



## SMOKELESS TOBACCO IN THE UNITED STATES

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### Health Harms of Smokeless Tobacco

Public health authorities including the Surgeon General and the National Cancer Institute have found that smokeless tobacco use is hazardous to health and can lead to nicotine addiction.<sup>1</sup> Smokeless tobacco contains at least 28 cancer-causing chemicals and causes oral, pancreatic and esophageal cancer. Use of smokeless tobacco is also associated with other health problems including lesions in the mouth and tooth decay.

- Nearly 30 years ago, an expert advisory committee to the U.S. Surgeon General found that, "After a careful examination of the relevant epidemiologic, experimental, and clinical data, the committee concludes that the oral use of smokeless tobacco represents a significant health risk. It is not a safe substitute for smoking cigarettes. It can cause cancer and a number of non-cancerous oral conditions and can lead to nicotine addiction and dependence."<sup>2</sup>
- According to the National Cancer Institute (NCI), at least 28 cancer causing chemicals have been identified in smokeless tobacco.<sup>3</sup> The U.S. National Toxicology Program established smokeless tobacco as a "known human carcinogen."<sup>4</sup>
- NCI and the International Agency for Research on Cancer report that use of smokeless tobacco causes oral, pancreatic and esophageal cancer.<sup>5</sup>
- Smokeless tobacco users have an increased risk of heart attacks and strokes compared to never users, and former smokers who have switched to smokeless tobacco have a higher risk compared to those who have quit entirely.<sup>6</sup> Smokeless tobacco use increases the risk of death when users have heart attacks or strokes.<sup>7</sup>
- Smokeless tobacco use is associated with leukoplakia, a disease of the mouth characterized by white patches and oral lesions on the cheeks, gums, and/or tongue. Leukoplakia can sometimes lead to oral cancer. Studies have found that more than half of daily users of smokeless tobacco had lesions or sores in the mouth, and that these sores are commonly found in the part of the mouth where users place their chew or dip.<sup>8</sup>
- Chewing tobacco has been linked to dental caries (tooth decay). Chewing tobacco users were four times more likely than non-users to have decayed dental root surfaces.<sup>9</sup>
- Smokeless tobacco contains nitrosamines—proven and potent carcinogens.<sup>10</sup> The level of carcinogenic TSNA in U.S. oral moist snuff brands have been found to be significantly higher than comparable Swedish Match brands, suggesting that it is possible for smokeless tobacco companies to produce oral snuff with significantly lower TSNA levels.<sup>11</sup>
- A study of a large nationally representative population found higher concentrations of observed levels of nicotine and a carcinogenic tobacco-specific nitrosamine (TSNA) in smokeless tobacco users compared to cigarette smokers. Dual users of smokeless tobacco and cigarettes also had higher TSNA levels than cigarette smokers. TSNA levels varied over time and were based on a small sample, so the study notes that the levels should continue to be monitored and evaluated over time. This same study found higher blood lead concentrations in smokeless tobacco users compared to non-tobacco users, but in comparable levels to cigarette smokers.<sup>12</sup>
- The number of carcinogenic polycyclic aromatic hydrocarbons (PAHs) in moist snuff tobacco varies depending on the product and brand. Because of this variation, the researchers concluded that tobacco companies could minimize the levels of PAHs in their products.<sup>13</sup>

Despite all the evidence of the harms of smokeless tobacco, smokeless tobacco companies, particularly the U.S. Smokeless Tobacco Company (UST), now a subsidiary of Altria, the parent company of Philip Morris USA, have a history of denying that smokeless tobacco causes cancer or any other disease.<sup>14</sup>

The health harms from smokeless tobacco use amount to an estimated \$3.4 billion in excess health care costs in the U.S.<sup>15</sup>

### **Smokeless Tobacco Use in the U.S.**

Although cigarette smoking among youth in the U.S. has declined significantly since 2000, use of smokeless tobacco among youth has declined much more slowly.<sup>16</sup>

