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# Tobacco Product Use Among Adults — United States, 2013–2014

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While significant declines in cigarette smoking have occurred among U.S. adults during the past 5 decades, the use of emerging tobacco products\* has increased in recent years (1-3). To estimate tobacco use among U.S. adults aged ≥18 years, CDC and the Food and Drug Administration (FDA) analyzed data from the 2013–2014 National Adult Tobacco Survey (NATS). During 2013-2014, 21.3% of U.S. adults used a tobacco product every day or some days, and 25.5% of U.S. adults used a tobacco product every day, some days, or rarely. Despite progress in reducing cigarette smoking, during 2013-2014, cigarettes remained the most commonly used tobacco product among adults. Young adults aged 18-24 years reported the highest prevalence of use of emerging tobacco products, including water pipes/hookahs and electronic cigarettes (e-cigarettes). Furthermore, racial/ethnic and sociodemographic differences in the use of any tobacco product were observed, with higher use reported among males; non-Hispanic whites, non-Hispanic blacks, and non-Hispanics of other races<sup>†</sup>; persons aged <45 years; persons living in the Midwest or South; persons with a General Educational Development (GED) certificate; persons who were single/never married/not living with a partner or divorced/separated/widowed; persons with annual household income <\$20,000; and persons who were lesbian, gay, or bisexual (LGB). Population-level interventions that focus on all forms of tobacco product use, including tobacco price increases, high-impact anti-tobacco mass media campaigns, comprehensive smoke-free laws, and enhanced access to help quitting tobacco use, in conjunction with FDA regulation of tobacco products, are critical to reducing tobacco-related diseases and deaths in the United States.§

NATS is a stratified, random-digit—dialed landline and cellular telephone survey of noninstitutionalized U.S. adults aged ≥18 years. The 2013–2014 NATS included 75,233 respondents (70% landline, 30% cellular); the overall response rate was 36.1% (landline 47.6%, cellular 17.1%). Based on established conventions regarding patterns of tobacco product use (3), NATS questions used varying thresholds of lifetime use to separate established users from experimenters and nonusers. Four tobacco product types assessed in NATS had lifetime usage thresholds: cigarettes (≥100 cigarettes); cigars/cigarillos/filtered little cigars (≥50 times); regular pipes (≥50 times); and chewing tobacco/snuff/dip (≥20 times). Water pipes/hookahs, e-cigarettes, snus, and dissolvable tobacco products did not have usage thresholds. Respondents who met the respective thresholds for cigarettes, cigars/cigarillos/filtered little cigars,

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<sup>\*</sup> Emerging tobacco products are non-cigarette tobacco products that have gained increasing popularity and use within the U.S. market over the past decade.

<sup>&</sup>lt;sup>†</sup>Three race/ethnic groups (American Indians/Alaska natives, non-Hispanic; Native Hawaiians/other Pacific Islanders, non-Hispanic; and persons of multiple race, non-Hispanic) were combined into one category of "other, non-Hispanic" because sample sizes were too small to provide statistically reliable estimates for the individual groups. Data are presented separately for non-Hispanic white, non-Hispanic black, non-Hispanic Asian, and Hispanic adults.

 $<sup>\</sup>S$  http://www.cdc.gov/tobacco/state and community/best\_practices/index. htm?source=gov delivery.

regular pipes, and chewing tobacco/snuff/dip or who reported ever using water pipes/hookahs, e-cigarettes, snus, and dissolvable tobacco products, were then asked if they used each respective product at the time of the survey. With the exception of cigarettes, response options for frequency of use at the time of survey were "every day," "some days," "rarely," or "not at all"; "rarely" was not included as a response option for cigarettes.

Data were weighted to provide nationally representative estimates of prevalence and number of users. To assess the effect of occasional tobacco use on estimates of current tobacco use, two definitions were used for all tobacco product types (except cigarettes): 1) use every day or some days; and 2) use every day, some days, or rarely. Any tobacco product use was defined as use of at least one tobacco product type. Any combustible tobacco product use was defined as use of at least one of the following tobacco product types: cigarettes, cigars/cigarillos/filtered little cigars, regular pipes, or water pipes/hookahs. All smokeless tobacco products (chewing tobacco/snuff/dip, snus, and dissolvable tobacco products) were aggregated into a single category. Prevalence estimates were calculated overall and by sex, age, race/ethnicity, U.S. Census region, education, marital status, annual household income, and sexual orientation.

Prevalence estimates with a relative standard error ≥30% are not presented. Differences between groups were assessed using chi-squared statistics; estimates with p<0.05 were considered to be statistically significant.

Overall, the reported prevalence of every day or some day use was as follows: any tobacco product use, 21.3% (estimated 49.2 million users); any combustible tobacco product use, 18.4% (42.8 million); cigarette use, 17.0% (39.8 million); cigar/cigarillo/filtered little cigar use, 1.8% (4.1 million); regular pipe use, 0.3% (0.7 million); water pipe/hookah use, 0.6% (1.4 million); e-cigarette use, 3.3% (7.8 million); and smokeless tobacco use, 2.5% (5.7 million) (Table 1). When "rarely" was added to the definition of use, prevalence of use was as follows: any tobacco product use, 25.5% (58.8 million users); any combustible tobacco product use, 22.2% (51.5 million); cigar/cigarillo/filtered little cigar use, 5.4% (12.6 million); regular pipe use, 0.8% (2.0 million); water pipe/hookah use, 4.3% (10.0 million); e-cigarette use, 6.6% (15.5 million); smokeless tobacco product use, 3.5% (8.2 million) (Table 2).

