



Prevention Research Center for Healthy Neighborhoods
at Case Western Reserve University

2019 Cuyahoga County Youth Risk Behavior Survey Tobacco Use and Electronic Vapor Product Use

Introduction

The Prevention Research Center for Healthy Neighborhoods (PRCHN) at Case Western Reserve University has administered the Youth Risk Behavior Survey (YRBS) in school districts throughout Cuyahoga County since 2000. The YRBS is a cross-sectional tool developed by the Centers for Disease Control and Prevention (CDC) to track adolescent risk behavior over time. In fall of 2019, the PRCHN conducted the YRBS among 9th through 12th grade students in Cuyahoga County high schools. A more detailed description of the methodology is available at our website, www.prchn.org/YRBSDataCollectionAnalysis.aspx.

This brief report presents results from the 2019 Cuyahoga County High School Youth Risk Behavior Survey, with a particular focus on Tobacco Use and Electronic Vapor Product Use. In this brief report, we present:

- [Overall Prevalence](#)
- [Demographic Prevalence](#)
- [Trend Report](#)

Data for similar behaviors can be found at our website, www.prchn.org/yrbs_home.aspx.

Tobacco Use and Electronic Vapor Product Use

Using tobacco can have serious effects on long-term health. The use of cigarettes is the single leading preventable cause of death in the United States.ⁱ Almost 90% of adult smokers initiate use before or at age 18.ⁱⁱ Hookah smoking can lead to cardiovascular disease and cancer. Per a report from the World Health Organization (WHO), one hookah smoking session may be equivalent to smoking 100 cigarettes.ⁱⁱⁱ Although introduced as tobacco cessation aids, electronic vapor products may initiate adolescent nicotine usage, resulting in addiction and other tobacco product use.^{iv} Tobacco use in adolescence is associated with many other health risk behaviors, including higher-risk sexual behavior and use of alcohol or other drugs.ⁱⁱ

Overall Prevalence

The following table summarizes tobacco and electronic vapor product use among the 15,350 high school students who completed the 2019 Cuyahoga County YRBS. Prevalence estimates and 95% confidence intervals were computed for all dichotomous variables. The 2019 Ohio Youth Risk Behavior Survey prevalence for shared variables is also shown. A statistically significant difference exists between groups if the 95% confidence intervals do not overlap.

Risk Behavior	Cuyahoga County % (95% Confidence Interval)	Ohio % (95% Confidence Interval)
Ever smoked cigarettes (Smoked a cigarette, even 1 or 2 puffs, on at least 1 day during their life.)	12.9 (12.0 - 13.9)	21.5 (16.3 - 27.8)
Current cigarette use (Smoked a cigarette on at least 1 day during the 30 days before the survey.)	3.9 (3.3 - 4.5)	4.9 (21. - 7.5)
Ever used an electronic vapor product (Including e-cigarettes, vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods.)	36.9 (35.2 - 38.6)	47.7 (43.4 - 52.1)
Current electronic vapor product use (Used at least 1 day during the 30 days before the survey.)	12.7 (11.7 - 13.9)	29.8 (25.7 - 34.3)
Usually bought electronic vapor products in a store (Including convenience store, supermarket, discount store, gas station, or vape store, among students who used electronic vapor products during the 30 days before the survey.)	9.8 (8.0 - 11.9)	13.3 (6.1 - 26.8)
Current cigar use (Smoked a cigar, cigarillo, little cigar, or flavored cigar on at least 1 day during the 30 days before the survey.)	6.7 (6.1 - 7.4)	7.2 (6.3 - 8.2)
Usually bought cigars, cigarillos, little cigars, or flavored cigars in a store (Among students who smoked cigars during the 30 days before the survey.)	28.2 (24.8 - 31.8)	n/a
Current use of tobacco in a waterpipe (Smoked from a hookah, narghile or water pipe on at least 1 day during the 30 days before the survey.)	3.7 (3.2 - 4.1)	6.9 (5.4 - 8.8)
Tried first tobacco product before age 13 years (Including cigarettes, cigars, little cigars, flavored cigars, shisha or hookah tobacco, and chewing tobacco.)	7.4 (6.8 - 8.0)	n/a
Ever tried to quit using all tobacco products (Among students who used any tobacco products during the 12 months before the survey.)	53.7 (50.7 - 56.6)	n/a
Students perceive great risk of harm from electronic vapor product use (Physically or in other ways, if use almost every day.)	37.4 (35.9 - 38.8)	n/a

Demographic Prevalence

The tables below allow for further comparisons of tobacco and electronic vapor product use between demographic groups. Data are presented by gender, race/ethnicity, grade level, and sexual identity. In following tables, LGB stands for lesbian, gay, or bisexual. A statistically significant difference exists between groups if the 95% confidence intervals do not overlap.

