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Trends in Sales of Flavored and Menthol Tobacco Products in the United States during 2011–2015

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Abstract

Introduction—Flavors can mask the harshness of tobacco and make it appealing to young people. This study assessed flavored and menthol tobacco product sales at the national and state levels.

Methods—Universal Product Code (UPC) tobacco sales data collected by Nielsen were combined for convenience stores and all-outlets-combined during October 22, 2011–January 9, 2016. Products were characterized as flavored, menthol, or non-flavored/non-menthol. Total unit sales, and the proportion of flavored and menthol unit sales, were assessed nationally and by state for seven tobacco products. Joinpoint Regression was used to assess trends in average monthly percentage change.

Results—Nationally, the proportion of flavored and menthol sales in 2015 was as follows: cigarettes (32.5% menthol), large cigars (26.1% flavored), cigarillos (47.5% flavored, 0.2% menthol), little cigars (21.8% flavored, 19.4% menthol), chewing tobacco (1.4% flavored, 0.7% menthol), moist snuff (3.0% flavored, 57.0% menthol), and snus (88.5% menthol). From 2011–2015, sales increased for flavored cigarillos and chewing tobacco, as well as for menthol cigarettes, little cigars, moist snuff and snus. Sales decreased for flavored large cigars, moist snuff and snus, and for menthol chewing tobacco. State-level variations were observed by product; for example, flavored little cigar sales ranged from 4.4% (Maine) to 69.3% (Utah) and flavored cigarillo sales ranged from 26.6% (Maine) to 63.0% (Maryland).

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Conclusions—Menthol and flavored sales have increased since 2011, particularly for the products with the highest number of units sold, and significant state variation exists. Efforts to restrict flavored tobacco product sales could reduce overall U.S. tobacco consumption.

Introduction

Although the prevalence of cigarette smoking in the United States has declined considerably over the past five decades, disparities remain among population subgroups,¹ and the use of other tobacco products has increased or remained unchanged.^{2,3} During 2011–2015, current use of e-cigarettes and hookah increased among middle and high school students, whereas current use of conventional tobacco products decreased, resulting in no change in overall tobacco product use.² Moreover, cigar consumption increased from 2002–2012,⁴ partly due to consumers switching from cigarettes to little cigars to avoid higher taxes.⁵

Concern is growing that widely marketed varieties of new and existing flavored tobacco might appeal to nonusers and could be contributing to recent increases in initiation and use of emerging tobacco products among young people, including e-cigarettes and hookah.^{2,6,7} Flavored tobacco products are perceived more favorably, particularly among youth, because they can mask the harshness and taste of tobacco.^{8,9} Among youth who have ever tried tobacco, current cigarette smokers are almost four times as likely as noncurrent smokers to have tried flavored tobacco products.¹⁰ In 2014, 70% of current youth tobacco users reported using a flavored non-cigarette tobacco product in the past 30 days, with 63% using a flavored e-cigarette, 64% using a flavored cigar, and 61% using a flavored hookah.¹¹ The most common flavor of cigarettes used by youth is menthol,¹¹ which is a mint-flavored additive with cooling and anesthetic effects.¹² Among young adults, women, African Americans, Hispanics, social smokers, and sexual minorities are also more likely to use menthol cigarettes.¹³ Since 2010, menthol cigarette prevalence has increased among whites, Asians and Hispanics as a whole.¹⁴

In 2009, the Family Smoking Prevention and Tobacco Control Act (FSPTCA) granted the Food and Drug Administration (FDA) authority to regulate tobacco products.¹⁵ FDA banned the sale of cigarettes with characterizing fruit, candy, and clove flavors, excluding menthol.¹⁶ A review conducted by FDA's Tobacco Products Scientific Advisory Committee (TPSAC) indicates that initiating smoking with menthol cigarettes is more likely to lead to established smoking than initiating with non-menthol cigarettes, and that use of menthol cigarettes increases the likelihood of addiction among youth and makes it harder for current smokers to quit.^{12,17,18} Additionally, the tobacco industry has marketed menthol cigarettes using messages and images that appeal directly to youth.^{12,19–20} Accordingly, the TPSAC concluded that menthol cigarettes have an adverse impact on public health and the “removal of menthol cigarettes from the marketplace would benefit public health in the United States.”¹⁵

Although characterizing flavors, excluding menthol, are currently prohibited for cigarettes, they are not prohibited in other tobacco products.¹⁶ In May 2016, FDA issued a final regulation extending its authority to regulate all tobacco products, including electronic nicotine delivery systems, cigars, pipe tobacco, dissolvables, and hookah.²¹ While the rule

does not prohibit characterizing flavors in non-cigarette tobacco products, FDA indicated intent to propose a tobacco products standard for characterizing flavors in cigars.²² Regardless, state and localities may adopt or continue to enforce requirements that are in addition to, or more stringent than, FSPTCA requirements. Several local jurisdictions have limited or restricted sales of flavored tobacco products.²³ Thus, while certain state and local ordinances (e.g., regulation of product constituents, advertising content) are preempted by federal law, states retain some authority to regulate tobacco products.^{15,23,24} For example, though states or localities may not regulate product constituents, they have the ability to prohibit sales or distribution of entire product categories.²⁴

To date, some studies have assessed U.S. consumption of conventional and emerging tobacco products more broadly.^{5,25-28} However, no study has assessed trends in national and state sales of both flavored and menthol tobacco products. Given the rapidly evolving tobacco use and product landscape, information on flavored tobacco sales and trends can help inform public health policy, planning, and practice.³ This study examined national and state-specific unit sales of flavored, mentholated, and non-flavored/non-mentholated conventional tobacco products (cigarettes, large cigars, little cigars, cigarillos, chewing tobacco, moist snuff, and snus) using retail scanner data from late 2011 through 2015.