Differences in use of any tobacco product every day or some days were observed across population groups (Table 1). Prevalence was higher among males (26.3%) than females (16.7%), and among age groups, was highest among persons aged 25–44 years (26.1%) and lowest among persons aged ≥65 years (10.3%). Prevalence was highest among non-Hispanics of other races (i.e., American Indians/Alaska natives, Native Hawaiians/other Pacific Islanders, and persons of multiple race) (32.6%) and lowest among non-Hispanic Asians

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Participants who reported use of any product were considered any tobacco product users, but those who had a combination of "no" and missing responses to any of the assessed product type questions were excluded from the analysis. Participants who did not report use of any product "every day," "some days," or "rarely" who had missing responses for any of the assessed tobacco products (1.9% of respondents) were excluded.

TABLE 1. Percentage of persons aged ≥18 years who reported tobacco product use "every day" or "some days" and met established thresholds, by tobacco product and selected characteristics — National Adult Tobacco Survey, United States, 2013–2014

	Tobacco product % (95% CI)								
Characteristic	Any tobacco product*	Any combustible tobacco product†		Cigars/Cigarillos/ Filtered little cigars¶	Regular pipe**	Water pipe/ Hookah <sup>††</sup>	E-cigarettes <sup>§§</sup>	Smokeless tobacco <sup>¶¶</sup>	
Overall	21.3 (20.8–21.7)	18.4 (18.0–18.8)	17.0 (16.6–17.4)	1.8 (1.6–1.9)	0.3 (0.2-0.4)	0.6 (0.5-0.7)	3.3 (3.1–3.5)	2.5 (2.3–2.6)	
Sex									
Male	26.3 (25.6-27.0)	21.5 (20.8-22.1)	19.3 (18.6-19.9)	2.8 (2.5-3.1)	0.6 (0.5-0.7)	0.8 (0.6-0.9)	4.0 (3.6-4.3)	4.8 (4.5-5.2)	
Female	16.7 (16.2-17.3)	15.7 (15.1-16.2)	15.1 (14.5-15.6)	0.8(0.6-0.9)	***	0.4 (0.3-0.5)	2.8 (2.6-3.0)	0.3 (0.2-0.3)	
Age group (yrs)									
18–24	24.5 (23.0-26.1)	20.5 (19.1-22.0)	17.0 (15.7–18.4)	3.1 (2.4-3.7)	0.5 (0.3-0.8)	3.2 (2.5-3.8)	5.5 (4.8-6.3)	4.4 (3.7-5.1)	
25-44	26.1 (25.2–27.0)		21.4 (20.6–22.3)	2.0 (1.7–2.3)	0.2 (0.1–0.3)	0.5 (0.4–0.7)	4.4 (4.0-4.8)	3.1 (2.8–3.4)	
45-64	21.5 (20.9–22.2)	19.0 (18.3-19.6)	17.8 (17.2–18.5)	1.6 (1.4-1.8)	0.3 (0.2-0.4)	0.1 (0.0-0.1)	2.8 (2.6-3.1)	1.9 (1.7-2.2)	
≥65	10.3 (9.8-10.8)	8.9 (8.4-9.4)	7.9 (7.5-8.4)	0.9 (0.7-1.0)	0.3 (0.2-0.4)	***	0.9 (0.7-1.1)	1.1 (0.9-1.3)	
Race/Ethnicity									
White, non-Hispanic	21.3 (20.8–21.8)	17.8 (17.3–18.3)	16.6 (16.2–17.1)	1.5 (1.3-1.7)	0.3 (0.2-0.4)	0.4 (0.3-0.5)	3.6 (3.4-3.9)	3.1 (2.8-3.3)	
Black, non-Hispanic	25.1 (23.7–26.6)	. ,	21.3 (19.9–22.6)	3.3 (2.7–3.9)	0.3 (0.1–0.5)	0.9 (0.5–1.2)	2.1 (1.6–2.6)	1.1 (0.7–1.4)	
Asian, non-Hispanic	11.2 (9.2–13.1)	. ,	8.1 (6.5–9.7)	***		***	2.8 (1.8–3.8)	***	
Other, non-Hispanic	32.6 (30.1–35.2)	29.1 (26.3–31.6)	27.5 (25.1–30.0)	2.1 (1.5-2.8)	0.6 (0.3-1.0)	***	5.2 (4.0-6.5)	4.0 (3.0-5.0)	
Hispanic	17.6 (16.3-19.0)	16.2 (14.9-17.5)	14.7 (13.5-16.0)	1.8 (1.3-2.3)	***	1.1 (0.7-1.5)	2.7 (2.1-3.2)	1.0 (0.6-1.3)	
