

Supplementary Online Content

Erhabor J, Boakye E, Obisesan O, et al. E-cigarette use among US adults in the 2021 Behavioral Risk Factor Surveillance System survey. *JAMA Netw Open*. 2023;6(11):e2340859. doi:10.1001/jamanetworkopen.2023.40859

eTable 1. Weighted Sample Size by Participant Characteristics

eTable 2. Weighted Prevalence of Current Sole E-Cigarette, Dual (E-Cigarette and Combustible Cigarette), and Exclusive Combustible Cigarette Use Across Age Groups, 2021 Behavioral Risk Factor Surveillance System

eTable 3. Age-Standardized Weighted Prevalence of E-Cigarette Use (Current and Daily) Across US States, 2019 Behavioral Risk Factor Surveillance System

eFigure 1. Proportion of Current E-Cigarette Use Among Individuals With No Smoking History

eFigure 2. Patterns of E-Cigarette and Combustible Cigarette Use by Age, 2021 Behavioral Risk Factor Surveillance System

eFigure 3. Prevalence of Current E-Cigarette Use by State, 2021 Behavioral Risk Factor Surveillance System

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Weighted Sample Size by Participant Characteristics

Variables	Weighted Sample Size	
	Current E-cigarette Use	Daily E-cigarette Use
Total Population	15,000,000	6,997,185
Age		
18-20	2,272,805	973,314
21-24	2,856,732	1,383,501
25-29	2,363,261	1,090,105
30-34	2,018,333	935,607
35-39	1,248,489	572,981
40-44	1,169,616	589,471
45-49	659,915	307,519
50-54	679,555	336,142
55-59	566,114	277,105
≥60	1,046,866	468,455
Sex		
Male	8,551,857	4,011,064
Female	6,453,806	2,986,121
Race/Ethnicity		
Non-Hispanic White	9,751,578	5,080,748
Non-Hispanic Black	1,344,852	461,156
Non-Hispanic Asian	728,114	220,823
Hispanic	2,231,529	806,769
NH or PI	60,566	30,449
AI or AN	171,728	57,754
Multiracial	354,166	161,164
Other	79,849	33,817
Sexual orientation		
Heterosexual	6,622,109	3,055,647
Lesbian/gay	311,718	173,790
Bisexual	853,060	443,441
Other	261,943	140,239
Transgender		
No	7,953,105	3,746,689
Yes	136,590	83,977
BMI		
<18.5kg/m ²	536,141	303,213
≥18.5kg/m ² to <25/m ²	5,252,346	2,329,854
≥25/m ² to <30kg/m ²	4,351,041	1,994,434
≥30 kg/m ²	4,182,311	2,036,613
Marital status		
Married	4,054,310	2,066,762
Divorced or separated	1,845,157	841,519
Widowed	359,701	181,468
Single	7,074,178	3,023,460
Highest education level		
Less than high school	1,747,529	755,388
≥High school or some college	10,900,000	5,248,705
College graduate	2,356,639	981,171

Variables	Weighted Sample Size	
	Current E-cigarette Use	Daily E-cigarette Use
Income, poverty line, %		
<100	1,909,505	668,975
100-200	3,245,710	1,523,573
>200	9,740,794	4,746,371
Employment status		
Employed	9,823,671	4,855,126
Unemployed	2,963,902	1,293,731
Student	1,390,582	467,529
Retired	691,679	323,741
Area of residence		
Rural	945,570	461,091
Urban	6,511,678	6,511,678
Combustible Cigarette Use		
Never	4,882,539	1,720,260
Former	5,366,385	3,530,018
Current	4,632,683	1,690,674
Pregnant		
No	5,078,994	2,315,756
Yes	100,215	67,272
CVD^a		
No	14,100,000	6,593,551
Yes	741,132	358,259
Cancer		
No	14,400,000	6,703,288
Yes	542,463	268,035
COPD		
No	13,900,000	6,508,483
Yes	1,037,259	268,035
Asthma		
No	11,800,000	5,473,904
Yes	3,128,123	1,473,624
Depression		
No	9,287,392	4,141,897
Yes	5,589,944	2,800,191

eTable 2. Weighted Prevalence of Current Sole E-Cigarette, Dual (E-Cigarette and Combustible Cigarette), and Exclusive Combustible Cigarette Use Across Age Groups, 2021 Behavioral Risk Factor Surveillance System

