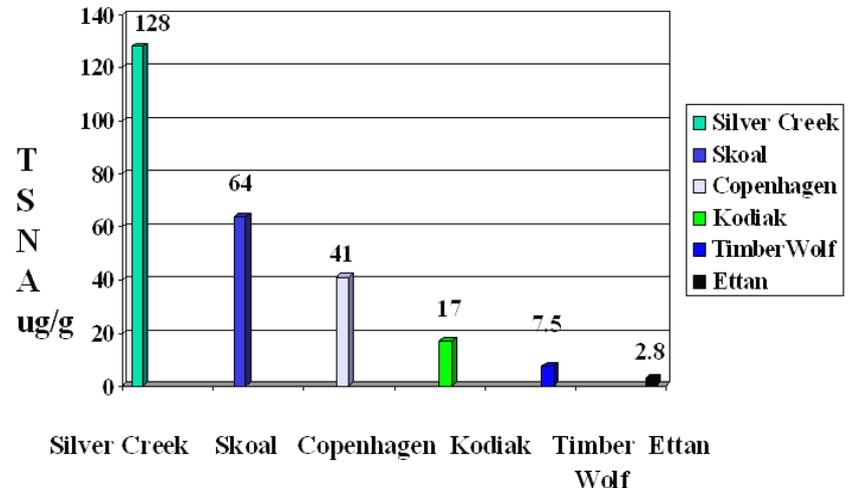
COMPONENTS OF TOBACCO

- Nitrosamines (organic carcinogenic compounds)
 - Proven carcinogens
 - N-nitrosamines
 - N-nitroso normicotine
 - 12-o-tetradecanoylphorbol-13 acetate
 - Tumor promoter

COMPONENTS OF TOBACCO

- Nitrosamines
 - Snuff contains 10 times the amount of nitrosamines found in cigarettes
 - 100 times the amount that the FDA allows in other products
 - Levels of cancer causing tobacco specific nitrosamines (TSNA) were significantly higher in US brands than Swedish brands, suggesting that companies can produce a product with lower levels of TSNA
 - Swedish snuff – 2.8ug of nitrosamine per gram of dried tobacco

TSNA Levels in Oral Snuff (ug/g)



Source: American Health Foundation, 2001

COMPONENTS OF TOBACCO

- Nitrosamines (TSNA)
 - US snuff has higher levels of bacterial activity leading to the formation of nitrosamines because it is fermented and shipped without refrigeration
 - Copenhagen and Skoal, two US brands had large increases in TSNA levels when placed on a shelf at room temperature over a 6 – month time period.
 - 20% increase TSNA in Skoal
 - 137% increase TSNA level in Copenhagen
 - No significant change in Swedish brands

PHARMACOLOGIC DIFFERENCES

| Cigarette | Smokeless tobacco |
|--|--|
| More than 4000 chemicals | More than 4000 chemicals |
| Nicotine is the addictive agent | Nicotine is the addictive agent |
| Produces rapid peak and trough (low) levels of nicotine | More prolonged, sustained level of nicotine |
| Level of nicotine less than smokeless tobacco | Level of nicotine more than cigarettes (one can delivers amount equal to 60 cigarettes) |

NICOTINE CENTRAL NERVOUS SYSTEM (CNS) EFFECT

- Stimulating effects are seen with low dose nicotine and affect the brain in the
 - Cortex
 - Locus ceruleus
- Reward like effects are seen with high dose nicotine levels and affect the brain in the
 - Limbic system

• These brain areas are effected by various substances, such as: opiates work through the Locus ceruleus and cocaine affects the limbic system.

TOXICITY OF NICOTINE

- Nausea
- Vomiting
- Diarrhea
- Abdominal pain
- Diaphoresis (sweats)
- Flush
- Dizziness

TOXICITY OF NICOTINE

- Perinatal exposure
 - Hypoxemia of fetus (low oxygen levels)
 - Spontaneous abortion
 - Abruptio placenta (placenta disruption)
 - Preterm delivery
 - Congenital malformations (questionable)
 - Decrease in milk production and vitamin c in milk

