



HELPING SMOKERS QUIT: A ROLE FOR SMOKELESS TOBACCO?



ACSH PRESENTS

Helping Smokers Quit: A Role for Smokeless Tobacco?

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for the American Council on Science and Health

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FOREWORD

By Sally Satel, M.D.

For decades, public health advocates have championed harm reduction for people who either can't or don't want to stop taking health risks. Needle exchange is a classic example. If intravenous drug users get clean needles, the reasoning goes, their risk of contracting HIV and spreading it will be reduced.

Smoking is another dangerous addiction. While there is no denying that public education has done some good, more than 40 million Americans continue to smoke. We must face the fact that a smoke-free country is a pipe-dream.

So what about harm-reduction for committed smokers? Unfortunately, the smoking-cessation lobby wants nothing to do with it. Its "experts" insist on pushing a quit-or-die philosophy even in the face of overwhelming evidence that there already exists a life-saving alternative to cigarettes: smokeless tobacco.

The safest types are modern products like snus, or Swedish moist snuff, and a host of similar products available in the U.S. Crucially, they satisfy smokers' nicotine addiction and cause negligible health risks of their own. All of these products are held discreetly between lip and gum, releasing nicotine, and because they do not stimulate saliva production there is no spitting. Significantly, the blood levels of nicotine obtained with smokeless are higher than those associated with gum or a patch; this is why smokeless has such a powerful anti-craving effect.

Even better, there is no smoke.

And this is key. Tobacco smoke, with its thousands of toxic agents, can lead to cancer, heart disease and emphysema. Eliminate the smoke, and you significantly reduce the risk. To put it bluntly: it's the smoke, stupid.

This comprehensive and indispensable monograph from The American Council on Science and Health presents the latest epidemiological findings on smokeless tobacco and offers wise policy recommendations. The authors draw on an impressive archive of Swedish data, which is both long-ranging and much-replicated.

Although 40% of Swedish men use tobacco products, the same rate for men in the other 14 countries in the European Union, Sweden has the lowest rate of lung cancer by far. Why? Largely because of snus. What's more, over 20 epidemiological studies show that

smokeless tobacco is far safer than cigarettes. Even mouth cancer is only about one-third to one-half as likely with traditional chewing tobacco and moist snuff products as with smoking.

It is rare to find such a powerful cause-and-effect relationship in health epidemiology as the one between snus and reduction in lung cancer incidence and mortality. The other best example, it turns out, is the danger of cancer posed by smoking itself. Repeat: from *smoking*, not from nicotine per se.

Public health experts have for years endorsed harm reduction as a pragmatic last resort for hard-core substance users. For heroin they advocate needle exchange and even supervised distribution of heroin itself. For problem drinkers they have suggested drinking in moderation. In Seattle, new public housing programs for homeless alcoholics allow drinking in the privacy and safety of their own apartments – a controversial move that is based on the tenet of harm reduction: that relative safety can accrue to the user and society even if he or she does not relinquish an addiction.

It is ironic that much of the public health community accepts such radical accommodations for people addicted to intoxicants but resists the use of smokeless tobacco to treat an addiction that afflicts a far greater percentage – and causes far more suffering from disease and death.

In documenting the evidence on the relative benefits of smokeless tobacco as compared to smoking, this report serves another invaluable function: It makes the powerful case that most of what people believe they know about the product is outdated, wrong or both. Lamentably, the public has been subject to a vast miasma of misinformation, generated, sometimes deliberately, by anti-tobacco zealots and, perhaps unwittingly, by the U.S. Department of Health and Human Services.

Reducing the harm from cigarettes depends on responsible science. One can ponder the political agendas driving the anti-smokeless lobby, but whatever their motives, distorting the truth about smokeless tobacco is a grave disservice to millions of American smokers. This clearly written and exhaustively researched monograph is a potent antidote to bad science and a life-saving prescription in itself.

Dr. Satel, a psychiatrist, is a resident scholar at the American Enterprise Institute. She is a widely-published expert in addiction and harm reduction.

EXECUTIVE SUMMARY

According to the Centers for Disease Control and Prevention, about 45 million Americans continue to smoke, even after one of the most intense public health campaigns in history, now over 40 years old. Each year some 438,000 smokers die from smoking-related diseases, including lung and other cancers, cardiovascular disorders, and pulmonary diseases.

