

# The NSDUH Report

March 5, 2009

## Smokeless Tobacco Use, Initiation, and Relationship to Cigarette Smoking: 2002 to 2007

### In Brief

- The rate of past month smokeless tobacco use remained relatively stable in the range of 3.0 to 3.3 percent between 2002 and 2007 among persons aged 12 or older; however, there were increases among certain subpopulations—in particular, among adolescent males
- Among past month smokeless tobacco users, 85.8 percent used cigarettes at some time in their lives, and 38.8 percent used cigarettes in the past month
- Among persons who had used both smokeless tobacco and cigarettes in their lifetime, 31.8 percent started using smokeless tobacco first, 65.5 percent started using cigarettes first, and 2.7 percent initiated use of smokeless tobacco and cigarettes at about the same time

Smokeless tobacco products consist of tobacco or a tobacco blend that is chewed, placed in the oral cavity outside the gums, or inhaled or snorted through the nose rather than smoked. The Surgeon General reported that use of smokeless tobacco “is not a safe substitute for cigarette smoking, can cause cancer and a number of noncancerous oral conditions, and can lead to nicotine addiction and dependence.”<sup>1</sup>

The National Survey on Drug Use and Health (NSDUH) asks persons aged 12 or older about their substance use, including their use of tobacco products. The questions on tobacco products focus on cigarettes, cigars, pipe tobacco, and smokeless tobacco (i.e., chewing tobacco and snuff). Respondents who used these substances are asked when they first used them.

This issue of *The NSDUH Report* examines smokeless tobacco use and its relationship to cigarette smoking among persons aged 12 or older. The first section presents information on trends in the use of smokeless tobacco using NSDUH data from 2002 to 2007. Unless otherwise noted, all other findings are annual averages based on data from the combined 2002 to 2007 surveys.

### Trends in Smokeless Tobacco Use and Initiation of Use

Among persons aged 12 or older, past month smokeless tobacco use remained relatively stable in the range of 3.0 to 3.3 percent between 2002 and 2007 (Figure 1). This finding was consistent across most gender and age groups. However, among males aged 12 to 17, past month smokeless tobacco use increased significantly—from 3.4 percent in 2002 to 4.4 percent in 2007.

Among persons aged 12 or older, the rate of recent initiation of smokeless tobacco use (i.e., first-time use of smokeless tobacco in the 12 months before the survey interview among all persons who had not previously used it) showed a modest, but statistically significant

**Figure 1. Percentages of Persons Aged 12 or Older Who Used Smokeless Tobacco in the Past Month: 2002 to 2007**



Source: SAMHSA, 2002 to 2007 NSDUHs.

**Table 1. Percentages of Persons Aged 12 or Older Initiating Smokeless Tobacco Use in the Past Year among Those Eligible for Initiation, by Age Group and Gender: 2002 to 2007**

| Age Group/Gender        | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|-------------------------|------|------|------|------|------|------|
| Total                   | 0.5  | 0.5  | 0.5  | 0.6  | 0.7  | 0.6  |
| <b>Aged 12 to 17</b>    |      |      |      |      |      |      |
| Male                    | 3.0  | 3.4  | 2.9  | 3.5  | 3.9  | 4.0  |
| Female                  | 1.0  | 0.8  | 0.9  | 1.1  | 1.0  | 1.2  |
| <b>Aged 18 to 25</b>    |      |      |      |      |      |      |
| Male                    | 3.1  | 2.5  | 2.9  | 3.4  | 3.9  | 3.9  |
| Female                  | 0.6  | 0.6  | 0.8  | 0.8  | 0.7  | 0.9  |
| <b>Aged 26 or Older</b> |      |      |      |      |      |      |
| Male                    | 0.1  | 0.1  | 0.1  | 0.1  | 0.2  | 0.1  |
| Female                  | 0.0  | 0.0  | 0.1  | 0.0  | 0.1  | 0.1  |

Source: SAMHSA, 2002 to 2007 NSDUHs.

