SUPPLEMENTAL MATERIAL

Data S1.

Expanded Methods. Description of Population Attributable Fraction Methodology

Population Attributable Fractions and Events Prevented

We calculated age-, sex-, and race/ethnicity-specific population attributable fractions (PAFs) to estimate the proportion of CVD events that could hypothetically be prevented (or postponed), assuming a causal relationship, if the entire US adult population (or subgroups) had high CVH, using the following formula:

$$PAF = \frac{\sum_{i=1}^{k} p_i(HR_i - 1)}{1 + \sum_{i=1}^{k} p_i(HR_i - 1)}$$

where p_i is the proportion of CVH level i, HR_i is the age- and race-adjusted hazard ratio of CVD comparing CVH level i to the reference high CVH level, and k is the total number of CVH levels. For example, to calculate the estimated PAF for black women aged 40-59 years:

$$PAF = \frac{0.213(3.16 - 1) + 0.766(8.64 - 1)}{1 + 0.213(3.16 - 1) + 0.766(8.64 - 1)} = 86.3\%$$

We then multiplied the age-, sex-, and race/ethnicity-specific PAFs by the corresponding number of annual CVD events to estimate the absolute number of annual events that could be prevented. This process was conducted for each age, sex, and race/ethnicity, and aggregated. For example, to calculate the estimated number of annual CVD events prevented for black women aged 40-59 years:

$$Events\ Prevented = PAF * No.of\ Expected\ Events = 0.863 * 61424 = 53009$$

In a sensitivity analysis, we calculated potential impact fractions (PIFs) for the continuous CVH score with a similar overall approach, but using the following formula:

$$PIF = \frac{\int_{x=0}^{m} HR(x)P(x)dx - \int_{x=0}^{m} HR(x)P'(x)dx}{\int_{x=0}^{m} HR(x)P(x)dx}$$

where *HR(x)* is the hazard ratio for a 1-unit increase in CVH score, *P(x)* is the population distribution of the CVH score, *P'(x)* is the counterfactual distribution of the CVH score (e.g., the mean CVH score is increased 1 point in the US population), and *m* is the maximum CVH score (14; i.e., the theoretical minimum risk level).

Uncertainty Estimation

We accounted for uncertainty in our estimation of the proportions of CVH score categories, incidence rates, and hazard ratios of CVD using Monte Carlo simulation. For each age-, sex-, and race/ethnicity-specific PAF calculation, numbers were randomly generated from assumed distributions for the prevalence of CVH level *i* (normal distribution with mean p_i and standard error SE_{pi}; calculated using SAS PROC SURVEYFREQ) and the HR comparing CVH level *i* to high CVH (log-normal distribution with mean HR_i and SE_{HRi}; calculated using Cox proportional hazards regression). Next, the incidence rate (*IR*) of CVD was calculated using Poisson regression and the point estimate multiplied by the respective US population number to estimate the total number of annual CVD events, overall and by subgroup. Numbers of expected CVD events were assumed to be fixed. Finally, the PAF was multiplied by the total number of events to estimate the number of events prevented. For each age-, sex-, and race/ethnicity-specific calculation, 10,000 simulations were conducted for the PAF and events prevented. The 2.5th and 97.5th percentile estimates of the simulated distributions were used to form 95% confidence intervals. The same general approach was used for calculation of PAFs for the individual CVH metrics, and for calculation of PIFs.

Table S1. Proportions of US Adults Meeting Recommended Levels of Cardiovascular Health Metrics by Age Group, Sex, and Race: The Lifetime Risk Pooling Project.