TOXICITY OF NICOTINE

- Interfere with birth control pills
- Infertility
- Impotence

USEFUL EFFECTS OF NICOTINE

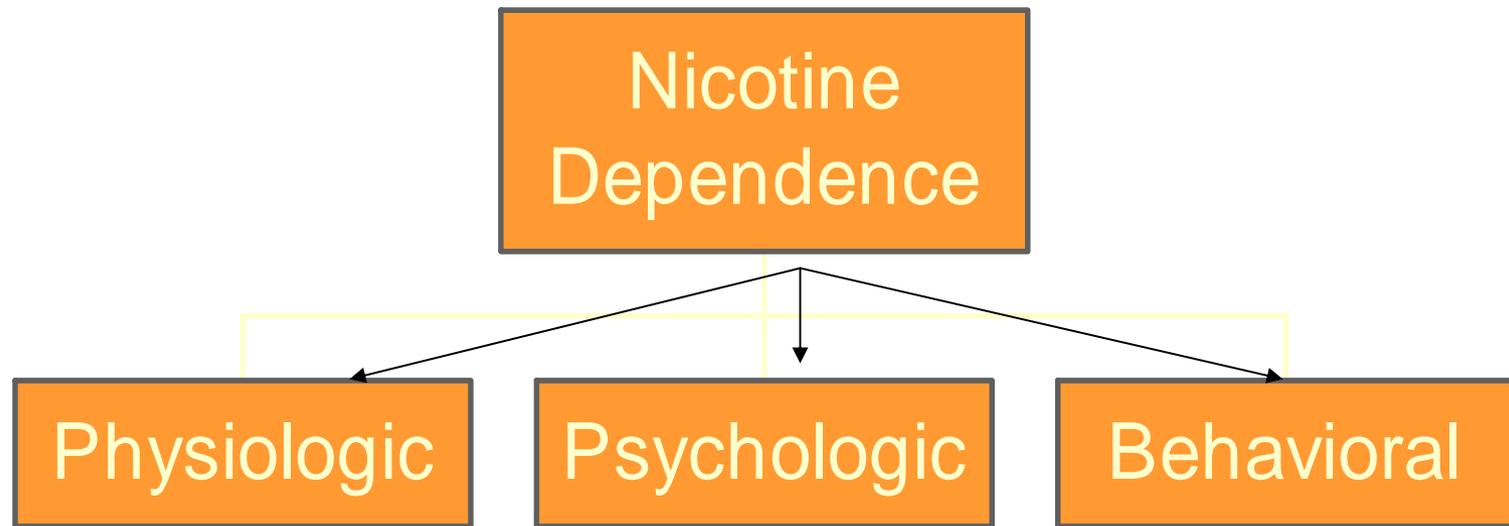
- Alleviate stress
- Improved learning
- Control weight
- May improve Tourette's Syndrome
 - Study in *Clin Psych News 2000*
 - Can wear patch for 1 week, improvement lasts several weeks

USEFUL EFFECTS OF NICOTINE

- Schizophrenia
 - Impaired sensory gating
 - Trouble focusing on all events happening at once (background sounds) – everything appears to be as important
 - Bolus (a large dose) of nicotine corrects this in 45 minutes
 - Patch does not work

