

SmokeLess New Zealand

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Mouth and throat cancer: due to smoking and drinking, not moist snuff

- **Smoking and alcohol increases the risk of mouth and throat cancer: Swedish or US moist snuff does not.**
- **Human papilloma virus** of the kind that causes cervical cancer was associated with nearly half of mouth cancer in one large recent study.
- All studies below refer to snuff taken mainly before snuff nitrosamines were lowered to current very low levels in the 1980s. Future snuff risks of cancer will tend to be lower still.
- High nitrosamine (> 1000 ppm) snuff from Sudan (toombak), or from India, or dry snuff in Southern US white women before 1980 after an average 55 years of use,¹ does cause mouth cancer. Regulations are required to exclude such products from New Zealand. www.smokeless.org.nz/snuffregulations.htm

SWEDEN

All four published Swedish case-control studies show no increase of cancer risk from snuff:

1. **Head and neck cancer** (lip to larynx, including nasal). Lewin et al from 1988 to 1990, studied 2 million person-years of risk among men age 40-79 years of age yielding 605 cases of head and neck cancer, for comparison with 756 controls, in 1988-90. Tobacco smokers were 6.5 times more likely to develop cancer, and heavy drinkers (50 g alcohol per day) were 5.5 times more likely than light drinkers (10g or less per day). The risk of smoking and drinking together almost multiplied the separate risks. **No increased risk was found for the use of Swedish snuff.**²

2. **Mouth cancer** Schildt from 1980 to 1989, studied 410 new cases of mouth cancer (versus 410 controls, and compared with no exposure to each risk factor, smoking increased the risk 80%, (relative risk 1.8) and as did spirits 60% but the **risks for snuff users showed no increased risk** (OR 0.7, 95% Confidence interval 0.4, 1.1), even though 20% of men had used or still used snuff.³

3. **Mouth and throat cancer** Rosenquist from 2000 to 2004, investigated 132 new cases of mouth and throat cancer and compared their risk factors with those of 320 matched controls. In multivariate analysis, smoking 11-20 cigarettes a day increased risks 2.4 times (more than not smoking), and drinking alcohol (350 g per week or more) increased risks 2.6 times, but there was **no increased risk for Swedish moist snuff** (OR 1.1; 95% CI 0.5, 2.5), whether fermented or not in manufacture.⁴ Regular dental care halved the risk.⁵

Strikingly, high risk human papillomavirus (HPV) of the same types found in cervical cancer, infected 47% of the cases, versus 1% of the controls; HPV was linked to a 63-fold increased risk of mouth cancer. (95% CI 14, 280).^{4,5}

Thus the planned immunization of New Zealand girls with an anti-HPV vaccine could possibly prevent some mouth cancers in addition to the planned lowering of cervical cancer risk.

4. **Esophageal cancer.** Lagergren interviewed 618 patients with cancer of the esophagus. Smoking and alcohol combined increased the risk of squamous cell cancer of the esophagus 23 fold, but snuff had no effect on cancer of the esophagus, whether adenocarcinoma or squamous cell carcinoma.⁶

Cancer due to snus use in Sweden is rare - as shown by a case study published of a 90-year old man with squamous cell carcinoma at the exact position in the mouth he had regularly placed snus for 70 years.⁷

UNITED STATES OF AMERICA

Case-control studies.

The five American studies of moist oral snuff published up to 2002 showed risks close to the above results from Sweden. Most studies failed to control for smoking and alcohol. Overall there was no increased risk (Summary relative risk 1.00 (95% CI 0.8, 1.2) for moist snuff.⁹) Nitrosamine levels in US snuff declined in the 1980s,¹⁰ and so in later studies cancer risk due to snuff should be even lower.

Cohort study: All cancers and mouth cancer: From 1982-1992, 6779 interviewees 45-75 years of age participating in the NHANES national health surveys were identified and followed up. Because smoking is a major cause of mouth cancer, smokers were excluded and cancer incidence in 414 subjects who exclusively used smokeless tobacco was followed-up. The incidence of all cancers and of mouth cancer among exclusively-smokeless users was not increased above that of non-tobacco users. Combined users of cigarettes and smokeless tobacco had cancer risks no greater than for cigarettes alone.¹¹

Thickening of the mucosa

Smokeless tobacco keratosis (STK) is a thickening of the epithelium, at the site of snus use, due to local irritation, and occurring in most regular snus users. It is recognized by WHO as separate from oral leucoplakia, a condition often due to smoking, which may develop into cancer. Loose snus and long duration of use per day make STK more likely.¹⁰

Conclusion. Moist oral snuff does not need to carry a cancer warning.¹²

Cigarettes and tobacco should carry such a warning, as should alcoholic beverages.

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12. EU decision on warnings on snus cans sold in Sweden, European Commission. 2001.

For Australian picture warnings on cigar packets, see www.smokeless.org.nz/cigarsmokingrisks.htm

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