**Table 2. Percentages of Persons Aged 12 or Older Using Smokeless Tobacco in the Past Month, by Demographic and Geographic Characteristics: 2002 to 2007**

| Demographic and Geographic Characteristic | Past Month |
|---|------------|
| <b>Age Group in Years</b>                 |            |
| 12 to 17                                  | 2.2        |
| 18 to 25                                  | 5.0        |
| 26 or Older                               | 3.0        |
| <b>Gender</b>                             |            |
| Male                                      | 6.2        |
| Female                                    | 0.4        |
| <b>Race/Ethnicity</b>                     |            |
| White                                     | 4.1        |
| Black or African American                 | 1.4        |
| American Indian or Alaska Native          | 7.1        |
| Native Hawaiian or Other Pacific Islander | 2.9        |
| Asian                                     | 0.6        |
| Hispanic or Latino                        | 0.9        |
| Two or More Races                         | 2.9        |
| <b>County Type</b>                        |            |
| Large Metropolitan                        | 1.9        |
| Small Metropolitan                        | 3.7        |
| 250,000 to 1 Million Population           | 3.2        |
| <250,000 Population                       | 4.7        |
| Non-Metropolitan                          | 6.6        |
| Urbanized                                 | 5.5        |
| Less Urbanized                            | 7.1        |
| Completely Rural                          | 8.4        |
| <b>Region</b>                             |            |
| Northeast                                 | 1.7        |
| Midwest                                   | 3.7        |
| South                                     | 4.2        |
| West                                      | 2.4        |

increase between 2002 and 2007 (from 0.5 to 0.6 percent) (Table 1). Initiation rates were higher in 2007 than in 2002 among males aged 12 to 17 and males aged 18 to 25. Among females, there were no statistically significant changes in initiation rates for any age group over the 6-year period.

### Smokeless Tobacco Use, by Demographic and Geographic Characteristics

Combined 2002 to 2007 data indicate that an annual average of 3.2 percent of persons aged 12 or older (an estimated 7.8 million persons) used smokeless tobacco in the past month. Certain demographic subgroups were more likely to use smokeless tobacco than others. It was more likely to be used among persons aged 18 to 25 than among 12 to 17 year olds and those 26 or older (Table 2). Males were more likely than females to have used smokeless tobacco (6.2 vs. 0.4 percent). American Indians or Alaska Natives were more likely than persons in any other racial/ethnic category to have used smokeless tobacco.

Rates also varied by geographic characteristics. Past month smokeless tobacco use was highest among persons who lived

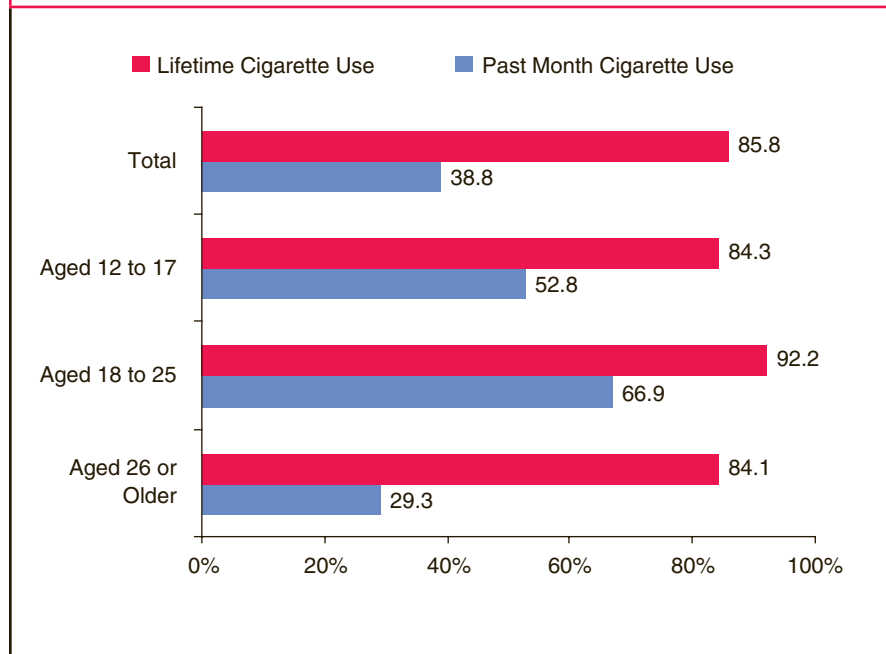
Source: SAMHSA, 2002 to 2007 NSDUHs.

in completely rural and less urbanized counties in non-metropolitan areas and lowest among persons who lived in large metropolitan areas. Persons who lived in the South and Midwest were more likely than persons who lived in the West and Northeast to have used smokeless tobacco.