NICOTINE ADDICTION IS A “3-PRONGED” DEPENDENCE

Physiological, Psychological and Behavioral



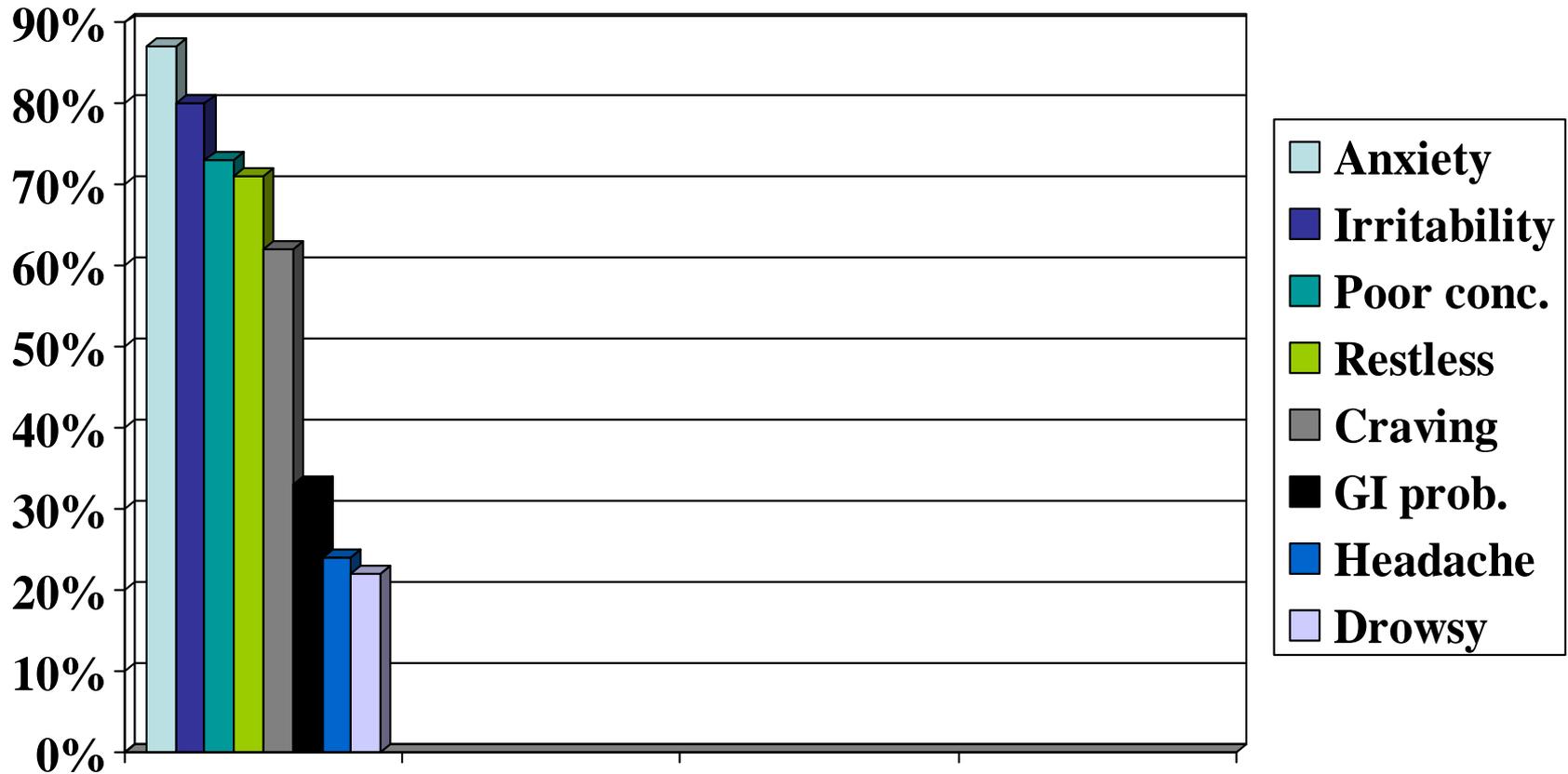
NICOTINE DEPENDENCE

- Behavioral dependence
 - Social use patterns
 - Ritualistic triggers
 - Behavioral habits promote relapse
- Physiologic dependence
 - Withdrawal
 - Tolerance

Psychological dependence includes: Rituals and Behaviors (snuff bottles, holders, spittoons)



NICOTINE WITHDRAWAL SYMPTOMS



ADVERSE MEDICAL CONSEQUENCES

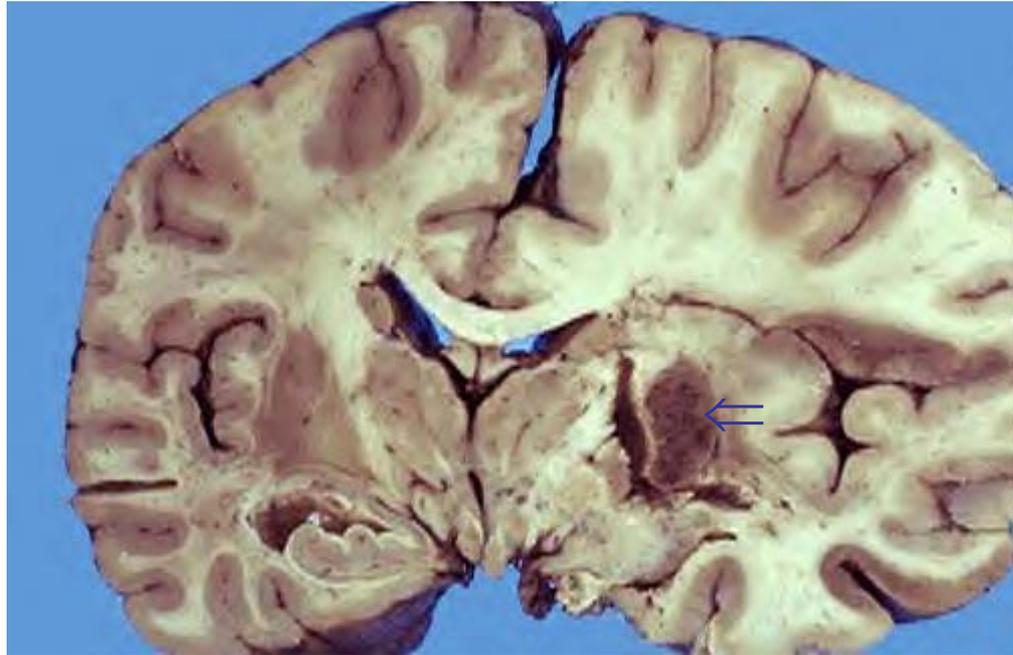
Many Adverse Medical Consequences Are Seen
With Tobacco Use

CENTRAL NERVOUS SYSTEM

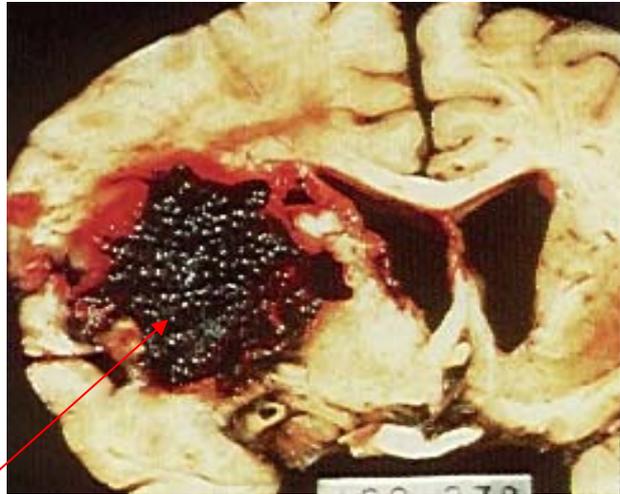
- Vascular disease
- Cerebrovascular accidents
 - Transient Ischemic Attacks (TIA's – a stroke like condition that resolves back to normal in less than 24 hours)
 - Stroke



**STRING SIGN OF LEFT
CAROTID ARTERY DISSECTION
AND OCCLUSION**



CEREBRAL INFARCTION



**HEMORRHAGIC
STROKE**

HEART DISEASE

- Smokeless tobacco causes similar effects as those seen in smoking
 - Increase heart rate (30% higher)
 - Tolerance develops quickly and then the heart rate goes back to baseline
 - Increase blood pressure
 - Increase platelet interaction with vessel walls which is seen in smoking is **NOT** seen in smokeless tobacco use
 - **Less cardiovascular risk than smoking possibly due to lack of carbon monoxide and related compounds**



