

COMMENTARY

Moist snuff in Sweden—tradition and evolution

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Abstract

Snuff-dipping was already widespread in Sweden in the 19th century. After the 1920s snuff sales went down, but Sweden still kept its position as world leader in per capita consumption of moist snuff. Following a major advertising campaign snuff consumption began rising again in the late 1960s. The Swedish Tobacco Company claims that Swedish snuff is a 'less harmful' alternative to cigarettes. Swedish epidemiological studies indicate that there is a cancer risk from snuff-dipping, but it is low compared with smoking. Accordingly, the STC claims to "do a good job replacing cigarettes with snuff". However, an analysis of the trends in tobacco usage patterns in Sweden during the last few decades does not support this claim. The marketing of moist snuff has not primarily attracted older smokers who would seek help in order to stop smoking, but young people. The use of snuff is no prerequisite and no guarantee for a decrease of smoking. On the contrary, taking up snuff must be seen as an introduction to the tobacco habit and possibly a first step towards taking up cigarettes.

A unique feature of tobacco use in Sweden is the traditional oral use of moist snuff. This product consists of very finely-ground tobacco with a relatively high moisture content of about 50%. It contains potassium carbonate to make it alkaline (pH 8-9) which allows nicotine to be absorbed efficiently by the mucous membranes of the oral cavity. Traditionally snuff is sold in boxes of 50 g. The user takes a portion between his fingers and forms it into a 'pinch' which is placed between the cheek and the gum (usually behind the upper lip). The practice will here be referred to as 'snuff-dipping'. In later years the traditional box of loose snuff has been supplemented by boxes where the snuff is portion-packed in small sachets. More recently smaller-sized sachets in colourful, glossy bags quite similar to candy packages have been available.

Snuff-dipping was already widespread in Sweden

in the 19th century and even in the late 1920s total tobacco sales were dominated by snuff. During the following decades snuff sales went down considerably, but Sweden still kept its position as world leader in per capita consumption of moist snuff. Since the late 1960s snuff consumption has begun rising again.^{1,2} However, the re-emergence of snuff-dipping is not at all a return to previous usage patterns. The new dippers are recruited from groups other than the traditional ones (Fig. 1) and the interaction between smoking and dipping is different from what it used to be. This makes it interesting to study Swedish developments and especially the role of the Swedish Tobacco Company.

The Swedish Tobacco Company is one of the leading manufacturers and promoters of smokeless tobacco in the world. After acquiring (in 1985) The Pinkerton Tobacco Company, one of the largest

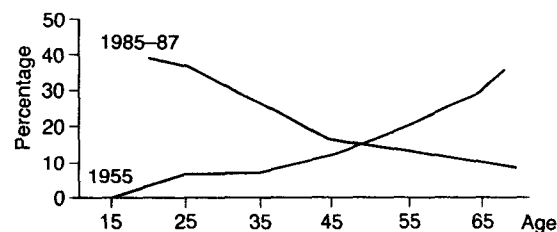


Figure 1. Snuff-dippers (%) among Swedish men at different ages in 1955 and 1985-87.^{9,10,11,14}

manufacturers of smokeless tobacco products in the USA, the Swedish Tobacco Company now strives intensively to increase its exports and to introduce moist snuff for oral use internationally, both in Europe (e.g. Switzerland), North America (mainly the USA) and the Third World (e.g. Malaysia). The company is partly state-owned but operates on equal terms with privately-owned companies on a pure profit basis. Its ownership does therefore not mean that this company is required to or should be expected to operate otherwise than any other tobacco company.

The ebb and turn of the tide

In 1920, when the Swedish population amounted to c. 5 million, Swedish men consumed about 7000 tons of moist snuff. During the following decades, consumption decreased steadily (Fig. 2), but the habit remained widespread among elderly men, especially among farmers, fishermen and lumberjacks. In the 1950s and 1960s, the typical dipper was an old, poorly educated, not very sophisticated man from a rural area. The use of snuff seemed to be a minor problem, very near its 'natural death'. By the end of the 1960s less than 10% of boys and young men used snuff, the median age of consumers being over 40.