Many smokers are unable – or at least unwilling – to achieve cessation through complete nicotine and tobacco abstinence; they continue smoking despite the very real and obvious adverse health consequences. Conventional smoking cessation policies and programs generally present smokers with two unpleasant alternatives: quit or die.

A third alternative, tobacco harm reduction, involves the use of alternative sources of nicotine, including modern smokeless tobacco products. A substantial body of research, much of it produced over the past decade, establishes the scientific and medical foundation for tobacco harm reduction using smokeless tobacco products.

This report provides a description of traditional and

modern smokeless tobacco products. It reviews the epidemiologic evidence for low health risks associated with smokeless use, both in absolute terms and in comparison to the much higher risks of smoking. The report also describes evidence that smokeless tobacco has served as an effective substitute for cigarettes among Swedish men, who consequently have among the lowest smoking-related mortality rates in the developed world. The report documents the fact that extensive misinformation about smokeless tobacco products is widely available from ostensibly reputable sources, including governmental health agencies and major health organizations.

The American Council on Science and Health believes that strong support of tobacco harm reduction is fully consistent with its mission to promote sound science in regulation and in public policy, and to assist consumers in distinguishing real health threats from spurious health claims. As this report documents, there is a strong scientific and medical foundation for tobacco harm reduction, which shows great potential as a public health strategy to help millions of smokers.

INTRODUCTION

Even though people have known for more than 40 years that cigarettes are deadly, cigarette smoking remains the number one preventable cause of death in the United States, accounting for more than 400,000 deaths per year.

Efforts to reduce the number of people who smoke have had mixed results. On the plus side, it is less common for people to start smoking now than it was in the past. On the minus side, smokers' efforts to kick the cigarette habit usually fail. Statistics show that 70% of smokers want to quit and that 40% make a serious attempt to quit each year; however, each year fewer than 5% succeed in quitting permanently. Because nicotine is addictive, most people who want to quit smoking find themselves unable or unwilling to quit when they try.

A new approach to reducing the number of deaths and illnesses caused by cigarette smok-

ing has recently been suggested: encouraging smokers to switch from cigarettes to less harmful smokeless tobacco products so that they can reduce their risk of tobacco-related illness and death without having to break their addiction to nicotine. Some health experts and antismoking advocates have welcomed this idea, but others have strongly criticized it.

In this report, the American Council on Science and Health (ACSH) evaluates the prospect for the use of smokeless tobacco as a harm reduction alternative for smokers, discusses the reasons why this approach is controversial, and recommends some policy changes that may reduce the risk of tobacco-related illness and death among cigarette smokers. This report is based on a peer-reviewed ACSH report entitled "Tobacco Harm Reduction: An Alternate Cessation Strategy for Inveterate Smokers," by Dr. Brad Rodu and William T. Godshall, M.P.H., from the Dec. 21, 2006 issue (Vol. 3, issue 1) of *Harm Reduction Journal*.

CIGARETTE SMOKING: IT'S EVEN DEADLIER THAN YOU THINK

Although most people know that smoking cigarettes is unhealthful, many do not realize just how deadly cigarettes really are. One in every five deaths in the United States results from smoking-related diseases, and half of all smokers die from smoking-related diseases. Each year, smoking steals more than five million years of potential life from the over 400,000 Americans who die from illnesses linked to smoking.

To put these statistics into perspective, it may be helpful to consider the impact of cigarette smoking in comparison to that of six other major causes of death: alcohol abuse, drug abuse, AIDS, motor vehicle crashes, homicide, and suicide. All six of these causes *combined* kill only half as many people as cigarettes do.

Cigarette smokers can substantially reduce their risk of smoking-related illness and death by quitting smoking, but this is not as easy as it sounds. Even with the help of currently approved smoking cessation methods, most people who want to do so fail to quit permanently. Their inability to give up smoking is due to the strong addictive power of nicotine. Research has shown that nicotine fits all the criteria of an addictive agent and that the intensity of desire for cigarettes among smokers is as intense as or greater than the desire for heroin, alcohol, or cocaine among those addicted to these substances. As British tobacco addiction research expert Michael A.H. Russell noted more than 30 years ago, "There is little doubt that if it were not for the nicotine...people would be little more inclined to smoke than they are to blow bubbles or light sparklers."