- The 2023 National Youth Tobacco Survey (NYTS) showed that among all high school students, 1.5 percent reported current use of smokeless tobacco products, 1.7 percent reported current use of nicotine pouches, and 1.2 percent reported current use of other oral nicotine products (i.e., lozenges). Among high school boys, 2.1 percent used smokeless tobacco, 2.6 percent used nicotine pouches, and 1.5 percent used other oral nicotine products in the past 30 days.<sup>17</sup>
- Each day, more than 300 kids ages 12-17 use smokeless tobacco for the first time.<sup>18</sup>
- Among current high school smokeless tobacco users in 2021, 30.3 percent used these products on 20 to 30 of the previous 30 days, which is considered frequent use.<sup>19</sup>
- Based on data from the Youth Risk Behavior Survey (YRBS), smokeless tobacco use among high school boys exceeded the national rate in 23 states. In 2021, the states with the highest boys' smokeless tobacco use rates were Louisiana (9.6%), Mississippi (9.0%), West Virginia (9.0%), Montana (7.8%), North Dakota (7.5%), and Missouri (7.0%).<sup>20</sup>
- Based on 2013 data from the YRBS, high school athletes use smokeless tobacco at higher rates than non-athletes (11.1% vs. 5.9%). Among male high school athletes, smokeless tobacco use is particularly alarming at 17.4 percent. In addition, participation in more sports teams during high school is associated with higher rates of smokeless tobacco use.<sup>21</sup>
- The 2014-2015 PATH study found that 62.7 percent of current smokeless tobacco users had used a flavored product in the last month.<sup>22</sup> The 2013-2014 PATH study found that 68.9 percent of 12-17 year olds who had ever used smokeless tobacco used flavored smokeless tobacco the first time they tried the product. Moreover, more than two-thirds of youth using smokeless tobacco products said they did so "because they come in flavors I like."<sup>23</sup>
- According to the 2021 National Health Interview Survey (NHIS), 4.2 percent of adult men reported using smokeless tobacco some days or every day.<sup>24</sup>

### ***Dual Use – Smokeless Tobacco Use and Cigarette Smoking***

Dual use of smokeless tobacco and cigarettes is concerning, because users can face greater health risks than they would from using either product alone. Moreover, the risk of lung cancer and other smoking-related disease depends largely on how long a person smokes—not just the number of cigarettes smoked.<sup>25</sup> Thus, youth smokers, including those who transitioned from smokeless products, put themselves at greater risk for tobacco-related diseases in the future.

- Research shows that youth who use smokeless tobacco are also more likely to smoke cigarettes.<sup>26</sup>
- According to a 2010 study based on data from national U.S. surveys, the prevalence of cigarette smoking is substantially higher among middle and high school males who use smokeless tobacco than among those who do not. For 12<sup>th</sup> grade males, the prevalence of smoking one-half pack of cigarettes or more per day was nearly five times greater among smokeless tobacco users than non-users.<sup>27</sup>
- The 2019 NYTS found that 9.8 percent of middle and high school students who currently used two or more tobacco products reported using e-cigarettes and smokeless tobacco.<sup>28</sup>
- The 2014 NYTS showed that more than 70 percent of middle and high school current frequent (20 or more of the preceding 30 days) smokeless tobacco users reported currently using two or more tobacco products. Poly-tobacco use was only slightly lower among infrequent users: more

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\* Note that the adult data are not comparable to the youth data due to different sources and survey methodologies.

than 60 percent of less frequent (1-5 of the preceding 30 days) middle and high school current smokeless tobacco users reported currently using multiple tobacco products.<sup>29</sup>

### **Marketing Smokeless Tobacco**

Smokeless tobacco companies in the U.S. have a long history of creating new products that appeal to kids.<sup>30</sup> In recent years, there has been an onslaught of new smokeless tobacco products on the market, which, coupled with aggressive marketing strategies, could attract new youth users.

Not surprisingly, tobacco marketing plays an important role in attracting users – particularly youth. The 2012 Surgeon General's report, *Preventing Tobacco Use among Youth and Young Adults*, found that the “integration of product design with marketing helped to reverse the mid-twentieth century decline in smokeless tobacco use and spurred a rapid increase in smokeless tobacco use by adolescents and young adult males.”<sup>31</sup>

From 1998 to 2022, the total advertising and marketing expenditures of the top-five smokeless tobacco companies in the U.S. nearly quadrupled. In 2022, these smokeless tobacco companies spent \$572.7 million to advertise and market their products, more than twice the 2005 expenditures (\$250.8 million), the year before the cigarette companies started acquiring and marketing their own smokeless tobacco products.<sup>32</sup>

Some of these funds pay for smokeless tobacco ads in magazines with high youth readership, such as *Sports Illustrated* and *Rolling Stone*.<sup>33</sup> In the few years after signing the Smokeless Tobacco Master Settlement Agreement (STMSA), despite its restrictions placed on youth advertising, UST increased its expenditures in magazines with a significant number of youth readers by 161 percent, from \$3.6 million to \$9.4 million.<sup>34</sup> In 2013, Altria returned to advertising in magazines for its UST brands, including those that are popular with boys and young men. However, the tobacco companies continue to spend most of their money (68.9%) in the price discount category, to make their products more affordable and accessible to consumers – including youth.<sup>35</sup>