U.S. Census region <sup>†††</sup>									
Northeast	18.3 (17.3–19.3)	16.4 (15.4–17.4)	15.2 (14.2–16.1)	1.5 (1.1–1.8)	0.3 (0.1-0.4)	0.6 (0.4-0.9)	2.3 (1.9-2.7)	1.4 (1.1–1.7)	
Midwest	23.2 (22.2–24.2)	, ,	18.8 (17.9–19.7)	1.9 (1.6–2.2)	0.2 (0.1–0.3)	0.4 (0.3–0.6)	3.5 (3.0–3.9)	2.7 (2.3–3.1)	
South	24.0 (23.2–24.7)	, ,	18.9 (18.2–19.6)	2.1 (1.9–2.4)	0.3 (0.2–0.4)	0.6 (0.5–0.8)	3.7 (3.4–4.1)	3.2 (2.9–3.5)	
West	17.6 (16.8–18.4)		13.8 (13.1–14.6)	1.2 (1.0–1.4)	0.3 (0.2-0.4)	0.6 (0.4–0.8)	3.4 (3.0–3.8)	1.9 (1.6–2.1)	
Education									
0–12 yrs (no diploma)	31.9 (30.1–33.6)	28.9 (27.2–30.6)	27.4 (25.7–29.1)	2.8 (2.2-3.4)	0.4 (0.2-0.6)	0.6 (0.3-0.9)	3.4 (2.8-4.0)	3.3 (2.7-3.9)	
GED	50.0 (46.4–53.6)	. ,	44.2 (40.6–47.7)	4.9 (3.2–6.6)	***	***	8.0 (5.9–10.0)	3.4 (2.0–4.8)	
High school diploma	25.4 (24.4–26.4)		19.9 (19.0–20.8)	2.0 (1.7–2.3)	0.5 (0.3-0.6)	0.9(0.7-1.2)	4.2 (3.8–4.7)	3.4 (3.0–3.8)	
Some college, no diploma	23.6 (22.5–24.7)	. ,	18.9 (17.9–19.9)	2.0 (1.7–2.4)	0.2 (0.1–0.3)	0.7 (0.5–1.0)	4.4 (3.8–4.9)	2.3 (2.0–2.7)	
Associate degree	21.6 (20.6–22.7)		17.3 (16.3–18.3)	1.4 (1.1–1.7)	0.2 (0.1–0.3)	0.4 (0.2-0.6)	3.9 (3.4–4.4)	2.4 (2.0-2.8)	
Undergraduate degree	10.2 (9.5–10.8)	8.0 (7.5–8.6)	7.1 (6.6–7.6)	0.8 (0.6–1.0)	0.2 (0.1-0.3)	0.3 (0.2-0.4)	1.4 (1.2–1.7)	1.5 (1.3–1.8)	
Graduate degree	6.4 (5.8–7.0)		4.4 (3.9-4.9)	0.8 (0.6–1.0)	0.1 (0.1-0.2)	***	0.9 (0.7–1.1)	0.8 (0.6–1.0)	
Marital status									
Married/Living with a partner	18.0 (17.4–18.5)	15.2 (14.7–15.7)	14.1 (13.6–14.6)	1.4 (1.2-1.6)	0.2 (0.1-0.3)	0.4 (0.3-0.5)	2.9 (2.7-3.1)	2.4 (2.2-2.6)	
Divorced/Separated/Widowed	26.1 (25.1–27.1)		22.2 (21.2–23.2)	1.6 (1.3–1.9)	0.4 (0.3–0.6)	***	3.6 (3.2–4.1)	2.2 (1.8–2.5)	
Single/Never married/	26.1 (25.0–27.2)	. ,	20.5 (19.5–21.5)	2.9 (2.4–3.3)	0.5 (0.3–0.6)	1.6 (1.3-2.0)	4.4 (3.9–4.9)	2.9 (2.5–3.3)	
Not living with a partner									
Annual household income (\$)									
<20,000	32.2 (30.5–33.9)	29.9 (28.2–31.5)	28.7 (27.1–30.4)	2.7 (2.2-3.3)	0.5 (0.3-0.7)	***	4.0 (3.3-4.7)	2.0 (1.5-2.5)	
20,000–49,999	26.4 (25.4–27.4)		21.7 (20.8–22.6)	2.2 (1.8–2.5)	0.4 (0.2–0.5)	0.7 (0.5–1.0)	4.2 (3.8–4.7)	2.5 (2.2–2.9)	
50,000-99,999	18.4 (17.5–19.2)	. ,	14.1 (13.4–14.9)	1.1 (0.9–1.4)	0.3 (0.2–0.4)	0.4 (0.3–0.6)	3.3 (2.9–3.7)	2.9 (2.5–3.3)	
≥100,000	12.1 (11.3–13.0)	, ,	8.0 (7.3–8.7)	1.2 (1.0–1.5)	***	0.6 (0.3–0.8)	2.3 (2.0–2.7)	2.2 (1.9–2.6)	
Unspecified	21.4 (20.5–22.3)	, ,	17.2 (16.4–18.1)	1.9 (1.6–2.3)	0.3 (0.2-0.4)	0.7 (0.5–0.9)	3.0 (2.6–3.3)	2.3 (2.0–2.6)	
Sexual orientation									
Heterosexual/Straight	20.7 (20.2–21.2)	17.7 (17.3–18.2)	16.4 (16.0–16.9)	1.6 (1.5–1.8)	0.3 (0.2-0.4)	0.5 (0.4-0.6)	3.3 (3.1-3.6)	2.5 (2.4–2.7)	
LGB	32.1 (29.2–35.1)	. ,	27.1 (24.3–30.0)	4.4 (3.0–5.8)	***	1.8 (0.9–2.6)	6.9 (5.2–8.6)	***	
Unspecified	22.3 (21.0–23.5)	. ,	18.5(17.3–19.7)	2.0 (1.6–2.4)	0.3 (0.1-0.4)	0.7 (0.4–0.9)	2.6 (2.1–3.0)	2.2 (1.8-2.6)	

Abbreviations: CI = confidence interval; e-cigarettes = electronic cigarettes; GED = General Education Development certificate; LGB = lesbian, gay, or bisexual.

