
Foreword

Tobacco use in the United States has gone through many stages. Initially tobacco was used by Native Americans in religious ceremonies, with apparently little or no routine usage. The colonists, however, adopted tobacco for secular uses and quickly established it as a trading commodity. Toward the end of the 19th century, smoking tobacco was found primarily in cigars, pipes, or roll-your-own cigarettes; less than 3 percent of all tobacco consumed was in the form of manufactured cigarettes. By contrast, more than 50 percent was consumed as chewing tobacco.

The changing social acceptance of the manufactured cigarette, together with the use of milder, blended tobaccos, beginning around 1913, allowed tobacco users to absorb nicotine more quickly and efficiently through inhalation than via absorption through the oral mucosa. Thus, by the end of World War I, cigarette smoking had become not only socially acceptable but even fashionable—at least for men. By the early 1920's, tobacco consumed in the form of cigarettes had increased considerably, accounting for fully 25 percent of all tobacco being used in the United States.

The 1920's and 1930's saw a major increase in the number of male smokers, with the 1940's and 1950's characterized as the beginning of this country's lung cancer epidemic. These time frames illustrate the 20- to 30-year lag time between the initiation of regular smoking and a clinical diagnosis of lung cancer. This lag time was observed again with the increased use of cigarettes by women in the 1940's and 1950's and the subsequent increase in lung cancer among women in the 1970's.

Social norms have played a major role in the history of tobacco use. In the early part of this century, many antitobacco laws were based on morals and religion.¹ During the latter half of the 20th century, however, medical science has provided the foundation for a rational public health policy on tobacco use. When the landmark 1964 Surgeon General's Report identified smoking as the major cause of lung cancer, smoking rates dropped. Subsequent reports from the Surgeon General have reinforced the public's consciousness of the multitude of hazards in exposure to tobacco smoke—for both the smoker and the nonsmoker.

Paradoxically, it was the heightened awareness of smoking hazards in the 1970's and early 1980's that prompted some people, looking for a safe alternative to cigarettes, to begin using a product that the industry labeled "smokeless" tobacco. Early advertising campaigns pitched these products as a safe alternative because they did not contain the major health-threatening

¹ The use of spitting tobacco fell into social disfavor immediately after the turn of the century because of concern that exposure to saliva increased the spread of tuberculosis, a major uncontrolled cause of death at that time. Many towns and cities enacted local ordinances against spitting in public.

ingredient of cigarettes—*smoke*. Millions of consumers succumbed to this faulty logic, and the use of spitting tobacco (chewing tobacco and snuff, or ST) spread rapidly, particularly among young adult and adolescent males, as Figure 1 illustrates.

Unfortunately, the tobacco industry's ability to increase demand through new and innovative marketing strategies has always outpaced the ability of the scientific community to document the adverse health effects resulting from product use. The ST industry began to aggressively advertise and promote new product lines, often using well-known figures in sports and entertainment to pitch these products on television during prime time. The use of TV and radio for cigarette advertising had been banned by the Congress since 1971, but the legislation did not address other tobacco products.