### **Cigarette Companies Enter the Smokeless Market**

The downward trend in smoking rates and the continued popularity of smokeless tobacco products has pushed cigarette companies into the smokeless tobacco market, relying on their popular cigarette brand names to attract new users. The two largest U.S. cigarette manufacturers, both of whom were found to be racketeers and guilty of marketing to kids by a U.S. District Court Judge, both acquired two of the largest smokeless tobacco manufacturers and are producing their own smokeless tobacco products under their famous cigarette brand names. Reynolds American – labeled as a “serial violator” of the Master Settlement Agreement by the U.S. Department of Justice – entered into the smokeless tobacco market with its purchase of American Snuff Company (formerly Conwood Tobacco Company) in 2006, while Philip Morris USA's parent company, Altria, purchased UST in 2009. Today, UST controls half (49.8%) of the moist snuff tobacco market (with leading premium brands Skoal and Copenhagen).<sup>36</sup> Other cigarette companies have also test-marketed their own smokeless tobacco products.

There is reason for concern given the track record of UST and its prior marketing behavior aimed at kids and adolescents, as well as Reynolds American and Philip Morris USA's participation in the smokeless tobacco category.<sup>37</sup> In her landmark ruling in the Department of Justice (DOJ) lawsuit against Philip Morris USA and R.J. Reynolds (and the other defendant cigarette companies), Judge Kessler found, “The evidence is clear and convincing – and beyond any reasonable doubt – that Defendants have marketed to young people twenty-one and under while consistently, publicly, and falsely, denying they do so.”<sup>38</sup> Just one example is a recent California Supreme Court ruling that found R.J. Reynolds (which is owned by Reynolds American) had, on six separate occasions, violated California state law banning the free distribution of cigarettes at events attended by minors.<sup>39</sup>

### **Newer Products**

In the last decade, cigarette companies have introduced a number of new smokeless tobacco products in different forms.

**Snus.** Snus products are small, teabag-like pouches containing tobacco and other flavorings that users place between their upper gum and lip, and discard after use. Because these products do not require spitting, their use can be easily concealed. One high school student admitted using Camel Snus during class, saying, “It’s easy, it’s super-discreet...and none of the teachers will ever know what I’m doing.”<sup>40</sup>

Of the major tobacco companies that introduced snus products, only two brands remain on the market: R.J. Reynolds’s Camel Snus and Swedish Match North America’s General Snus. Philip Morris USA had launched Marlboro Snus, Liggett Group created Grand Prix Snus, and Lorillard introduced Triumph Snus, but each have been discontinued. In 2015, FDA granted a marketing order to Swedish Match North America for eight varieties of its General Snus,<sup>41</sup> a product similar to those it sells in Sweden, and in 2019, FDA granted a modified risk tobacco product order for those products, which allows the company to use specific reduced risk messaging to market these products.<sup>42</sup>

**Nicotine Pouches.** Some pouch products contain nicotine derived from tobacco, but without containing any tobacco leaf, and are often described as “tobacco-free” by manufacturers. All of the major tobacco manufacturers sell these types of nicotine pouches. Swedish Match North America first introduced Zyn pouches in 2015;<sup>43</sup> Reynolds American has introduced Velo pouches<sup>44</sup> and acquired Dryft Sciences, LLC, to incorporate their pouch products as part of the Velo brand;<sup>45</sup> Altria purchased a majority stake in a company to distribute On! pouches in the U.S.;<sup>46</sup> and Swisher acquired Rogue Holdings to sell their oral nicotine products.<sup>47</sup> An analysis of market sales data from convenience stores and similar shops for nicotine pouch products found that sales in this category grew exponentially since its introduction. In 2019, Zyn had 86 percent of sales, followed by Velo at 6.1 percent, then On! at 5.5 percent. Market data also show that products are only available in non-tobacco flavors, with the highest sales for spearmint/mint, followed by wintergreen and cinnamon.<sup>48</sup> Financial analysts covering the tobacco industry “believe oral nicotine is taking most of its share from traditional smokeless tobacco, but is also benefiting from increased poly-usage across nicotine categories.”<sup>49</sup> Some smaller companies have introduced nicotine pouches claiming to use synthetic nicotine.<sup>50</sup>