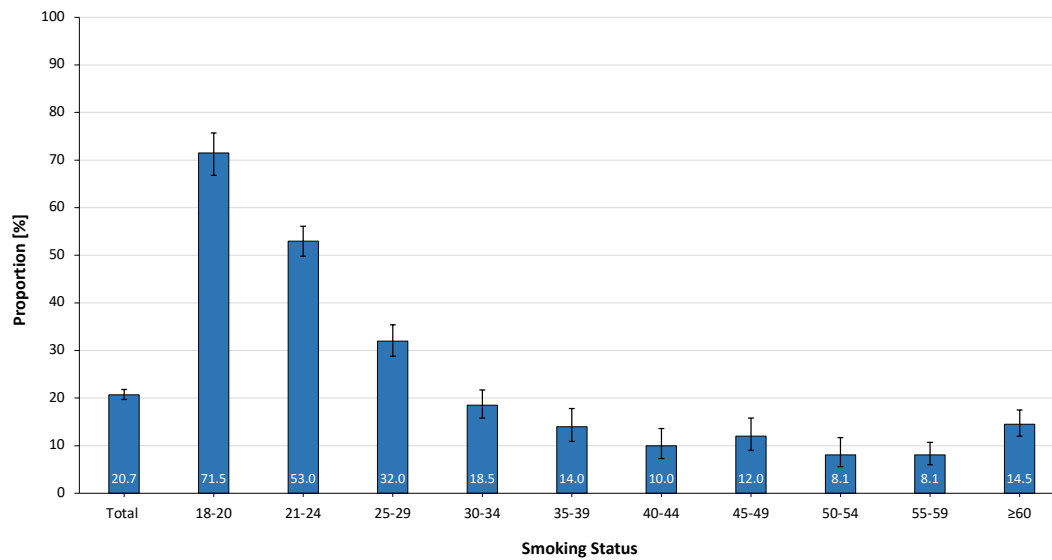
Age Groups, years	Weighted Prevalence, % (95% CI)		
	Exclusive E-cigarette Use	Exclusive Combustible Cigarette Use	Dual E-cigarette and Combustible Cigarette Use
Total Population	4.7 (4.6-4.9)	11.7 (11.4-11.9)	2.2 (2.1-2.3)
18-20	15.2 (13.9-16.7)	1.3 (1.0-1.8)	2.8 (2.3-3.3)
21-24	14.6 (13.6-15.6)	4.7 (4.1-5.4)	3.9 (3.4-4.4)
25-29	9.2 (8.5-10.0)	9.3 (8.6-10.0)	4.0 (3.5-4.6)
30-34	5.9 (5.1-6.4)	13.6 (12.8-14.5)	3.2 (2.9-3.6)
35-39	4.1 (3.7-4.6)	14.8 (14.0-15.6)	2.9 (2.6-3.3)
40-44	3.6 (3.1-4.0)	15.4 (14.6-16.2)	2.5 (2.1-2.9)
45-49	2.4 (2.1-2.7)	14.3 (13.4-15.3)	2.1 (1.7-2.5)
50-54	2.0 (1.7-2.4)	14.5 (13.7-15.3)	1.6 (1.4-1.9)
55-59	1.8 (1.6-2.1)	15.5 (14.7-16.3)	1.4 (1.2-1.6)
≥60	0.9 (0.8-1.0)	10.5 (10.1-10.8)	0.6 (0.5-0.7)
Note: Patterns are based on reported current use of e-cigarette and combustible cigarette use. Thus, sole e-cigarette use as defined may include individuals who formerly used combustible cigarettes			

eTable 3. Age-Standardized Weighted Prevalence of E-Cigarette Use (Current and Daily) Across US States, 2019 Behavioral Risk Factor Surveillance System