Methods

Data Source

Universal Product Code (UPC) data on national and state-specific retail sales of cigarettes, cigars, and noncombustible tobacco were acquired from The Nielsen Company (Nielsen). Nielsen collects data from a census of certain stores (e.g., specific retail chains) and from a sample of remaining stores, to which it applies a proprietary weighting method to project total sales in variously defined geographic areas. Data on tobacco sales were acquired from two mutually exclusive groups: convenience stores (c-store) and All-Outlets-Combined (AOC). C-store data include sales from franchise, chain, and independent c-stores that may or may not sell gasoline. AOC data include sales from supermarkets (e.g., Kroger), drug stores (e.g., Walgreens), mass merchandisers (e.g., Target), dollar stores (e.g., Dollar General), club stores (e.g., Sam's Club), U.S. Defense Commissary Agency commissaries, and Walmart.

The UPC data are reported in 4-week aggregates (i.e., approximately monthly). The current analysis evaluates the most recently available data at the time of the study: October 22, 2011 through January 9, 2016. (Because the last 4 week aggregate of 2015 includes only 9 days into 2016, we refer to 2015 as the end point of the study.) C-store and AOC data were available for the United States overall and for each of the 48 states in the continental United States. Data were not available for Alaska, Hawaii, or the District of Columbia.

Measures

A single coder (KF) prepared the dataset and conducted the initial analysis described below, which another author (DG) reviewed and confirmed. The analysis was restricted to seven conventional tobacco product types, including cigarettes and various categories of cigar and

noncombustible tobacco. Using pre-determined category descriptions, UPC and quantity descriptions, brand information, and online searches, the cigar data were separated into three mutually exclusive categories: 1) little cigars (self-described as little cigars, often sold with filters, and sold in quantities of 20 per pack or 200 per carton, much like cigarettes); 2) cigarillos (self-described as cigarillos, often have a plastic or wood tip, and sold in smaller quantities than little cigars); and 3) large cigars (often sold individually and have no filter or tip). Similarly, the noncombustible tobacco data were separated into three categories: 1) dip (moist snuff, finely ground or shredded tobacco sold in a can); 2) chewing tobacco (tobacco often sold as loose-leaf, plugs or twists in a pouch); 3) and snus (spitless moist snuff sold in single-use sealed packets).

Flavored Tobacco Products—Coding of flavors was done using an existing protocol.^{5,27} Three mutually exclusive indicators were created to characterize whether the UPC was flavored, menthol, or non-flavored/non-menthol. UPCs were coded as flavored when the product description referenced a fruit, chocolate, spice, coffee, or alcoholic drink. In instances where it was uncertain if a product was flavored, information from the brand's website or online retailers was used to make a final assessment (e.g., “Purple Haze” is grape-flavored). UPCs were coded as menthol when product descriptions referenced menthol or anything mint-like, such as wintergreen, spearmint, or arctic ice. All other UPCs were coded as non-flavored/non-menthol.

Analysis

Unit sales were standardized by count or ounces for the most commonly occurring pack size and/or weight within each product category, such that 1 unit equals either 1 pack of 20 cigarettes, 1 large cigar, a pack of 2 cigarillos, a pack of 20 little cigars, a 3-ounce pack of chewing tobacco, a 1.2-ounce can of dip, or a .53-ounce (or 15-piece) pack of snus (e.g., an item that has 4 cigarillos is equal to 2 standardized units).

For each tobacco category, flavored, menthol, and non-flavored/non-menthol unit sales were aggregated. Proportions were calculated by dividing flavored sales by total sales, and menthol sales by total sales.

Joinpoint regression was used to assess significant changes in flavored, menthol, and non-flavored/non-menthol tobacco sales trends.²⁹ For each tobacco product category, trends in average monthly percent change (AMPC) were evaluated by: (1) total unit sales; (2) proportion of menthol sales by total sales; and (3) proportion of flavored sales by total sales. The independent variable in each Joinpoint regression was a time indicator ranging in value from 1-56 that corresponded to the 56 4-week reporting periods. Trends were tested at both the national and state levels where applicable (alpha level of 0.05). All models employed the Bayesian Information Criterion to identify best fit and controlled for serial correlation. Using the AMPC, we calculated the average annual percentage change using the compound interest formula $\left(\left(1 + \frac{AMPC}{100} \right)^{12} - 1 \right) * 100$.

Results

National Proportions and Trends in Flavored and Menthol Tobacco Sales

Total Sales—Table 1 presents aggregate U.S. sales during the full study period (late 2011-2015), for each product category overall and for flavored and menthol products separately. Sales from 2011-2015 comprised 49.24 billion packs of cigarettes, 5.08 billion cans of moist snuff, 4.76 billion packs of cigarillos (2 per pack), 2.01 billion individual large cigars, 421 million packs of little cigars (20 per pack), 264 million packs of chewing tobacco, and 178 million cans of snus.

From 2011-2015, cigarette sales decreased by an average of 0.2% per month (2.4% per year) and large cigars decreased by 1.1% per month (14.0% per year) (Table 1). Throughout 2015, the monthly cigarette trend did not change significantly.