<sup>\*</sup> Any tobacco use was defined as "every day" or "some days" use of cigarettes; cigars, cigarillos, or filtered little cigars; pipes; water pipes/hookahs; e-cigarettes; or smokeless tobacco (snus, dissolvable tobacco products, or snuff, chewing tobacco or dip). The survey assessed "every day" or "some days" use of the respective products only among persons who met specified lifetime usage thresholds: cigarettes (≥100 times); cigars/cigarillos/filtered little cigars (≥50 times); regular pipes (≥50 times); water pipes/hookahs (≥1 time); snus (≥1 time); dissolvable tobacco products (≥1 time); chewing tobacco/snuff/dip (≥20 times); and e-cigarettes (≥1 time).

<sup>&</sup>lt;sup>†</sup> Any combustible tobacco users were defined as persons who met specified lifetime usage thresholds for at least one of four different tobacco product types (cigarettes [≥100 times]; cigars/cigarillos/filtered little cigars [≥50 times]; regular pipes [≥50 times]; water pipes/hookahs [≥1 time]), and who now (at the time of the survey) used the respective product(s) every day or some days.

<sup>§</sup> Current cigarette smokers were defined as persons who reported smoking ≥100 cigarettes during their lifetime and now smoked cigarettes every day or some days.

<sup>¶</sup> Current cigar/cigarillo/filtered little cigar smokers were defined as persons who reported smoking cigars, cigarillos, or little filtered cigars ≥50 times during their lifetime and now smoked cigars, cigarillos, or little filtered cigars every day or some days.

<sup>\*\*</sup> Reported smoking a regular pipe filled with tobacco ≥50 times during their lifetime and now smoked a regular pipe filled with tobacco every day or some days.

<sup>††</sup> Reported smoking tobacco in a water pipe/hookah at least once during their lifetime and now smoked tobacco in a water pipe/hookah every day or some days.

<sup>§§</sup> Persons who reported using electronic cigarettes at least once during their lifetime and now used e-cigarettes every day or some days.

<sup>11</sup> Smokeless tobacco users were defined as using at least one of the following three tobacco product types: 1) chewing tobacco, snuff, or dip; 2) snus; and 3) dissolvable tobacco products. Chewing tobacco, snuff, or dip users were respondents who reported using the product ≥20 times during their lifetime and now using chewing tobacco, snuff, or dip every day or some days. Snus or dissolvable tobacco product users were respondents who reported using each respective product at least once during their lifetime and now using each respective product every day or some days.

<sup>\*\*\*</sup> Estimate not presented because relative standard error ≥30%.

<sup>\*\*\*</sup> Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

TABLE 2. Percentage of persons aged ≥18 years who reported tobacco product use "every day," "some days," or "rarely" and met established thresholds, by tobacco product and selected characteristics — National Adult Tobacco Survey, United States, 2013–2014