States	Weighted Prevalence, % (95% CI)	
	Current E-cigarette Use	Daily E-cigarette Use
Alabama	9.1 (8.0-10.5)	4.4 (3.6-5.5)
Alaska	6.2 (5.2-7.3)	3.0 (2.3-3.8)
Arizona	8.8 (7.9-9.7)	4.3 (3.8-5.0)
Arkansas	7.3 (6.1-8.7)	4.2 (3.3-5.2)
California	5.2 (4.5-5.9)	2.2 (1.8-2.7)
Colorado	6.9 (6.3-7.5)	3.7 (3.2-4.2)
Connecticut	5.0 (4.3-5.8)	2.3 (1.8-2.9)
Delaware	6.1 (5.1-7.4)	2.9 (2.2-3.8)
District of Columbia	4.8 (3.6-6.3)	1.7 (1.0-3.0)
Georgia	7.8 (6.8-9.0)	3.6 (2.9-4.4)
Guam	11.1 (8.8-14.0)	5.7 (4.2-7.7)
Hawaii	7.3 (6.4-8.3)	3.3 (2.7-4.0)
Idaho	7.4 (6.5-8.3)	4.2 (3.5-4.9)
Illinois	6.4 (5.3-7.8)	3.2 (2.4-4.2)
Iowa	6.4 (5.7-7.2)	3.3 (2.8-3.9)
Indiana	8.1 (7.3-8.9)	4.0 (3.5-4.6)
Kansas	6.6 (6.1-7.2)	3.3 (3.0-3.7)
Kentucky	9.3 (8.2-10.5)	4.4 (3.6-5.3)
Louisiana	9.0 (7.8-10.3)	3.6 (2.9-4.5)
Maine	5.8 (5.1-6.7)	2.7 (2.2-3.4)
Maryland	4.5 (3.9-5.0)	1.8 (1.5-2.2)
Massachusetts	4.7 (4.1-5.4)	2.1 (1.7-2.6)
Michigan	7.6 (6.8-8.4)	3.3 (2.8-4.0)
Minnesota	5.7 (5.2-6.2)	2.6 (2.2-2.9)
Mississippi	6.4 (5.4-7.6)	2.9 (2.3-3.6)
Missouri	7.4 (6.6-8.2)	3.8 (3.3-4.4)
Montana	6.1 (5.2-7.0)	3.0 (2.4-3.8)
Nebraska	6.7 (6.1-7.4)	3.3 (2.9-3.9)
Nevada	7.0 (5.7-8.6)	2.6 (1.9-3.6)
New Hampshire	4.9 (4.1-6.0)	2.6 (2.0-3.5)
New Jersey	6.0 (5.2-6.8)	2.5 (2.0-3.0)
New Mexico	7.3 (6.3-8.3)	2.7 (2.1-3.4)
New York	5.3 (4.9-5.8)	2.4 (2.1-2.7)
North Carolina	6.8 (5.9-7.9)	3.3 (2.6-4.1)
North Dakota	7.4 (6.4-8.5)	3.7 (3.0-4.6)
Ohio	7.8 (7.1-8.6)	4.0 (3.5-4.6)
Oklahoma	9.4 (8.3-10.6)	4.6 (3.8-5.5)
Oregon	6.6 (5.8-7.5)	3.0 (2.4-3.6)