**Dissolvable Tobacco Products.** Tobacco companies introduced dissolvable tobacco products from 2009 to 2013, but most of these products have been discontinued because of low sales or other reasons. Star Scientific used to market Ariva tobacco lozenges and Stonewall Hard Snuff, R.J. Reynolds marketed Camel Dissolvables (orbs, sticks, and strips), and Philip Morris USA test-marketed Marlboro Sticks and Skoal Sticks in Kansas. A few state agencies issued warnings about these types of products when they were on the market.<sup>51</sup> As required by the Family Smoking Prevention and Tobacco Control Act of 2009, the Tobacco Products Scientific Advisory Committee of the U.S. Federal Drug Administration reviewed the dissolvable products that were on the market at that point and released a report stating, “concluded that the available evidence, while limited, leads to a qualitative judgment that availability of DTPs [dissolvable tobacco products] could increase the number of users of tobacco products.”<sup>52</sup>

The latest iterations of dissolvable products contain tobacco-derived nicotine, but not actually tobacco leaf. Examples of these products are Reynolds American’s Velo lozenges and Swisher’s Rogue tablets and lozenges.

While very new, these developments could possibly result in changes in the smokeless tobacco market specifically and more generally in the market for all tobacco products, but the nature of those changes is not certain. Potential outcomes could include:

- Increased youth access to smokeless tobacco products as the new low-weight tobacco products continue to be inadequately taxed at the state and federal level.
- Increased efforts by smokeless manufacturers to encourage adult smokers who are concerned about their health or who are interested in quitting to switch to smokeless tobacco rather than quit completely.
- Increase in nicotine addiction due to dual use of smokeless and combusted tobacco products in light of limitations on indoor smoking and industry marketing encouraging poly-use.
- Increased youth experimentation with smokeless tobacco (due to the ability to use it discretely/secretly) and it could be a deterrent to youth tobacco use cessation efforts.
- Decreased cessation rates as smokers use smokeless tobacco products in places they cannot smoke rather than being abstinent from tobacco and nicotine exposure.

**Campaign for Tobacco-Free Kids, November 22, 2023 / Ann Boonn****Types of Smokeless Tobacco**

- *Oral (moist) snuff* is a finely cut, processed tobacco, which the user places between the cheek and gum that releases nicotine which, in turn, is absorbed by the membranes of the mouth.
- *Snus (or pouches)* is a tea-bag like packet of moist snuff tobacco and flavorings, placed between the upper gum and lip, and discarded after use. The product design does not require the user to spit, unlike traditional moist snuff.
- *Nicotine pouches* contain flavorings and either nicotine derived from tobacco or synthetic nicotine, but no tobacco leaf/bits. Like snus, they are placed in the mouth, do not require the user to spit, and are discarded after use.
- *Dissolvable tobacco products* can be made of ground tobacco and flavorings, but can also be made with tobacco-derived nicotine without actual tobacco bits. They are shaped into pellets, strips, or other forms that the user ingests orally. These products do not require spitting.
- *Looseleaf* chewing tobacco is stripped and processed cigar-type tobacco leaves, loosely packed to form small strips. It is often sold in a foil-lined pouch and usually treated with sugar or licorice.
- *Plug* chewing tobacco consists of small, oblong blocks of semi-soft chewing tobacco that often contain sweeteners and other flavoring agents.
- *Nasal snuff* is a fine tobacco powder that is sniffed into the nostrils. Flavorings may be added during fermentation, and perfumes may be added after grinding.

**For more information on smokeless tobacco, see the Campaign's website at [http://www.tobaccofreekids.org/facts\\_issues/fact\\_sheets/toll/products/smokeless/](http://www.tobaccofreekids.org/facts_issues/fact_sheets/toll/products/smokeless/).**

<sup>1</sup> For more information about the health harms of smokeless tobacco products, see Campaign for Tobacco-Free Kids factsheet, *Health Harms from Smokeless Tobacco Use*, <http://www.tobaccofreekids.org/research/factsheets/pdf/0319.pdf>.

<sup>2</sup> U.S. Department of Health and Human Services (HHS), *The Health Consequences of Using Smokeless Tobacco: A Report of the Advisory Committee to the Surgeon General*, Bethesda, MD 20892, NIH Publication No. 86-2874, April 1986, <http://profiles.nlm.nih.gov/NN/B/B/F/C/>.