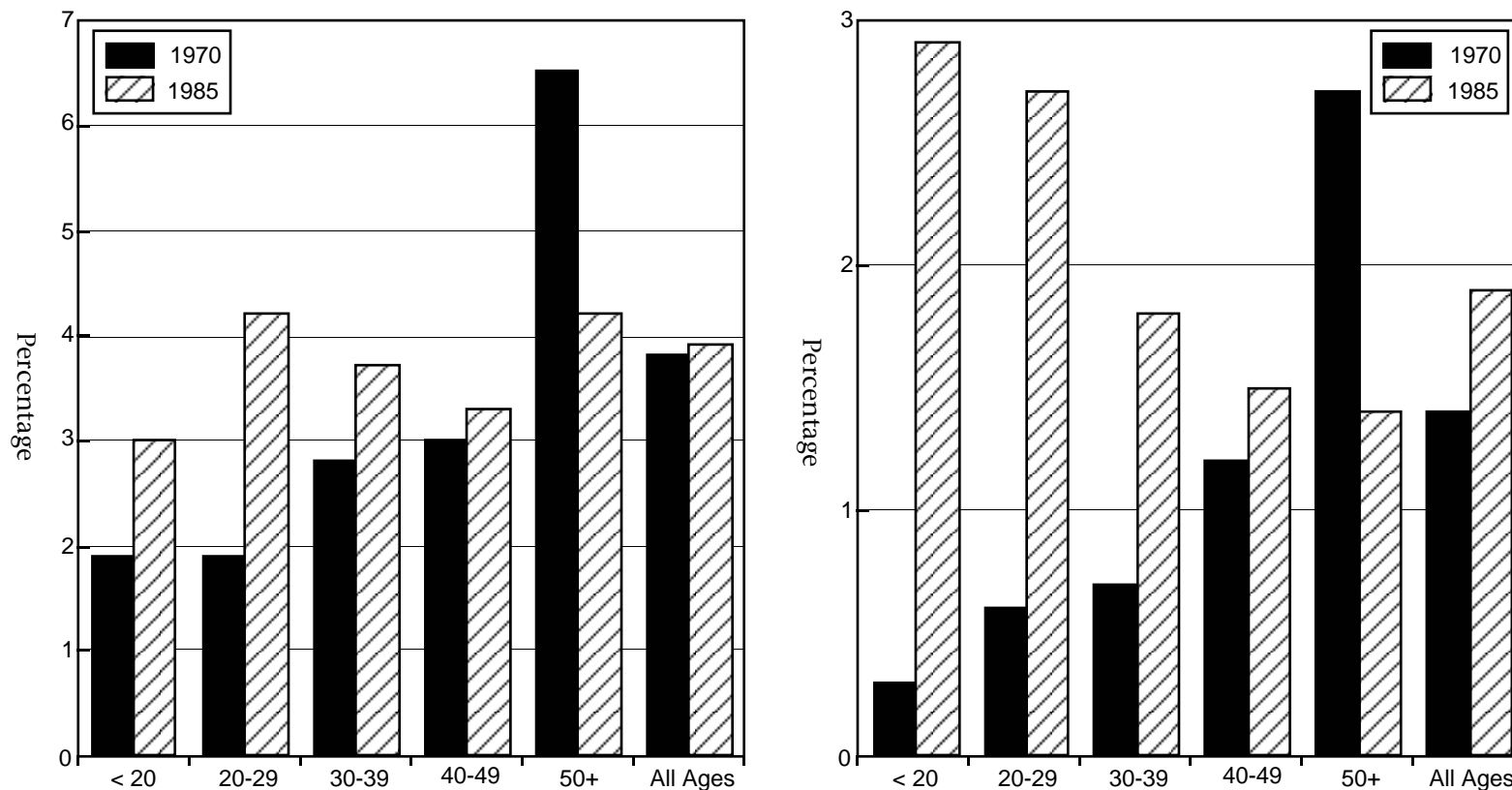
Particularly alarming is that ST advertising has been most effective with boys and young men. Although the marketing of ST products is legal, current marketing strategies are persuading many individuals to become regular users before reaching 18, the legal age to buy the products in most states. One advertising campaign (see Figure 2) used National Football League stars to teach "beginners" how to work up to stronger brands of spitting tobacco. In the wake of these promotions, the consumption of spitting tobacco, especially moist snuff, has continued to rise. From 1972 to 1991, total U.S. consumption of spitting tobacco has risen from 99 million pounds per year to 125 million pounds. There has been an alarming 40 percent increase in consumption of moist snuff, the most dangerous form of spitting tobacco.

The increase in ST consumption stands in sharp contrast to the significant decline in consumption observed in all other tobacco categories. Over the past decade alone, total cigarette sales have decreased by more than 130 billion cigarettes, and our national per capita consumption is at its lowest level since the early 1940's (Figure 3). Because of the 20- to 30-year lag time between large-scale exposure to a carcinogenic agent and subsequent increases in cancer mortality, the trends in ST consumption predict a public health problem in the making, unless significant behavior changes can be achieved soon.

In 1981 National Cancer Institute (NCI) investigator Deborah Winn and colleagues published a seminal study that pointed to a link between oral snuff dipping and oral cancer. Later that year, after reviewing the evidence, the Institute announced that it believed that snuff use was a cause of oral cancer. In 1984 the Smoking and Tobacco Control Program of NCI issued a Request for Applications, soliciting research on the use of spitting tobacco, and the following year NCI funded the first clinical trials aimed at intervening in ST use.

The year 1985 saw a flurry of activity related to spitting tobacco. In February, the National Cancer Advisory Board issued a resolution on smokeless tobacco, in which it stated that the NCAB "considers the use of smokeless tobacco to pose a serious and increasing health risk." The board also

Figure 1
Prevalence of the use of chewing tobacco (left) and snuff (right) among males, 1970 and 1985



Source: 1970 National Health Interview Survey and 1985 Current Population Survey

Figure 2
ST ad aimed at "beginners"

Walt Garrison
answers your questions about
smokeless tobacco.

Q: Wait, just what is Moist Smokeless Tobacco?
A: It's just what it says: Tobacco you enjoy without lighting up.

