


Advancing Our Understanding of Prevention of Head and Neck Cancer

Robert A. Schnoll, Ph.D.
Assistant Professor
Department of Psychiatry
University of Pennsylvania



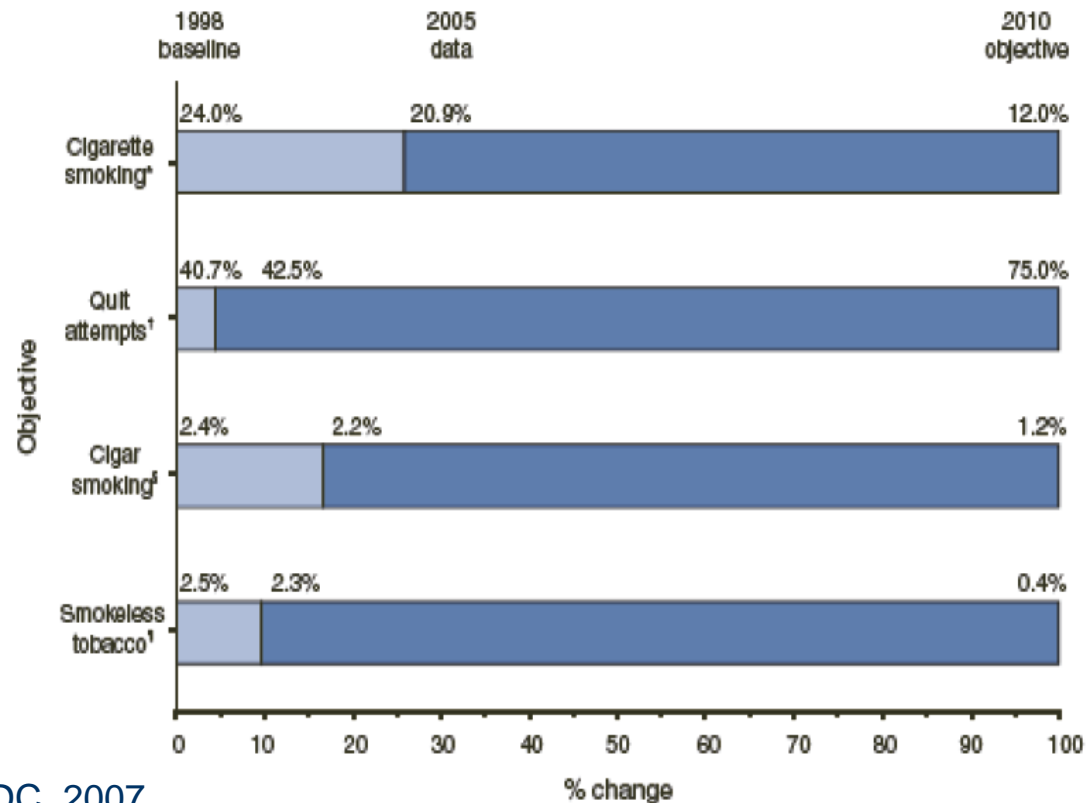
Targets for Prevention

- Tobacco Use
- Alcohol Use
- Genes
- Chemoprevention
- Screening
- HPV Vaccine

Tobacco Use

- Smoking rate dropped from 24% in 1998 to 20.9% in 2005
- 3% reduction means about 10 million fewer smokers
- Substantial change is needed to meet Health People 2010 objectives

FIGURE. Percentage change toward achieving tobacco-use national health objectives for 2010, by objective — National Health Interview Survey, United States, 2005