During 2011-2015, cigarillos sales increased by 1.0% per month (12.7% per year), accelerating throughout 2015 to 1.5% per month (19.6% per year). During 2011-2015, sales decreased for little cigars by 0.4% per month (4.9% per year) and for chewing tobacco by 0.3% per month (3.7% per year), while sales of moist snuff and snus increased by 0.3% per month (3.7% per year) and 0.6% per month (7.4% per year), respectively. Throughout 2015, moist snuff sales accelerated by increasing 0.4% per month (4.9% per year).

Flavored and Menthol Sales—During 2011-2015, menthol products represented nearly a fifth (18.0%) of little cigars, nearly a third (31.5%) of cigarettes, over half (55.3%) of moist snuff, and 85.1% of snus sold. In the same time frame, flavored products represented about a fifth (21.6%) of little cigars, nearly a third (31.7%) of large cigars, and close to half (45.6%) of all cigarillos (Table 1).

During 2011-2015, the proportion of flavored sales: increased 0.2% per month (2.4% per year) for cigarillos and for chewing tobacco, and decreased for large cigars by 0.5% per month (6.2% per year), moist snuff by 0.5% per month (6.2% per year), and for snus by 16.0% per month (493.6% per year). Throughout 2015, flavored moist snuff sales decreased by 0.7% per month (8.7% per year).

During 2011-2015, the proportion of menthol sales: increased for cigarettes by 0.2% per month (2.4% per year), little cigars by 0.3% per month (3.7% per year), moist snuff by 0.1% per month (1.2% per year), and snus by 0.2% per month (2.4% per year), and decreased for chewing tobacco by 0.7% per month (8.7% per year). Throughout 2015, menthol sales increased for cigarettes by 0.2% per month (2.4% per year) and for snus by 0.1% per month (1.2% per year), while menthol chewing tobacco sales decreased by 1.9% per month (25.3% per year).

State Trends in Flavored and Menthol Combustible Tobacco Sales

Table 2 presents the proportion of flavored and menthol combustible tobacco product sales, by state during late 2011-2015. Results for mentholated large cigars and cigarillos were too small to be reported at the state level.

Cigarettes (pack of 20)—The proportion of menthol cigarettes sold ranged from 16.1% in Idaho to 45.0% in Pennsylvania, and averaged 22.5% in the West, 28.4% in the Midwest, 30.2% in the Northeast, and 33% in the South (Table 2). The majority of states (n=33) experienced significant increases in the proportion of menthol cigarettes sold, and one state (New Jersey) experienced a significant decrease.

Large Cigars (1 unit)—The proportion of flavored large cigars sold ranged from 15.0% in Maine to 39.4% in Maryland, and averaged 21.9% in the Midwest, 22.7% in the South, 25.7% in the West, and 26.3% in the Northeast (Table 2). Three states (Maine, Maryland, and California) experienced significant increases in the proportion of flavored large cigars sold, while 17 states experienced a significant decrease.

Cigarillos (pack of 2)—The proportion of flavored cigarillos sold ranged from 26.6% in Maine to 63% in Maryland, and averaged 42.4% in the Northeast, 44.3% in the South, 47.7% in the Midwest, and 48.7% in the West (Table 2). Twenty-five states experienced significant increases in the proportion of flavored cigarillos sold, while two states (Massachusetts and Rhode Island) experienced significant decreases.

Little Cigars (pack of 20)—The proportions of flavored little cigars sold ranged from 4.4% in Maine to 69.3% in Utah, and averaged 17.3% in the South, 17.7% in the Northeast, 20.7% in the Midwest, and 42.2% in the West. Five states experienced significant increases in the proportion of flavored little cigars sold, while eight states experienced significant decreases.

The proportion of menthol little cigars sold ranged from 0.2% in Montana to 30.1% in Delaware, and averaged 6.3% in the West, 15.3% in the Midwest, 19.6% in the Northeast, and 20.9% in the South (Table 2). Fifteen states experienced significant increases in the proportion of menthol little cigars sold, while three states (California, Oregon, and Rhode Island) experienced significant decreases.

State Trends in Flavored and Menthol Noncombustible Tobacco Sales

Table 3 presents state-level sales trends during late 2011-2015, overall and for flavored and menthol products for each noncombustible tobacco product category. Results for flavored chewing tobacco and snus were too small to report at the state level.

Chewing Tobacco (3 oz. pack)—The proportion of menthol chewing tobacco sold ranged from 0.0% in Delaware and Louisiana to 12.6% in Iowa, and averaged 0.6% in the South, 2.1% in the West, 2.7% in the Northeast, 3.8% in the Midwest (Table 3). Seven states experienced significant increases in the proportion of menthol chewing tobacco, while one state (New Mexico) experienced a significant decrease.

Moist Snuff (1.2 oz. can)—The proportion of flavored moist snuff sold ranged from 1.1% in Minnesota and Oregon to 12.3% in New Jersey, and averaged 2.1% in the West, 2.7% in the Midwest 3.3% in the South, 8.3% in the Northeast (Table 3). The majority of states (n=31) experienced significant decreases in the proportion of flavored moist snuff sold, while one state (Wisconsin) experienced a significant increase.

The proportion of menthol moist snuff sold ranged from 24.6% in Montana to 79% in Maine, and averaged 42.8% in the West, 56.9% in the South, 61.3% in the Midwest, 66.6% in the Northeast (see Table 3). Twenty-nine states experienced significant increases in the proportion of menthol moist snuff sold.