Q: How do you use it?
A: First, you don't chew it. Just take a small pinch between your thumb and forefinger, put it between your cheek and gum, and leave it there. The tobacco will slowly release its great flavor to give you real tobacco satisfaction.

Q: Is it hard to use?
A: Not really. When you first try it, the tobacco may move around in your mouth more than it should, and your mouth may water a bit more than you're used to, but getting the hang of "going smokeless" is all part of the fun. In a couple of weeks you'll be a "pro."

Q: Is there a difference between the three most popular brands?
A: Sure... **HAPPY DAYS** is a mild, satisfying blend of mint-flavored tobacco, while **SKOAL** is full-bodied with the added good taste of wintergreen. **COPENHAGEN** is a stronger, natural blend of choice tobaccos.



All three are packed in convenient cans and each is dated for freshness.

Q: Is the date on the can the expiration date?
A: No, it's the date of manufacture. It's our way of letting you know how fresh and moist our tobacco is.

Q: How much does "Going Smokeless" cost?
A: An average user "dips" about 1 1/2 cans per week, and that's about a dollar's worth. Not bad, when you think how much everything else costs these days.

Q: Do a lot of people use smokeless tobacco?
A: A lot more than you think. Last year we sold over 325 million cans. And more and more people from every part of the country are "going smokeless" all the time. (Even loose-leaf chewers are mixing it in with their brands for extra flavor.)

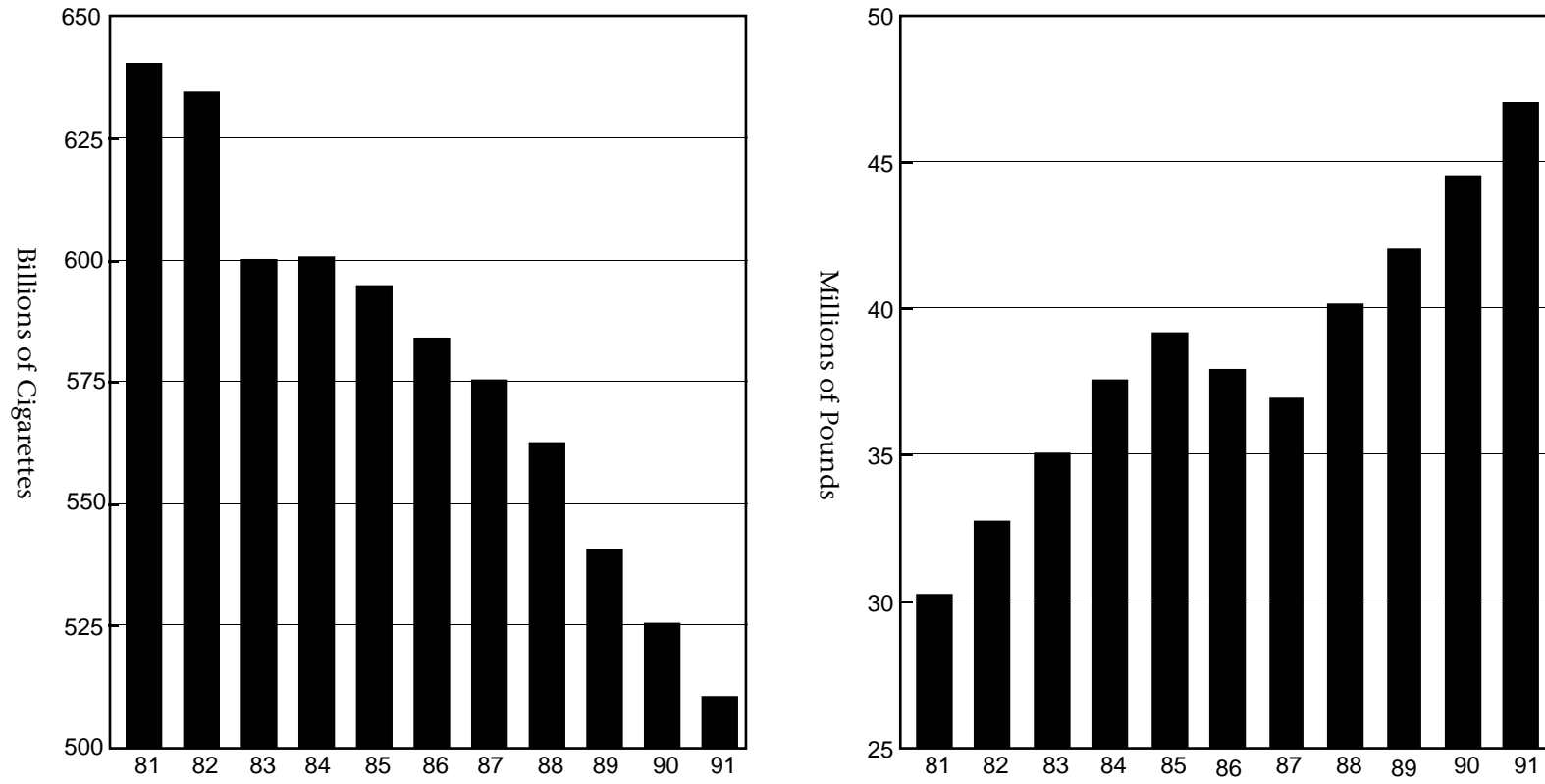
Q: Where can I buy it?
A: Ask for it at your favorite tobacco counter; or mail the coupon below and you'll get a free can of **HAPPY DAYS** to try. Thanks a lot, Walt...

