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## Surveillance of Smokeless Tobacco Products Sold in Massachusetts (1997-2010)

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## **SURVEILLANCE OF SMOKELESS TOBACCO PRODUCTS SOLD IN MASSACHUSETTS (1997-2010)**

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### **Background**

Moist snuff and snus are smokeless tobacco products that are marketed toward smokers for use at times smoking is prohibited. Little information is available about the nicotine content and design features of these products, particularly snus.

### **Methods**

Data on free nicotine levels and design features (pH, total nicotine content, tobacco leaf cut and flavor) of smokeless tobacco products were obtained from manufactures' annual reports to Massachusetts Department of Public Health between 1997 and 2010. Descriptive statistics were provided overall, and by manufacturer and product type.

### **Results**

Mean level of free nicotine in moist snuff remained relatively constant within the range of 3 to 5 mg/g between 1997 and 2010, although this varies by manufacturer, brand, and design characteristics. Mean free nicotine was higher in snus than in moist snuff and increased over time. Average free nicotine content of Swedish Match snus increased sharply since 2003 and reached >6 mg/g in 2010 while that of American brands of snus decreased from 2.9 mg/g in 2001 to 1.7 mg/g in 2010. Swedish Match snus had significantly higher pH than American brands of snus and moist snuff, and experienced a sharp increase from 7.3 in 2003 to 8.3 in 2010. Wide variations in nicotine and pH levels were present among manufacturers. Free nicotine level was associated with pH level of both snus and moist snuff products, and with tobacco leaf-cut for moist snuff. The number of sub-brands of both snus and moist snuff products increased during the study period.

### **Conclusion**

There was notable increasing trend in free nicotine concentration in Swedish Match snus that are marketed to US consumers. The increase in number sub-brands suggests greater marketing efforts by the manufacturers in recent years. Continued surveillance of smokeless tobacco products in MA is an important component of the State's control effort.