	Tobacco product % (95% CI)								
Characteristic	Any tobacco product*	Any combustible tobacco product <sup>†</sup>	Cigars/Cigarillos/ Filtered little cigars <sup>§</sup>	Regular pipe <sup>¶</sup>	Water pipe/ Hookah**	E-cigarettes <sup>††</sup>	Smokeless tobacco <sup>§§</sup>		
Overall	25.5 (25.0–25.9)	22.2 (21.7–22.6)	5.4 (5.1–5.6)	0.8 (0.7-0.9)	4.3 (4.0–4.5)	6.6 (6.3–6.9)	3.5 (3.3–3.7)		
Sex									
Male	32.1 (31.4-32.9)	26.9 (26.2-27.6)	9.3 (8.9-9.8)	1.5 (1.3-1.7)	5.1 (4.7-5.5)	7.9 (7.4-8.3)	6.9 (6.5-7.3)		
Female	19.4 (18.8-20.0)	17.9 (17.3-18.5)	1.8 (1.5-2.0)	0.2 (0.1-0.3)	3.5 (3.2-3.8)	5.5 (5.2-5.9)	0.4 (0.3-0.5)		
Age group (yrs)									
18–24	37.4 (35.7–39.2)	33.0 (31.3-34.7)	8.9 (7.8-9.8)	1.6 (1.1–2.1)	20.2 (18.7-21.6)	13.6 (12.4-14.8)	6.4 (5.6-7.2)		
25-44	30.9 (30.0-31.9)	26.8 (25.9–27.7)	6.9 (6.4–7.4)	0.7 (0.6-0.9)	5.0 (4.6-5.4)	9.0 (8.4-9.6)	4.7 (4.3-5.1)		
45-64	23.7 (23.0-24.4)	20.7 (20.1-21.4)	4.6 (4.2-4.9)	0.8 (0.6-0.9)	0.4 (0.3-0.5)	4.7 (4.4-5.1)	2.6 (2.3-2.8)		
≥65	11.5 (11.0–12.1)	9.9 (9.4–10.4)	2.1 (1.8–2.3)	0.7 (0.6-0.8)	99	1.5 (1.3–1.7)	1.3 (1.1–1.5)		
Race/Ethnicity									
White, non-Hispanic	25.1 (24.6-25.6)	21.3 (20.8-21.9)	5.5 (5.2-5.8)	0.8 (0.7-1.0)	3.3 (3.1-3.6)	6.9 (6.6-7.3)	4.3 (4.0-4.5)		
Black, non-Hispanic	28.6 (27.1-30.1)	26.7 (25.2-28.2)	5.9 (5.1-6.7)	0.5 (0.3-0.8)	4.7 (3.9-5.5)	4.0 (3.4-4.6)	1.4 (1.0-1.7)		
Asian, non-Hispanic	16.3 (14.0-18.5)	14.2 (12.1-16.3)	1.2 (0.5-2.0)	99	6.7 (5.1-8.2)	5.0 (3.7-6.3)	1.2 (0.6-1.8)		
Other, non-Hispanic	38.7 (36.1-41.3)	34.1 (31.6-36.7)	7.4 (5.9-8.8)	1.6 (1.0-2.2)	7.4 (5.9-8.9)	11.0 (9.2-12.8)	5.4 (4.3-6.5)		
Hispanic	23.0 (21.5-24.5)	20.8 (19.4-22.3)	4.7 (4.0-5.5)	0.8 (0.5-1.2)	6.7 (5.8-7.6)	6.4 (5.6-7.3)	1.9 (1.4-2.4)		
U.S. Census region***									
Northeast	22.7 (21.6-23.8)	20.6 (19.5-21.7)	4.5 (4.0-5.0)	0.7 (0.5-1.0)	4.5 (3.9-5.1)	4.8 (4.3-5.4)	2.0 (1.7-2.3)		
Midwest	26.7 (25.7–27.7)	23.4 (22.5–24.4)	5.6 (5.1–6.2)	0.9 (0.7–1.2)	3.4 (3.0–3.9)	7.1 (6.5–7.7)	3.8 (3.4–4.2)		
South	28.1 (27.3–28.9)	24.0 (23.3–24.8)	6.0 (5.6–6.5)	0.8 (0.7–1.0)	4.0 (3.6-4.4)	7.1 (6.6–7.5)	4.5 (4.1-4.9)		
West	22.2 (21.3-23.2)	19.3 (18.4-20.1)	4.8 (4.3-5.2)	0.8 (0.6-1.0)	5.2 (4.7-5.8)	6.9 (6.3-7.5)	2.9 (2.5-3.2)		
Education									
0–12 yrs (no diploma)	33.8 (32.0-35.6)	30.7 (28.9-32.4)	6.2 (5.3–7.1)	1.3 (0.8–1.7)	3.2 (2.4-4.0)	6.4 (5.5-7.4)	4.4 (3.7-5.2)		
GED	52.7 (49.1–56.3)	48.5 (44.9–52.1)	12.0 (9.6–14.3)	1.6 (0.8–2.3)	5.3 (3.5–7.0)	15.9 (13.1–18.6)	6.0 (4.1–7.9)		
High school diploma	29.5 (28.5–30.5)	25.3 (24.3–26.2)	5.7 (5.2–6.3)	1.0 (0.8–1.3)	5.2 (4.6–5.7)	8.2 (7.6–8.9)	4.7 (4.3–5.2)		
Some college, no diploma	28.9 (27.7–30.1)	25.4 (24.3–26.5)	6.2 (5.6–6.9)	0.6 (0.4–0.8)	5.8 (5.2–6.5)	8.9 (8.2–9.7)	3.6 (3.1–4.1)		
Associate degree	25.7 (24.5–26.8)	22.0 (21.0–23.1)	5.7 (5.1–6.3)	0.8 (0.6–1.0)	3.6 (3.1–4.2)	7.4 (6.7–8.1)	3.3 (2.9–3.8)		
Undergraduate degree	15.9 (15.1–16.6)	13.4 (12.7–14.1)	4.0 (3.6–4.4)	0.6 (0.4–0.7)	4.1 (3.7–4.6)	3.4 (3.0–3.8)	2.3 (2.0–2.6)		
Graduate degree	9.9 (9.2–10.6)	8.5 (7.8–9.1)	2.7 (2.4–3.1)	0.5 (0.4–0.7)	2.1 (1.7–2.5)	1.9 (1.5–2.2)	1.2 (0.9–1.5)		
Marital status	, , , , , , , , , , , , , , , , , , , ,	,	, ,	,	, , , , , , , , , , , , , , , , , , , ,	,	, , , , , , , , , , , , , , , , , , , ,		
Married/Living with a partner	21.3 (20.8–21.9)	18.2 (17.6–18.7)	4.8 (4.5-5.1)	0.7 (0.5-0.8)	2.3 (2.0-2.5)	5.3 (5.0-5.7)	3.4 (3.1-3.6)		
Divorced/Separated/Widowed	28.0 (27.0–29.0)	24.5 (23.5–25.5)	4.6 (4.1–5.1)	1.1 (0.8–1.4)	1.6 (1.2–2.0)	6.7 (6.1–7.3)	3.1 (2.7–3.5)		
Single/Never married/	34.6 (33.4–35.8)	31.2 (30.0–32.3)	7.7 (7.0–8.3)	1.1 (0.8–1.4)	12.4 (11.6–13.3)	10.2 (9.4–10.9)	4.4 (3.9–4.8)		
Not living with a partner	34.0 (33.4 33.0)	31.2 (30.0 32.3)	7.7 (7.0 0.5)	1.1 (0.0 1.4)	12.4 (11.0 15.5)	10.2 (5.4 10.5)	4.4 (3.2 4.0)		
Annual household income (\$)									
<20,000	34.9 (33.1–36.6)	32.0 (30.3-33.7)	5.9 (5.1-6.8)	1.2 (0.8–1.6)	3.5 (2.7-4.2)	8.0 (6.9-9.0)	2.8 (2.2-3.3)		
20,000–49,999	30.4 (29.4–31.4)	26.9 (25.9–27.9)	6.2 (5.7–6.8)	1.1 (0.8–1.3)	5.3 (4.7–5.8)	8.6 (7.9–9.2)	3.6 (3.2–4.0)		
50,000-99,999	23.1 (22.2–24.0)	19.5 (18.7–20.3)	5.1 (4.6–5.6)	0.8 (0.7–1.0)	4.2 (3.8–4.7)	6.5 (5.9–7.0)	4.0 (3.6–4.5)		
≥100,000 ≥100,000	17.7 (16.7–18.6)	14.6 (13.7–15.5)	5.2 (4.7–5.8)	0.4 (0.3–0.6)	3.7 (3.2–4.3)	4.6 (4.0–5.1)	3.3 (2.9–3.7)		
Unspecified	24.9 (24.0–25.8)	21.8 (20.9–22.7)	4.7 (4.3–5.2)	0.7 (0.6–0.9)	4.0 (3.5–4.4)	5.8 (5.3–6.3)	3.3 (2.9–3.7)		
'	2 (2 25.0)	(20.5 22.7)	( 5.2)	0 (0.0 0.5)	(5.5)	3.0 (3.3 0.3)	3.5 (2.5 3.7)		
Sexual orientation	240 (242 252)	21.5 (21.0–21.9)	E A (E 1 E C)	0.0 (0.7. 0.0)	20/27 42	6 5 (6 3 6 0)	3.6 (3.4–3.8)		
Heterosexual/Straight LGB	24.8 (24.3–25.3)	. ,	5.4 (5.1–5.6)	0.8 (0.7–0.9)	3.9 (3.7–4.2)	6.5 (6.2–6.8)	, ,		
Unspecified	41.4 (38.3–44.6)	38.1 (35.0–41.1)	8.7 (6.9–10.5)	2.3 (0.9–3.7)	14.8 (12.2–17.4)	14.7 (12.4–17.1)	3.0 (1.6–4.3)		
Unspecified	25.8 (24.5–27.1)	22.9 (21.6–24.2)	4.7 (4.1–5.4)	0.9 (0.6–1.2)	3.9 (3.2–4.5)	5.5 (4.8–6.2)	3.2 (2.7–3.7)		

