

Supplementary Table 1. Demographic characteristics of U.S. high school students in the analytic* and excluded samples – Youth Risk Behavior Survey, United States, 2025[†]		
Characteristic	Analytic sample[§]	Excluded sample
	% (95% CI)	% (95% CI)
Sex		
Female	47.3 (43.0, 51.7)	49.6 (46.6, 52.6)
Male	52.7 (48.3, 57.0)	50.4 (47.4, 53.4)
Grade		
9	27.2 (25.6, 28.8)	27.6 (23.7, 31.8)
10	25.2 (23.2, 27.4)	25.5 (22.5, 28.9)
11	24.3 (22.2, 26.5)	23.7 (21.0, 26.5)
12	23.3 (21.7, 25.0)	23.2 (21.1, 25.6)
Race and ethnicity^{¶, **}		
American Indian or Alaska Native	0.5 (0.3, 0.9)	0.8 (0.5, 1.5)
Asian	5.7 (3.8, 8.5)	5.1 (4.0, 6.3)
Black	9.5 (6.5, 13.8)	14.5 (10.3, 20.1)
Hispanic	24.6 (19.4, 30.6)	30.1 (25.3, 35.4)
Middle Eastern or North African	1.1 (0.7, 1.8)	1.2 (0.8, 1.9)
White	52.5 (45.2, 59.6)	41.8 (36.3, 47.6)
Multiracial	6.0 (5.0, 7.1)	5.8 (4.8, 7.1)
Abbreviations: CI = confidence interval; CVH = cardiovascular health; YRBS = Youth Risk Behavior Survey.		
* Students in the analytic sample had complete data for all five cardiovascular health metrics assessed in this study.		
† The analytic sample included 5,192 respondents with complete data for all five CVH metrics; 5,518 respondents missing data for one or more CVH metrics were included in the excluded sample. Data might be missing because 1) students in schools selected for both national and site-specific YRBS samples completed only one questionnaire; therefore, when the site-specific questionnaire was administered, it might not have included all questions on the national YRBS; 2) the student did not answer the question; or 3) the response was		

set to missing because of an out-of-range response or logical inconsistency. Prevalence estimates for each characteristic were calculated using nonmissing data.

[§] On the basis of t-test analysis with Taylor series linearization ($p < 0.05$), no significant differences were detected by sex or grade level. The proportion of White students in the analytic sample significantly differed from the proportion of White students in the excluded sample.

[¶] Persons of Hispanic origin might be of any race but are categorized as Hispanic; all racial groups are non-Hispanic.

** Prevalence estimates with a denominator < 30 were considered statistically unreliable and therefore were suppressed; therefore, estimates for Native Hawaiian or Pacific Islander students are not presented.