Health Metric	Definition		Participants in CVH Categories, No. (%)							
				Sex		Race		Age Group		
			All Participants	Men	Women	White/other	Black	Aged 20-39 y	Aged 40-59 y	Aged ≥60 y
Smoking	Ideal	Never or quit >12 months	14278 (46.9)	4476 (37.3)	9802 (53.2)	9505 (45.8)	4773 (49.2)	2369 (55.9)	6347 (44.0)	5562 (47.2)
	Intermediate	Former, quit ≤12 months	9847 (32.3)	4831 (40.2)	5016 (27.2)	7076 (34.1)	2771 (28.6)	619 (14.6)	4594 (31.8)	4634 (39.3)
	Poor	Current	6322 (20.8)	2701 (22.5)	3621 (19.6)	4172 (20.1)	2150 (22.2)	1248 (29.5)	3491 (24.2)	1583 (13.4)
Body mass index, kg/m^2	Ideal	<25	11154 (36.6)	3889 (32.4)	7265 (39.4)	8443 (40.7)	2711 (28.0)	2697 (63.7)	4666 (32.3)	3791 (32.2)
	Intermediate	25-29.99	11407 (37.5)	5567 (46.4)	5840 (31.7)	8038 (38.7)	3369 (34.8)	1019 (24.1)	5568 (38.6)	4820 (40.9)
	Poor	≥30	7886 (25.9)	2552 (21.3)	5334 (28.9)	4272 (20.6)	3614 (37.3)	520 (12.3)	4198 (29.1)	3168 (26.9)
Physical activity *	Ideal	Fourth quartile	7767 (25.5)	3917 (32.6)	3850 (20.9)	5786 (27.9)	1981 (20.4)	1058 (25.0)	3732 (25.9)	2977 (25.3)
	Intermediate	Third and second quartiles	15122 (49.7)	5849 (48.7)	9273 (50.3)	10463 (50.4)	4659 (48.1)	2119 (50.0)	7116 (49.3)	5887 (50.0)
	Poor	First quartile	7558 (24.8)	2242 (18.7)	5316 (28.8)	4504 (21.7)	3054 (31.5)	1059 (25.0)	3584 (24.8)	2915 (24.7)
Healthy diet score †	Ideal	Fifth and fourth quintiles	5450 (17.9)	1568 (13.1)	3882 (21.1)	3546 (17.1)	1904 (19.6)	847 (20.0)	2539 (17.6)	2064 (17.5)
	Intermediate	Third and second quintiles	11898 (39.1)	4337 (36.1)	7561 (41.0)	8063 (38.9)	3835 (39.6)	1695 (40.0)	5686 (39.4)	4517 (38.3)
	Poor	First quintile	13099 (43.0)	6103 (50.8)	6996 (37.9)	9144 (44.1)	3955 (40.8)	1694 (40.0)	6207 (43.0)	5198 (44.1)
Total cholesterol, mg/dL	Ideal	<200 (untreated)	13013 (42.7)	5874 (48.9)	7139 (38.7)	8768 (42.2)	4245 (43.8)	3226 (76.2)	5887 (40.8)	3900 (33.1)
	Intermediate	200-239 or treated to goal	11410 (37.5)	4373 (36.4)	7037 (38.2)	8006 (38.6)	3404 (35.1)	826 (19.5)	5532 (38.3)	5052 (42.9)
	Poor	≥240	6024 (19.8)	1761 (14.7)	4263 (23.1)	3979 (19.2)	2045 (21.1)	184 (4.3)	3013 (20.9)	2827 (24.0)
Blood pressure, mm Hg	Ideal	<120/<80 (untreated)	11668 (38.3)	4417 (36.8)	7251 (39.3)	8796 (42.4)	2872 (29.6)	3171 (74.9)	6250 (43.3)	2247 (19.1)
	Intermediate	120-139/80-89 or treated to goal	12477 (41.0)	5236 (43.6)	7241 (39.3)	8219 (39.6)	4258 (43.9)	963 (22.7)	5952 (41.2)	5562 (47.2)
	Poor	≥140/90	6302 (20.7)	2355 (19.6)	3947 (21.4)	3738 (18.0)	2564 (26.4)	102 (2.4)	2230 (15.5)	3970 (33.7)
Fasting glucose, mg/dL	Ideal	<100 (untreated)	19625 (64.5)	6961 (58.0)	12664 (68.7)	13094 (63.1)	6531 (67.4)	4099 (96.8)	8924 (61.8)	6602 (56.0)
	Intermediate	100-125 or treated to goal	8549 (28.1)	4139 (34.5)	4410 (23.9)	6355 (30.6)	2194 (22.6)	109 (2.6)	4522 (31.3)	3918 (33.3)
	Poor	≥126	2273 (7.5)	908 (7.6)	1365 (7.4)	1304 (6.3)	969 (10.0)	28 (0.7)	986 (6.8)	1259 (10.7)
Total CVH Score ‡	High	12-14 points	2270 (7.5)	763 (6.4)	1507 (8.2)	1853 (8.9)	417 (4.3)	992 (23.4)	922 (6.4)	356 (3.0)
	Moderate	9-11 points	10937 (35.9)	4276 (35.6)	6661 (36.1)	7790 (37.5)	3147 (32.5)	2301 (54.3)	5138 (35.6)	3498 (29.7)
	Low	0-8 points	17240 (56.6)	6969 (58.0)	10271 (55.7)	11110 (53.5)	6130 (63.2)	943 (22.3)	8372 (58.0)	7925 (67.3)