<sup>3</sup> National Cancer Institute (NCI), "Smokeless Tobacco and Cancer," Accessed September 9, 2014. <http://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco/smokeless-fact-sheet#r1>. See also: NIH, NCI, *Smoking and Tobacco Control Monograph 2: Smokeless Tobacco or Health: An International Perspective*, September 1992, [http://cancercontrol.cancer.gov/tcrb/monographs/2/m2\\_complete.pdf](http://cancercontrol.cancer.gov/tcrb/monographs/2/m2_complete.pdf).

<sup>4</sup> National Toxicology Program, Public Health Service, HHS, *Report on Carcinogens, Thirteenth Edition*, October 2014, <http://ntp.niehs.nih.gov/ntp/roc/content/profiles/tobacco/tobacco-related-exposures.pdf>.

<sup>5</sup> NCI and U.S. Centers for Disease Control and Prevention (CDC), *Smokeless Tobacco and Public Health: A Global Perspective*, Bethesda, MD: HHS, CDC, National Institutes of Health (NIH), NCI, NIH Publication No. 14-7983, 2014. National Cancer Institute, "Smokeless Tobacco and Cancer," Accessed February 19, 2020, <http://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco/smokeless-fact-sheet#r1>. See also: International Agency for Research on Cancer. *A Review of Human Carcinogens: Personal Habits and Indoor Combustions*. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100E (2012), <http://monographs.iarc.fr/ENG/Monographs/vol100E/mono100E-8.pdf>.

<sup>6</sup> Rostron, BL, et al., "Smokeless tobacco use and circulatory disease risk: a systematic review and meta-analysis," *Open Heart* 5(2):e000846, 2018.

<sup>7</sup> CDC, "Smokeless Tobacco: Health Effects," January 17, 2018,

[https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/smokeless/health\\_effects/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/smokeless/health_effects/index.htm). NCI and CDC, *Smokeless Tobacco and Public Health: A Global Perspective*, Bethesda, MD: HHS, CDC, NIH, NCI, NIH Publication No. 14-7983, December 2014, <http://cancercontrol.cancer.gov/brp/tcrb/global-perspective/index.html>.

<sup>8</sup> Hatsukami, D & Severson, H, "Oral Spit Tobacco: Addiction, Prevention and Treatment," *Nicotine & Tobacco Research* 1:21-44, 1999.

<sup>9</sup> Tomar, SL, "Chewing Tobacco Use and Dental Caries Among U.S. Men," *Journal of the American Dental Association*, 1999, 130: 160.

<sup>10</sup> National Cancer Institute (NCI), "Smokeless Tobacco and Cancer," Accessed February 19, 2020, <https://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco/smokeless-fact-sheet#r1>; Hatsukami, D & Severson, H, "Oral Spit Tobacco: Addiction, Prevention and Treatment," *Nicotine & Tobacco Research* 1:21-44, 1999.

<sup>11</sup> Brunnemann, KD, et al., "Aging of Oral Moist Snuff and the Yields of Tobacco -Specific N-Nitrosamines," American Health Foundation, Massachusetts Tobacco Control Program, June 22, 2001.

<sup>12</sup> Rostron, BL, et al., "Nicotine and Toxicant Exposure among U.S. Smokeless Tobacco Users: Results from 1999 to 2012 National Health and Nutrition Examination Survey Data," *Cancer Epidemiology, Biomarkers & Prevention*, DOI: 10.1158/1055-9965, published online first, November 18, 2015.