At that time, however, the Swedish Tobacco Company decided that it would be too sad to let this 'noble old Swedish tradition' disappear. The company held practically 100% of the market, no competitors were within sight, but the decrease of total sales was obviously felt as a challenge. So, for the first time in its history, the company launched a large advertising campaign for snuff. On huge billboards and in attractive advertisements, Swedish 'Rock-blasters! Lumberjacks! Bank directors! Football-players!' were told to "Look—what a lot of nice snuff we've got" and informed that "Dippers are colourful chaps". The traditional oval, brown-greyish packages were replaced by new 'nicer and

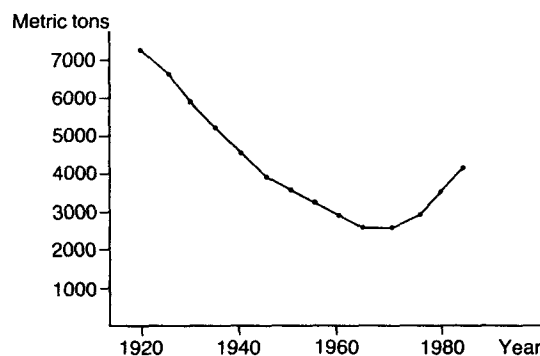


Figure 2. Moist snuff sales in Sweden 1920-87. Source: Swedish Tobacco Company.

jollier' round boxes in bright colours, and several new brands were introduced. The company's internal staff magazine expressed hope for "a renaissance for snuff, this the most glorious, interesting and legendary product in our assortment". The company openly admitted that the purpose of this campaign was to make snuff more popular in wider consumer groups and to increase total sales. What happened?

For almost five decades consumption had been decreasing steadily. This now changed dramatically into a steady increase in 1969 and the years to come (Fig. 2). The consumption has doubled since 1968. From 1969 to 1973 (Table 1) the percentage of dippers doubled among adolescents while remaining almost unchanged among older men (K. Unger, Swedish Tobacco Company, personal communication, 1976). The median age of snuff-dippers went down from 41 in 1969-70 to 30 in 1972-73. In a few years, snuff-dipping became a very 'in' and 'fashionable' thing to do among boys and adolescents, especially among sportsmen and athletes. This rapid and dramatic change seems to be a purely 'domestic phenomenon', no other neighbouring country experienced a similar increase in snuff consumption during these years.³

Alleged health benefits

The Swedish Tobacco Company claims that Swedish moist snuff is a 'less harmful' alternative to cigarettes and also less harmful than snuff from other countries. The latter claim is based on measurements⁴ showing that Swedish snuff contains lower amounts of nitrosamines than US moist snuff (but still about 100 times as much as the maximum levels found and accepted in any food or drink).

Swedish epidemiological studies indicate that

Table 1. Snuff-dippers (%) among the male adult (15-67) population in Sweden from 1969-70 to 1972-73

Year	Age 15-19	20-29	30-39	40-49	50-60	61-67	All	Median age
1969-70	11	13	11	10	12	16	12	41
1970-71	18	18	12	12	14	16	15	34
1971-72	19	20	12	11	15	17	15	33
1972-73	22	23	13	11	13	17	17	30

Source: Swedish Tobacco Company.

there is a cancer risk from snuff-dipping although it is low compared with smoking (as most other cancer risks are). The most detailed study⁵ deals specifically with one category of oral cancers, ICD 144, i.e. tumours located in the oral cavity excluding lips, tongue, salivary glands and the floor of the mouth. Records of male cancer at this location registered from 1962-71 were reviewed and particular note was taken of whether or not the tumour was situated at a location where snuff is usually placed. If so located the tumour was regarded as probably snuff-related.

In the total material of 375 cases information about tobacco use was available in 176 cases only. Of these, 28% were dippers, which means that there is an over-representation of dippers among these cancer cases compared to the 15% of dippers in the general population at that time. The tumour had a 'snuff-related' location in 71% of the verified current snuff dippers compared to only 8% in those identified as non-dippers. Both these findings do suggest that snuff-dipping contributes to the development of these oral cancers.

Among the 176 cases with known tobacco habits, 33 cases, i.e. 19% were snuff-related. If this were taken as an estimate of the snuff-related fraction of ICD 144 tumours, it would also explain the greater part of the difference between males and females (0% dippers), female incidence for this tumour site being about 24% lower than the male one.

The above figures refer to a 10-year period and an estimate of annual figures would be some 5-6 snuff-related cancers at this location per year in Sweden. Even if some addition is made for other oral locations, the number of snuff-related tumours will be much smaller than the one for smoking-related tumours. On the other hand, this means that the oral use of moist snuff causes more extra cancer cases per year in Sweden than the Chernobyl disaster.⁶ Furthermore, certain findings in a recent Swedish study⁷ (among other things an increased incidence of high diastolic blood pressure among snuff-

dippers) indicate that snuff may also be harmful to the cardiovascular system, which is not unexpected in view of the high nicotine intake by regular snuff-dippers.