Supplementary Table 2. Prevalence of high (80–100; favorable), moderate (50–79), and low (0–49) scores for cardiovascular health metrics and overall cardiovascular health* among U.S. high school students with complete data for all five metrics – Youth Risk Behavior Survey, United States, 2025 ¹																		
Characteristic	Overall CVH			Diet			Physical activity			Nicotine exposure			Sleep health			Body mass index		
	High [§]	Moderate	Low	High [¶]	Moderate	Low	High**	Moderate	Low	High ^{††}	Moderate	Low	High ^{§§}	Moderate	Low	High ^{¶¶}	Moderate	Low
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Overall	20.7 (17.6, 24.1)	61.3 (59.0, 63.6)	18.0 (14.7, 22.0)	10.0 (8.4, 11.9)	32.1 (29.3, 34.9)	57.9 (53.7, 62.0)	49.7 (45.8, 53.6)	10.3 (9.3, 11.4)	40.0 (36.4, 43.7)	74.6 (71.1, 77.8)	4.4 (3.6, 5.3)	21.0 (18.1, 24.2)	24.9 (22.5, 27.4)	31.1 (28.5, 33.8)	44.0 (40.2, 48.0)	73.0 (70.0, 75.7)	13.1 (11.8, 14.4)	14.0 (11.9, 16.4)
Sex																		
Female	18.1 (14.7, 22.1)	62.4 (58.9, 65.8)	19.5 (15.6, 24.0)	11.5 (9.1, 14.3)	32.1 (28.9, 35.6)	56.4 (50.9, 61.7)	42.9 (38.5, 47.3)	10.4 (8.9, 12.1)	46.8 (42.5, 51.0)	72.8 (68.4, 76.7)	4.3 (3.3, 5.5)	23.0 (19.3, 27.1)	22.3 (19.6, 25.3)	28.9 (25.9, 32.1)	48.8 (44.9, 52.7)	76.4 (72.8, 79.7)	12.9 (11.1, 15.0)	10.7 (8.7, 13.1)
Male	23.0 (19.4, 27.0)	60.3 (57.6, 62.9)	16.7 (13.4, 20.6)	8.8 (7.3, 10.4)	32.0 (29.2, 34.9)	59.3 (55.5, 62.9)	55.8 (51.9, 59.7)	10.3 (9.3, 11.4)	33.9 (30.2, 37.8)	76.3 (73.0, 79.2)	4.5 (3.4, 5.8)	19.2 (16.6, 22.2)	27.2 (24.1, 30.5)	33.1 (29.6, 36.8)	39.8 (35.5, 44.2)	69.9 (66.6, 72.9)	13.2 (11.5, 15.1)	17.0 (14.3, 20.0)
Grade																		
9	27.6 (22.5, 33.4)	58.9 (55.2, 62.4)	13.5 (10.4, 17.4)	11.0 (8.8, 13.5)	32.9 (29.1, 37.0)	56.1 (51.3, 60.8)	51.3 (46.4, 56.3)	10.7 (8.5, 13.2)	38.0 (33.5, 42.7)	84.7 (79.6, 88.7)	3.6 (2.4, 5.4)	11.7 (8.5, 15.8)	31.4 (27.3, 35.8)	29.8 (27.1, 32.6)	38.9 (33.7, 44.3)	73.5 (69.3, 77.3)	13.2 (11.4, 15.2)	13.3 (10.4, 16.8)
10	22.3 (17.7, 27.5)	59.5 (55.3, 63.5)	18.2 (13.4, 24.4)	9.3 (6.8, 12.5)	33.0 (29.0, 37.3)	57.7 (52.1, 63.1)	53.5 (48.0, 58.9)	9.1 (7.4, 11.2)	37.4 (32.4, 42.7)	76.2 (70.7, 80.9)	3.0 (1.9, 4.6)	20.8 (16.6, 25.8)	26.6 (22.4, 31.2)	32.0 (28.3, 36.0)	41.4 (35.9, 47.1)	70.3 (65.8, 74.5)	14.6 (12.9, 16.5)	15.1 (11.5, 19.5)