### Initiation of Smokeless Tobacco Use, by Demographic Characteristics

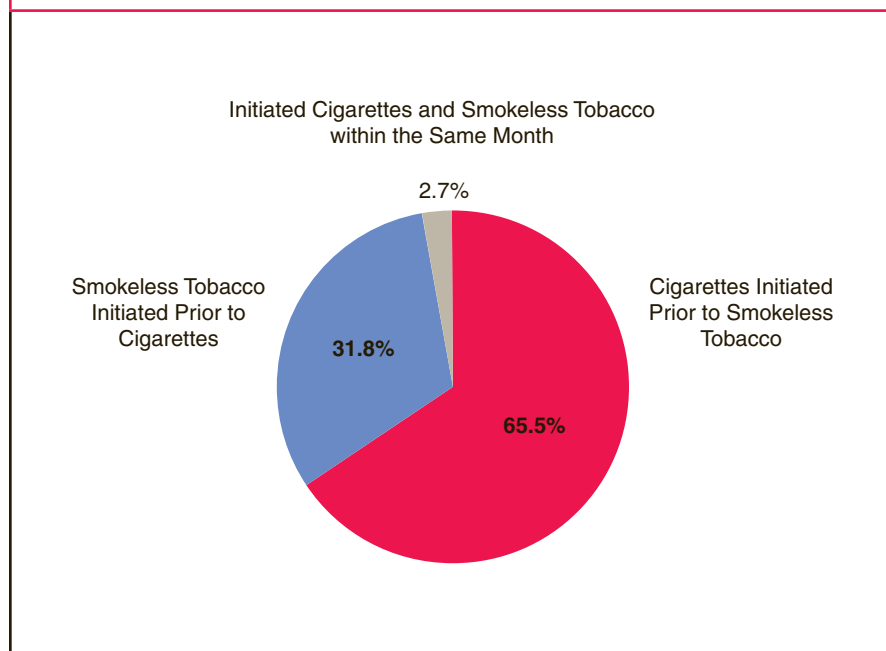
Combined data from 2002 to 2007 indicate that an annual average of 1.1 million persons initiated use of smokeless tobacco in the past 12 months. This represents 0.6 percent of those at risk for initiation (i.e., those who had not previously used smokeless tobacco). Initiation of smokeless tobacco in the past 12 months was more likely to occur among youths aged 12 to 17 than among young adults aged 18 to 25 (2.2 vs. 1.8 percent). Both of these age groups had higher rates of initiation than adults aged 26 or older (0.1 percent). Among those at risk for initiation of smokeless tobacco use, the rate of recent initiation was higher among males than females (1.0 vs. 0.2 percent).

**Figure 2. Percentages of Cigarette Use among Past Month Smokeless Tobacco Users, by Age Group: 2002 to 2007**



Source: SAMHSA, 2002 to 2007 NSDUHs.

**Figure 3. Sequence of Initiation of Smokeless Tobacco and Cigarette Use among Persons Who Had Ever Used Both Smokeless Tobacco and Cigarettes: 2004 to 2007**



Source: SAMHSA, 2004 to 2007 NSDUHs.

---

## Cigarette Use among Smokeless Tobacco Users

---

Combined data from 2002 to 2007 indicate that 85.8 percent of past month smokeless tobacco users used cigarettes at some time in their lives, and 38.8 percent used cigarettes in the past month (Figure 2). The rate of current cigarette use was 66.9 percent among past month smokeless tobacco users aged 18 to 25, 52.8 percent among those aged 12 to 17, and 29.3 percent among those aged 26 or older.