CVH, cardiovascular health; LRPP, Cardiovascular Disease Lifetime Risk Pooling Project

* In the LRPP, Z-scores were calculated from the distribution of physical activity scores in each individual cohort, measured using different metrics, and quartiles were computed. Ideal: 4th quartile; intermediate: 3rd and 2nd quartiles; poor: 1st quartile.

† In the LRPP, the Alternate Healthy Eating Index (AHEI-2010) was calculated in each individual cohort and quintiles were computed. Ideal: 5th and 4th quintiles; intermediate: 3rd and 2nd quintiles; poor: 1st quintile

‡ The total CVH score represents the sum of individual metric point values and ranges from 0 to 14. Each individual metric was scored as ideal (2 points), intermediate (1 point), or poor (0 points). We defined overall CVH as high (12-14 points), moderate (9-11 points), or low (0-8 points).

Table S2. Proportions of US Adults Meeting Cardiovascular Health Metrics by Age Group: NHANES 2011-2016.

Health Metric	Definition		Proportion of US Adults, % (95% CI)		
			Aged 20-39 y	Aged 40-59 y	Aged ≥60 y
Smoking	Ideal	Never or quit >12 months	74.5 (72.1-77.0)	75.7 (73.5-77.9)	88.2 (86.8-89.6)
	Intermediate	Former, quit ≤12 months	4.3 (3.2-5.5)	2.5 (1.6-3.4)	1.1 (0.7-1.6)
	Poor	Current	21.2 (19.1-23.2)	21.8 (19.4-24.1)	10.6 (9.4-11.9)
Body mass index, kg/m^2	Ideal	<25	35.9 (33.0-38.7)	25.9 (23.8-28.0)	25.1 (22.6-27.7)
	Intermediate	25-29.99	30.2 (27.9-32.4)	33.7 (31.2-36.2)	35.8 (33.5-38.0)
	Poor	≥30	33.9 (31.5-36.4)	40.4 (37.5-43.3)	39.1 (36.3-41.9)
Physical activity	Ideal	≥150 min/week moderate or ≥75 min/week vigorous or ≥150 combination	48.9 (46.0-51.8)	36.7 (33.7-39.8)	29.9 (27.2-32.6)
	Intermediate	1 to 149 min/week moderate or 1 to 74 min/week vigorous or 1 to 149 min/week combination	15.5 (14.1-16.9)	18.7 (16.0-21.5)	16.4 (14.5-18.3)
	Poor	None	35.6 (32.4-38.8)	44.5 (41.0-48.1)	53.7 (50.6-56.8)
Healthy diet score [a]	Ideal	4-5 components	0.2 (0.1-0.3)	0.6 (0.3-0.8)	1.4 (1.0-1.8)
	Intermediate	2-3 components	19.6 (17.3-21.8)	24.6 (21.9-27.4)	32.0 (29.1-34.8)
	Poor	0-1 components	80.2 (77.9-82.5)	74.8 (72.1-77.6)	66.6 (63.7-69.6)
Total cholesterol, mg/dL	Ideal	<200 (untreated)	71.5 (68.9-74.1)	36.4 (33.7-39.1)	25.8 (23.7-28.0)
	Intermediate	200-239 or treated to goal	22.0 (19.6-24.3)	45.6 (42.6-48.7)	62.1 (59.7-64.6)
	Poor	≥240	6.5 (5.4-7.6)	18.0 (16.1-19.9)	12.0 (10.6-13.5)
Blood pressure, mm Hg	Ideal	<120/<80 (untreated)	64.9 (62.8-67.0)	36.5 (34.0-39.1)	15.5 (13.0-18.0)
	Intermediate	120-139/80-89 or treated to goal	30.1 (28.1-32.2)	49.3 (46.5-52.0)	54.7 (51.7-57.6)
	Poor	≥140/90	5.0 (4.1-5.8)	14.2 (12.5-15.9)	29.9 (27.4-32.3)
HbA1c, % [†]	Ideal	<5.7 (untreated)	87.5 (85.8-89.1)	64.3 (61.7-66.9)	42.4 (39.6-45.1)
	Intermediate	5.7-6.5 or treated to goal	10.4 (9.1-11.8)	26.3 (23.9-28.8)	42.9 (40.3-45.5)
	Poor	≥6.5	2.1 (1.5-2.7)	9.4 (7.8-10.9)	14.7 (13.2-16.2)
Total CVH Score [‡]	High	12-14 points	13.5 (11.7-15.4)	5.2 (3.9-6.4)	1.8 (1.2-2.5)
	Moderate	9-11 points	47.6 (45.3-49.9)	30.0 (27.0-32.9)	21.9 (18.9-24.8)
	Low	0-8 points	38.9 (36.0-41.7)	64.9 (61.7-68.1)	76.3 (73.1-79.4)