11	16.4 (13.7, 19.6)	63.0 (58.9, 67.0)	20.6 (16.2, 25.7)	10.5 (7.9, 13.8)	31.3 (27.1, 35.8)	58.3 (52.7, 63.6)	45.8 (40.2, 51.5)	12.0 (9.8, 14.6)	42.2 (36.7, 47.9)	71.4 (65.6, 76.6)	4.6 (3.3, 6.5)	24.0 (18.5, 30.5)	20.4 (17.5, 23.6)	33.6 (29.5, 38.1)	46.0 (41.0, 51.0)	72.3 (67.9, 76.4)	12.4 (9.9, 15.3)	15.3 (11.9, 19.5)
12	15.3 (11.7, 19.8)	64.3 (59.0, 69.2)	20.4 (16.1, 25.5)	9.4 (7.1, 12.3)	30.6 (26.7, 34.8)	60.0 (54.3, 65.4)	47.6 (43.2, 52.0)	9.5 (7.6, 11.9)	42.9 (38.9, 46.9)	64.3 (59.5, 68.9)	6.5 (4.9, 8.6)	29.1 (24.6, 34.1)	20.2 (17.0, 23.8)	29.1 (25.4, 33.2)	50.7 (45.3, 56.1)	75.7 (72.1, 79.1)	11.9 (9.4, 14.9)	12.4 (10.4, 14.7)
Race and ethnicity***,†††																		
American Indian or Alaska Native	13.5 (2.8, 46.0)	58.5 (32.0, 80.9)	28.0 (9.8, 58.4)	9.1 (1.4, 41.4)	14.2 (4.7, 35.4)	76.7 (48.0, 92.1)	37.8 (16.9, 64.3)	13.2 (3.5, 38.7)	49.1 (29.1, 69.4)	71.1 (42.0, 89.3)	0.5 (0.1, 4.5)	28.4 (10.3, 57.8)	49.9 (23.5, 76.4)	15.5 (6.6, 32.2)	34.6 (14.3, 62.6)	67.2 (33.5, 89.3)	10.2 (3.3, 27.6)	22.6 (5.9, 57.4)
Asian	24.0 (17.9, 31.2)	69.7 (62.2, 76.2)	6.4 (3.4, 11.5)	14.8 (10.7, 20.1)	41.4 (36.1, 46.8)	43.9 (38.6, 49.3)	46.1 (39.9, 52.4)	14.0 (10.6, 18.2)	40.0 (34.4, 45.8)	90.0 (85.9, 93.0)	2.7 (1.2, 6.0)	7.3 (4.6, 11.5)	18.6 (11.5, 28.6)	32.3 (24.6, 41.0)	49.1 (38.1, 60.2)	86.5 (80.8, 90.8)	8.4 (5.8, 12.2)	5.0 (2.3, 10.6)
Black	11.2 (9.0, 13.7)	65.0 (61.5, 68.5)	23.8 (20.8, 27.0)	4.6 (3.2, 6.6)	25.9 (21.3, 31.0)	69.6 (65.2, 73.6)	40.5 (36.7, 44.5)	10.3 (8.4, 12.6)	49.1 (45.3, 52.9)	76.2 (72.1, 79.8)	3.1 (2.0, 4.8)	20.8 (17.2, 24.8)	22.2 (18.1, 26.8)	23.2 (20.5, 26.2)	54.6 (50.1, 59.0)	66.1 (63.2, 68.8)	15.3 (13.1, 17.8)	18.7 (16.3, 21.3)
Hispanic	14.9 (12.4, 17.8)	63.0 (59.8, 66.1)	22.1 (18.5, 26.0)	8.5 (6.5, 10.9)	30.3 (27.6, 33.2)	61.3 (57.2, 65.2)	41.2 (36.8, 45.7)	10.9 (9.3, 12.8)	47.9 (43.2, 52.6)	73.7 (68.5, 78.3)	4.1 (3.1, 5.4)	22.2 (18.0, 27.1)	24.8 (20.0, 30.3)	30.7 (27.8, 33.6)	44.5 (38.2, 51.1)	66.4 (62.5, 70.1)	14.9 (12.7, 17.4)	18.7 (16.6, 21.0)
Middle Eastern or North African	37.2 (21.8, 55.7)	44.0 (29.0, 60.1)	18.8 (6.7, 42.8)	27.7 (14.2, 46.9)	33.6 (20.5, 49.8)	38.7 (23.9, 56.0)	43.8 (28.8, 60.0)	15.3 (5.9, 34.4)	40.9 (27.5, 55.8)	85.6 (66.7, 94.6)	2.5 (0.8, 7.4)	11.9 (3.6, 32.8)	30.7 (18.1, 47.1)	41.6 (26.2, 58.8)	27.7 (12.7, 50.2)	56.9 (39.9, 72.4)	25.0 (13.3, 42.0)	18.1 (7.3, 38.3)
Multiracial	21.0 (15.7, 27.4)	62.4 (56.2, 68.3)	16.6 (10.9, 24.4)	10.8 (7.7, 14.9)	31.8 (23.5, 41.6)	57.4 (47.9, 66.3)	54.2 (48.0, 60.2)	11.0 (6.9, 17.0)	34.9 (28.6, 41.7)	73.5 (64.4, 81.0)	5.3 (3.0, 9.0)	21.2 (14.8, 29.5)	19.8 (14.7, 26.3)	31.2 (22.9, 40.9)	49.0 (41.4, 56.6)	74.8 (68.0, 80.5)	13.3 (9.0, 19.1)	11.9 (7.1, 19.3)
White	24.3 (20.6, 28.5)	59.3 (55.7, 62.7)	16.4 (12.0, 22.2)	10.7 (8.5, 13.5)	33.1 (29.4, 37.1)	56.2 (50.6, 61.6)	55.3 (50.4, 60.1)	9.5 (8.1, 11.0)	35.2 (30.8, 39.9)	73.1 (68.5, 77.2)	4.9 (3.8, 6.2)	22.1 (18.5, 26.1)	26.1 (23.6, 28.8)	32.6 (29.3, 36.1)	41.2 (36.8, 45.8)	76.1 (72.3, 79.5)	12.1 (10.4, 14.0)	11.9 (9.2, 15.1)