A pinch is all it takes!

recommended that the Surgeon General undertake a complete review of the scientific evidence on ST's health effects, and that the Office on Smoking and Health include ST use as part of its ongoing surveillance activities. Subsequently, the Office on Smoking and Health sponsored a supplement to the Current Population Survey to collect data on current usage of smokeless tobacco. The Surgeon General at that time, Dr. C. Everett Koop, appointed a PHS Advisory Committee to report on ST's health consequences.

In September 1985, the International Agency for Research on Cancer (IARC) in Lyon, France, issued a report that concluded, "In aggregate, there is sufficient evidence that oral use of smokeless tobacco is carcinogenic to humans." Then, in January 1986, an NIH-NCI Consensus Development Conference on Smokeless Tobacco was held; the participants concluded that there was strong evidence from human studies to link snuff use with cancer.

Figure 3
U.S. tobacco consumption of cigarettes (left) and moist snuff (right), 1981 to 1991



Source: U.S. Department of Agriculture

The Surgeon General's Advisory Committee Report, compiled and published under NCI auspices, was issued in April and concluded that *"oral use of smokeless tobacco represents a significant health risk. It is not a safe substitute for smoking cigarettes. It can cause cancer and a number of noncancerous oral conditions and can lead to nicotine addiction and dependence."*

The committee also concluded that evidence related to the carcinogenic potential of chewing tobacco was limited, but the evidence on oral use of snuff was more than sufficient to conclude that it is carcinogenic to humans.

The PHS Advisory Committee also noted that snuff contained N'-nitrosamines at levels 100 times higher than the levels permitted under Federal regulations for all other ingested consumer products in the United States. The levels of nicotine absorbed during ST use were found to be high and to remain elevated for most of the day. Later in the same year, Congress passed the Comprehensive Smokeless Tobacco Health Education Act of 1986, which banned advertising on broadcast media and required rotating warning labels on ST products and in print advertising.

In 1989, NCI issued its first monograph on this subject, *Smokeless Tobacco Use in the United States*, which reinforced the overall conclusion of the 1986 Report of the Surgeon General, that "there is no safe form of tobacco use." The monograph also contained results from the Current Population Survey sponsored by the Office on Smoking and Health, which found that ST use varied considerably by region of the country, with rates among adult males in many southern states exceeding 12 percent, reaching 23 percent in West Virginia.

In April 1991, NCI cosponsored the First International Conference on Smokeless Tobacco. From this conference, the world learned that ST use is a problem in many countries, and the types of ST used are diverse, but the potential for addiction and oral cancer and other untoward health effects are omnipresent. This monograph presents a selection of peer-reviewed papers from that valuable conference.

We have made significant advances in our understanding of the health consequences associated with ST use, but much more remains to be done. NCI is committed to the continued support of research on spitting tobacco, with the eventual goal of making the use of this deadly and addictive product an extinct behavior. Research alone, however, will not solve this growing health threat. Thus, the reduction of ST use is a high priority within ASSIST—the American Stop Smoking Intervention Study for Cancer Prevention, a 17-state, NCI-funded, demonstration project that began last October. Over the next 7 years, ASSIST is expected to reach more than 90 million individuals, including 20 million tobacco users. While ASSIST is aimed primarily at cigarette smokers, an estimated 1 million or more regular ST users will be targeted for the project interventions.

We have made great progress over the past 40 years in making the United States a smoke-free society. Our task will not be complete however, until we make the nation free of tobacco use in *all forms*. To accomplish this will require the full cooperation of public and private agencies, research and service organizations, professionals and laypeople, working together toward this common goal. To do otherwise would invite unnecessary suffering, disease, and death.

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Surgeon General