Abbreviations: CI = confidence interval; e-cigarettes = electronic cigarettes; GED = General Education Development certificate; LGB = lesbian, gay, or bisexual.

<sup>\*</sup> Any tobacco use was defined as "every day" or "some days" use of cigarettes; and/or "every day," "some days," or "rarely" use of cigars, cigarillos, or filtered little cigars; pipes; water pipes/ hookahs; e-cigarettes; or smokeless tobacco (snus, dissolvable tobacco products, or snuff, chewing tobacco or dip). Cigarettes are not presented separately because the questionnaire only assessed "every day" or "some days" use (no "rarely" response option). "Every day" or "some days" use of cigarettes was assessed among those who reported smoking ≥100 cigarettes during their lifetime.

<sup>&</sup>lt;sup>†</sup> For the other tobacco product types, the survey assessed "every day," "some days," or "rarely" use among persons who met specified lifetime usage thresholds for the different tobacco product types: cigars/cigarillos/filtered little cigars (≥50 times); regular pipes (≥50 times); water pipes/hookahs (≥1 time); snus (≥1 time); dissolvable tobacco products (≥1 time); chewing tobacco/snuff/dip (≥20 times); and e–cigarettes (≥1 time).

Surrent cigar/cigarillo/filtered little cigar smokers were defined as persons who reported smoking cigars, cigarillos, or little filtered cigars ≥50 times during their lifetime and smoked a cigar, cigarillos, or filtered little cigars every day, some days, or rarely.

Reported smoking a regular pipe filled with tobacco ≥50 times during their lifetime and now smoked a regular pipe filled with tobacco every day, some days, or rarely.

<sup>\*\*</sup> Reported smoking tobacco in a water pipe/hookah at least once during their lifetime and now smoked tobacco in a water pipe/hookah every day, some days, or rarely.

<sup>&</sup>lt;sup>+†</sup> Persons who reported using electronic cigarettes at least once during their lifetime and now using electronic cigarettes every day, some days, or rarely.

Smokeless tobacco users were defined using at least one of the following three tobacco product types: 1) chewing tobacco, snuff, or dip; 2) snus; and 3) dissolvable tobacco products. Chewing tobacco, snuff, or dip users were respondents who reported using the product at least 20 times during their lifetime and now used chewing tobacco, snuff, or dip every day, some days, or rarely. Snus or dissolvable tobacco product users were respondents who reported using each respective product at least once during their lifetime and now used each respective product every day, some days, or rarely.

<sup>¶</sup> Estimate not presented because relative standard error ≥30%.

<sup>\*\*\*</sup> Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

(11.2%); by region, prevalence was highest among persons living in the South (24.0%) and lowest among persons living in the West (17.6%). Prevalence was highest among adults with a GED certificate (50.0%) and lowest among persons with a graduate degree (6.4%). Prevalence was higher among adults who were single/never married/not living with a partner (26.1%) or divorced/separated/widowed (26.1%) than those married or living with a partner (18.0%). Prevalence was highest among adults with annual household income <\$20,000 (32.2%) and lowest among those with annual household income ≥\$100,000 (12.1%) and was higher among LGB adults (32.1%) than heterosexual/straight adults (20.7%). Prevalence patterns were generally similar when "rarely" was included in the definition of use (Table 2).

Among every day, some days, or rarely users, younger adults aged 18–24 accounted for 55.8% of water pipe/hookah smokers, 24.3% of e-cigarettes users, 23.1% of regular pipe smokers, 21.6% of smokeless tobacco users, and 19.5% of cigar/cigarillo/filtered little cigar smokers (Figure).