- <sup>13</sup> Stepanov, I, et al., "Analysis of 23 Polycyclic Aromatic Hydrocarbons in Smokeless Tobacco by Gas Chromatography-Mass Spectrometry," *Chemical Research in Toxicology* [epub ahead of print], October 27, 2009.
- <sup>14</sup> Letter to Secretary Donald S. Clark, U.S. Federal Trade Commission, dated February 5, 2002, from Daniel C. Schwartz, Partner, Bryan Cave LLP. UST website (accessed May 8, 2006), *2005 Annual Report & 2006 Proxy UST*, <http://ccbn.mobular.net/ccbn/7/1301/1391/print/print.pdf>.
- <sup>15</sup> In 2014 dollars. Wang, Y, et al., "Healthcare Utilization and Expenditures Attributable to Smokeless Tobacco Use among US Adults," *Nicotine & Tobacco Research*, ntx196, <https://doi.org/10.1093/ntr/ntx196>, September 2, 2017.
- <sup>16</sup> U.S. Centers for Disease Control & Prevention (CDC), "Vital Signs: Tobacco Product Use Among Middle and High School Students—United States, 2011–2018," *MMWR* 68(6):157–164, February 15, 2019, <https://www.cdc.gov/mmwr/volumes/68/wr/pdfs/mm6806e1-H.pdf>. CDC, "Tobacco Product Use and Associated Factors Among Middle and High School Students — United States, 2019," *MMWR* 68(12), December 6, 2019, <https://www.cdc.gov/mmwr/volumes/68/ss/pdfs/ss6812a1-H.pdf>. CDC, "Tobacco Product Use Among Middle and High School Students—United States, 2020," *MMWR*, 69, December 17, 2020, <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6950a1-H.pdf>. Park-Lee E, et al., "Tobacco Product Use Among Middle and High School Students — United States, 2022," *MMWR* 71(45):1429–1435, November 11, 2022, <https://www.cdc.gov/mmwr/volumes/71/wr/pdfs/mm7145a1-H.pdf>. Birdsey, J, et al., "Tobacco Product Use U.S. Among Middle and High School Students — National Youth Tobacco Survey, 2023," *MMWR* 72(44):1173–1182, November 3, 2023, <https://www.cdc.gov/mmwr/volumes/72/wr/pdfs/mm7244a1-H.pdf>.
- <sup>17</sup> Smokeless tobacco includes chewing tobacco, snuff, dip, or snus, while other oral nicotine products covers lozenges, discs, tablets, gums, dissolvable tobacco products, and other products. Birdsey, J, et al., "Tobacco Product Use U.S. Among Middle and High School Students — National Youth Tobacco Survey, 2023," *MMWR* 72(44):1173–1182, November 3, 2023, <https://www.cdc.gov/mmwr/volumes/72/wr/pdfs/mm7244a1-H.pdf>.
- <sup>18</sup> Substance Abuse and Mental Health Administration (SAMHSA), HHS, *Results from the 2022 National Survey on Drug Use and Health, NSDUH: Detailed Tables*, Table 4.10A, <https://www.samhsa.gov/data/report/2021-nsduh-detailed-tables>.
- <sup>19</sup> CDC, "Tobacco Product Use and Associated Factors Among Middle and High School Students — United States, 2021," *MMWR* 71(5), March 11, 2022, <https://www.cdc.gov/mmwr/volumes/71/ss/pdfs/ss7105a1-H.pdf>.
- <sup>20</sup> CDC, "Tobacco Product Use Among High School Students — Youth Risk Behavior Survey, United States, 2021," *MMWR* 72(1), April 28, 2023. States with boys' smokeless use rates higher than the national rate include (for states listed in previous years, data are the most recent available): **2021 (national rate of 3.3%)**: Alabama (5.6%), Arkansas (6.3%), Georgia (4.3%), Iowa (3.7%), Kansas (4.8%), Kentucky (5.8%), Louisiana (9.6%), Maryland (3.6%), Mississippi (9.0%), Missouri (7.0%), Montana (7.8%), Nebraska (4.3%), Nevada (3.7%), North Dakota (7.5%), Pennsylvania (5.4%), Rhode Island (3.7%), South Carolina (3.5%), South Dakota (3.8%), Tennessee (3.5%), Texas (4.3%), Vermont (4.4%), West Virginia (9.0%); **2019 (national rate of 5.8%)**: Alaska (10.4%) [CDC, "Tobacco Product Use Among High School Students — Youth Risk Behavior Survey, United States, 2019," *MMWR* 69(1), August 21, 2020].
