

# Snus Use in the U.S.: Reducing Harm or Creating It?

By Renee Twombly

A controversial and unsanctioned method of tobacco control, embraced in Sweden by its citizens and now catching on in Norway, may come under federal discussion in the U.S. now that the Food and Drug Administration has regulatory control over tobacco products. But U.S. supporters of the Scandinavian strategy known as tobacco harm reduction don't expect an easy transition, if any movement at all, away from the current U.S. focus on smoking cessation through FDA-approved methods.

Harm reduction involves giving inveterate cigarette smokers the nicotine they are addicted to in a product that may be less harmful than the toxic smoke that causes cancer. The method that has apparently worked well in Sweden is snus (rhymes with "moose"), which is finely chopped tobacco contained in a teabag-like sachet placed under the lip. Because it is pasteurized and refrigerated, snus is said to be purer—lower in carcinogens such as nitrosamines—than more traditional smokeless tobacco such as dry snuff, nasal snuff, and chewing tobacco produced by fermentation.

Swedish snus also contains more nicotine than most other forms of smokeless tobacco, and advocates say it is the only high-nicotine product on the market that can compete with cigarettes. They say this method of tobacco harm reduction gives smokers the drug they are addicted to, but in a much safer form.

FDA-approved methods of smoking cessation, however, center on a 2- to 3-month course of therapy, using tested and approved lower-dose nicotine replacement products, such as gum and patches, or drugs that don't contain nicotine, followed

by nicotine abstinence. The quit rate for these products is reported to be, at best, 15% after 1 year.

Although Swedish health authorities have never endorsed snus, and Swedish law bans tobacco advertising, 19% of men in Sweden reportedly use snus daily, whereas 11% smoke cigarettes. The situation is reversed for women: 2009 data indicate that 13% smoke daily and 4% use snus, although snus use has also been increasing among women. Sweden now has the lowest rate of lung cancer of any comparable developed nation and lower levels of oral cancer and vascular disease. And in Norway, as the use of snus has increased, smoking rates have decreased. By 2009, roughly the same amount of men, aged 16–30 years, smoked (35%) as used snus (33%). And, as in Sweden, snus use in women is on the rise, and smoking rates are declining, although more women smoke than use snus.

"Snus has become the most popular smoking cessation method in Norway, which is a little bit sensational, because the gum and the patch have been heavily marketed for 25 years and have

been easily available and recommended by health authorities," said Karl Erik Lund, Ph.D., research director of the Norwegian Institute for Alcohol and Drug Research, speaking in July at the Euroscience Open Forum meeting in

Italy. "Quitters also don't like nicotine medicine. They like snus."

## Scandinavian Snus

Sweden is a natural laboratory for observing how snus competes with smoking because of its long-standing history of using the product. Using snus became widespread

in Sweden in the early 20th century, and industrial production started about 50 years ago. Sweden successfully lobbied for exemption from the European Union's ban on commercial sale of snus when it joined the EU in 1995. Snus also gained popularity in Norway, which is not a member of the EU, especially after the country banned public smoking in 2004.

But just how much snus has contributed to the decline in Swedish smoking rates is in dispute. Gregory Connolly, D.M.D., director of the tobacco control research group at Harvard School of Public Health, maintains that the decline in smoking in Sweden occurred before snus use increased. "Sweden was first to give effective warnings about tobacco, first to raise taxes on cigarettes and to deal with smoking in public places," he said. "The credit is due to the public health community."

But Lars Ramström, director of the Institute for Tobacco Studies in Sweden, says snus, which is much cheaper than cigarettes, is "an important contributory factor" to reduced cigarette use. "This means that in the absence of snus use, the Swedish smoking rates would not have decreased as much as



Karl Erik Lund, Ph.D.

has actually been the case. Neither taxes nor advertising restrictions nor warning labels nor whatever else can alone explain lower smoking rates, and it is impossible to separate in detail the contribution by each component."

Ramström said some studies have shown that snus has contributed to both the decrease in the onset of smoking and the increase in smoking cessation.

But that finding is true only for men, argues Rosaria Galanti, Ph.D., an associate professor of epidemiology at the Karolinska Institutet. Women have not substantially

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increased their use of snus, even as their smoking rates have declined, she said. Furthermore, Galanti says that according to her research, snus has contributed to only a modest decline in smoking.

In Norway, snus use is on the rise. A study with 3,500 former and current smokers, led by Lund and published in the July 9 issue of *Nicotine and Tobacco Research*, found that snus is the preferred method for quitting smoking among men, even though users of varenicline (Champix), a non-nicotine pill, were the most successful quitters in the study. “Champix is expensive, needs a prescription, and can by no means compete with snus on the population level—which is effectiveness,” Lund said.

Snus is the least harmful of the smokeless tobacco products because of how it is produced and stored, and “everyone who has studied this agrees there is a 95%–99% reduction in the health risk of snus, compared to use of cigarettes,” said Kenneth Warner, Ph.D., dean of the School of Public Health at the University of Michigan in Ann Arbor.