NICOTINE: ADDICTIVE BUT NOT DEADLY

At this point, it's necessary to make an important distinction. *Cigarettes* kill; *nicotine* doesn't.

Nicotine is a highly addictive substance, but in all other respects, it is not especially dangerous. It does not cause cancer or emphysema, and there is no evidence that it plays a direct role in the development of heart disease or stroke, although it does have some effects on the circulatory system. If it weren't for its addictive power, nicotine would be of little public health concern.

Most people are not aware that nicotine is not responsible for the health damage caused by smoking. A survey of American smokers showed that 53% incorrectly believed that nicotine causes cancer and 14% didn't know. Even health professionals may be misinformed about the health effects of nicotine. A survey of physicians in the United Kingdom showed that 40% believed, incorrectly, that nicotine may cause cardiovascular disease and stroke and one-quarter believed it may cause lung cancer.

SMOKING CESSATION VS. HARM REDUCTION

In the past, public health campaigns to reduce health hazards among smokers have focused exclusively on smoking cessation. Traditionally, experts have not suggested any alternatives to quitting for smokers who are unable or unwilling to break their addiction to nicotine. However, the fact that the addictive component of tobacco, nicotine, is not responsible for most of the health damage resulting from cigarette smoking suggests possibilities for harm reduction.

The term *harm reduction* refers to a public health philosophy that seeks to decrease the potential harm associated with a particular behavior without necessarily eliminating that behavior. Harm reduction approaches to public health problems include the provision of clean needles and syringes to users of injected drugs to reduce the risk of infectious disease transmission and making condoms readily available to reduce the risks of sexually transmitted diseases and unintended pregnancy. Less controversially, the use of sunscreen to reduce the risks of sunburn and skin cancer without requiring people to give up outdoor activities can also be regarded as a harm reduction strategy.

In the case of tobacco, the risks of illness and death associated with cigarette smoking could be reduced if cigarette smokers could be persuaded to switch to a different, safer source of nicotine. Theoretically, this could be done using nicotine replacement therapy products, such as nicotine patches. However, the versions of these products currently on the market were not designed for use as long-term cigarette alternatives. Instead, they were intended for use as short-term aids to smoking cessation, with abstinence as the eventual goal. They contain relatively low doses of nicotine — much less than the amount that smokers are accustomed to receiving daily. In the United States, federal regulations limit their use to 10 to 12 weeks. And they are much more expensive than cigarettes. It is technically possible to manufacture a high-dose nicotine patch, and it is legally possible to modify regulations so that

longer periods of use would be considered acceptable. However, whether nicotine replacement therapy can be provided at a cost that would be attractive to smokers is uncertain.

Another alternative source of nicotine, however, is already on the market at competitive prices. That alternative is smokeless tobacco. As will be discussed in the next section, cigarette smokers who switch to smokeless tobacco can greatly reduce the risks to their health.

SMOKELESS TOBACCO PRODUCTS

The term *smokeless tobacco* refers to tobacco products that are not burned. Instead, most are placed in the cheek or between the lip and gum.¹ Many different smokeless tobacco products are used in various parts of the world, but the following four types are best known in the U.S. and other western countries:

- *Dry snuff*. In the U.S., this powdered product has traditionally been used primarily by women in southern states. Its popularity has declined greatly in the past few decades.
- *Loose leaf chewing tobacco*. This product is used primarily by men in the U.S., commonly in conjunction with outdoor activities. It is typically used in large amounts, resulting in the production of large amounts of saliva. Sales of this type of smokeless tobacco have decreased recently, probably because of the problem of saliva production and the resulting need to spit.
- *Moist snuff*. Moist snuff is now the most popular form of smokeless tobacco in the U.S. Users compress a “pinch” between the thumb and finger and place it inside the lip. Moist snuff is much less bulky than chewing tobacco but still produces some saliva that needs to be expelled. Recently, user-friendly forms of moist snuff sold in preportioned pouches that look like miniature teabags have become popular. These products stay in place in the mouth, unlike traditional pinches of snuff, which tend

to move around, and they generate very little saliva, allowing them to be used discreetly, without spitting. Moist snuff, called *snus* (rhymes with “moose”) is very popular in Sweden; it will be discussed in detail later in this report. In the United States, moist snuff is currently the most popular form of smokeless tobacco, with increased sales over the past 15 years.