## **Discussion**

During 2013-2014, one in five U.S. adults (an estimated 49.2 million persons) used any tobacco product every day or some days, and one in four (58.8 million persons) used any tobacco product every day, some days, or rarely. Across population groups, differences were observed in tobacco use by sex, age, race/ethnicity, U.S. Census region, education, marital status, annual household income, and sexual orientation. The magnitude and patterns of tobacco product use generally were comparable to those from other national surveys of U.S. adults during the same period.\*\* Use of any tobacco product every day or some days was nearly threefold higher among non-Hispanics of other races (i.e., American Indians/Alaska natives, Native Hawaiian/other Pacific Islanders, and persons of multiple race) than among Asian non-Hispanics. Adults with annual household incomes of <\$20,000 also reported a higher prevalence of tobacco product use than did persons with higher annual household income and LGB adults reported higher prevalence of tobacco product use than did adults who identified as heterosexual/straight.

The use of e-cigarettes and water pipes/hookahs was particularly prevalent among certain populations. Most users of these two emerging tobacco products were not daily users. Moreover, young adults had the highest prevalence of use of e-cigarettes and water pipes, which might reflect that although most experimentation with tobacco products occurs during the teenage years, young adulthood increasingly is a time of initiation

of tobacco products, including emerging tobacco products.†† The higher prevalence of use among younger adults might also be a consequence of targeted marketing of e-cigarette products and varying perceptions about the relative harm or social acceptability of these products compared with conventional cigarettes (1,4,5). When the definition of current users included participants who reported rarely using tobacco products, current use was disproportionately higher among younger adults. These users might not consider themselves to be tobacco product users, and thus, might not consider themselves to be at risk for tobacco-related disease or death (6,7). For example, one focus group study with adult cigar smokers found that some users would only use the term "smoker" or "cigar smoker" to describe someone who smoked cigars several times a week or daily (8). This finding underscores the importance of further research on the ascertainment of tobacco product use, as well as efforts to educate the public about the potential harms of all tobacco product use, including risks associated with occasional use.

Continued implementation of proven population-based interventions, including increasing tobacco product prices, implementing and enforcing comprehensive smoke-free laws, warning about the dangers of tobacco use through public education media campaigns, and increasing access to proven resources to help people quit tobacco use, can help reduce tobacco use and tobacco-related disease and death (1,9). In addition, regulatory authority over the manufacture, marketing, and sales of tobacco products is an important tool to further reduce tobacco-related disease and death in the United States. §§ In May 2016, FDA finalized a rule extending its authority to all products that meet the definition of a tobacco product, including e-cigarettes, cigars, pipes, and water pipes/hookahs. This rule sets a national minimum age for sales; requires health warnings, tobacco product ingredient reporting, and reporting of harmful and potentially harmful constituents; and ensures FDA premarket review of new and changed tobacco products and premarket review of the marketing of products as reduced-risk (modified risk tobacco products). The rule also enables future rulemaking regarding tobacco product manufacturing, marketing, and sales.

The findings in this report are subject to at least four limitations. First, self-reported tobacco use might have resulted in misreporting; however, self-reported cigarette smoking correlates highly with serum cotinine levels (10). Second, small sample

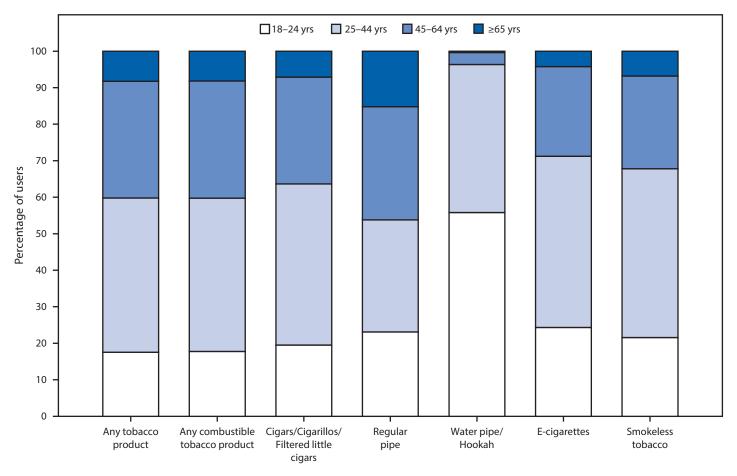
<sup>\*\*</sup> http://www.cdc.gov/nchs/nhis/SHS/tables.htm and http://www.samhsa.gov/data/sites/default/files/NSDUH-FRR1-2014/NSDUH-FRR1-2014.pdf.

 $<sup>^{\</sup>dagger\dagger}$  http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/full-report.pdf.

<sup>§§</sup> http://www.fda.gov/tobaccoproducts/guidancecomplianceregulatoryinformation/ucm246129.htm.

<sup>55</sup> https://www.federalregister.gov/articles/2016/05/10/2016-10685/ deeming-tobacco-products-to-be-subject-to-the-federal-food-drug-andcosmetic-act-as-amended-by-the.

FIGURE. Distribution of persons aged ≥18 years who were "every day," "some days," or "rarely" tobacco users and met thresholds for established use,\* by age group and type of tobacco product — National Adult Tobacco Survey, United States, 2013–2014



Type of tobacco product

Abbreviation: e-cigarettes = electronic cigarettes.

sizes among certain subgroups resulted in less precise estimates. Third, the overall response rate of 36.1% might have resulted in bias, even after adjustment for nonresponse. Finally, thresholds and current use measures varied by tobacco product type; for example, the absence of a response option of "rarely" for ascertaining cigarette smoking at the time of the survey might have resulted in underestimates for current cigarette smoking.