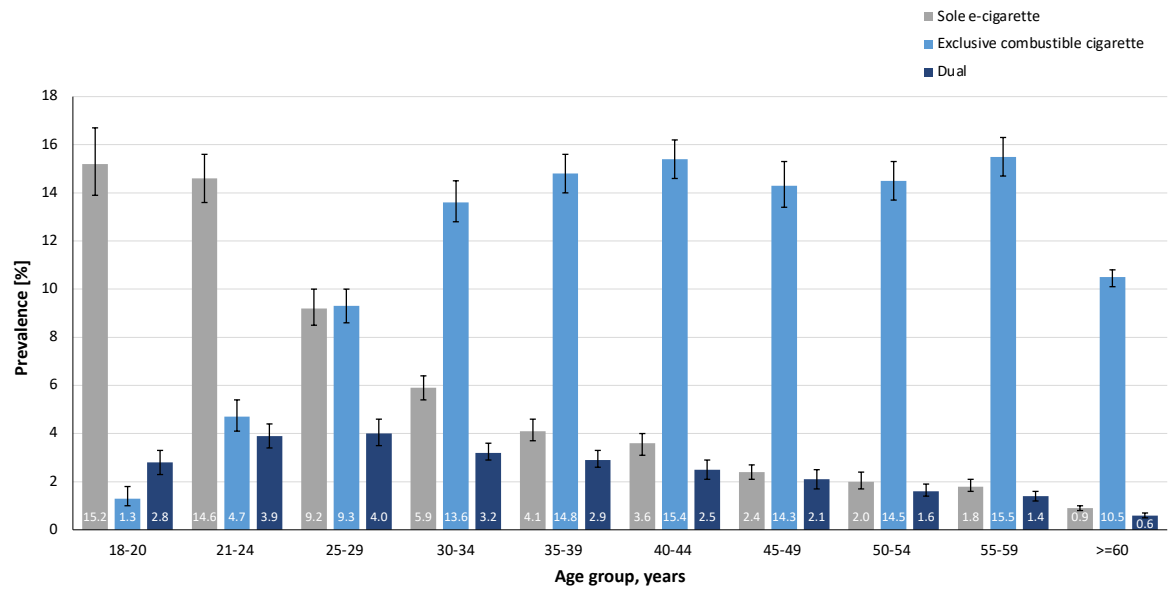
States	Weighted Prevalence, % (95% CI)	
	Current E-cigarette Use	Daily E-cigarette Use
Pennsylvania	6.1 (5.3-7.0)	2.8 (2.3-3.5)
Puerto Rico	2.0 (1.5-2.7)	0.7 (0.4-1.1)
Rhode Island	6.2 (5.1-7.4)	2.8 (2.1-3.6)
South Carolina	7.2 (6.3-8.2)	3.8 (3.2-4.5)
South Dakota	6.1 (4.9-7.7)	1.9 (1.4-2.7)
Tennessee	9.1 (8.0-10.3)	4.6 (3.8-5.6)
Texas	6.0 (5.1-7.0)	2.6 (2.1-3.3)
Utah	7.2 (6.5-7.9)	3.3 (2.8-3.8)
Vermont	5.0 (4.1-6.1)	2.6 (1.9-3.4)
Virginia	6.8 (6.0-7.7)	3.3 (2.8-4.0)
Washington	6.5 (5.9-7.2)	3.2 (2.8-3.7)
West Virginia	7.1 (6.3-8.1)	3.2 (2.6-3.9)
Wisconsin	6.2 (5.3-7.3)	3.0 (2.3-3.9)
Wyoming	7.5 (6.2-9.0)	4.1 (3.2-5.3)

eFigure 1. Proportion of Current E-Cigarette Use Among Individuals With No Smoking History



Error bars indicate 95% CIs

eFigure 2. Patterns of E-Cigarette and Combustible Cigarette Use by Age, 2021
Behavioral Risk Factor Surveillance System



Error bars indicate 95% CIs. Sole e-cigarette use, as defined, may include individuals who formerly used combustible cigarettes, while dual use includes individuals who currently use both combustible cigarettes and e-cigarettes.

eFigure 3. Prevalence of Current E-Cigarette Use by State, 2021 Behavioral Risk Factor Surveillance System