- *Miscellaneous modern products.* In addition to the moist snuff pouches mentioned above, other types of small-sized smokeless tobacco products that can be used discreetly without spitting have appeared on the market in recent years. They include dry, flavored pouches; small pieces of leaf tobacco; and pellets of compressed tobacco that dissolve completely in the mouth.

HEALTH EFFECTS OF SMOKELESS TOBACCO

The health risks associated with smokeless tobacco are much less extensive than those associated with cigarette smoking. Consider the following:

- Cigarette smoking causes chronic lung diseases (chronic bronchitis and emphysema). Smokeless tobacco doesn't.
- Cigarette smoking increases a person's risk of heart disease two- to fourfold. Most studies of smokeless tobacco indicate that it has no influence on heart disease risk.
- Cigarette smoking causes cancer both at sites that come in direct contact with cigarette smoke — including the mouth, nose, throat, and lungs — and at sites that don't — including the bladder, kidney, pancreas, uterus, cervix, and stomach. Smokeless tobacco, on the other hand, has been associated with only one type of cancer — oral cancer — and the risk of oral cancer associated with the use of smokeless tobacco is less than the risk of oral

cancer associated with cigarette smoking. Moist snuff, the type of smokeless tobacco most popular today, as well as the less popular chewing tobacco, pose an oral cancer risk substantially lower than that of dry snuff. This may be because the process of manufacturing modern moist snuff produces smaller amounts of cancer-causing nitrosamines than older methods did. Some moist snuff products may pose little or no oral cancer risk.

- Smokeless tobacco often does cause a characteristic change in the tissues of the mouth (usually where the tobacco is held) called “oral leukoplakia.” However, this condition usually represents irritation rather than anything more serious, and it rarely progresses to cancer. Smokeless tobacco use may cause local changes in gum tissues. But people don't die of gum problems.
- The use of smokeless tobacco does not expose other people to tobacco smoke. Although the exact degree of health risk associated with exposure to environmental tobacco smoke is disputed, decreased exposure to “secondhand” smoke would certainly be welcome.
- Overall, the use of smokeless tobacco confers only about 2% of the health risks of smoking. For example, if the 400,000 people who died of smoking-related diseases had instead been using smokeless, the death toll might have been only 8,000. Every one would still have been tragic — but the public health impact would have been incredibly lessened.

Most people are not aware of the large difference in risks between cigarettes and smokeless tobacco. In 2005, a survey of adult U.S. smokers found that only about 11% correctly believed that smokeless tobacco products are less hazardous than cigarettes. In another survey, 82% of U.S. smokers incorrectly believed that chewing tobacco is just as likely as cigarette smoking to cause cancer.

DOES SWITCHING TO SMOKELESS TOBACCO WORK?

There is evidence from a small number of scientific studies and one real-life natural experiment that switching from cigarettes to smokeless tobacco can help people to quit smoking and thereby decrease the risks to their health.

A few surveys in the U.S., mostly in the 1980s and 1990s, indicated that people who switched from cigarettes to smokeless tobacco were more likely to quit smoking successfully than those who did not use smokeless tobacco. There has also been one clinical trial in which people who wanted to quit smoking were informed about the health effects of all forms of tobacco use and provided with information about and samples of a smokeless tobacco product. In this study, 16 of 63 participants (25%) successfully quit smoking for at least one year, and 12 (19%) were still smoke-free after seven years. This is better than the quit rates typically produced by conventional smoking cessation methods. These successes were achieved among smokers who had previously failed with nicotine gum or patch.

The most interesting information on smokeless tobacco use as a smoking cessation aid comes from Sweden, where the moist snuff product snus is very popular among men but not women. Smoking rates among Swedish men have been lower than those of men in other European countries for decades, and Swedish men have the lowest rates of smoking-related cancers such as lung cancer and the lowest percentage of male deaths related to smoking in Europe. In contrast, women in Sweden smoke and die at rates similar to those of women in other European countries. It has been calculated that per capita nicotine consumption in Sweden is similar to that in other countries such as Denmark, but the tobacco-related death rates for Danish men are higher than those for Swedish men. The difference is that Swedish men mostly get their nicotine from snus rather than from cigarettes as the Danish men do.