The Swedish Tobacco Company, however, continues to claim that "switching from cigarettes to snuff will minimize the health risks" not only for the individual but also for the population. Mr Klaus Unger, the company's president and chief executive officer, has been quoted as saying that "we think we're doing a good job replacing cigarettes with snuff".⁸ These claims are based on two assumptions: (1) that the health risks from snuff-dipping are negligible, and (2) that an increase in snuff consumption will automatically cause a decrease in cigarette consumption, viz., that anyone who starts dipping snuff will stop or never start smoking.

Data from Sweden and elsewhere clearly demonstrates that the first of these assumptions is not valid. The second assumption also seems to be invalid as is illustrated by the following analysis of Swedish experiences.

Snuff-cigarette interaction

The increase of snuff consumption, which has proceeded steadily for almost two decades in Sweden, represents an evolution of totally new usage patterns. According to recent surveys, carried out by the Swedish National Smoking and Health Association (NTS) in 1985-87, 19% of Swedish men (16-74) use snuff daily and 5% do it occasionally.⁹⁻¹¹ There are, however, great differences between various age groups. In the 16-24 age group 31% use snuff daily and an additional 8% use it occasionally. In the 25-34 age group 28% use snuff daily and 7% occasionally, whereas the corresponding figures for older age group are much lower (about 11%)—a striking contrast to previous patterns.

Smoking and snuff-dipping share an important feature, namely nicotine dependence. It is therefore

a matter of interest to investigate how those two habits relate to each other in individual behaviour. The NTS study shows that there is a great deal of 'overlapping' between these two forms of nicotine intake. Among all male snuff-dippers (18-70) 47% are smokers (daily or occasionally). Among all men not using snuff in the same age group, 36% are smokers. (This pattern is quite similar in both younger and older groups.) In other words, smoking seems to be more frequent among those who use snuff than among those who do not. The idea that snuff-dipping would prevent or exclude smoking, is consequently not true. (It is true, however, that nicotine intake from snuff reduces nicotine intake through smoking, the ratio of daily versus occasional smokers being greater among those who do not use snuff compared to those who do.)

A more thorough study of the interaction between smoking and snuff-dipping must consider differences between age groups, as various age groups show very different patterns. This becomes very evident when we look at snuff-dipping habits in different age groups, separating those who have

never smoked daily from those who have been but are no longer daily smokers. In the older age group (men 35-70) the greater part (61%) of daily dippers are former daily smokers while only 20% have never been daily smokers. In the younger group (men 18-34) 50% of daily dippers have been 'recruited' among those who have never been daily smokers. This difference between the generations is even more evident when we look specifically at those who have never been daily smokers. Among older men in this group only 6% use snuff, whereas 33% of younger never-daily smokers are snuff-users. (See further Tables 2 and 3.)

Cigarettes and snuff—substitute or complement?

The data just cited give rise to two interesting and important questions:

- (1) Would the majority of older snuff-dippers who abandoned daily smoking have remained daily smokers if they had not taken up dipping? In other words, has snuff contri-

Table 2. History of daily smoking, Swedish males, 1985-87 (pool), by dipping habit and age

Percent (vertically) where not otherwise stated.)

	Daily dippers		Occasional dippers		Non-dippers	
	18-34 yrs	35-70 yrs	18-34 yrs	35-70 yrs	18-34 yrs	35-70 yrs
Number of individuals	375	228	97	86	755	1684
History of daily smokers						
Now daily smoker	13	19	62	66	26	30
Former daily smoker	37	61	13	30	16	33
Never daily smoker	50	20	25	5	57	38

Derived from ⁹, ¹⁰, ¹¹.

Table 3. Snuff-dipping in Sweden, males, 1985-87 (pool), by history of daily smoking and age

Percent (vertically) where not otherwise stated.

	Now daily smokers		Former daily smokers		Never daily smokers	
	18-34 yrs	35-70 yrs	18-34 yrs	35-70 yrs	18-34 yrs	35-70 yrs
Number of individuals	301	599	277	728	651	713
Daily dippers	15	7	51	19	29	6
Occasional dippers	19	9	5	3	4	0
Non-dippers	64	83	44	75	67	89

Derived from ⁹, ¹⁰, ¹¹.

buted to increasing the rate of smoking cessation?