Snus (0.53 oz. pack or 15 piece pack)—The proportion of menthol snus sold ranged from 77.4% in Georgia to 90.1% in Nebraska and New Hampshire, and averaged 83.6% in the South, 86.2% in the West, 87.2% in the Northeast, and 87.6% in the Midwest (Table 3). The majority of states (n=35) experienced significant increases in the proportion of menthol snus sold.

Discussion

From late 2011-2015, flavored and menthol tobacco products comprised a significant proportion of tobacco product unit sales, and flavored product sales varied by product type, state, and over time. For example, flavored product sales accounted for more than one-fifth of little cigars, almost one-third of large cigars, and nearly half of cigarillo sales. Increases in the proportion of sales for menthol and flavored products were observed for multiple product types, including flavored cigarillos and chewing tobacco, as well as menthol cigarettes, little cigars, moist snuff, and snus. Therefore, sustained efforts to implement proven tobacco control policies and strategies to address all forms of tobacco use, particularly flavored and menthol tobacco products, are important.^{3,30}

Nearly one-third of cigarettes sold during the assessed period were mentholated. The significant increase in mentholated cigarette sales is consistent with population-based surveys documenting increased menthol use among U.S. subpopulations.^{6,8-14,31-32} Similarly, market share for menthol varieties in the context of total cigarette volume increased during 2005-2012, particularly among those aged 12-25 years.³³ The prominent use of menthol cigarettes in the U.S. is compounded by disparities in menthol use across subpopulations, most notably young adults and African Americans.^{6-7,11-14,34} Historically, the marketing and promotion of menthol cigarettes have been targeted heavily toward African Americans through culturally tailored advertising images and messages, and the vast majority of African American smokers indicate that they prefer menthol cigarettes.^{6,8,35-36} Industry in-person promotional efforts (e.g., Newport's "Pleasure Lounge") are likely a factor in recent increases in menthol market share.³⁷ Accordingly, efforts to address the sale of menthol-flavored tobacco products, most notably cigarettes, could help reduce the use of these products.¹²

For cigars, a sizeable proportion of sales from late 2011-2015 were flavored. These findings are generally consistent population-based survey results, which suggest that two-fifths of adult cigar smokers and one-third to two-thirds of U.S. middle and high school cigar users report using a flavored variety of these products.³⁸⁻⁴⁰ Little cigars are comparable to cigarettes with regard to shape, size, filters, and packaging, and the tobacco industry has promoted little cigars as a lower-cost alternative to cigarettes.⁴¹ Tobacco industry research documents from 1970 reveal the marketing strategy was shaped by the "surprisingly low" percentage of adult cigarette smokers who could accurately identify a little cigar, and that

many described a little cigar as “a new kind of smoke” and “another cigarette brand.”⁴¹⁻⁴³ This strategy was continued more recently by a clove cigarette manufacturer switching to production of clove little cigars after flavored cigarettes were banned, which essentially replaced their cigarettes sales.⁴⁴ Continued access to low-priced flavored cigarette-like products, such as little cigars, could diminish the public health impact of current tobacco control interventions. Thus, sales trends observed across cigar types emphasize the value of strategies that address the diversity of cigar products available on the market.⁵ Continued monitoring of cigar use and sales in a manner that can distinguish between cigar types is warranted.

For noncombustible tobacco, menthol products accounted for more than half of moist snuff sales and more than four-fifths of snus sales nationally. These findings are consistent with research suggesting that menthol-type flavors comprise the majority of U.S. noncombustible tobacco sales.²⁶ Increases were also observed in the use of certain noncombustible tobacco products, including menthol moist snuff and snus, and flavored chewing tobacco. These increases could be attributable, in part, to advertising for newer noncombustible tobacco products that consistently promotes available flavors and the potential for these products to serve as acceptable alternatives to cigarette smoking in prohibited settings.⁴⁵ While combustible tobacco smoking is responsible for the overwhelming burden of death and disease from tobacco use, noncombustible tobacco use is also associated with multiple adverse health effects, including cancers of the mouth, esophagus, and pancreas.³ Therefore, efforts to address flavored tobacco use should consider both combustible and noncombustible products.

State and regional variations were noted in the proportion of flavored and menthol tobacco product sales. The sizable proportion of flavored and menthol tobacco product use in many states reinforces the importance of state and local efforts to address flavored tobacco product use. Such efforts could include prohibitions on the sale of certain product types (e.g., flavored cigars), or the sale of tobacco within a specified distance of a school. Several jurisdictions have passed policies restricting sales of various flavored tobacco products.²³ For example, Maine prohibited the sale of flavored cigars, though exempted certain flavors (e.g., “wine”) and premium cigars,⁴⁶ which may explain why Maine has the lowest rate of flavored cigarillos, large and little cigars, but still registered flavored sales. Other jurisdictions that have enacted restrictions on the sale of flavored, non-cigarette tobacco products (including e-cigarettes), with exceptions for menthol or tobacco-flavored products include Providence, Rhode Island,⁴⁷ and several municipalities in Massachusetts,⁴⁸⁻⁵⁰ which may explain why Massachusetts and Rhode Island were the only two states who experienced significant decreases in sales of flavored cigarillos in this study. Additionally, New York City has enacted restrictions on the sale of flavored, non-cigarette tobacco products, with exceptions for electronic cigarettes and menthol or tobacco-flavored products.⁵¹ Finally, Santa Clara county (California) became the first municipality to restrict the sale of menthol cigarettes and other flavored tobacco products (including electronic cigarettes), to retailers that only allow customers over 21 years of age.⁵² Monitoring state-level sales data over time, coupled with evaluation of these policies, could help inform efforts to address flavored tobacco use at the state and local level.