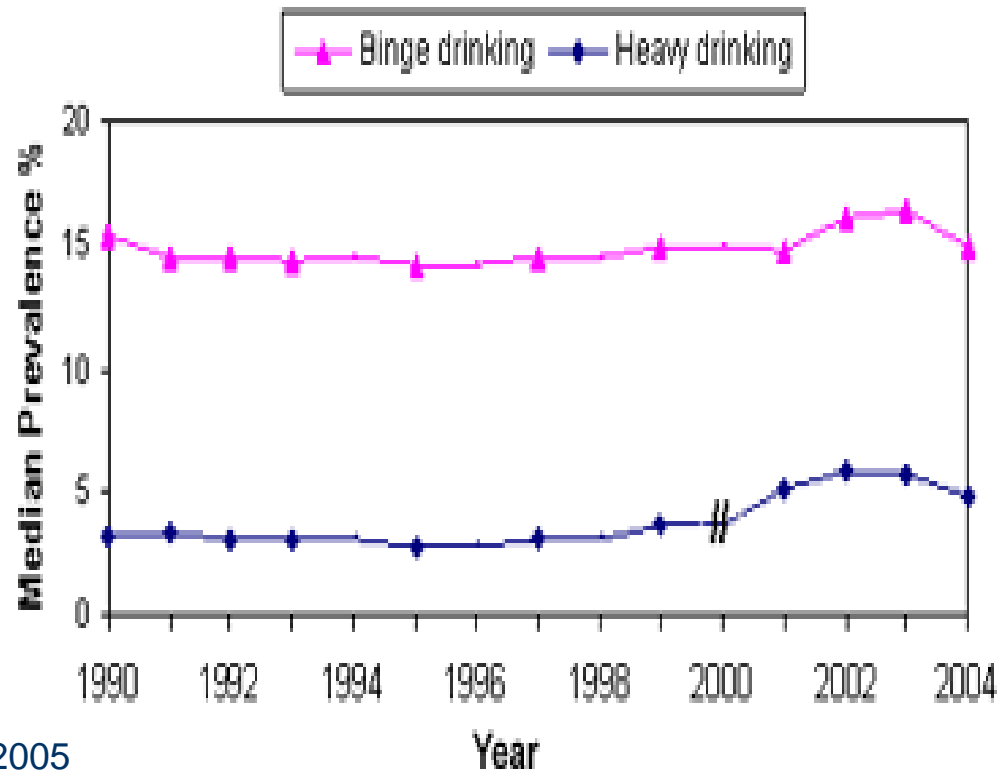
Tobacco Use Intervention

- Treatments
 - NRT, Bupropion, Varenicline + counseling yield 20-25% success rate
- Clean In-door Air Legislation
 - Prevents exposure to carcinogens with no adverse economic impact
 - Comprehensive bans in more than 13 States and numerous cities
- Limit Tobacco Advertising
 - Children with tobacco merchandise are ~3 times more likely to smoke
- Warning Labels and Bans on Misleading Terminology
 - Read, discuss, and consider warning labels doubles chance to quit
- Taxation
 - 10% increase in price = 4% reduction in smoking rate

Alcohol Use

- In 2002, 4.65% of the population abused alcohol, an increase from 3.03% in 1992
- The rate of binge and heavy drinking has increased since 2000
- 32% of high school students report binge drinking in the past 14 days

Prevalence of binge drinking and heavy drinking among adults in the United States, 1990–2004.



Alcohol Use Intervention

- Treatments
 - FDA-approved medications (e.g., naltrexone)
 - Behavioral Counseling and Twelve-step programs (AA)
 - Brief Primary Care Physician Interventions
- Social Policy
 - Education/Public Awareness Campaigns
 - Laws: Minimum Drinking Age, Drinking & Driving, Restricted Access
 - Taxation
- Focus on Underage and College Drinking - www.stopalcoholabuse.gov
 - Education and laws and changing “Culture of Drinking”
 - Inoculate against peer pressure and positive drinking expectancies
 - Strengthening the Family Program: parenting skills and family bonding

Genes and Head and Neck Cancer Risk

- ~90% of patients have a history of tobacco use and ~45% of patients have a history of heavy alcohol use
- BUT, a fraction of smokers and drinkers develop head and neck cancer
- Genetic differences may increase susceptibility to carcinogenic effects of tobacco and alcohol
 - How people metabolize nicotine and alcohol
 - Ability to repair DNA following damage caused by alcohol and tobacco
- Research facilitates *risk profiling* to target enhanced primary prevention (smoking/drinking cessation) and screening to those most at risk

Chemoprevention and Head and Neck Cancer

- Natural or synthetic chemical to prevent premalignant lesion from becoming cancer
- Potential Agents:
 - Retinoids (Vitamin A) – tumor regression with continual therapy, but adverse side effects
 - β -Carotene – tumor regression but related to higher death rates among smokers with lung cancer
 - Vitamin E and Selenium – limited research but possible benefits
 - Green and Black Tea – limited research but possible benefits
- Further research is needed before agents can be recommended

Screening for Head and Neck Cancer

	Local	Regional	Distant
5-year Survival Rate	82%	52%	26%
Stage at Diagnosis	33%	52%	10%

- Premalignant lesions can be visually detected; symptoms are: mouth sores, bleeding, hoarseness, and white and red patches on the skin
- NCI: No evidence that oral screening decreases head and neck cancer mortality
- ACS: Recommends that dentists and physicians conduct oral exams
- Screen high risk and assess suspicious lesions

HPV Vaccine

- Human Papillomavirus DNA (HPV16) has been found in cancers of the oral cavity, nasopharynx, oropharynx, hypopharynx and larynx
- FDA-approved vaccine, Gardasil, for preventing HPV infection that leads to cervical cancer
- Use to prevent HPV infection and head and neck cancer is unknown

PENN Smoking Cessation

- Transdisciplinary Tobacco Use Research Center (TTURC)
 - Specialized, innovative smoking cessation programs, including behavioral counseling and pharmacotherapy
 - Referral to smoking cessation programs for cancer patients
 - Smoking cessation programs for relatives of cancer patients
- Contact Us
 - <http://www.med.upenn.edu/tturc/>
 - 877-513-QUIT