



## **Smoking Prevention Position Paper** **by: Nia D. Banks**

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### Smoking or Health

In the United States, tobacco is responsible for 1 in 5 deaths and 30% of deaths due to cancer, costing \$68 billion per year in health care costs and loss of productivity. Tobacco is related to over 419,000 deaths per year in the United States and over 3 million per year world wide. Cigarette smoking is the cause of 87% of lung cancer cases and increases the risk of lung cancer by a factor of 22 for male smokers and 12 for female smokers. Tobacco is also associated with cancer of the larynx, pharynx, oral cavity, esophagus, uterine cervix, pancreas, bladder, and kidney (1). Smoking is a major cause of coronary heart disease (CHD), causing 24% of CHD deaths (2). The Surgeon General has also documented that smoking increases the risk of cerebrovascular disease, chronic obstructive pulmonary disease (including emphysema), and intrauterine growth retardation (3). Indeed, smoking is the most preventable cause of death in our society.

There are many forms of tobacco, including cigarettes, cigars (which have become more popular in the last few years), and smokeless tobacco. Each of these preparations contains nicotine, a highly addictive drug. In fact, the probability of becoming addicted to nicotine after any exposure is higher than that for alcohol, heroin, or cocaine (4). Tobacco products contain over 4,000 other compounds, including known carcinogens such as benzo(a)pyrene and vinyl chloride. Environmental tobacco smoke (second hand smoke) is classified as a Group A carcinogen by the Environmental Protection Agency, along with asbestos, benzene, and arsenic (3).

While, filter cigarettes have reduced smokers' exposure to high levels of tar and nicotine, they are still associated with a lung cancer risk that is four times that of a nonsmoker. Smokers of low-tar and low-nicotine cigarettes have a death rate that is 30 to 75 % higher than the death rate of nonsmokers (2).

Smoking also has immediate health effects. Cigarette smoking in adolescence appears to arrest lung development and limit the level of maximum lung function that can be achieved. Young smokers are less likely to be physically fit than nonsmokers and more often complain of coughing spells, shortness of breath, wheezing, and phlegm production. Smoking among children and adolescents is also associated with increased levels of low-density lipoprotein, increased levels of very-low-density lipoprotein, increased triglycerides, and decreased levels of high-density lipoprotein, which are all

risk factors for cardiovascular disease (4). Carbon monoxide (a component of tobacco smoke) has a high affinity for hemoglobin, higher than that of oxygen, and binds hemoglobin to form carboxyhemoglobin, thereby reducing the oxygen carrying capacity of the blood. Carbon monoxide also increases vascular permeability which causes edema and allows cholesterol to deposit more easily, contributing to the development of atherosclerosis. Nicotine, in addition to being addictive, acts on the adrenal glands to increase the release of catecholamines which increases heart rate and blood pressure. These effects in combination with accelerated atherosclerosis contributes to the development of heart disease and myocardial infarctions (3). Smokeless tobacco in particular is associated with halitosis, periodontal degeneration, soft tissue lesions, and oral cancer (4).

#### Epidemiology of Tobacco Use

Most adults do not smoke. Smoking prevalence has actually declined over the last few years, dropping from 33 to 24% of women and 43 to 28% of men from 1974 to 1991 (1). However, people tend to overestimate the number of people that do smoke, possibly due to extensive smoking advertisement and the frequency of cigarette smoking on television shows and movies. Among children, the higher the overestimation the higher the probability that the child will become a regular smoker (4).

Of current smokers, 9 out of 10 report that they would like to quit smoking (2). Three fourths of teenagers who smoke have made at least one serious attempt to quit but were unsuccessful. Teenagers and adults experience similar withdrawal symptoms when they do abstain from cigarette smoking (4).

While the general trend since 1974 has been a decrease in the number of people who smoke and increasing numbers of people who quit smoking, smoking rates increased for the first time between 1990 and 1991 due to an increase in smoking among Blacks and women. In addition, over 3000 teenagers a day become regular smokers in the United States and 82% of daily smokers began smoking before the age of 18 (1,3). Seventy percent of high school students have tried cigarette smoking. Eighteen percent of high school smokers started in elementary school and 30% began in grades 7 through 9. Among high school students, 31% of white students, 25% of Hispanic students, and 13% of Black students are smokers. (Tobacco use rates for men and women have been the same since 1988, except for smokeless tobacco [19% of high school males, 1% of high school females] [3].) These statistics emphasize the need for early intervention.