Ever smoked cigarettes		
Category	%	CI
Gender		
Female	12.3	11.2 - 13.5
Male	13.5	12.3 - 14.9
Race/Ethnicity		
White	15.5	14.0 - 17.3
Black	8.9	7.9 - 9.9
Hispanic	16.5	14.5 - 18.7
Other/Multiple	13.6	11.3 - 16.2
Grade		
9th	8.8	7.6 - 10.2
10th	10.8	9.0 - 12.9
11th	13.1	11.1 - 15.2
12th	19.5	17.3 - 21.8
Sexual Identity		
Heterosexual	11.3	10.3 - 12.3
LGB	22.7	20.2 - 25.4
Not sure	15.0	11.4 - 19.6
Total	12.9	12.0 - 13.9

Current cigarette use		
Category	%	CI
Gender		
Female	2.6	2.1 - 3.3
Male	5.0	4.2 - 6.0
Race/Ethnicity		
White	5.3	4.3 - 6.5
Black	1.9	1.3 - 2.6
Hispanic	4.6	3.6 - 6.0
Other/Multiple	4.2	3.0 - 5.8
Grade		
9th	2.5	1.9 - 3.4
10th	2.8	1.9 - 4.1
11th	3.7	2.8 - 4.9
12th	6.5	4.8 - 8.6
Sexual Identity		
Heterosexual	3.3	2.7 - 4.1
LGB	6.3	5.1 - 7.8
Not sure	6.4	3.8 - 10.7
Total	3.9	3.3 - 4.5

Ever used an electronic vapor product			
Category	%	CI	
Gender			
Female	38.4	36.2	- 40.6
Male	35.5	33.6	- 37.3
Race/Ethnicity			
White	44.4	41.7	- 47.1
Black	26.5	24.6	- 28.5
Hispanic	43.0	39.9	- 46.0
Other/Multiple	32.0	28.5	- 35.7
Grade			
9th	27.5	25.3	- 29.9
10th	33.6	29.8	- 37.8
11th	41.0	38.0	- 44.1
12th	46.6	43.2	- 50.0
Sexual Identity			
Heterosexual	35.8	34.1	- 37.6
LGB	45.9	42.5	- 49.3
Not sure	31.6	26.4	- 37.4
Total	36.9	35.2	- 38.6

Current electronic vapor product use			
Category	%	CI	
Gender			
Female	13.0	11.6	- 14.5
Male	12.5	11.3	- 13.9
Race/Ethnicity			
White	18.5	16.7	- 20.5
Black	5.0	4.2	- 5.9
Hispanic	15.3	13.1	- 17.8
Other/Multiple	11.5	9.3	- 14.0
Grade			
9th	7.9	6.6	- 9.4
10th	10.0	7.9	- 12.5
11th	15.0	12.9	- 17.3
12th	18.9	15.8	- 22.3
Sexual Identity			
Heterosexual	12.0	10.9	- 13.2
LGB	17.9	15.4	- 20.6
Not sure	12.4	8.9	- 17.1
Total	12.7	11.7	- 13.9

Usually bought electronic vapor products in a store		
Category	%	CI
Gender		
Female	6.8	5.3 - 8.7
Male	13.0	9.6 - 17.3
Race/Ethnicity		
White	10.3	8.0 - 13.1
Black	8.1	5.6 - 11.4
Hispanic	9.3	6.2 - 13.9
Other/Multiple	9.5	4.8 - 17.9
Grade		
9th	5.1	3.1 - 8.1
10th	6.4	4.4 - 9.4
11th	6.7	4.9 - 9.2
12th	17.2	13.0 - 22.2
Sexual Identity		
Heterosexual	10.1	8.0 - 12.8
LGB	8.0	5.5 - 11.5
Not sure	10.6	5.1 - 20.9
Total	9.8	8.0 - 11.9