CI, confidence interval; CVH, cardiovascular health; HbA1c, glycated hemoglobin; NHANES, National Health and Nutrition Examination Survey

* The 5 dietary score components include ≥4.5 cups/day of fruits/vegetables, ≥2 servings of fish per week (3.5 oz), ≥3 servings of whole grains per day (1 oz), <1500 mg/day of sodium, and <450 kcal/week of sugar-sweetened beverages. Dietary values are scaled to a 2000 kcal/day diet.

[†] Given that fasting plasma glucose values were only available for a subsample of NHANES participants, we used HbA1c values as a proxy for fasting glucose levels (fasting plasma glucose ≥126 mg/dL = HbA1c ≥6.5%; fasting plasma glucose 100-125 mg/dL = HbA1c 5.7-6.4%; fasting plasma glucose <100 mg/dL untreated = HbA1c <5.7% untreated), as suggested by the American Diabetes Association.

[‡] The total CVH score represents the sum of individual metric point values and ranges from 0 to 14. Each individual metric was scored as ideal (2 points), intermediate (1 point), or poor (0 points). We defined overall CVH as high (12-14 points), moderate (9-11 points), or low (0-8 points).

Table S3. Characteristics of US Adults in CVH Groups by Age Group, Sex, Race, and Cardiovascular Health: NHANES 2011-2016.