Adolescent smoking should be viewed as a part of a syndrome. Adolescents who smoke are more likely to later use alcohol and illicit drugs. They are more likely to get into fights, carry weapons, attempt suicide, and engage in high-risk sexual behaviors (4). Twenty five percent of teenage girls who smoke report using marijuana compared to 3% of teenage girls who do not smoke. A third of smoking teenage girls admit drinking to get drunk versus 4% of nonsmokers. Near 31% of smoking girls report being sexually active compared with 8% of nonsmokers. Teenage girl smokers also achieve lower letter grades in school (2).

There are many factors that can pressure someone to become a smoker (4,5,6):

1. Parents (other exemplars - teachers, medical professionals) - (a)children learn that their parents do not become sick immediately and die from smoking

cigarettes, (b) children learn ways to argue against or reject anti-smoking messages, (c) children learn from their parents that smoking is an adult privilege.

2. Film and Television - People watch their heroes and role-models smoke without suffering health consequences. Smoking is associated with glamour and maturity.

3. Sales Promotion - Smokers are portrayed as sexually attractive, popular, outgoing, healthy, wealthy, independent (Virginia Slims: RyouUve come a long way, baby!S).

4. Peer Pressure - The pressure to maintain cohesiveness and uniformity within a peer group can pressure a person to smoke. The peer group may use smoking as a way to imitate adults, take risks, or declare their independence. A nonsmoker may succumb to peer pressure in order to retain the support of the group.

5. Economics - People of lower socioeconomic groups (including children from single parent homes) have a higher rate of smoking.

On the other hand, factors that can influence someone not to smoke include (5):

1. Culture/ Social convention - Smoking may not be acceptable in a childUs culture, sub-culture, or peer group.

2. Religion - Several religions prohibit tobacco use, including Islam, Latter Day Saints, Seventh Day Adventists, and Hinduism.

#### Role of School Based Smoking Prevention Programs

There are many smoking cessation programs and methods available today. However, many smokers that try to stop find that they cannot and of those that do quit, 93% resume smoking within 1 year (3). Also, even the shortest period of cigarette use is associated with adverse health effects. Therefore, smoking prevention programs have a unique role. Since the majority of regular smokers begin before the age of eighteen and a large portion of these start in grades 7-9, a smoking prevention program is best targeted at middle school or junior high school students.

Smoking prevention programs can provide information about cigarette use and health effects. Although the adverse effects of cigarette smoking have been known for years, the proportion of high school seniors that know that cigarette users are at great risk for physical or other harm from smoking a pack a day or more rose from 64% in 1980 to only 69% in 1992 (4). This means that in 1992, 30% of high school seniors were still not educated about the adverse effects of smoking. However, information about the link between smoking and cancer and other diseases are not enough to effect the numbers of teenagers who go on to smoke. Older smoking prevention programs followed such Rinformation deficitS models and it was found that this alone was not effective: Ryouth do not respond to information about consequences of behavior whose effects appear only in the distant futureS (4,5).

Later programs followed an Raffective educationS model and were based on the assumption that adolescents smoke because their perception of themselves was compatible with health compromising behavior. These programs were also not effective and actually may have elicited interest in smoking by presenting it as a risky behavior.

More recent and successful programs recognize that a childUs Rsocial

environment is the most important determinant of smoking onset and teaches children skills to resist social influences to smoke (4). Since adolescents are experiencing multiple transitions to physical maturity and a sense of self, they are vulnerable to a range of hazardous behaviors. Comprehensive social skills training can help adolescents resist other social pressures as well, such as advertisement and pressures to use alcohol or drugs (4). These programs also focus on negative short term social consequences of smoking and the techniques of tobacco advertising.

The Surgeon General lists eight essential elements of school-based smoking-prevention programs:

1. Classroom sessions should be delivered at least five times per year in each of two years in the sixth through eighth grades.
2. The program should emphasize the social factors that influence smoking onset, short-term consequences, and refusal skills.
3. The program should be incorporated into the existing school curricula.
4. The program should be introduced during the transition from elementary school to junior high school or middle school (sixth or seventh grades).
5. Students should be involved in the presentation and delivery of the program.
6. Parental involvement should be encouraged.
7. Teachers should be adequately trained.
8. The program should be socially and culturally acceptable to each community.

Several independent reports show lower smoking rates among students who have completed social influences programs than among students who have not had such programs. These differences in smoking rates range from 25 to 60% and persist for 1 to 4 years after completion of the program. Short term interventions dissipate over time, especially if there are no booster sessions, community wide activities, parental involvement, or mass media based components (4).

