

Does Snus use have a harm reduction effect in Sweden?

7 February 2007 ▲▼▲

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Some tobacco control community members believe that advocating the use of snus, a form of Swedish smokeless tobacco said to be less harmful than cigarettes, would prove an effective harm reduction strategy against tobacco related diseases. One important basis for such a claim is the fact that snus is widely used in Sweden (23% men used snus daily in 2002), where the incidence of cancer caused by tobacco is relatively low, and the observation that the Swedish are switching from smoked tobacco to snus. One way of looking at this claim of harm reduction through the use of snus is to compare tobacco related cancer rates in Sweden to those in the state of Connecticut, where use of any kind of smokeless tobacco including snus has been consistently rare.

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The table below provides a comparison of age adjusted incidence rates for Sweden and Connecticut. As the data show, the incidence of tobacco related cancer is much lower in Sweden, about one half that of Connecticut. Trend data for Sweden seemingly provide further supportive evidence to the harm reduction hypothesis, as a dramatic increase in snus use in Sweden (0.4 kg/person in 1970 to 0.9kg/person in 2000) coincides with a decreasing cigarette consumption (1.1kg/person in 1970 to 0.6kg/person in 2000) resulting in a decrease of tobacco related cancer from 97.8 per 100,000 in 1966-1970 to 56.7 per 100,000 in 1993-1997.1,

However, if snus has a harm reduction effect, the incidence of tobacco related cancers should not only decline in Sweden as snus use increases, but it should decrease more in Sweden than in Connecticut, where the consumption of smokeless tobacco has remained <1% over 1990s. However, the data below demonstrate that the ratio of the incidence of tobacco related cancer in Sweden and Connecticut has remained constant at about 0.5 since 1973, and the same ratio for lung cancer has been stable at about 0.4 since 1960. Rather than snus causing the decrease in tobacco related cancer in Sweden, these data suggest that another factor was responsible in reducing cancer incidence in both Sweden and Connecticut. That factor is likely to be the decline in cigarette use, which fell in men from about 28% to 15% (Sweden) and 26.7% to 18.7% (Connecticut) from 1985-2003.1,3 During the period of 1970s to 1990s, both populations were exposed to smoking reduction strategies such as increased awareness of health risks, increased prices, a change in social norms regarding tobacco use, etc but both places did not have an increase in snus use. Thus, the data do not seem to support the hypothesis that the decrease in tobacco related cancers in Sweden is due to increasing use of snus.

Comparison of Age Standardized (World) incidence (per 100,000) for tobacco related cancers, and cancer of lung & bronchus in USA-Connecticut and Sweden

Time Period	US-Connecticut		Time Period	Sweden		Ratio Sweden/US	
	Tobacco related cancers*	Cancer of lung & bronchus		Tobacco related cancer	Cancer of lung & bronchus	Tobacco related cancers*	Cancer of lung & bronchus
1960-62	111.1	43.2	1959-61	57.6	16.1	0.51	0.37
1963-65	114.3	44.0	1962-65	70.1	19.2	0.61	0.44
1968-72	135.8	53.7	1966-70	97.8	21.3	0.72	0.40
1973-77	128.7	60.9	1971-75	69.2	23.8	0.54	0.39
1978-82	133.3*	64.3*	1978-82	72.8	25.3	0.55	0.39
1983-87	121.5*	62.5*	1983-87	62.7	25.2	0.52	0.40
1988-92	119.4*	62.0*	1988-92	60.2	23.8	0.50	0.38
1993-97	112.0*	56.1*	1993-97	56.7	22.0	0.51	0.39

*Whites only

* *Lip, tongue, mouth, oropharynx, hypopharynx, other unspecified pharynx, oesophagus, pancreas, larynx, bladder, other urinary organs, bronchus trachea and lung.*

Source: International Agency for Research on Cancer. Lyon. Cancer Incidence in Five Continents. Vol. I to VIII.

References

1. Foulds, J., Ramstrom, L., Burke, M., Fogerstrom K. Effect of Smokeless tobacco (snus) on smoking and public health in Sweden. Tobacco Control, 2003; 12: 349-359.
2. Cancer Incidence in Five Continents. Vol. I-VIII. Lyon: International Agency for Research on Cancer.
3. CDC. State System: State Tobacco Activities tracking and evaluation system. Tobacco Use Supplement to the Current Population Survey. 2006. Available at <http://apps.nccd.cdc.gov/statesystem/>. Accessed January 17, 2007.

RE: Does Snus use have a harm reduction effect in Sweden?

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Dr Gupta's comparison of trends in lung cancer mortality and smoking prevalence in Sweden and Connecticut purports to undermine the claim that increasing snus use in Sweden has contributed to declining lung cancer rates there.

Dr Gupta argues that some factor other than snus must have been at work because the ratio of lung cancers between Sweden and Connecticut has remained constant despite the large difference in snus use between the two places. He identifies this "other factor" as a declining cigarette smoking prevalence that he attributes to tobacco control policies.

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Gartner, et al.

We agree that a decline in cigarette smoking in both countries explains the lung cancer trends but we don't see how this rules out a role for snus. This is exactly the mechanism by which proponents of snus would claim that snus use reduces smoking prevalence, namely, that population smoking prevalence declines because existing smokers switch to snus and new tobacco users use snus rather than cigarettes (Ramström and Foulds 2006).

The fact that smoking prevalence declined in Connecticut as a result of more traditional tobacco control policies simply shows that there is more than one way to reduce smoking prevalence. The fact that the decline in cigarette smoking over the time period examined was greater in Sweden (-13%) than in Connecticut (-8%) supports the hypothesis that the addition of snus to more conventional tobacco control policies has increased the decline in smoking prevalence.

We concede that the comparison does not prove that snus was responsible for the decline in lung cancer rates in Sweden, but it is much more supportive of the claims for snus than Dr Gupta allows.

Yours sincerely

Coral Gartner and Wayne Hall

References

Ramström, L. M. and J. Foulds (2006). "Role of snus in initiation and cessation of tobacco smoking in Sweden." Tobacco Control 15(3): 210-214.