**RIGHT CORONARY
ARTERY OCCLUSION**

HYPERTENSION

- Blood pressure levels are affected by
 - High sodium levels in smokeless tobacco
 - Nicotine
 - Licorice (active ingredient) causes sodium retention
- Can see increase of 21 mm Hg systolic and 14 Hg diastolic
- Long term effects depend on age with younger athletes showing no increase in BP

LIPIDS

- American Journal of Public Health (1989) looked at 2840 men
 - Smokeless tobacco users had 2 ½ times increase in cholesterol
- Indian study (2000)
 - Found increase in triglycerides and decrease in HDL (“good cholesterol”)
- Not all studies agree



CORONARY ARTERY WITH NARROWED LUMEN DUE TO BUILD UP OF ATHEROSCLEROTIC PLAQUE

DIABETES

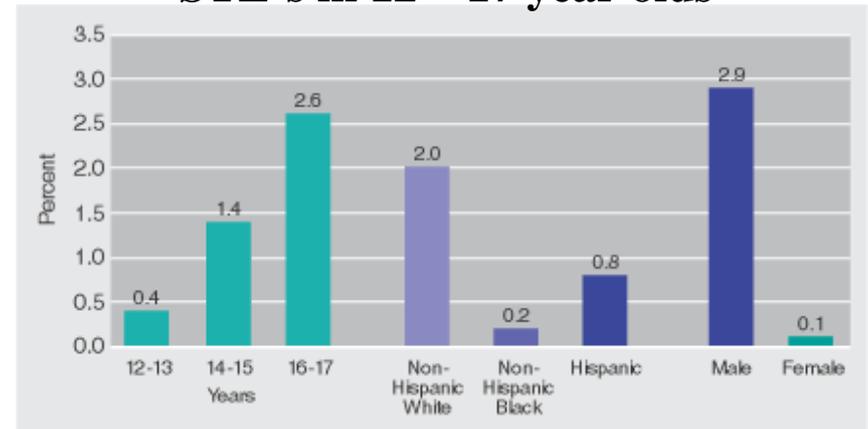
- Cigarette smokers and smokeless tobacco users have increase insulin levels which suggests a link with insulin resistance

- Head and Neck disease is a MAJOR RISK

SMOKELESS TOBACCO LESIONS (STL's)

- Appear as changes in color and texture of the oral mucosa
- STL's are the most prevalent oral soft-tissue lesions among adolescents in the US

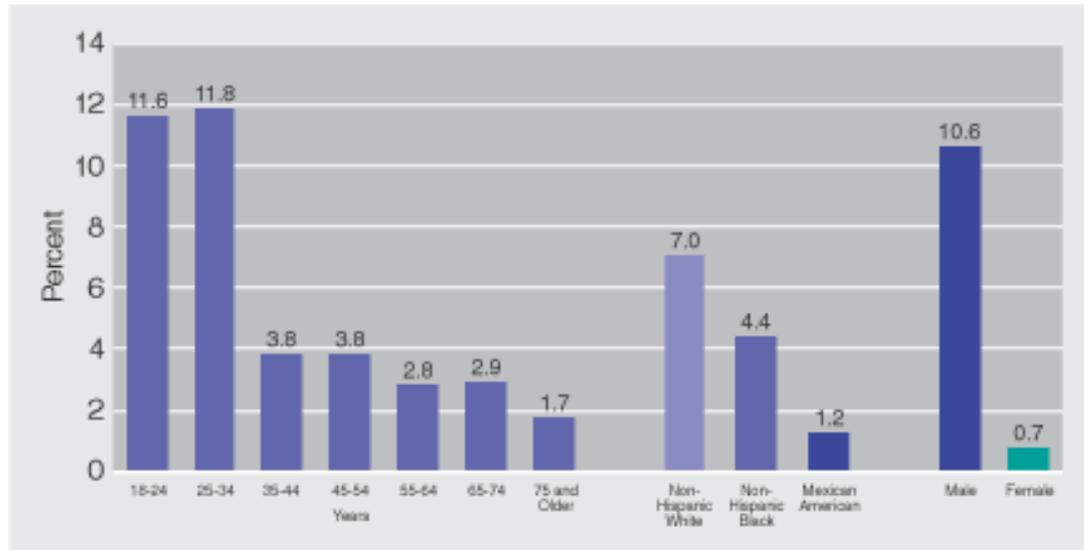
STL's in 12 – 17 year olds



SOURCES OF DATA

Analyses reported here are based on data from the 1986-1987 National Survey of Oral Health in U.S. School Children, National Institute of Dental and Craniofacial Research, National Institutes of Health (children analyses) as reported by Tomar et al. (1997) and from the Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention (adult analyses). NHANES III includes data on STLs for persons under 18; however, the sample size was too small for analysis.