**School-based Smoking Prevention Programs as Part of the Anti-tobacco Movement**  
Smoking prevention programs are most effective when multiple sectors of society are involved. The message heard in school based programs must be echoed by the media, the community, parents, and legislation. Local chapters and individual members of the Student National Medical Association are encouraged to become involved in all tiers of the smoking prevention movement.

**Goals of Healthy People 2000: National Health Promotion and Disease Prevention Objectives (from the Secretary of the Department of Health and Human Services)(3)**

(Only goals relevant to smoking prevention programs are listed.)

3.4 Reduce cigarette smoking to a prevalence of no more than 15% among people aged 20 and older. (Baseline: 29% in 1987)

3.5 Reduce the initiation of cigarette smoking by children and youth so that no more than 15% have become regular cigarette smokers by the age of 20.

(Baseline: 30% in 1987)

3.7 Increase smoking cessation during pregnancy so that at least 60% of women who are cigarette smokers at the time they become pregnant quit smoking early in pregnancy and maintain abstinence for the remainder of their pregnancy.

(Baseline: 39% in 1985)

3.8 Reduce to no more than 20% the proportion of children aged 6 and younger who are regularly exposed to tobacco smoke at home (Baseline: 39% in 1986)

3.9 Reduce smokeless tobacco use in males aged 12 through 24 to a prevalence of no more than 4% (Baseline: 6.6% for age 12-17 in 1988)

3.10 Establish tobacco-free environments and include tobacco-use prevention in the curricula of all elementary, middle, and secondary school, preferably as part of quality [comprehensive] school education. (Baseline: 17% of school districts were smoke-free, and 75%-81% of school districts offered anti-smoking education in 1988)

3.11 Increase to at least 75% the proportion of work sites [such as schools] with a formal smoking policy that prohibits or severely restricts smoking at the workplace. (Baseline: 54% of medium and large companies in 1987)

3.12 Enact in 50 state comprehensive laws on clean indoor air that prohibit or strictly limit smoking in the workplace and enclosed public places [such as schools]. (Baseline: 13 states in 1988)

#### Smoking Prevention Protocol:

A Comprehensive Social Skills Training Model

Student National Medical Association

#### Setting up the Program

As suggested by the Surgeon General, the program should target children in the sixth or seventh grade. Contact a middle or junior high school in your area to arrange class time for the program. Find out what smoking prevention/educational programs the school already has in place so that the sessions best serve the students.

#### Training Facilitators

Each session should have at least two members of the SNMA chapter participating. Remember that the sessions must be in a non-lecture format whenever possible. Emphasize discussions, experiments, role-playing, films, etc. Get the students involved and keep their interest. Try to involve parents, by giving homework assignments for example. Experiments should be tried before a session is conducted to ensure that it will work and is safe. Please consider that this protocol is written for an audience of medical school students, not sixth and seventh graders. Facilitators must present important concepts and information in a manner that can be comprehended. Also, recall the Surgeon General's eight elements: the program should be socially and culturally acceptable to each community (4). That is, it is the duty of each facilitator to make him- or herself aware of the reality that their audience faces inside, and especially, outside the classroom.

#### Lesson Outline

Below are essential topics to be dealt with over the course of the program. A

typical program would run for five weeks with one one-hour session each week plus a booster session to follow some months later as a means of follow-up. Due to the emphasis of social skills training, a holistic approach combining this protocol with other protocols, such as Teen Health and Sexuality and Violence Prevention, could be a very effective way to present this information. It is left up to the individual chapters to determine the final format for their smoking prevention program.

Lesson topics derived from Sussman and Dent (7).

Session 1:

Introduction/Active Listening

Facilitators introduce themselves and share a little bit about who they are and why they are participating in the program. Explain the purpose of the program (to encourage a smoke-free lifestyle through social skills training) and give a brief outline of the program's activities. Facilitators should use this session to begin learning the names of the students and to appreciate the dynamics between students in the class and between the students and the teacher.

Ask students what does it mean to be an active listener. Ask students to tell you ways that you can listen actively. Explain importance of active listening. Let students know that this is what you expect from them during every session.

Now is also a good time to establish ground rules for the sessions, such as no talking while someone else is talking, no one shall put down anyone else's ideas or comments, no question is a dumb question, all questions are welcomed and the facilitators will try to answer questions to the best of their ability or will direct students to an appropriate resource, etc.

Students should be asked to complete a self-evaluation about their experience with smoking (questions that may be included in the evaluation are listed below). Facilitators should encourage students not to complete the evaluation if they feel they cannot answer all the questions honestly.

Evaluations should be collected in a manner to ensure that responders remain anonymous (students can place folded evaluations in a closed box). Students should not put their names on the evaluations. Facilitators should explain that the purpose of the evaluations is to determine the impact of the program and ways to improve the program.