This study is subject to at least four limitations. First, Nielsen uses proprietary weighting methods to project sales; therefore, it was not possible to verify their sales estimates independently. Second, sales from tobacco outlets or specialty shops are not collected by Nielsen, and are therefore not represented in this study. Third, convenience store, drug store, and supermarket sales only represent stores with annual sales of at least \$1 million, \$1 million, and \$2 million respectively; therefore, stores in these categories with lower annual sales are not included. Fourth, sales data were not available for every state, and national estimates excluded Alaska, Hawaii, and the District of Columbia.

In conclusion, flavored and menthol tobacco products comprise a sizable proportion of conventional tobacco product unit sales in the U.S., particularly for certain products and states. These findings underscore the importance of sustained efforts to implement proven tobacco control policies and strategies to reduce tobacco consumption in the United States, including flavored and menthol tobacco products (including electronic cigarettes).^{3,30,53} This is particularly critical in the context of youth prevention measures.^{5,53} Additionally, continued monitoring of flavored combustible and noncombustible tobacco sales at state and national levels is critical for informing and prioritizing evidence-based strategies to reduce tobacco use, as are policies that disincentivize substitution between tobacco products.

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Implications

Flavors in tobacco products can mask the harshness of tobacco and make these products more appealing to young people. This is the first study to assess national and state-level trends in flavored and menthol tobacco product sales. These findings underscore the importance of population-based interventions to address flavored tobacco product use at the national, state, and local levels. Additionally, further monitoring of flavored and menthol tobacco product sales can inform potential future regulatory efforts at the national, state, and local levels.

Table 1
Total and Proportion of Flavored and Menthol Tobacco Sales, and Average Monthly Percent Change, United States, 2011–2015

| Product | Measure | Oct-Dec 2011 | 2012 | 2013 | 2014 | 2015 | 2011–2015 | AMPC 2011–2015 | AMPC 2015 |
|--|--------------------------|--------------|---------|---------|---------|---------|----------------|----------------|-----------|
| Combustible Tobacco Products | | | | | | | | | |
| Cigarette Sales (<i>pack of 20 cigarettes</i>) | Total Units ^a | 36,637 | 118,062 | 115,395 | 112,444 | 110,900 | 49,343,784,932 | -0.2* | 0.2 |
| | % Menthol | 30.2% | 30.5% | 31.3% | 31.9% | 32.5% | 31.5% | 0.2* | 0.2* |
| Large Cigar Units (<i>1 large cigar</i>) | Total Units ^a | 1,892 | 5,766 | 4,846 | 4,008 | 3,559 | 2,007,126,028 | -1.1* | -0.1 |
| | % Flavored | 36.0% | 37.1% | 33.8% | 28.6% | 26.1% | 31.7% | -0.5* | 0.1 |
| | % Menthol | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.01% | 4.5 | -4.3 |
| Cigarillo Units (<i>pack of 2 cigarillos</i>) | Total Units ^a | 2,657 | 8,694 | 10,129 | 12,094 | 13,998 | 4,757,213,408 | 1.0* | 1.5* |
| | % Flavored | 42.1% | 43.5% | 44.6% | 47.7% | 47.5% | 45.6% | 0.2* | -0.1 |
| | % Menthol | 0.1% | 0.0% | 0.0% | 0.2% | 0.2% | 0.1% | 4.2 | -1.8 |
| Little Cigar Units (<i>pack of 20 little cigars</i>) | Total Units ^a | 329 | 1,049 | 1,028 | 924 | 880 | 420,962,037 | -0.4* | 0.3 |
| | % Flavored | 22.1% | 21.9% | 21.4% | 21.1% | 21.8% | 21.6% | -0.1 | 0.3 |
| | % Menthol | 16.7% | 16.5% | 17.6% | 18.9% | 19.4% | 18.0% | 0.3* | -0.4 |
| Noncombustible Tobacco Products | | | | | | | | | |
| Chewing Tobacco Units (<i>3oz pack</i>) | Total Units ^a | 210 | 650 | 620 | 587 | 573 | 264,021,722 | -0.3* | 0.4 |
| | % Flavored | 1.3% | 1.3% | 1.3% | 1.4% | 1.4% | 1.3% | 0.2* | 1.1 |
| | % Menthol | 0.9% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | -0.7* | -1.9* |
| Moist Snuff Units (<i>1.2oz can</i>) | Total Units ^a | 3,381 | 11,190 | 11,731 | 12,040 | 12,482 | 5,082,381,783 | 0.3* | 0.4* |
| | % Flavored | 3.8% | 3.6% | 3.2% | 3.1% | 3.0% | 3.2% | -0.5* | -0.7* |
| | % Menthol | 53.0% | 53.8% | 54.7% | 56.5% | 57.0% | 55.3% | 0.1* | 0.1 |
| Snus Units (<i>0.53 oz pack or 1.5 piece pack</i>) | Total Units ^a | 110 | 357 | 403 | 435 | 473 | 177,692,217 | 0.6* | 1.0 |
| | % Flavored | 0.8% | 0.2% | 0.0% | 0.0% | 0.0% | 0.1% | -16.0* | -23.3 |

| Product | Measure | Oct-Dec 2011 | 2012 | 2013 | 2014 | 2015 | 2011–2015 | AMPC 2011–2015 | AMPC 2015 |
|---------|-----------|--------------|-------|-------|-------|-------|-----------|----------------|-----------|
| | % Menthol | 78.7% | 81.9% | 84.9% | 87.3% | 88.5% | 85.1% | 0.2* | 0.1* |

Full assessed period is Oct. 22, 2011 to January 9, 2016; 2015 data include data from January 1–9, 2016. Average Monthly Percent Change (AMPC) coincides with each 4–week period, which are usually stratified monthly.