Characteristics *	White/other Men, CVH			Black Men, CVH			White/other Women, CVH			Black Women, CVH		
	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
Aged 20-39 years												
Age, years	31.0 (0.3)	28.5 (0.4)	27.4 (0.5)	30.3 (0.5)	26.9 (0.6)	24.9 (0.6)	30.0 (0.3)	29.3 (0.3)	28.6 (0.8)	30.4 (0.4)	27.2 (0.7)	27.9 (1.8)
Current smoking, %	66.6 (3.3)	37.4 (4.5)	0.0 (0.0)	77.7 (5.2)	56.1 (7.5)	0.0 (0.0)	84.1 (2.6)	40.1 (5.8)	0.0 (0.0)	82.3 (4.8)	52.2 (12.4)	0.0 (0.0)
Antihypertensive med. use, %	5.9 (1.1)	1.3 (0.7)	0.0 (0.0)	10.4 (2.6)	1.2 (0.7)	0.0 (0.0)	6.2 (1.4)	0.9 (0.3)	0.0 (0.0)	14.5 (2.8)	0.8 (0.8)	0.0 (0.0)
Lipid-lowering med. use, %	4.2 (1.0)	1.1 (0.7)	0.0 (0.0)	3.7 (1.7)	0.3 (0.3)	0.0 (0.0)	2.2 (0.9)	0.6 (0.4)	0.0 (0.0)	2.8 (0.8)	0.0 (0.0)	0.0 (0.0)
History of diabetes, %	3.4 (1.0)	0.4 (0.2)	0.0 (0.0)	7.5 (2.4)	0.0 (0.0)	0.0 (0.0)	4.4 (1.3)	0.9 (0.5)	0.7 (0.6)	8.1 (2.4)	0.0 (0.0)	0.0 (0.0)
Body mass index, kg/m^2	31.9 (0.4)	26.5 (0.3)	23.4 (0.3)	32.3 (0.6)	25.8 (0.6)	22.9 (0.4)	33.8 (0.6)	26.6 (0.3)	22.3 (0.3)	35.1 (0.5)	28.9 (0.5)	23.7 (1.0)
Leisure physical activity, min/wk	163 (17)	456 (26)	596 (41)	342 (52)	633 (64)	1227 (271)	96 (20)	266 (22)	610 (67)	81 (13)	374 (82)	697 (147)
AHA healthy diet score	0.5 (0.0)	0.7 (0.0)	1.4 (0.1)	0.6 (0.1)	0.5 (0.1)	0.9 (0.2)	0.6 (0.0)	1.0 (0.1)	1.5 (0.1)	0.6 (0.1)	0.7 (0.1)	1.6 (0.3)
Total cholesterol, mg/dL	202.2 (1.9)	177.1 (1.8)	162.7 (2.2)	192.7 (4.1)	165.0 (2.1)	151.0 (4.7)	189.9 (2.0)	176.8 (1.5)	170.6 (2.1)	180.1 (2.3)	171.1 (2.5)	160.6 (4.5)
Systolic blood pressure, mmHg	122.9 (0.7)	117.2 (0.5)	110.7 (0.8)	128.4 (1.2)	119.3 (1.3)	112.0 (0.9)	115.3 (0.7)	109.3 (0.7)	105.7 (0.7)	117.9 (1.1)	111.1 (1.1)	107.0 (2.1)
Diastolic blood pressure, mmHg	74.0 (0.7)	68.9 (0.5)	65.1 (1.1)	72.3 (1.3)	65.7 (1.0)	65.7 (1.1)	70.2 (0.6)	66.6 (0.6)	65.8 (0.8)	71.3 (0.9)	66.0 (0.9)	64.5 (1.3)