SMOKELESS TOBACCO LESIONS in ADULTS (USA)



SOURCES OF DATA

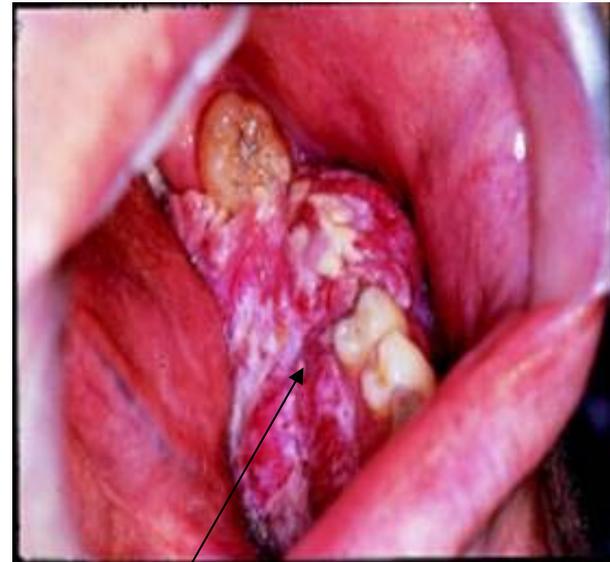
Analyses reported here are based on data from the 1986-1987 National Survey of Oral Health in U.S. School Children, National Institute of Dental and Craniofacial Research, National Institutes of Health (children analyses) as reported by Tomar et al. (1997) and from the Third National Health and Nutrition Examination Survey (NHANES III) 1988-1994, National Center for Health Statistics, Centers for Disease Control and Prevention (adult analyses). NHANES III includes data on STLs for persons under 18; however, the sample size was too small for analysis.



Discoloration of teeth and receding gums

PERIODONTAL DISEASE

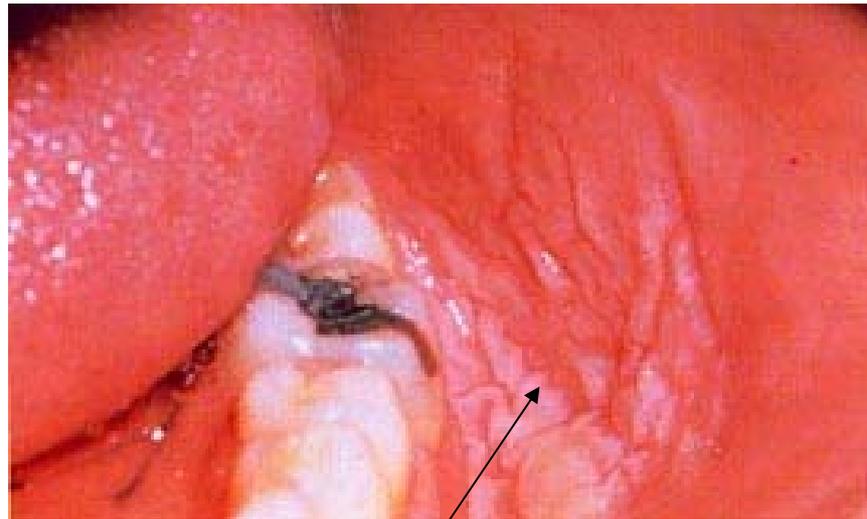
3 – 5% of diseased gingival and periodontal tissue becomes oral cancer

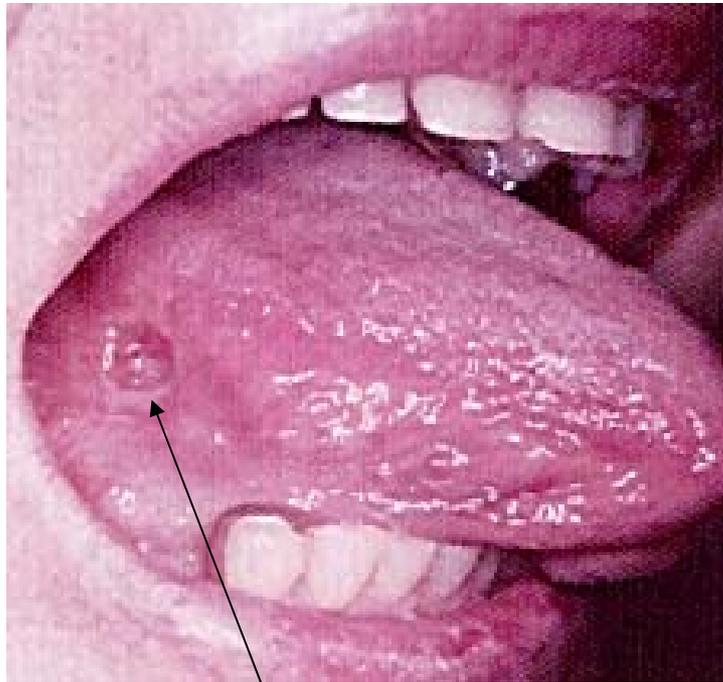




Gingival recession

Snuff dipper's patch – wrinkled hyperkeratosis (excessive thickening)





CANCER OF THE TONGUE

LEUKOPLAKIA

- White patches in the mouth and oral lesions of the tongue, cheek, and gums
- Can lead to oral cancer
- Occurs in more than half of all users in the first 3 years of use
- 60 to 78 % of all smokeless tobacco users have oral lesions