^a denotes the units are reported in hundreds of thousands (100,000).

* denotes the AMPC is significantly different from zero at $\alpha = 0.05$.

Alaska, Hawaii, and the District of Columbia are excluded due to lack of data. Sales are combined from the census of Convenience stores and All-Outlets-Combined (AOC) retail outlets, as describe in Methods.

Table 2
Proportion of Flavored and Menthol Combustible Tobacco Sales, by U.S. Region and State, 2011-2015

| U.S. Census Region | State | Cigarettes | | Large Cigars | | Cigarillos | | Little Cigars | |
|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------|---------------|-----------|
| | | % Menthol | % Flavored | % Flavored | % Flavored | % Flavored | % Flavored | % Menthol | % Menthol |
| Northeast | Connecticut | 33.8 | 27.9 | 42.1 | 16.5 | 27.9 [^] | | | |
| | Massachusetts | 29.6 | 32.7 ^v | 52.2 ^v | 22.2 | 25.5 [^] | | | |
| | Maine | 17.4 | 15.0 [^] | 26.6 [^] | 4.4 | 22.3 | | | |
| | New Hampshire | 19.7 [^] | 32.7 | 40.8 [^] | 18.4 | 12.4 | | | |
| | New Jersey | 36.3 ^v | 23.2 | 48.1 [^] | 18.8 | 24.6 [^] | | | |
| | New York | 33.5 [^] | 21.6 | 46.6 [^] | 25.3 ^v | 6.2 | | | |
| | Pennsylvania | 45.0 [^] | 25.6 | 50.6 | 24.5 | 15.1 [^] | | | |
| | Rhode Island | 38.0 [^] | 37.4 ^v | 40.1 ^v | 13.9 | 23.7 ^v | | | |
| | Vermont | 18.8 [^] | 20.3 ^v | 34.3 | 15.5 | 18.4 | | | |
| | South | Alabama | 32.8 [^] | 15.1 | 32.4 [^] | 9.4 | 16.2 | | |
| Arkansas | 25.4 [^] | 18.8 | 38.2 [^] | 30.6 | 21.6 | | | | |
| Delaware | 43.3 | 38.2 | 58.5 [^] | 15.2 | 30.1 [^] | | | | |
| Florida | 36.3 | 27.2 ^v | 44.0 [^] | 7.3 ^v | 24.2 [^] | | | | |
| Georgia | 34.0 [^] | 15.9 ^v | 40.9 | 10.9 | 23.3 | | | | |
| Kentucky | 23.5 [^] | 25.5 ^v | 40.0 | 17.0 | 14.3 | | | | |
| Louisiana | 34.2 | 25.9 ^v | 42.8 | 12.2 [^] | 26.8 | | | | |
| Maryland | 44.0 | 39.4 [^] | 63.2 [^] | 27.1 | 22.8 | | | | |
| Mississippi | 37.2 [^] | 15.9 ^v | 33.1 [^] | 7.2 ^v | 25.4 [^] | | | | |
| North Carolina | 37.9 [^] | 23.3 ^v | 46.5 [^] | 20.8 | 25.1 | | | | |
| Oklahoma | 23.7 [^] | 15.7 | 46.9 [^] | 29.7 | 12.3 | | | | |
| South Carolina | 38.9 [^] | 19.1 ^v | 38.7 [^] | 14.1 [^] | 26.2 | | | | |
| Tennessee | 28.5 [^] | 17.6 | 37.7 | 17.0 ^v | 19.0 [^] | | | | |