- (2) Would the majority of younger snuff-dippers who never smoked daily have become daily smokers if they had not taken up dipping? In other words, has snuff helped lower the rate of uptake of smoking among young people?

Concerning the first question, there is a theoretical argument for answering in the affirmative, as here we are considering individuals who in their initial state (daily smokers) are already dependent on nicotine. Snuff-dipping may very well form an alternate form of drug intake after smoking cessation, if nicotine dependence could not be broken. Even if one can to a certain degree answer "yes" to question 1, one cannot, however, attribute any major influence on smoking cessation to snuff-dipping. The increase in the number of ex-smokers in these age groups is far greater than the increase in the number of snuff-dippers. Accordingly, most ex-smokers have been able to break nicotine dependence, and snuff-dipping is therefore no prerequisite for remaining smoking-free. The trends among women provide additional confirmation. During the years 1976-86 more than 100,000 women have stopped smoking in Sweden, without any significant number of these ever having taken up the habit of using snuff.

As regards question 2 above, one must note that there is no initially established nicotine dependency that could justify an answer in the affirmative. Nor does an analysis of how smoking versus snuff-dipping habits have developed in the youngest age group (18-24) supply any argument for such an answer. Among men in this group the use of snuff has increased dramatically during the 1980s, whereas smoking habits have remained practically unchanged during the same period. It is, of course, impossible to obtain any exact knowledge of how the rate of taking up smoking among boys would have changed had snuff not existed. One can, however, once again look at smoking trends among women. The female rate of taking up the smoking habit has decreased since the early 1970s. Among Swedish 16-year-old (grade 9) schoolgirls the percentage of smokers has dropped from 47 in 1971 to 22 in 1986.¹² This happened *without* the use of snuff becoming widespread among women. Accordingly, an increase in the use of snuff is *no prerequisite*—and also *no guarantee*—for a decrease of smoking.

As for younger men, one can note an interesting difference in attitudes towards snuff-dipping versus

smoking. Among male young smokers (16-24) only a minority (34%) explicitly wish to continue with smoking (i.e. answer "no" to the question of whether they want to give up smoking). Among snuff-dippers a majority (52%) explicitly wish to continue with dipping (i.e. answer "no" to the question of whether they want to give up dipping).^{9,13} This evident difference in attitudes towards dipping and smoking respectively shows that smoking and dipping are perceived quite differently. People are far more negative towards smoking. The non-smoking dippers would have been very likely to reject snuff as well, had dipping been regarded as unfavourably as smoking.

In the 1987 and 1988 NTS studies a special effort was made to analyse the 'initiation pattern' among tobacco users. The respondents were asked whether they had ever been daily smokers or daily dippers and, if both, which kind of tobacco use started first. The answers were analysed with respect to current tobacco use (Table 4). Among men who had ever started using tobacco in any form, 40% in the younger age group (18-34) had started their tobacco use as dippers. The corresponding figure in the older group (35-70) was 7%. Among current daily smokers, 15% in the younger group had started their tobacco use as dippers, compared to 4% in the older group. This strengthens the above conclusion that an increase in snuff-dipping among boys should not be regarded as some kind of 'immunization' against smoking. The opposite seems more likely: taking up the use of snuff can rather be a first step towards taking up smoking as well.

Table 4. 'Snuff-starters', i.e. those who started their tobacco use as dippers (percent base in parenthesis)

	Age	
	18-34	35-70
'Snuff-starters' as a percentage of all who ever started using tobacco	40 (496)	7 (993)
'Snuff-starters' as a percentage of all current daily smokers	15 (177)	4 (444)

Derived from ^{11, 13}.

Summary and conclusions

Data from Sweden support the conclusion that the introduction and marketing of moist snuff in a

country does not primarily attract older smokers who would seek help in order to stop smoking, but young people who can very easily acquire the habit of snuff-dipping as a new 'in' and 'fashionable' thing to do. Consumption may thus increase very rapidly.

An increase in snuff-dipping does not *per se* lead to a decrease in smoking. The use of snuff is no prerequisite and no guarantee for a decrease in smoking. On the contrary, taking up snuff must be seen as an introduction to the tobacco habit and possibly a first step towards taking up cigarettes. Categorical claims that 'snuff helps to reduce smoking' and the like—when used at the population or public health level—must be firmly rejected. The above Swedish data may be specially helpful when discussing policy matters at times when moist snuff is being pushed internationally.

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