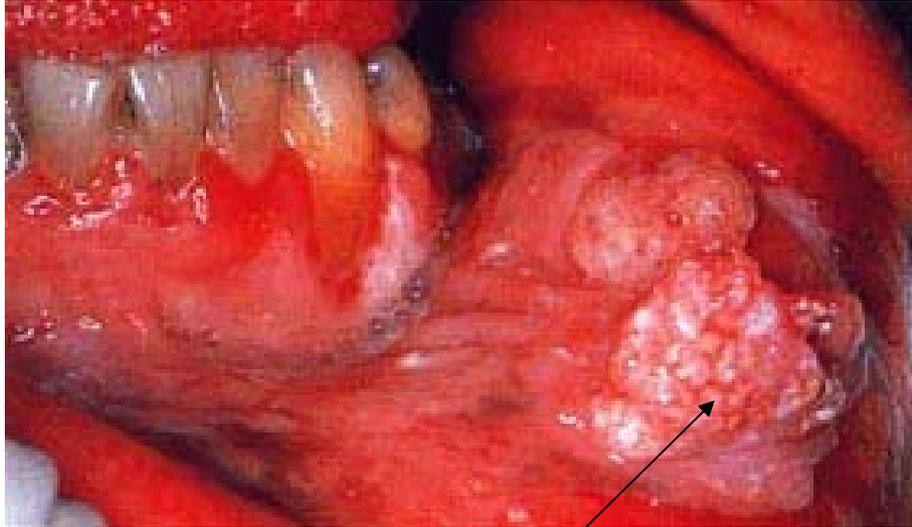
“HAIRY TONGUE”

- Theoretically tobacco smoke prevents the epithelial cells from sloughing in a normal fashion and they accumulate into a very thickened and white (unless stained brown, black, etc.) surface which extends as long "hairs" at the tips of the papillae.

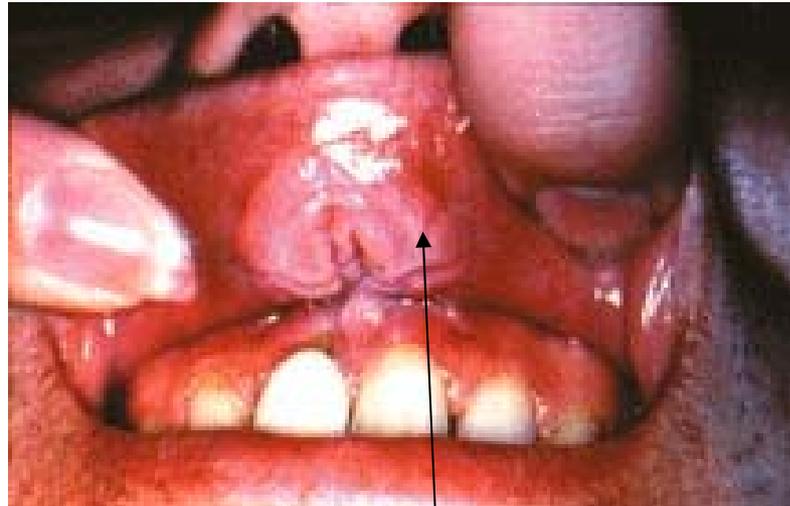




Cancer under the tongue



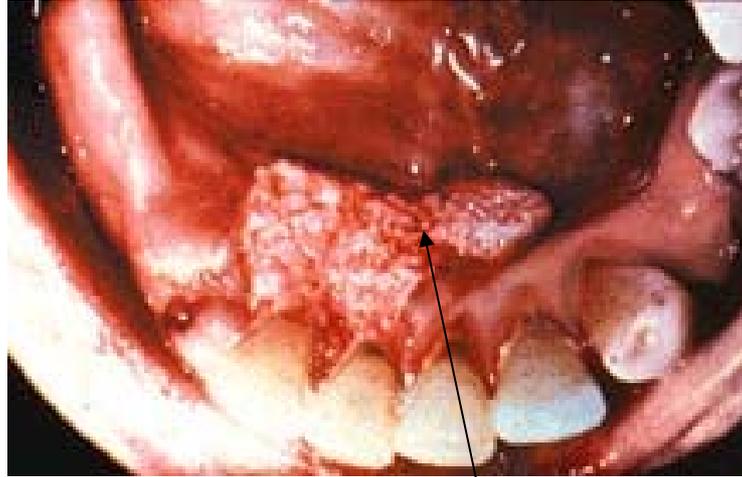
Cancer inside the cheek



Cancer under the upper lip



Cancer on upper gum line



Cancer behind the teeth



Cancer of the lower lip



Cancer of the lower lip



Cancer of the lower lip with loss
of significant tissue



Cancer of the cheek



Cancer of the cheek
with erosion of tissue



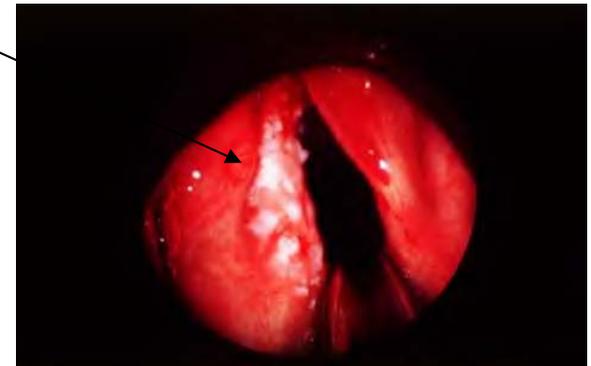
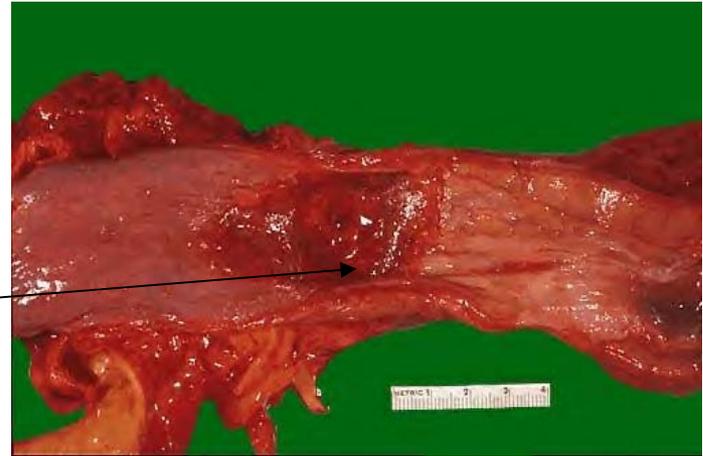
Operation for Cancer
with loss of part of
the jaw and tongue