| U.S. Census Region | State | Cigarettes | | Large Cigars | | Cigarillos | | Little Cigars | |
|--------------------|---------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | % Menthol | % Flavored | % Flavored | % Flavored | % Flavored | % Flavored | % Menthol | % Flavored |
| | Texas | 27.5 [^] | 16.9 | 49.7 [^] | 12.1 | 49.7 [^] | 12.1 | 49.7 [^] | 13.2 [^] |
| | Virginia | 38.6 [^] | 25.0 ^v | 46.9 [^] | 21.7 [^] | 46.9 [^] | 21.7 [^] | 46.9 [^] | 19.7 |
| | West Virginia | 22.6 [^] | 23.1 | 49.2 | 24.6 | 49.2 | 24.6 | 49.2 | 14.0 |
| Midwest | Iowa | 25.2 [^] | 26.7 | 50.3 [^] | 23.2 ^v | 50.3 [^] | 23.2 ^v | 50.3 [^] | 14.7 |
| | Illinois | 35.8 | 22.2 | 47.4 | 18.0 | 47.4 | 18.0 | 47.4 | 15.9 |
| | Indiana | 27.6 [^] | 24.7 ^v | 48.7 | 18.7 ^v | 48.7 | 18.7 ^v | 48.7 | 16.6 [^] |
| | Kansas | 27.1 [^] | 20.3 | 52.7 | 22.4 ^v | 52.7 | 22.4 ^v | 52.7 | 16.7 [^] |
| | Michigan | 36.1 | 19.7 | 44.9 | 16.7 | 44.9 | 16.7 | 44.9 | 16.4 [^] |
| | Minnesota | 24.0 | 16.3 | 39.9 | 21.0 | 39.9 | 21.0 | 39.9 | 9.3 |
| | Missouri | 27.4 [^] | 24.3 ^v | 42.7 | 31.9 | 42.7 | 31.9 | 42.7 | 14.7 |
| | North Dakota | 20.5 [^] | 25.2 | 55.7 [^] | 25.5 | 55.7 [^] | 25.5 | 55.7 [^] | 12.1 |
| | Nebraska | 25.5 [^] | 22.2 | 53.2 | 22.1 | 53.2 | 22.1 | 53.2 | 12.0 |
| | Ohio | 31.3 [^] | 21.3 | 37.8 | 16.5 | 37.8 | 16.5 | 37.8 | 14.4 [^] |
| | South Dakota | 21.0 | 17.6 | 47.7 [^] | 16.3 | 47.7 [^] | 16.3 | 47.7 [^] | 18.4 |
| | Wisconsin | 39.6 | 22.5 ^v | 51.7 [^] | 16.1 | 51.7 [^] | 16.1 | 51.7 [^] | 22.8 |
| | West | Arizona | 23.9 [^] | 31.7 ^v | 54.2 [^] | 58.5 | 54.2 [^] | 58.5 | 54.2 [^] |
| California | | 25.0 [^] | 29.0 [^] | 43.2 | 66.0 | 43.2 | 66.0 | 43.2 | 3.6 ^v |
| Colorado | | 22.3 [^] | 22.9 | 52.0 [^] | 58.6 | 52.0 [^] | 58.6 | 52.0 [^] | 4.0 |
| Idaho | | 16.1 [^] | 23.5 | 30.9 | 15.3 | 30.9 | 15.3 | 30.9 | 3.5 |
| Montana | | 16.2 | 21.8 | 60.2 | 13.1 | 60.2 | 13.1 | 60.2 | 0.2 |
| New Mexico | | 24.2 | 23.4 | 51.9 [^] | 15.7 ^v | 51.9 [^] | 15.7 ^v | 51.9 [^] | 18.8 [^] |
| Nevada | | 30.9 [^] | 20.7 | 42.3 | 33.7 | 42.3 | 33.7 | 42.3 | 21.7 |
| Oregon | | 21.0 [^] | 27.5 | 50.5 [^] | 50.4 [^] | 50.5 [^] | 50.4 [^] | 50.5 [^] | 2.4 ^v |
| Utah | | 24.3 [^] | 31.1 ^v | 55.0 [^] | 69.3 [^] | 55.0 [^] | 69.3 [^] | 55.0 [^] | 2.3 |
| Washington | | 24.6 [^] | 23.4 ^v | 49.3 [^] | 43.0 | 49.3 [^] | 43.0 | 49.3 [^] | 1.9 |

| U.S. Census Region | State | Cigarettes | | Large Cigars | | Cigarillos | | Little Cigars | |
|--------------------|---------|-------------------|------------|--------------|------------|------------|------------|---------------|-----------|
| | | % Menthol | % Flavored | % Flavored | % Flavored | % Flavored | % Flavored | % Menthol | % Menthol |
| | Wyoming | 18.9 [^] | 27.7 | 46.2 | 40.9 | 6.4 | | | |

Full assessed period is Oct. 22, 2011 to January 9, 2016; 2015 data include data from January 1-9, 2016.

[^] denotes a positive Average Monthly Percent Change (AMPC), significantly different from zero at alpha = 0.05.

^v denotes a negative AMPC, significantly different from zero at alpha = 0.05.

The following values were excluded from this table due to an insufficient number of observations: % Flavored Cigarettes, % Menthol Large Cigars, and % Menthol Cigarillos. Alaska, Hawaii, and the District of Columbia are excluded due to lack of data.

Sales are combined from the census of Convenience stores and All-Outlets-Combined (AOC) retail outlets, as describe in Methods.

Table 3
Proportion of Flavored and Menthol Noncombustible Tobacco Sales, by U.S. Region and State, 2011-2015

| U.S. Census Region | State | Chewing Tobacco | | Moist Snuff | | Snus | |
|--------------------|------------------|------------------|-------------------|-------------------|-------------------|-----------|-----------|
| | | % Menthol | % Flavored | % Flavored | % Menthol | % Menthol | % Menthol |
| Northeast | Connecticut | 1.3 | 11.4 ^v | 60.4 [^] | 86.1 [^] | | |
| | Massachusetts | 1.6 | 9.4 ^v | 70.8 [^] | 86.8 [^] | | |
| | Maine | 1.7 | 4.4 ^v | 79.0 [^] | 89.9 [^] | | |
| | New Hampshire | 4.2 | 6.3 ^v | 71.4 [^] | 90.1 [^] | | |
| | New Jersey | 0.4 | 12.3 ^v | 61.4 [^] | 85.3 [^] | | |
| | New York | 4.5 | 8.7 ^v | 66.4 [^] | 85.5 [^] | | |
| | Pennsylvania | 4.2 [^] | 5.1 | 53.5 | 84.7 [^] | | |
| | Rhode Island | 0.2 | 11.2 ^v | 63.3 [^] | 87.5 | | |
| | Vermont | 6.5 | 5.9 ^v | 73.2 [^] | 89.1 [^] | | |
| | | | | | | | |
| South | Alabama | 0.9 | 2.7 | 51.4 | 82.4 | | |
| | Arkansas | 0.2 | 1.3 | 56.6 | 82.6 | | |
| | Delaware | 0.0 | 9.1 ^v | 66.7 [^] | 84.0 | | |
| | Florida | 0.4 | 3.6 ^v | 46.0 [^] | 82.4 | | |
| | Georgia | 0.1 | 3.0 ^v | 50.3 | 77.4 | | |
| | Kentucky | 3.5 | 2.4 ^v | 73.0 | 84.6 [^] | | |
| | Louisiana | 0.0 | 1.5 ^v | 62.8 | 85.5 | | |
| | Maryland | 0.8 | 6.8 ^v | 64.6 [^] | 85.0 [^] | | |
| | Mississippi | 0.1 | 1.5 | 52.5 | 85.3 [^] | | |
| | North Carolina | 0.1 | 4.1 ^v | 61.5 [^] | 83.6 [^] | | |
| | Oklahoma | 0.2 | 1.7 ^v | 51.3 [^] | 85.0 [^] | | |
| | South Carolina | 0.1 | 3.3 ^v | 68.6 | 84.1 [^] | | |
| | Tennessee | 0.5 [^] | 2.4 ^v | 58.5 | 82.5 [^] | | |
| Texas | 0.6 [^] | 2.1 | 38.1 [^] | 83.4 [^] | | | |