Concerns have been expressed that the use of smokeless tobacco might serve as a gateway to

the much more dangerous habit of cigarette smoking, but the Swedish experience doesn't support this idea. Studies of men in Sweden have indicated that the use of snus is more likely to lead to quitting smoking than starting it. Snus users were less likely than nonusers to start smoking, and snus was the most commonly used smoking cessation aid. Among Swedish men, the number of smokers has dropped during the past 20 years, while the number of exclusive snus users has increased. Among Swedish boys aged 15 and 16, the percentage that use snus has increased in recent years (to about 13%), but the percentage that smoke has declined. Among Swedish girls, very few of whom use snus, smoking rates are about double those of boys.

HEALTH POLICY QUESTIONS

Based on the Swedish experience and the limited scientific research that is available, it appears that switching to smokeless tobacco can help cigarette smokers reduce the risks to their health if they cannot or will not abstain from the use of tobacco completely. However, the idea that health authorities might advocate that cigarette smokers switch to smokeless tobacco — or even that they might inform people that the health risks of using smokeless tobacco are less extensive than those of cigarette smoking, without necessarily advocating any particular course of action — is highly controversial.

Official publications from U.S. government agencies emphasize that the use of smokeless tobacco is not risk-free (which is undeniably true), but they never say that it is far less risky to use smokeless tobacco than to smoke cigarettes. In fact, the U.S. government seems to go out of its way to *avoid* telling people the truth about smokeless tobacco.

For example:

- A Centers for Disease Control and Prevention summary of the harm caused by tobacco use² states, “Smokeless tobacco, cigars, and pipes also have deadly consequences, including

lung, larynx, esophageal, and oral cancers. Low-tar cigarettes and other tobacco products are not safe alternatives.” The huge difference between the risks of cigarettes and smokeless tobacco is not mentioned, and the wording of the sentence on smokeless tobacco, cigars, and pipes may incorrectly suggest to readers that smokeless tobacco has been convincingly linked to lung, larynx, and esophageal cancers, when in fact it has not.

- A Q & A–style fact sheet on smokeless tobacco from the National Cancer Institute³ fails to mention the relative risks of smokeless tobacco vs. cigarettes in answers to the questions “Is smokeless tobacco a good substitute for cigarettes?” and “What about using smokeless tobacco to quit cigarettes?” Instead, the fact sheet states that “because all tobacco use causes disease and addiction, NCI recommends that tobacco use be avoided and discontinued” and that “the accumulated scientific evidence does not support changing this position.”
- Until 2004, a document published by the National Institute on Aging entitled “Smoking: It’s Never Too Late to Stop”⁴ stated, “Some people think smokeless tobacco (chewing tobacco and snuff), pipes, and cigars are safer than cigarettes. They are not.” With respect to smokeless tobacco, this is simply false. So is the heading under which these sentences appeared, which read: “Cigars, Chewing Tobacco, and Snuff Are Not Safer.” In response to an official request for correction from the National Legal & Policy Center (NLPC),⁵ a nonprofit organization committed to promoting open, accountable, and ethical practices in government, the wording of the text was changed to “Some people think smokeless tobacco (chewing tobacco and snuff), pipes, and cigars are safe. They are not.” The heading was changed to “Cigars, Pipes, Chewing Tobacco, and Snuff Are Not Safe.” The NLPC’s request that the document mention that the use of smokeless tobacco is significantly less hazardous than cigarette smoking was ignored.

- Until early 2006, a document entitled “Tips for Teens: The Truth About Tobacco,”⁶ published by the Substance Abuse and Mental Health Administration, answered the question “Isn’t smokeless tobacco safer to use than cigarettes?” as follows: “No. There is no safe form of tobacco.” Although the statement “There is no safe form of tobacco” is consistent with current scientific evidence, the “No” that precedes it is a misrepresentation of the facts. In this instance, the government agency responded to a NLPC request for correction by withdrawing the document from its Web site rather than by providing accurate scientific information.