Hemoglobin A1c, %	5.5 (0.0)	5.2 (0.0)	5.1 (0.0)	5.8 (0.1)	5.3 (0.0)	5.2 (0.1)	5.4 (0.1)	5.1 (0.0)	5.1 (0.0)	5.7 (0.1)	5.3 (0.0)	5.2 (0.1)
Aged 40-59 years												
Age, years	50.4 (0.2)	49.0 (0.5)	47.8 (1.1)	50.2 (0.4)	49.1 (0.7)	42.4 (0.4)	50.7 (0.3)	48.9 (0.4)	48.1 (0.7)	50.2 (0.5)	46.8 (0.6)	46.8 (1.3)
Current smoking, %	51.4 (3.4)	11.0 (3.2)	0.0 (0.0)	72.4 (4.7)	35.7 (12.7)	0.0 (0.0)	58.3 (3.9)	21.7 (4.6)	0.0 (0.0)	65.7 (5.3)	27.0 (13.6)	0.0 (0.0)
Antihypertensive med. use, %	26.2 (1.8)	8.2 (2.1)	1.9 (1.2)	42.6 (3.2)	13.0 (4.8)	0.0 (0.0)	28.8 (2.3)	12.3 (2.2)	0.6 (0.6)	49.1 (3.0)	11.3 (3.6)	11.1 (11.1)
Lipid-lowering med. use, %	21.5 (1.7)	10.2 (2.4)	7.6 (4.8)	26.8 (3.4)	3.8 (1.8)	0.0 (0.0)	21.8 (1.6)	7.5 (2.4)	0.2 (0.2)	19.1 (2.8)	4.2 (2.2)	0.0 (0.0)
History of diabetes, %	13.9 (1.7)	2.2 (0.7)	0.0 (0.0)	18.2 (2.4)	6.1 (3.2)	0.0 (0.0)	15.0 (1.3)	2.7 (1.4)	0.0 (0.0)	15.5 (2.1)	4.1 (2.3)	0.0 (0.0)
Body mass index, kg/m^2	30.5 (0.3)	27.1 (0.2)	24.1 (0.4)	31.2 (0.4)	27.0 (0.6)	21.4 (0.6)	32.4 (0.3)	25.4 (0.3)	22.4 (0.2)	35.3 (0.5)	28.1 (0.6)	22.9 (0.4)
Leisure physical activity, min/wk	118 (15)	392 (40)	653 (123)	193 (31)	632 (140)	528 (129)	82 (8)	278 (17)	655 (156)	160 (26)	300 (56)	518 (81)
AHA healthy diet score	0.7 (0.0)	1.1 (0.1)	1.8 (0.1)	0.7 (0.0)	1.2 (0.1)	0.9 (0.7)	0.9 (0.0)	1.4 (0.1)	1.8 (0.1)	0.8 (0.1)	1.3 (0.1)	2.2 (0.5)
Total cholesterol, mg/dL	209.3 (2.1)	193.2 (2.2)	181.5 (2.9)	193.6 (2.7)	180.3 (4.2)	163.7 (22.1)	213.6 (1.9)	203.0 (2.7)	179.7 (3.3)	201.8 (2.9)	184.1 (3.4)	174.6 (5.1)
Systolic blood pressure, mmHg	126.6 (0.9)	117.0 (0.9)	113.9 (1.8)	130.3 (1.2)	122.0 (1.6)	114.8 (3.1)	123.9 (0.8)	115.0 (1.0)	108.6 (1.2)	130.8 (1.1)	115.9 (1.1)	113.1 (4.8)
Diastolic blood pressure, mmHg	77.1 (0.5)	73.2 (0.5)	69.7 (0.9)	78.6 (0.8)	73.2 (0.9)	72.7 (4.3)	73.5 (0.4)	71.5 (0.6)	67.8 (0.9)	75.3 (0.7)	70.4 (0.8)	69.8 (2.1)
Hemoglobin A1c, %	5.9 (0.1)	5.3 (0.0)	5.3 (0.1)	6.3 (0.1)	5.5 (0.1)	5.5 (0.1)	5.9 (0.0)	5.3 (0.0)	5.2 (0.0)	6.2 (0.1)	5.4 (0.1)	5.1 (0.1)