Session 2:

Course of Tobacco Use and Consequences

Short term consequences should be emphasized. Students should also learn about long term effects of smoking. Such information can be found in the Smoking Prevention Position Paper or in the listed references and resources. A copy of the American Cancer Society program *Don't Choke on Smoke* has been included as a resource because it provides helpful information, illustrations, and experiment designs for this session.

Students should realize that effect of carbon monoxide on oxygen carrying capacity and what this implies about their performance in sports and other activities. Also, reduced oxygen tension can promote the onset of sickle cell painful crises.

An example of a simple experiment: cover the unlit portion of a cigarette with a filter or tissue, attach a piece of tubing and create suction with pipette bulb, show student the stain that is created on the filter (5).

Session 3:

### Peer Pressure

Students learn how to deal with peer pressure and recognize what peer pressure is. Students should realize that peer pressure is only as powerful as they allow it to be and that compliance with peer pressure is the opposite of being independent.

Students should practice different ways of dealing with peer pressure.

Facilitators can use role-playing: present a situation to the class and ask the students to come up with ways to handle the situation in a positive manner, small groups of students can get together to develop their ideas and come up with a brief skit to present to the rest of the class. Alternatively, the facilitators can play the pressuring peers and have a student play the role of the peer who does not succumb to the pressure.

### Self-esteem

Students practice ways to improve or reinforce self-esteem by acknowledging their positive characteristics. This should be an ongoing process during the program. A homework assignment could involve the parents and allows parents to provide a supportive role: have students get their parents or guardian to tell them five characteristics that they admire about their child while the child writes them down. These assignments do not have to be shared in class, but facilitators should get a general idea of whether or not the class did the assignment at the next session.

### Session 4:

#### Images

Students learn the ways in which the media portrays tobacco Rsocial imagesS and influence people to use tobacco. Students should come away with an understanding of how some adolescents may use tobacco to improve self-image. Facilitators should explain the importance of children as a market for cigarette manufacturers in search of new impressionable consumers. An excellent module on decoding tobacco advertising can be found in A Manual on Smoking and Children (5). A copy is included.

#### Social Activism

Students begin to learn what it means to be a social activist. As a homework assignment, students can practice writing letters advocating tobacco-free lifestyles or design anti-tobacco/pro-nonsmoking posters.

### Session 5:

#### Public Commitment Using Videotape and Conclusion

Students can perform a skit or make a video using a news program format to summarize what they have learned, answer questions from their peers, and share their commitment regarding tobacco. The posters and letters assigned to promote social activism can be used in the video. For example, the posters can be used for a backdrop or samples from letters can be shared. Students should be given the option to participate or not. A student should not be made to make a commitment that he or she does not intend to keep. Students can identify a friend or friends in the class to make the non-smoking commitment with (the buddy system) and sign a contract that they write out themselves. Students should be given a true/false quiz or play a quiz game to be sure that they learned the important points of each session. The results of such quizzes can also help facilitators decide which points need to be better emphasized (Possible questions are listed below). Facilitators should explain that this will not be graded but is to show how well the facilitators did. Students should be asked what they liked and did not like about the program so that it can be improved. Students can write down comments if they

do not feel comfortable expressing them orally.  
Facilitators should remain in touch with the class to see how they are doing and to provide support.

#### Booster Session

Since the effects of smoking prevention programs have been shown to be short lived in the absence of follow-up and reinforcement, it is recommended that at least one booster session is conducted (4). This session can be planned by each chapter depending on the dynamics between the class and the facilitators during the previous sessions. The session should be held the following year or after a few months have passed. The session can be a discussion about how they have used what they learned during the earlier sessions or problems or pressures that they have encountered. Another suggestion might be to assemble the class for a less formal smoke-free gathering outside the classroom setting. Self-evaluations should be completed again, compiled, and compared to results of the initial evaluations.

#### Suggested Evaluation Questions

- ever tried cigarette smoking
- age when first smoked a whole cigarette
- ever smoked cigarettes regularly (one cigarette a day for 30 days)
- age when first smoked regularly
- number of days during past month that cigarettes were smoked
- number of cigarettes smoked per day during past month
- number of days during past month that cigarettes were smoked on school property
- ever tried to quit smoking cigarettes during past six months
- any use of chewing tobacco or snuff during past month
- any use of chewing tobacco or snuff during past month on school property