The statement that smokeless tobacco products are “not safe,” which appears in many government publications, may be intended to be consistent with the smokeless tobacco warning labels required by the 1986 Comprehensive Smokeless Tobacco Education Act, one of which states, “This product is not a safe alternative to cigarettes.” However, saying that smokeless tobacco is “not safe” is not enough. People need to be fully informed about the *relative* risks of cigarette smoking and smokeless tobacco use in order to make sound decisions about the use of tobacco products.

Some government and health organizations and health professionals may be reluctant to tell people that smokeless tobacco use is less dangerous than cigarette smoking out of concern that this information might prompt nonusers of tobacco to start using smokeless tobacco. However, the overall public health impact of any increase in smokeless tobacco use is extremely unlikely to outweigh the beneficial effect of cigarette smokers switching to smokeless tobacco, since it would require 50 people to start using smokeless tobacco to equal the degree of health risk associated with one person smoking. Concerns about the possibility that smokeless tobacco might act as a gateway to cigarette smoking also appear to be unwarranted, based on the Swedish experience.

CONCLUSIONS AND RECOMMENDATIONS

The health consequences of cigarette smoking are devastating, and current smoking cessation strategies for combating this menace have had very limited success. Adding tobacco harm reduction to the arsenal of weapons against smoking-related illness and death offers the potential to save many lives, since there remain approximately 45 million addicted smokers in the United States. Tobacco harm reduction empowers smokers to gain control over the consequences of their nicotine addiction. The strategy is cost-effective, accessible to almost all smokers, and consistent with the moral principle that the public has a right to accurate and complete health information. However, its implementation will require rethinking of conventional tobacco control policies.

ACSH believes that public health would benefit from the following actions and policy changes:

1. Government agencies and private health organizations should provide accurate and complete information about the health risks of tobacco, including information about the differential risks of different types of tobacco use.
2. Manufacturers of tobacco products should acknowledge that smokeless tobacco use is much less hazardous than cigarette smoking. One company, British American Tobacco, has already done this and is incorporating such information into its marketing of a snus-like smokeless tobacco product in some countries.
3. Congress should repeal the federally mandated warning on smokeless tobacco products that states, “This product is not a safe alternative to cigarettes.” This warning may mislead smokeless tobacco users into thinking that they might as well smoke — a dangerous conclusion. Consideration should be given to placing the following message on *cigarette* (not smokeless tobacco) packages: “Warning: Smokeless tobacco use has risks, but there is a scientific consensus that cigarette smoking is far more dangerous. Although quitting tobacco entirely is ideal, switching from cigarettes to smokeless tobacco can reduce health risks to smokers and those around them.” Placement of this warning on packages of cigarettes ensures that it reaches the target audience of cigarette smokers.
4. State legislatures should place higher taxes on more dangerous tobacco products than on less dangerous tobacco products. The state of Kentucky has already taken steps in this direction.
5. Regulatory restrictions on the manufacture and sale of nicotine replacement medications should be revised to allow the use of higher doses and longer-term (even lifelong) use of the medication. This would enable these medications to be incorporated into harm reduction strategies. In addition, smokers should be informed (perhaps by messages on cigarette packages) that permanent use of nicotine replacement therapy is much safer than continuing to smoke.

1. In the past, some snuff products were inhaled through the nose, but this practice is very uncommon today.
2. <http://www.cdc.gov/nccdphp/publications/aag/osh.htm>
3. <http://www.nci.nih.gov/cancertopics/factsheet/Tobacco/smokeless>
4. The current, modified version is available online at <http://www.niapublications.org/agepages/smoking.asp>
5. <http://aspe.dhhs.gov/infoquality/requests.shtml> Scroll down the page to where it says “NIH — Smokeless Tobacco” to find both the request and the agency’s response.
6. <http://aspe.dhhs.gov/infoquality/requests.shtml> Scroll down the page to where it says “SAMHSA – Smokeless Tobacco Risks” to find both the request and the agency’s response.

APPENDIX: EXAMPLES OF SMOKELESS TOBACCO PRODUCTS



Panel 1: Powdered dry snuff



Panel 2: Loose-leaf chewing tobacco



Panel 3: Moist snuff



Panel 4: Modern smokeless tobacco products

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