- <sup>21</sup> CDC, "Combustible and Smokeless Tobacco Use Among High School Athletes — United States, 2001–2013," *MMWR* 64(34):935–939, September 4, 2015.
- <sup>22</sup> Rose, S, et al., Flavour types used by youth and adult tobacco users in wave 2 of the Population Assessment of Tobacco and Health (PATH) Study 2015–2015," *Tobacco Control*, published online September 21, 2019. The 2018 NYTS found that 37.5% of middle and high school smokeless tobacco users had used flavored smokeless tobacco in the past month. Cullen, KA, et al., "Flavored Tobacco Product Use Among Middle and High School Students—United States, 2014–2018," *MMWR*, 68(39): 839–844, October 4, 2019, <https://www.cdc.gov/mmwr/volumes/68/wr/pdfs/mm6839a2-H.pdf>.
- <sup>23</sup> Ambrose, BK, et al., "Flavored Tobacco Product Use Among US Youth Aged 12–17 Years, 2013–2014," *Journal of the American Medical Association*, published online October 26, 2015.
- <sup>24</sup> Cornelius, ME, "Tobacco Product Use Among Adults — United States, 2021," *MMWR* 72(18):475–483, May 5, 2023, <https://www.cdc.gov/mmwr/volumes/72/wr/pdfs/mm7218a1-H.pdf>.
- <sup>25</sup> HHS, *The health consequences of smoking: a report of the Surgeon General*, 2004 (page 95).
- <sup>26</sup> Tomar, S, et al., "Patterns of dual use of cigarettes and smokeless tobacco among US males – findings from national surveys," *Tobacco Control* 19:104–109, 2010; Severson, H, et al., "Use of smokeless tobacco is a risk factor for cigarette smoking," *Nicotine & Tobacco Research*, 9(12):1331–1337, December 2007; Forrester, K, et al., "Predictors of smoking onset over two years," *Nicotine & Tobacco Research*, 9(12):1259–1267, December 2007; Tomar, S, "Is use of smokeless tobacco a risk factor for cigarette smoking? The U.S. experience," *Nicotine & Tobacco Research* 5(4):561–569, August 2003; Haddock, CK, et al., "Evidence That Smokeless Tobacco Use Is a Gateway for Smoking Initiation in Young Adult Males," *Preventive Medicine* 32:262–267, 2001.
- <sup>27</sup> Tomar, S, et al., "Patterns of dual use of cigarettes and smokeless tobacco among US males – findings from national surveys," *Tobacco Control* 19:104–109, 2010.
- <sup>28</sup> CDC, "Tobacco Product Use and Associated Factors Among Middle and High School Students — United States, 2019," *MMWR* 68(12), December 6, 2019.
- <sup>29</sup> CDC, "Frequency of Tobacco Use Among Middle and High School Students — United States, 2014," *MMWR* 64(38):1061–1065, October 2, 2015.
- <sup>30</sup> See, e.g., TFK Factsheet, *Smokeless Tobacco and Kids*, <http://www.tobaccofreekids.org/research/factsheets/pdf/0003.pdf>.
- <sup>31</sup> HHS. *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*, 2012, at 539.
- <sup>32</sup> U.S. Federal Trade Commission (FTC), *Smokeless Tobacco Report for 2022*, October 2023, [https://www.ftc.gov/system/files/ftc\\_gov/pdf/2022-Smokeless-Tobacco-Report.pdf](https://www.ftc.gov/system/files/ftc_gov/pdf/2022-Smokeless-Tobacco-Report.pdf). Data for top 5 manufacturers only: Altria Group, Inc.; North Atlantic Trading Company, Inc.; Reynolds American, Inc.; Swedish Match North America, Inc.; and Swisher International Group, Inc.
- <sup>33</sup> Morrison, MA, et al., "Under the Radar: Smokeless Tobacco Advertising in Magazines With Substantial Youth Readership," *American Journal of Public Health (AJPH)* 98:543–548, 2008. See also, *Sports Illustrated*, July 30, 2001, and December 11, 2009; *Rolling Stone*, June 10, 2010, and December 5, 2013.