| U.S. Census Region | State | Chewing Tobacco | | Moist Snuff | | Snus | |
|--------------------|---------------|-------------------|------------------|------------------|-------------------|-------------------|-------------------|
| | | % Menthol | % Flavored | % Flavored | % Menthol | % Menthol | % Menthol |
| | Virginia | 0.6 | 4.5 ^v | 4.5 ^v | 64.9 | 85.5 [^] | 85.5 [^] |
| | West Virginia | 1.7 | 2.3 | 2.3 | 43.5 | 84.8 | 84.8 |
| Midwest | Iowa | 12.6 | 3.7 | 3.7 | 55.4 | 90.0 [^] | 90.0 [^] |
| | Illinois | 1.8 | 5.5 ^v | 5.5 ^v | 69.2 [^] | 87.9 [^] | 87.9 [^] |
| | Indiana | 1.7 | 3.1 | 3.1 | 72.1 | 84.5 [^] | 84.5 [^] |
| | Kansas | 3.1 | 1.8 | 1.8 | 58.3 | 84.5 | 84.5 |
| | Michigan | 1.5 | 3.4 ^v | 3.4 ^v | 78.2 [^] | 88.9 [^] | 88.9 [^] |
| | Minnesota | 2.3 | 1.1 ^v | 1.1 ^v | 65.9 | 87.9 | 87.9 |
| | Missouri | 1.5 | 1.6 ^v | 1.6 ^v | 66.7 | 87.7 [^] | 87.7 [^] |
| | North Dakota | 6.5 [^] | 2.5 ^v | 2.5 ^v | 37.6 | 89.9 [^] | 89.9 [^] |
| | Nebraska | 7.3 | 2.2 | 2.2 | 55.1 | 90.1 [^] | 90.1 [^] |
| | Ohio | 1.4 | 3.2 ^v | 3.2 ^v | 64.8 [^] | 87.4 [^] | 87.4 [^] |
| West | South Dakota | 2.5 [^] | 1.7 ^v | 1.7 ^v | 46.4 [^] | 85.5 [^] | 85.5 [^] |
| | Wisconsin | 3.67 [^] | 2.4 [^] | 2.4 [^] | 66.3 [^] | 87.1 [^] | 87.1 [^] |
| | Arizona | 1.3 | 3.3 ^v | 3.3 ^v | 45.2 [^] | 83.8 [^] | 83.8 [^] |
| | California | 0.6 [^] | 3.7 ^v | 3.7 ^v | 51.8 [^] | 82.9 [^] | 82.9 [^] |
| | Colorado | 1.6 | 2.2 | 2.2 | 42.6 [^] | 85.8 [^] | 85.8 [^] |
| | Idaho | 1.5 | 1.3 | 1.3 | 34.3 | 87.7 | 87.7 |
| | Montana | 5.6 | 1.5 ^v | 1.5 ^v | 24.6 [^] | 88.7 | 88.7 |
| | New Mexico | 1.0 ^v | 2.4 | 2.4 | 39.4 [^] | 85.4 [^] | 85.4 [^] |
| | Nevada | 1.3 | 2.4 ^v | 2.4 ^v | 43.6 [^] | 83.7 [^] | 83.7 [^] |
| | Oregon | 4.6 | 1.1 | 1.1 | 57.4 [^] | 86.5 [^] | 86.5 [^] |
| West | Utah | 1.5 | 2.3 | 2.3 | 42.9 [^] | 89.0 | 89.0 |
| | Washington | 1.9 | 1.4 ^v | 1.4 ^v | 59.2 [^] | 85.9 [^] | 85.9 [^] |
| | Wyoming | 2.3 | 1.7 | 1.7 | 29.7 [^] | 88.4 [^] | 88.4 [^] |

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Full assessed period is Oct. 22, 2011 to January 9, 2016; 2015 data include data from January 1-9, 2016.

denotes a positive Average Monthly Percent Change (AMPC), significantly different from zero at $\alpha = 0.05$.

denotes a negative AMPC, significantly different from zero at $\alpha = 0.05$.

The following values were excluded from this table due to an insufficient number of observations: % Flavored Chewing Tobacco and % Flavored Snus, Alaska, Hawaii, and the District of Columbia are excluded due to lack of data.

Sales are combined from the census of Convenience stores and All-Outlets-Combined (AOC) retail outlets, as describe in Methods.