#### Suggested Quiz Topics

- a drug is a chemical that changes how the body works
- all forms of tobacco contain a drug called nicotine, which is addictive
- tobacco contains other harmful substance in addition to nicotine
- tobacco use includes cigarettes and smokeless tobacco
- tobacco use had short-term and long-term physiologic and cosmetic consequences
- tobacco use during pregnancy has harmful effects on the fetus
- stopping tobacco use has short-term and long-term benefits
- many people who use tobacco have trouble stopping
- some advertisements try to persuade people to use tobacco
- tobacco advertisement is often directed toward young people
- personal feelings, family, peers, and media influence decisions about tobacco use
- young people can resist pressure to use tobacco
- most young people and adults do not use tobacco
- people who choose to use tobacco are not bad people
- environmental tobacco smoke is dangerous to health
- there are laws, rules, and policies that regulate the sale and use of tobacco
- community organizations have information about tobacco use and can help people stop using tobacco

- schools and community organizations can promote smoke-free environments
- smoking cessation programs can be successful (3)

## References

1. American Cancer Society. R Cancer Facts and Figures - 1994S Web Site. <http://nysernet.org/bcic/acs2/communications/facts.94.html>
2. U.S. Department of Health, Education, and Welfare. The Smoking Digest: Progress Report on a Nation Kicking the Habit. U.S. Department of Health, Education, and Welfare; Public Health Service; National Institutes of Health; National Cancer Institute. Bethesda, MD 20014.
3. U.S. Department of Health and Human Services. RMorbidity and Mortality Weekly Report: Guidelines for School Health Programs to Prevent Tobacco Use and AddictionS. U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention. Atlanta, GA 30333.
4. U.S. Department of Health and Human Services. Preventing Tobacco Use Among Young People: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1994. Reprinted, with corrections, July 1994.
5. Wake, Robert, Alfred McAlister, and David Nostbakken. A Manual on Smoking and Children.. International Union Against Cancer. Geneva 1982.
6. Dunn, William L., Jr. Smoking Behavior: Motives and Incentives. John Wiley and Sons. New York, 1973.
7. Sussman, Steve, Clyde W. Dent, et al. Developing School-based Tobacco use Prevention and Cessation Programs. Sage Publications. London, 1995.

## Resources

U.S. Department of Health and Human Services. Preventing Tobacco Use Among Young People: A Report of the Surgeon General. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, S/N 017-001-00491-0.

U.S. Department of Health and Human Services. Vital and Health Statistics: Smoking and Other Tobacco Use: U.S. 1987. Hyattsville, MD: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Center for Health Statistics, Sept. 1989; DHHS publication no. (PHS)89-1597.

Public Health Service. Healthy People 2000: National Health Promotion and Disease Prevention Objectives - full report with commentary. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, 1991; DHHS publication no. (PHS)91-50212.

Other Publications available from the U.S. Department of Health and Human Services:

R Pathways to Freedom: Winning the Fight Against TobaccoS  
RClearing the Air: How to Quit Smoking... and Quit for KeepsS  
ROut of the Ashes: Choosing a Method to Quit SmokingS

American Cancer Society  
90 Park Avenue  
New York, New York 10016  
(212)382-2169  
(800)ACS-2345

American Heart Association  
National Center

7320 Greenville Avenue  
Dallas, Texas 75231  
(214)750-5300  
(800)AHA-USA1

American Lung Association  
1740 Broadway  
New York, New York 10019-4374  
(212)315-8700  
(800)LUNG-USA

Office on Smoking and Health  
Centers for Disease Control  
Park Building, Room 1-58  
5600 Fishers Lane  
Rockville, MD 20857  
(301)443-1575  
(800)CDC-1311

Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control  
Building 3  
1600 Clifton Road, NE  
Atlanta, GA 30333  
(404)639-3699  
(404)639-1075

General Conference of Seventh-Day Adventists  
Health and Temperance Department  
6840 Eastern Avenue, NW  
Washington, DC 20012  
(202)722-6700

National Audiovisual Center  
Order Section IQ  
Washington, DC 20409  
(301)496-4236

National, Heart, Lung, and Blood Institute  
Smoking Education Program  
9000 Rockville Pike  
Building 31, 4A-21  
Bethesda, MD 20892  
(301)496-1051  
National Institute for Child Health and Human Development  
Department of Health and Human Services  
Building 31, Room 2A-32  
9000 Rockville Pike  
Bethesda, MD 20892  
(301)496-1711

Office of Disease Prevention and Health Promotion  
Department of Health and Human Services  
Mary E. Switzer Building  
Room 2132

330 C Street, SW  
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(202)205-8611

National Cancer Institute  
9000 Rockville Pike  
Building 31, 4A-18  
Bethesda, MD 20892  
(301)496-4000  
(800)4-CANCER