- <sup>34</sup> Massachusetts Department of Public Health, *Smokeless Tobacco Advertising Expenditures Before and After the Smokeless Tobacco Master Settlement Agreement: A Report of the Massachusetts Department of Public Health*, May 2002, <http://archives.lib.state.ma.us/bitstream/handle/2452/49479/ocm50878863.pdf>.
- <sup>35</sup> FTC, *Smokeless Tobacco Report for 2022*, October 2023 [Data for top 5 manufacturers only].
- <sup>36</sup> Altria Group, Inc., Form 10-K, 2020 Annual Report, filed February 26, 2021, <https://www.sec.gov/ix?doc=/Archives/edgar/data/764180/000076418021000037/mo-20201231.htm>.
- <sup>37</sup> For more examples, see TFK Factsheet, *Smokeless Tobacco and Kids*, <http://www.tobaccofreekids.org/research/factsheets/pdf/0003.pdf>.
- <sup>38</sup> Tobacco Control Legal Consortium, *The Verdict Is In: Findings From United States v. Philip Morris, Marketing to Youth*, 2006.
- <sup>39</sup> California Attorney General, *Attorney General Lockyer Announces \$5 Million Settlement with R.J. Reynolds to Resolve Lawsuit Over Firm's Distribution of Free Cigarettes*, May 8, 2006, [http://oag.ca.gov/news/press\\_release?id=1301](http://oag.ca.gov/news/press_release?id=1301).
- <sup>40</sup> Nelson, L., "If you think Snus is a safe alternative to smoking, think again," *Kansas City Star*, October 31, 2007.
- <sup>41</sup> FDA, Marketing Order letter, November 10, 2015, <https://www.fda.gov/media/94616/download>.
- <sup>42</sup> FDA, Modified Risk Granted Orders letter, October 22, 2019, <https://www.fda.gov/media/131922/download>.
- <sup>43</sup> Abcede, A., "Zyn Smokeless Product Goes National," *CSP Daily News*, April 30, 2019, <https://www.cspdailynews.com/tobacco/zyn-smokeless-product-goes-national>.
- <sup>44</sup> R.J. Reynolds Tobacco Company, "R.J. Reynolds Vapor Company Announces VELO - Expanding Emerging Modern Oral Portfolio and Choice for Adult Tobacco Consumers," Press Release, July 8, 2019, <https://www.prnewswire.com/news-releases/rj-reynolds-vapor-company-announces-velo-expanding-emerging-modern-oral-portfolio-and-choice-for-adult-tobacco-consumers-300880801.html>.
- <sup>45</sup> British American Tobacco, "BAT strengthens its US New Category portfolio: Announces acquisition of Dryft Modern Oral business," Press Release, November 3, 2020, [https://www.bat.com/group/sites/UK\\_9D9KCY.nsf/vwPagesWebLive/DOBUYR3N](https://www.bat.com/group/sites/UK_9D9KCY.nsf/vwPagesWebLive/DOBUYR3N).
- <sup>46</sup> LaVito, A., "Altria takes stake in Swiss tobacco company Burger Sohne's global businesses for \$372 million as cigarette sales shrink," CNBC, June 3, 2019, <https://www.cnbc.com/2019/06/03/altria-invests-372-million-in-swiss-tobacco-company-burger-sohne.html>.
- <sup>47</sup> Swisher, "Swisher's Bold New Future Focused on Innovation for the Modern Adult Consumer," Press Release, August 31, 2020, <https://www.businesswire.com/news/home/20200831005439/en/Swisher%E2%80%99s-Bold-New-Future-Focused-on-Innovation-for-the-Modern-Adult-Consumer>.
- <sup>48</sup> Delnevo, CD, et al., "Examining Market Trends in Smokeless Tobacco Sales in the United States: 2011–2019," *Nicotine & Tobacco Research*, advance access publication, November 25, 2020.
- <sup>49</sup> Goldman Sachs, *Americas Tobacco: Nielsen Data thru 2/20/21: Total nicotine volumes decelerate*, March 2, 2021.
- <sup>50</sup> ZONE Labs, "ZONE™ 100% tobacco-free nicotine white portion pouch hits USA modern oral nicotine (MON) market," Press Release, October 6, 2020, <https://www.prnewswire.com/news-releases/zone-100-tobacco-free-nicotine-white-portion-pouch-hits-usa-modern-oral-nicotine-mon-market-301147260.html>. BidiVapor, "BidiTM Vapor Launches BidiTM Pouch, a Nicotine Delivery Product in a Tin Pack," Press Release, October 29, 2020, <https://www.newswire.com/news/biditm-vapor-launches-biditm-pouch-a-nicotine-delivery-product-in-a-21245979>.
- Crown Distributing, LLC, "RUSH® Non-Tobacco Oral Nicotine Pouches set to hit the US markets, and will launch nationwide through Crown Distributing and affiliate companies Global Tobacco LLC & America Juice Co.," Press Release, January 27, 2021, <https://www.prnewswire.com/news-releases/rush-non-tobacco-oral-nicotine-pouches-set-to-hit-the-us-markets-and-will-launch-nationwide-through-crown-distributing-and-affiliate-companies-global-tobacco-llc-america-juice-co-301216538.html>.
- <sup>51</sup> Indiana Poison Center, *New Forms of Smokeless, Spitless Tobacco Put Users and Children at Risk*, News Release, January 1, 2009.
- Kansas Department of Health and Environment, *World No Tobacco Day; Kansas Test Market for New Tobacco Product*, Press Release, May 26, 2011, [http://www.kdheks.gov/news/web\\_archives/2011/05262011.htm](http://www.kdheks.gov/news/web_archives/2011/05262011.htm).
- <sup>52</sup> U.S. Food and Drug Administration's Tobacco Products Scientific Advisory Committee (TPSAC), *Summary: TPSAC Report on Dissolvable Tobacco Products*, March 1, 2012. See also, Deyton, L (Director of the FDA Center for Tobacco Products), "Letter to Industry on Dissolvable Smokeless Tobacco Products (R.J. Reynolds Tobacco Company)" and "Letter to Industry on Dissolvable Smokeless Tobacco Products (Star Scientific, Inc)," February 1, 2010.