Cancer of the neck
with large lymph nodes

- Constant exposure to tobacco juice causes cancer of the esophagus, pharynx, larynx, stomach and pancreas



RARE CASE OF EXPOSURE

- Root et al in the *NEJM* (1960) presented a case of a patient who placed snuff in his left ear for 40 years and SQUAMOUS CELL CARCINOMA DEVELOPED AT THE SITE

OTHER CONSEQUENCES

- US HS students using smokeless tobacco had associated
 - Increase alcohol use
 - Increase marijuana use
 - Increase engagement in physical fights
 - Increase likelihood of carrying a weapon
 - Increase likelihood of NOT using a condom during sexual encounters

OVERALL RISK

- Study of 135,036 Swedish male construction workers age 35 to 54
 - 1.4 x's increase risk of dying as compared to nonusers
 - It is unknown if some had smoked

MD SUPPORTED TREATMENT

- 5 A'S OF THE NATIONAL CANCER INSTITUTE
 - ASK ABOUT TOBACCO
 - ADVISE TO QUIT
 - ASSESS WILLINGNESS TO QUIT
 - ASSIST IN QUIT ATTEMPT
 - ARRANGE FOLLOW - UP

MD SUPPORTED TREATMENT

- Danger signs to discuss with your physician/dentist
 - A sore that does not heal
 - A lump or white patch
 - A prolonged sore throat
 - Difficulty chewing
 - Restricted movement of the tongue or jaw
 - A feeling of something in the throat
- **PAIN IS RARELY AN EARLY SYMPTOM**

MD SUPPORTED TREATMENT

- NICOTINE REPLACEMENT
 - GUM
 - PATCH
 - INHALER
 - NASAL SPRAY

NICOTINE REPLACEMENT THERAPIES (NRT)

- Developed in Sweden during the 1970's as a means to assist submariners
- Cornerstone of tobacco dependence treatment
 - Safe
 - Effective

NICOTINE REPLACEMENT THERAPIES (NRT)

- NICOTINE GUM (NICOTINE POLACRILEX, NICORETTE®)
- NICOTINE TRANSDERMAL PATCHES (HABITOL®, NICODERM CQ®, NICOTROL®)
- NICOTINE INHALER (NICOTROL INHALER®)
- NICOTINE SPRAY (NICOTROL NS®)
- NICOTINE LOZENGE (COMMIT®)



NICOTINE REPLACEMENT THERAPIES (NRT)

- Nicotine gum (nicotine polacrilex, Nicorette®)
 - Approved by the FDA in 1984
 - Available in 2mg and 4mg pieces
 - .86 mg absorbed from the 2mg piece
 - 1.2 mg absorbed from the 4 mg piece
 - Composed of nicotine bound to an ion-exchange resin and then incorporated into a gum base
 - “Park and chew” technique – piece is chewed several times, then “parked” between the cheek and gum until the tingling effect of chewing the gum ceases – chew several more times. Each piece should last about 20 to 30 minutes.
 - Adverse effects: jaw pain, mouth soreness, dyspepsia, hiccups

NICOTINE REPLACEMENT THERAPIES (NRT)

- Nicotine gum (nicotine polacrilex, Nicorette®)
 - Composed of nicotine bound to an ion-exchange resin and then incorporated into a gum base
 - Affected by chewing rate and pH of the saliva
 - Adverse effects: jaw pain, mouth soreness, dyspepsia, hiccups
 - Silagy in a meta-analysis of 39 studies reported 1.6 times higher quit rates at 6 months

NICOTINE REPLACEMENT THERAPIES (NRT)

- Nicotine transdermal patches (Habitrol®, Nicoderm CQ ®, Nicotrol ®)
 - Approved by the FDA in 1991
 - Over the counter approval in 1996
 - All 21 mg patches deliver .9mg of nicotine per hour
 - Temperature and circulation affect delivery
 - Adverse effects: sleep disturbance, skin reactions
 - Many studies of efficacy: 20 to 30% over 6 months

THE PATCH AND SMOKING



- NICODERM AND HABITROL STUDY
 - 1800 PATIENTS
 - 60% SMOKED WITH THE PATCH ON
- NO CORONARY EVENTS

NICOTINE REPLACEMENT THERAPIES (NRT)