Contradictory studies have also debated the precise health effects of snus. But a 2008 literature review commissioned by the European Union study found that use of smokeless tobacco almost eliminated respiratory disease and substantially cuts the hazard of other health effects, such as cardiovascular disease and oral and gastrointestinal cancers. The exception, they and other experts say, is highly carcinogenic smokeless tobacco produced and consumed in India, Southeast Asia, and northern Africa, which increases oral cancer risk.

### U.S. Strategy

Warner believes that the U.S. and other nations need a new strategy for tobacco control because although smoking rates have been cut in half in the U.S., the decline is slowing and may be leveling off.

But he and other experts believe that for snus to be used for harm reduction in the U.S. and elsewhere, health authorities need to endorse and regulate it. That goal may be difficult to achieve because of the long-standing public health message that no safe form of tobacco use exists. Because of early studies showing that some forms of American snuff cause oral cancer, containers of smokeless tobacco in the U.S. have been required since 1986 to carry warnings about

cancer risk and nicotine addiction and dependency.

“There are a lot of public health folks and physicians who don’t feel comfortable recommending any product that does not meet the usual FDA safety standard,” said Joel Nitzkin, M.D., who chairs the Tobacco Control Task Force for the American Association of Public Health Physicians. In 2008, this group endorsed the concept of harm reduction in order to substantially reduce death and disease from cigarette use.

The bigger hurdle, however, may be the difficulty of demonstrating that snus, or any other smokeless tobacco product, is safe. The 2009 Family Smoking Prevention and Tobacco Control Act gave FDA the authority to regulate tobacco products, and the agency can require population studies to prove snus safety in a myriad of ways, including health effects and potential abuse by youths.

“What the Swedish data really show is that young people are starting with snus,” said Michael Thun, M.D., vice president emeritus of epidemiology and surveillance research at the American Cancer Society—a claim that some Swedish investigators dispute. “The last time companies introduced smokeless products in the U.S., there was a big epidemic among teenage boys. There is no way the FDA is going to encourage young people to start with snus in the hope that this will prevent them from starting with cigarettes.”

According to Thun, “There are two fundamental problems that make it difficult for regulatory agencies to approve snus for smoking cessation. First is the lack of evidence from randomized clinical trials that it is more effective and at least as safe as pharmaceutical products now on the market. Second, given the uncertainties about its safety profile, it is difficult to conduct a randomized clinical trial, let alone gain regulatory approval.”



Michael Thun, M.D.

### Dual Use of Snus and Cigarettes?

Meanwhile, U.S. tobacco companies are ramping up their interest in snus and other smokeless tobacco products such as dissolvable lozenges, sticks, and strips.

Experts say American snus has much less nicotine than Swedish snus and is thus designed for smokers to use as a nicotine “bridge” when they can’t smoke—effectively promoting use of both products. Advertisements for Camel snus point out that it “can be enjoyed virtually anywhere, including places where smoking is banned or restricted” and that “U.S. demand for snus keeps growing (especially as smoking bans and restrictions become more common) with every year, and snus is now available in every state.”

By law, manufacturers cannot advertise snus as a safe alternative to smoking, which suits the tobacco companies just fine, said Michael Siegel, M.D., professor at the Boston University School of Public Health. “In reality, what is really going on with snus in the U.S. is that the tobacco companies don’t want people to stop smoking.”

Dual use of snus and cigarettes could stop a smoker from attempting to quit and could lead to new smokers, thus jeopardizing the “significant progress that has been made toward ending the tobacco epidemic in the United States in recent decades,” according to Terry Pechacek, Ph.D., from the Centers for Disease Control and Prevention’s Office on Smoking and Health, testifying at a congressional hearing on smokeless tobacco in April.

But Brad Rodu, D.D.S., said, “science simply doesn’t support the idea that snus is a gateway to smoking. The dominant evidence is that snus is a way out of smoking.” Rodu heads tobacco harm reduction research at Kentucky’s University of Louisville and has worked with several Swedish researchers in evaluating snus use in that country.

“Smoking prevalence among Swedish men, compared to any other European Union country, has always been low, and the main reason is that snus use has always

been high,” he said. “A certain proportion of Swedish men have always preferred to use snus instead of smoking, and over the last 20 years, smoking rates have been further impacted by the transition from smoking to snus.”

Nitzkin believes that the current strong surge in snus sales in the U.S. is due partly to people who want to quit smoking and who are turning to snus or to e-cigarettes. Without FDA approval of those products, physicians are engaging in their own type of harm reduction

by recommending long-term use of nicotine replacement products in patients who are having trouble quitting smoking, he said.

“Science shows that smokeless tobacco products carry, at worst, only 5% of the risk of death that cigarettes do,” Nitzkin said. “At minimum, the FDA could remove a large barrier to their use, which are the warning labels, and they could approve of harm reduction as a concept.”

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