Current cigar use		
Category	%	CI
Gender		
Female	5.6	4.9 - 6.5
Male	7.7	6.8 - 8.6
Race/Ethnicity		
White	5.5	4.7 - 6.6
Black	7.9	6.9 - 8.9
Hispanic	8.4	7.0 - 10.1
Other/Multiple	8.1	6.6 - 10.0
Grade		
9th	5.5	4.5 - 6.7
10th	4.5	3.6 - 5.5
11th	7.0	5.8 - 8.4
12th	9.9	8.3 - 11.7
Sexual Identity		
Heterosexual	6.1	5.4 - 6.8
LGB	10.2	8.4 - 12.3
Not sure	6.9	4.4 - 10.8
Total	6.7	6.1 - 7.4

Usually bought cigars, cigarillos, little cigars, or flavored cigars in a store		
Category	%	CI
Gender		
Female	25.8	20.9 - 31.4
Male	30.0	25.1 - 35.4
Race/Ethnicity		
White	23.2	17.6 - 30.0
Black	33.6	28.9 - 38.5
Hispanic	19.4	14.2 - 25.8
Other/Multiple	26.7	17.2 - 39.0
Grade		
9th	16.0	11.2 - 22.4
10th	22.6	16.3 - 30.4
11th	22.5	16.5 - 29.9
12th	42.9	36.9 - 49.1
Sexual Identity		
Heterosexual	29.7	25.9 - 33.8
LGB	22.1	16.1 - 29.5
Not sure	33.5	16.1 - 56.8
Total	28.2	24.8 - 31.8

Current use of tobacco in a waterpipe		
Category	%	CI
Gender		
Female	3.5	2.9 - 4.1
Male	3.8	3.2 - 4.5
Race/Ethnicity		
White	2.7	2.1 - 3.5
Black	4.4	3.8 - 5.1
Hispanic	6.2	4.9 - 7.8
Other/Multiple	4.8	3.8 - 6.2
Grade		
9th	3.3	2.6 - 4.3
10th	2.1	1.5 - 2.9
11th	3.5	2.7 - 4.4
12th	5.7	4.5 - 7.2
Sexual Identity		
Heterosexual	3.4	2.9 - 3.9
LGB	4.6	3.6 - 5.8
Not sure	6.2	3.9 - 9.8
Total	3.7	3.2 - 4.1

Tried first tobacco product before age 13		
Category	%	CI
Gender		
Female	6.5	5.8 - 7.3
Male	8.2	7.2 - 9.2
Race/Ethnicity		
White	5.5	4.8 - 6.3
Black	8.9	7.8 - 10.1
Hispanic	13.4	11.5 - 15.4
Other/Multiple	10.0	8.1 - 12.1
Grade		
9th	8.3	6.9 - 10.0
10th	6.6	5.6 - 7.7
11th	6.0	5.0 - 7.1
12th	8.2	6.6 - 10.3
Sexual Identity		
Heterosexual	6.6	5.9 - 7.3
LGB	11.7	10.0 - 13.8
Not sure	8.7	5.4 - 13.6
Total	7.4	6.8 - 8.0

Ever tried to quit using all tobacco products		
Category	%	CI
Gender		
Female	56.9	52.9 - 60.8
Male	50.8	46.7 - 54.8
Race/Ethnicity		
White	62.3	57.9 - 66.4
Black	42.8	39.1 - 46.6
Hispanic	44.1	38.9 - 49.4
Other/Multiple	53.1	45.9 - 60.0
Grade		
9th	49.2	43.6 - 54.9
10th	53.4	46.7 - 60.0
11th	57.7	52.5 - 62.8
12th	54.0	48.3 - 59.6
Sexual Identity		
Heterosexual	54.1	50.7 - 57.4
LGB	56.3	50.2 - 62.2
Not sure	40.3	29.2 - 52.4
Total	53.7	50.7 - 56.6

Students perceive great risk of harm from electronic vapor product use			
Category	%	CI	
Gender			
Female	43.0	41.3	- 44.8
Male	31.7	29.9	- 33.5
Race/Ethnicity			
White	42.2	40.2	- 44.2
Black	29.9	27.6	- 32.3
Hispanic	28.4	25.7	- 31.3
Other/Multiple	42.4	38.0	- 46.8
Grade			
9th	36.0	33.0	- 39.0
10th	38.3	35.8	- 40.9
11th	38.2	35.0	- 41.5
12th	37.2	34.0	- 40.6
Sexual Identity			
Heterosexual	36.8	35.2	- 38.3
LGB	39.5	36.0	- 43.0
Not sure	43.5	37.5	- 49.7
Total	37.4	35.9	- 38.8

Cuyahoga County Trend Data

The following table presents the prevalence of tobacco and electronic vapor product use behaviors and attitudes among Cuyahoga County high school students in 2011, 2013, 2015, 2017, and 2019. The prevalence for each year is given (when available), with 95% confidence intervals below.