Aged ≥60 years												
Age, years	69.1 (0.3)	69.8 (0.5)	66.9 (1.1)	68.1 (0.5)	70.3 (1.0)	71.7 (2.2)	70.1 (0.3)	69.4 (0.7)	69.0 (1.5)	68.3 (0.4)	69.2 (1.3)	71.4 (2.7)
Current smoking, %	25.6 (1.9)	0.5 (0.4)	0.0 (0.0)	42.7 (3.9)	5.6 (4.2)	0.0 (0.0)	25.7 (2.5)	4.7 (2.2)	0.0 (0.0)	32.0 (4.2)	2.2 (2.3)	0.0 (0.0)
Antihypertensive med. use, %	52.6 (2.3)	28.5 (3.8)	6.3 (5.5)	68.9 (2.5)	34.3 (5.4)	33.5 (22.2)	59.6 (1.9)	39.1 (4.8)	15.7 (8.8)	72.4 (2.1)	42.6 (9.2)	52.4 (25.4)
Lipid-lowering med. use, %	52.8 (2.7)	32.1 (4.1)	18.2 (13.0)	45.1 (3.0)	18.6 (5.0)	0.0 (0.0)	43.1 (1.9)	33.3 (4.8)	15.6 (7.2)	47.6 (3.7)	17.1 (6.9)	0.0 (0.0)
History of diabetes, %	29.1 (2.0)	5.3 (1.5)	0.0 (0.0)	33.1 (3.1)	13.5 (4.5)	0.0 (0.0)	18.0 (1.5)	3.7 (1.1)	1.8 (1.8)	33.4 (2.7)	3.9 (3.0)	0.0 (0.0)
Body mass index, kg/m^2	30.5 (0.3)	25.4 (0.3)	21.7 (0.7)	29.4 (0.4)	26.2 (0.5)	22.2 (1.1)	30.3 (0.3)	25.5 (0.5)	22.1 (0.6)	33.2 (0.5)	27.3 (0.7)	23.3 (1.2)
Leisure physical activity, min/wk	110 (10)	427 (41)	431 (47)	65 (8)	508 (84)	592 (179)	69 (5)	327 (50)	594 (99)	67 (10)	328 (36)	248 (63)
AHA healthy diet score	1.0 (0.0)	1.4 (0.1)	2.2 (0.1)	0.9 (0.0)	1.6 (0.1)	2.1 (0.9)	1.2 (0.0)	1.9 (0.1)	2.0 (0.2)	1.1 (0.1)	1.7 (0.2)	3.3 (0.4)
Total cholesterol, mg/dL	180.5 (2.1)	180.6 (2.8)	167.0 (6.4)	185.0 (3.3)	172.9 (3.6)	157.7 (10.6)	205.3 (1.6)	199.7 (3.4)	189.9 (4.6)	201.9 (2.4)	190.7 (5.2)	182.2 (9.0)
Systolic blood pressure, mmHg	132.5 (0.7)	123.8 (1.3)	113.5 (3.6)	137.6 (1.4)	130.7 (2.2)	116.2 (3.0)	134.6 (0.8)	123.1 (1.5)	115.5 (2.1)	137.9 (1.4)	128.7 (3.1)	126.5 (3.7)
Diastolic blood pressure, mmHg	68.7 (0.5)	68.3 (0.7)	62.5 (2.2)	71.4 (1.2)	69.2 (1.3)	63.3 (0.7)	67.9 (0.6)	67.4 (1.0)	64.4 (1.9)	67.3 (0.9)	68.5 (1.9)	69.7 (3.9)
Hemoglobin A1c, %	6.1 (0.0)	5.5 (0.0)	5.3 (0.1)	6.3 (0.1)	5.7 (0.1)	5.5 (0.2)	5.9 (0.0)	5.5 (0.0)	5.1 (0.1)	6.3 (0.1)	5.6 (0.1)	5.1 (0.1)