Abbreviations: AI/AN = American Indian or Alaska Native; CI = confidence interval; CVH = cardiovascular health; ME/NA = Middle Eastern or North African; YRBS = Youth Risk Behavior Survey.

* Refer to Table 1 for details on the construction and scoring of each of the five CVH metrics. An overall CVH score was calculated for each student as the mean of the five metric scores.

† N = 5,192 respondents with complete data for all five CVH metrics (complete case analysis). Students with missing data were excluded. The total number (N) of students answering each question varied. Data may be missing because 1) students in schools selected for both national and site-specific YRBS samples completed only one questionnaire; when the site-specific questionnaire was administered, it might not have included all questions on the national YRBS, 2) the student did not answer the question, or 3) the response was set to missing because of an out-of-range response or logical inconsistency. Prevalence estimates in each category are calculated based on nonmissing data.

‡ As determined by t test analysis with Taylor series linearization ($p < 0.05$), female students significantly differed from male students; students in grade 9 significantly differed from students in grades 10, 11, and 12; students in grade 10 significantly differed from students in grades 11 and 12; AI/AN students significantly differed from ME/NA students; Asian students significantly differed from Black and Hispanic students; Black students significantly differed from Hispanic, ME/NA, White, and multiracial students; and Hispanic students significantly differed from ME/NA, White, and multiracial students.

§ As determined by t test analysis with Taylor series linearization ($p < 0.05$), female students significantly differed from male students; no significant differences were detected by grade level; Asian students significantly differed from Black and Hispanic students; Black students significantly differed from Hispanic, ME/NA, White, and multiracial students; Hispanic students significantly differed from ME/NA students; and ME/NA students significantly differed from White students.

** As determined by t test analysis with Taylor series linearization ($p < 0.05$), female students significantly differed from male students; students in grade 9 significantly differed from students in grade 11; students in grade 10 significantly differed from students in grades 11 and 12; Asian students significantly differed from White and multiracial students; Black students significantly differed from White and multiracial students; and Hispanic students significantly differed from White and multiracial students.

^{††} As determined by t test analysis with Taylor series linearization ($p < 0.05$), female students significantly differed from male students; students in grade 9 significantly differed from students in grades 10, 11, and 12; students in grade 10 significantly differed from students in grades 11 and 12; students in grade 11 significantly differed from students in grade 12; Asian students significantly differed from Black, Hispanic, White, and multiracial students.

^{†††} As determined by t test analysis with Taylor series linearization ($p < 0.05$), female students significantly differed from male students; students in grade 9 significantly differed from students in grades 10, 11, and 12; students in grade 10 significantly differed from students in grades 11 and 12; AI/AN students significantly differed from Asian and multiracial students; White students significantly differed from multiracial students.

^{††††} As determined by t test analysis with Taylor series linearization ($p < 0.05$), female students significantly differed from male students; students in grade 10 significantly differed from students in grade 12; Asian students significantly differed from Black, Hispanic, ME/NA, White, and multiracial students; Black students significantly differed from White and multiracial students; Hispanic students significantly differed from White and multiracial students; and ME/NA students significantly differed from White and multiracial students.

*** Persons of Hispanic origin might be of any race but are categorized as Hispanic; all racial groups are non-Hispanic.

^{†††††} Prevalence estimates with a denominator < 30 were considered statistically unreliable and therefore were suppressed; therefore, estimates for Native Hawaiian or Pacific Islander students are not presented.

Supplementary Figure. Flow diagram of participant inclusion and exclusion – Youth Risk Behavior Survey, United States, 2025