Cuyahoga County, 2011	Cuyahoga County, 2013	Cuyahoga County, 2015	Cuyahoga County, 2017	Cuyahoga County, 2019
Ever smoked cigarettes (Smoked a cigarette, even 1 or 2 puffs, on at least 1 day during their life.)				
30.6 (29.2 - 32.0)	30.7 (29.2 - 32.2)	30.2 (28.6 - 31.8)	20.4 (19.5 - 21.4)	12.9 (12.0 - 13.9)
Current cigarette use (Smoked a cigarette on at least 1 day during the 30 days before the survey.)				
11.4 (10.5 - 12.3)	10.4 (9.4 - 11.4)	9.8 (8.8 - 10.8)	6.2 (5.7 - 6.8)	3.9 (3.3 - 4.5)
Smoked more than 10 cigarettes (Per day, on the days smoked; among the students who smoked during the 30 days before the survey.)				
9.3 (7.5 - 11.5)	12.2 (9.6 - 14.9)	n/a	10.3 (7.5 - 14.0)	n/a
*Current cigar use (Smoked a cigar, cigarillo, little cigar, or flavored cigar on at least 1 day during the 30 days before the survey.)				
16.9 (15.7 - 18.3)	15.1 (14.1 - 16.2)	15.0 (13.7 - 16.5)	13.1 (12.2 - 14.0)	6.7 (6.1 - 7.4)
*Smoked more than 10 cigars, cigarillos, little cigars, or flavored cigars per day (On the days smoked; among the students who smoked during the 30 days before the survey.)				
5.2 (3.7 - 7.2)	5.4 (3.9 - 6.9)	n/a	6.5 (5.4 - 7.9)	n/a
**Current hookah use (Smoked from a hookah or water pipe on at least 1 day during the 30 days before the survey.)				
9.1 (8.3 - 9.9)	10.6 (9.5 - 11.8)	13.0 (12.0 - 14.1)	n/a	n/a
**Current use of tobacco in a waterpipe (Smoked from a hookah, narghile or water pipe on at least 1 day during the 30 days before the survey.)				
n/a	n/a	n/a	7.4 (6.7 - 8.0)	3.7 (3.2 - 4.1)
Tried first tobacco product before age 13 years (Including cigarettes, cigars, little cigars, flavored cigars, shisha or hookah tobacco, and chewing tobacco.)				
n/a	n/a	8.9 (8.2 - 9.7)	10.9 (10.1 - 11.7)	7.4 (6.8 - 8.0)
Ever tried to quit using all tobacco products (Among students who used any tobacco products during the 12 months before the survey.)				
n/a	n/a	n/a	42.8 (40.5 - 45.1)	53.7 (50.7 - 56.6)

*In 2013, “current cigar use” and “smoked more than 10 cigars, cigarillos, little cigars per day” was revised to include flavored cigars.

** In 2017 “current hookah use” was revised to “current use of tobacco in a water pipe.” Both items are included in this table.

Cuyahoga County, 2011	Cuyahoga County, 2013	Cuyahoga County, 2015	Cuyahoga County, 2017	Cuyahoga County, 2019
Ever used an electronic vapor product (Including e-cigarettes, vapes, vape pens, e-cigars, e-hookahs, hookah pens, and mods.)				
n/a	n/a	38.0 (36.2 - 39.8)	35.5 (34.3 - 36.8)	36.9 (35.2 - 38.6)
Current electronic vapor product use (Used at least 1 day during the 30 days before the survey.)				
n/a	n/a	18.7 (17.4 - 20.0)	15.7 (14.8 - 16.7)	12.7 (11.7 - 13.9)

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ⁱⁱⁱ World Health Organization (Tobacco Free Initiative). *Waterpipe Tobacco Smoking: Health Effects, Research Needs and Recommended Actions by Regulators* (Advisory Note). Accessed on September 17, 2013 from

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