Sustained, comprehensive state tobacco control programs funded at CDC-recommended levels can accelerate progress toward reducing tobacco-related diseases and deaths (1). However, during fiscal year 2016, despite combined revenue

of \$25.8 billion from settlement payments and tobacco taxes for all states combined, states will spend only 1.8% of this amount (\$468 million) on comprehensive tobacco control programs (<15% of the CDC-recommended level of funding for all states combined).\*\*\* Full implementation of comprehensive tobacco control programs at CDC-recommended funding levels, in conjunction with FDA regulation of tobacco products, could reduce tobacco use in the United States, thereby reducing morbidity and mortality caused by tobacco use (1).

<sup>\*</sup> Any tobacco use was defined as "every day" or "some days" use of cigarettes; and/or "every day," "some days," or "rarely" use of cigars, cigarillos, or filtered little cigars; pipes; water-pipes/hookahs; e-cigarettes; smokeless tobacco (snus, dissolvable tobacco products, or snuff, chewing tobacco or dip). Cigarettes not presented separately because the questionnaire only assessed "every day" or "some days" cigarette smoking (i.e., no "rarely" response option). "Every day" or "some days" use of cigarettes was assessed only among persons who reported smoking at least 100 cigarettes during their lifetime. For the other tobacco product types, the survey assessed "everyday," "some days," or "rarely" use among persons who met specified lifetime usage thresholds, which were different for the different tobacco product types assessed: cigars/cigarillos/filtered little cigars (≥50 times); regular pipes (≥50 times); water pipes/hookahs (≥1 time); snus (≥1 time); dissolvable tobacco products (≥1 time); chewing tobacco/snuff/dip (≥20 times); and e-cigarettes (≥1 time).

<sup>†</sup> Respondents of unknown age (1.5%) were excluded from these calculations.

<sup>§</sup> Denominator for each product comprised respondents who had ever reached the threshold for the specified product, including current and former users.

<sup>\*\*\*</sup> http://www.tobaccofreekids.org/microsites/statereport2016/#introduction.

#### **Summary**

# What is already known about this topic?

Although significant declines in cigarette smoking have occurred among U.S. adults during the past 5 decades, the use of emerging tobacco products has increased in recent years.

## What is added by this report?

During 2013–2014, 21.3% of U.S. adults used a tobacco product every day or some days, and 25.5% of U.S. adults used a tobacco product every day, some days, or rarely. Cigarettes remained the most commonly used tobacco product. Young adults aged 18–24 years reported the highest prevalence of use of emerging tobacco products, including water pipes/hookahs and e-cigarettes. Differences in the use of any tobacco product were observed, with higher use reported among males; persons aged <45 years; non-Hispanic whites, non-Hispanic blacks, or non-Hispanics of other races; persons in the Midwest or South; persons with a General Educational Development certificate; persons who were single/never married/not living with a partner or divorced/ separated/widowed; persons with annual household income <\$20,000; and persons who were lesbian, gay, or bisexual.

## What are the implications for public health practice?

Continued implementation of proven population-based interventions focused on the diversity of tobacco product use could help reduce tobacco use and tobacco related disease and death. These interventions include increasing tobacco product prices, implementing and enforcing comprehensive smoke-free laws, warning about the dangers of tobacco use through high-impact public education media campaigns, and increasing access to resources to help people quit tobacco use.

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## References

- US Department of Health and Human Services. The health consequences
  of smoking—50 years of progress: a report of the Surgeon General.
  Atlanta, GA: US Department of Health and Human Services, CDC;
  2014. http://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf
- 2. King BA, Patel R, Nguyen KH, Dube SR. Trends in awareness and use of electronic cigarettes among US adults, 2010–2013. Nicotine Tob Res 2015;17:219–27. http://dx.doi.org/10.1093/ntr/ntu191
- Agaku IT, King BA, Husten CG, et al. Tobacco product use among adults— United States, 2012–2013. MMWR Morb Mortal Wkly Rep 2014;63:542–7.
- Berg CJ, Stratton E, Schauer GL, et al. Perceived harm, addictiveness, and social acceptability of tobacco products and marijuana among young adults: marijuana, hookah, and electronic cigarettes win. Subst Use Misuse 2015;50:79–89. http://dx.doi.org/10.3109/10826084.2014.958857
- King BA, Dube SR, Tynan MA. Current tobacco use among adults in the United States: findings from the National Adult Tobacco Survey. Am J Public Health 2012;102:e93–100. http://dx.doi.org/10.2105/AJPH.2012.301002
- Rosa JD, Aloise-Young P. A qualitative study of smoker identity among college student smokers. Subst Use Misuse 2015;50:1510–7. http:// dx.doi.org/10.3109/10826084.2015.1018549
- Harris JB, Schwartz SM, Thompson B. Characteristics associated with self-identification as a regular smoker and desire to quit among college students who smoke cigarettes. Nicotine Tob Res 2008;10:69–76. http:// dx.doi.org/10.1080/14622200701704202
- 8. Dickinson DM, Johnson SE, Coleman BN, Tworek C, Tessman GK, Alexander J. The language of cigar use: focus group findings on cigar product terminology. Nicotine Tob Res 2016;18:850–6.
- 9. World Health Organization. WHO report on the global tobacco epidemic, 2008—the MPOWER package. Geneva, Switzerland: World Health Organization; 2008. http://www.who.int/tobacco/mpower/mpower\_report\_full\_2008.pdf
- 10. Caraballo RS, Giovino GA, Pechacek TF, Mowery PD. Factors associated with discrepancies between self-reports on cigarette smoking and measured serum cotinine levels among persons aged 17 years or older: Third National Health and Nutrition Examination Survey, 1988-1994. Am J Epidemiol 2001;153:807–14. http://dx.doi.org/10.1093/aje/153.8.807