- Nicotine spray (Nicotrol ns ®)
 - Approved by the FDA in 1996
 - One inhalation in each nostril = total dose of 1mg
 - Average use is 13 - 20 doses per day
 - 26% abstinence in the first year
 - Adverse effects: running nose, nasal irritation, throat irritation, watery eyes, sneezing
 - All but throat irritation decrease in 1 - 7 days

NICOTINE REPLACEMENT THERAPIES (NRT)

- Nicotine inhaler (Nicotrol inhaler ®)
 - FDA approved in 1998
 - Cigarette holder shape with replaceable cartridges
 - Each contains 10 mg nicotine and 1 mg menthol
 - 400 puffs per cartridge delivering 13 ug per puff
 - 80 puffs equal one cigarette
 - Use 4 to 6 inhalers per day
 - Affected by puff rate, temperature, saliva pH
 - 25% taper every month in number of puffs
 - Efficacy is 15% quit in first year

NICOTINE REPLACEMENT THERAPIES (NRT)

- Nicotine lozenge (Commit ®)
 - Approved by the FDA in 2002, though described as early as the 1960's in various medical journals
 - 2mg and 4 mg doses (72 lozenge package)
 - Minimum recommended number is 9 per day, in the first 6 weeks, with tapering thereafter
 - Maximum number is 20 lozenges per day
 - Glaxo packages “time to first cigarette” program with lozenges - program to decide if patient should start with a 2 or 4 mg lozenge

NICOTINE REPLACEMENT THERAPIES (NRT)

- NICOWater
 - Illegal in NYS
 - Can easily be sold to minors



ZYBAN®

- Generic form= bupropion hydrochloride
- Marketed first as an antidepressant
 - Wellbutrin® & Wellbutrin SR ®
- **First non-nicotine medication approved for smoking cessation**



ZYBAN®

- Appears to work thru the dopamine and norepinephrine pathways to reduce craving
- **Can be used alone or in combination with nicotine replacement medications**
- Side effects
 - Dry mouth
 - Insomnia
 - New England Journal of Medicine 2002 – seizure induced by insufflation of bupropion – case report of adolescent who crushed six 150mg tablets and snorted them

ZYBAN®

- Contraindicated in patients
 - Bulimia (high incidence of seizures if Zyban used with this eating disorder)
 - Seizure disorders

PLACEBO TREATMENT

- Mint Snuff
 - Use as a placebo or oral substitute
 - Mint leaves packed to mimic smokeless tobacco
 - No sugar
 - No nicotine



SPECIAL POPULATION

- Women and smokeless tobacco
 - Small percentage
 - Under – reported and/or socially unacceptable
 - Similar to male use in several ways
 - Friends usually initiate use
 - Many (25%) used smokeless tobacco to facilitate smoking cessation

SPECIAL POPULATION:

Differences Seen Between Men and Women When Using Smokeless Tobacco

| Men | Women |
|---|--|
| 6.3 dips of moist snuff per day | 3.6 dips of moist snuff/day |
| Held tobacco in mouth 39.9 minutes | Held tobacco in mouth 22.5 minutes |
| Used 2.8 tins of tobacco per week | Tin lasted 2 days to 3 months with median duration 6 days per tin |
| More than 5 years use | Less than 4 years use |

SPECIAL POPULATION :

Betel Nut Users

- Betel Nut (*Areca catechu*)
 - Member of the palm family
 - Used in SE Asia
 - Psychoactive = stimulant
 - Once used as toothpaste due to antibacterial effect



SPECIAL POPULATION :

Betel Nut Users

- Betel Nut (Areca catechu)



- Betel powder (ground)



BETEL NUT

- Betel quid (Pan Masala)
 - Product found in India, Africa and Asia
 - Dried paste made up of:
 - Tobacco
 - Areca nuts
 - Catechu
 - Plant based product used to treat diarrhea and as a birth control agent
 - Flavorings
 - Sucked or chewed

SPECIAL POPULATION :

Betel Nut Users

- Betel Nut Quid is made several different ways
 - Simplest is split a green nut, sprinkle it with lime and wrap it in a leaf of betel pepper and place it in your mouth



SPECIAL POPULATION :

Betel Nut Users

- Betel Nut Quid is made several different ways
 - As you chew, saliva mixes with the quid and generates a red juice that is spit out.
 - Results in a reddish tinge to the teeth
 - Users find this method refreshing and mildly stimulating



BETEL NUT

UNPROVEN USES

- Alcoholism
- Aphrodisiac
- Appetite stimulant
- Asthma
- Cough
- Digestive aid
- Diphtheria
- Ear infections
- Excessive thirst
- Fainting
- Gas
- Glaucoma
- Impotence
- Joint pain
- Leprosy
- Menstrual abnormalities
- Methanol induced blindness
- Parasites
- Skin disorders
- Toothache
- Veterinary laxative

BETEL NUT

ADVERSE EFFECTS WITH USE

- Salivation
- Lacrimation (eyes tearing)
- Diaphoresis (sweats)
- Diarrhea
- Nausea
- Urinary incontinence
- Fever
- Flush
- Confusion
- Memory lapse
- Anxiety
- Chest pain
- Myocardial infarction
- Irregular heart rhythms
- Hypoglycemia (low sugar)
- Hypertension
- Dependence

BETEL NUT

ADVERSE EFFECTS WITH USE

- Cancers
 - Mouth
 - Liver
 - Cervical
 - Stomach
 - Prostate
 - Lungs