---

## Initiation and Cessation Patterns for Smokeless Tobacco and Cigarettes

---

Combined 2004 to 2007 data indicate that, among persons who had used both smokeless tobacco and cigarettes in their lifetime, 31.8 percent started using smokeless tobacco first, 65.5 percent started using cigarettes first, and 2.7 percent initiated use of smokeless tobacco and cigarettes at about the same time (i.e., within the same month) (Figure 3). Nearly half (47.0 percent) of past month smokeless tobacco users were former cigarette users (i.e., used cigarettes at some time in the past, but not in the past month). Some initiates of smokeless tobacco use may be cigarette smokers who are substituting smokeless tobacco as a way to quit smoking. Among daily smokers who initiated smokeless tobacco use, 88.1 percent were still smoking daily 6 months later.<sup>2</sup>

---

## Discussion

---

Smokeless tobacco contains 28 cancer-causing agents and has been linked to oral cancer and increased risk of death from cardiovascular diseases.<sup>3,4</sup> Chewing tobacco leads to nicotine

dependence, as does cigarette use. This report indicates that although rates of use remained stable between 2002 and 2007, there were increases among certain subpopulations—in particular, among adolescent males. Most smokeless tobacco users smoked cigarettes at some time in their lives, and most people who used both cigarettes and smokeless tobacco had used cigarettes first. It is important for current and former cigarette users to understand that smokeless tobacco use is not a healthy alternative to cigarette smoking.

---

### End Notes

---

- <sup>1</sup> National Cancer Institute. (1992, September). *Smokeless tobacco or health: An international perspective* (Tobacco Control Monograph Series, Monograph 2). Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute. [Available at <http://cancercontrol.cancer.gov/tcrb/monographs/2/index.html>]
- <sup>2</sup> By focusing on lifetime daily cigarette smokers who initiated use of smokeless tobacco 6 to 12 months prior to the interview, this analysis examined cessation (or continuation) of daily smoking in the 6-month period following initiation of smokeless tobacco use. Cessation of daily smoking was based on questions on the last daily use of cigarettes.
- <sup>3</sup> World Health Organization, International Agency for Research on Cancer. (2007). *Smokeless tobacco and some tobacco-specific N-nitrosamines* (IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol. 89). Lyon, France: Author. [Available at <http://monographs.iarc.fr/ENG/Monographs/vol89/index.php>]
- <sup>4</sup> Teo, K. K., Ounpuu, S., Hawken, S., Pandey, M. R., Valentin, V., Hunt, D., et al. (2006). Tobacco use and risk of myocardial infarction in 52 countries in the INTERHEART study: A case-control study. *Lancet*, 368, 647-658.

---

### Suggested Citation

---

Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (March 5, 2009). *The NSDUH Report: Smokeless Tobacco Use, Initiation, and Relationship to Cigarette Smoking: 2002 to 2007*. Rockville, MD.

For change of address, corrections, or to be removed from this list, please e-mail: [shortreports@samhsa.hhs.gov](mailto:shortreports@samhsa.hhs.gov).

---

Research findings from the SAMHSA 2002 to 2007 National Surveys on Drug Use and Health (NSDUHs)

## Smokeless Tobacco Use, Initiation, and Relationship to Cigarette Smoking: 2002 to 2007

- The rate of past month smokeless tobacco use remained relatively stable in the range of 3.0 to 3.3 percent between 2002 and 2007 among persons aged 12 or older; however, there were increases among certain subpopulations—in particular, among adolescent males
- Among past month smokeless tobacco users, 85.8 percent used cigarettes at some time in their lives, and 38.8 percent used cigarettes in the past month
- Among persons who had used both smokeless tobacco and cigarettes in their lifetime, 31.8 percent started using smokeless tobacco first, 65.5 percent started using cigarettes first, and 2.7 percent initiated use of smokeless tobacco and cigarettes at about the same time

The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). The data used in this report are from the 2002 to 2007 NSDUHs. The survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

*The NSDUH Report* is prepared by the Office of Applied Studies (OAS), SAMHSA, and by RTI International in Research Triangle Park, North Carolina. (RTI International is a trade name of Research Triangle Institute.)

Information on the most recent NSDUH is available in the following publication:

Office of Applied Studies. (2008). *Results from the 2007 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 08-4343, NSDUH Series H-34). Rockville, MD: Substance Abuse and Mental Health Services Administration. Also available online: <http://oas.samhsa.gov>.



U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES  
Substance Abuse & Mental Health Services Administration  
Office of Applied Studies  
[www.samhsa.gov](http://www.samhsa.gov)