AHA, American Heart Association; CVH, cardiovascular health; DBP, diastolic blood pressure; HDL, high-density lipoprotein; SBP, systolic blood pressure

* Values are expressed as mean (standard error) or % (standard error) taking into consideration the complex survey design of the National Health and Nutrition Examination Survey 2011-2016

Table S4. Characteristics of US Adults in CVH Groups by Age Group, Sex, Race, and Cardiovascular Health: The Lifetime Risk Pooling Project.

Characteristics *	White/other Men, CVH			Black Men, CVH			White/other Women, CVH			Black Women, CVH		
	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High
Aged 20-39 years												
Age, years	27.8 (4.6)	26.4 (4.0)	26.6 (3.5)	26.1 (3.3)	25.0 (3.1)	24.8 (3.1)	26.6 (4.2)	26.8 (4.0)	26.8 (3.8)	26.0 (3.3)	25.1 (3.3)	25.1 (3.3)
Current smoking, %	58.0	25.6	2.4	64.9	29.4	1.1	76.8	31.6	3.1	59.3	23.1	2.5
Antihypertensive med. use, %	5.8	1.6	0.3	6.2	1.5	0.0	2.4	1.9	0.2	8.6	2.5	0.0
Lipid-lowering med. use, %	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
History of diabetes, %	0.5	0.2	0.0	1.0	0.0	0.0	2.4	0.3	0.0	0.8	0.3	0.0
Body mass index, kg/m^2	27.5 (4.7)	24.5 (3.4)	22.9 (2.0)	27.0 (5.0)	24.1 (3.6)	22.9 (2.2)	28.1 (6.7)	23.2 (4.1)	21.7 (2.3)	29.7 (7.4)	24.9 (5.8)	22.4 (2.5)
Physical activity, z-score	-0.13 (1.02)	0.21 (0.92)	0.77 (1.03)	-0.27 (0.85)	0.36 (1.08)	1.03 (1.12)	-0.63 (0.58)	-0.24 (0.73)	0.39 (0.89)	-0.82 (0.51)	-0.48 (0.69)	0.27 (0.82)
aHEI diet score	39.7 (8.8)	46.4 (10.8)	58.0 (11.5)	36.9 (8.6)	42.3 (10.1)	51.8 (15.2)	41.5 (9.9)	51.0 (10.5)	61.4 (9.5)	40.5 (8.1)	44.6 (10.1)	56.0 (11.2)
Total cholesterol, mg/dL	201.7 (37.7)	176.7 (32.0)	164.2 (23.8)	192.3 (40.7)	175.8 (31.7)	164.9 (24.8)	191.4 (34.0)	178.9 (31.2)	168.6 (24.8)	189.8 (38.8)	174.9 (30.2)	168.1 (24.8)
Systolic blood pressure, mmHg	120.3 (11.9)	114.7 (9.9)	111.2 (8.3)	121.3 (11.0)	115.6 (9.8)	110.5 (8.8)	109.4 (11.0)	105.1 (9.8)	103.1 (7.8)	112.1 (11.1)	106.9 (9.0)	104.8 (8.1)
Diastolic blood pressure, mmHg	75.1 (11.3)	70.9 (9.1)	69.6 (7.6)	75.0 (10.7)	70.8 (9.5)	69.7 (7.7)	68.0 (9.4)	66.6 (8.6)	65.2 (7.1)	70.2 (10.5)	66.6 (8.6)	66.0 (7.5)
Fasting glucose, mg/dL	88.3 (16.5)	85.8 (10.3)	84.1 (7.3)	85.9 (14.9)	83.4 (8.0)	81.2 (6.8)	86.6 (27.8)	81.5 (12.0)	81.0 (6.6)	85.4 (31.2)	79.2 (15.2)	77.8 (7.8)
Aged 40-59 years												
Age, years	52.2 (4.5)	51.6 (4.5)	50.6 (4.5)	52.0 (4.3)	51.1 (4.3)	49.7 (4.3)	52.2 (4.5)	51.0 (4.5)	50.2 (4.4)	52.9 (4.1)	52.7 (4.1)	52.7 (4.0)
Current smoking, %	33.5	11.3	0.4	43.1	18.7	6.7	37.1	15.4	2.1	25.0	8.1	1.0
Antihypertensive med. use, %	21.3	10.1	2.2	36.2	17.6	6.7	28.2	11.2	3.0	46.5	23.3	10.0
Lipid-lowering med. use, %	5.3	3.8	3.1	3.3	2.9	3.3	5.0	2.5	1.1	7.4	4.8	3.0
History of diabetes, %	3.8	0.7	0.5	11.1	3.8	0.0	4.4	0.5	0.0	13.0	1.5	0.0
Body mass index, kg/m^2	28.8 (4.1)	26.2 (3.1)	24.0 (2.0)	28.7 (4.9)	26.7 (4.0)	23.8 (2.2)	29.0 (6.1)	24.8 (4.0)	22.5 (2.3)	32.4 (6.6)	27.9 (5.3)	24.4 (3.3)
Physical activity, z-score	0.00 (0.97)	0.59 (1.05)	1.04 (1.09)	-0.27 (1.03)	0.43 (1.42)	1.69 (2.84)	-0.40 (0.79)	0.14 (0.91)	0.76 (1.05)	-0.36 (0.86)	0.16 (0.99)	0.59 (0.92)
aHEI diet score	41.7 (10.2)	48.4 (11.4)	56.9 (10.8)	41.8 (9.8)	50.1 (11.8)	62.9 (10.5)	44.9 (9.6)	51.1 (10.1)	59.1 (8.6)	46.2 (10.6)	55.5 (11.0)	63.1 (9.5)
Total cholesterol, mg/dL	215.9 (38.0)	195.9 (32.5)	179.0 (25.8)	210.7 (45.8)	187.7 (34.7)	169.5 (20.7)	226.8 (42.9)	201.1 (33.6)	182.8 (27.5)	221.8 (43.7)	197.7 (36.8)	181.5 (29.8)
Systolic blood pressure, mmHg	123.2 (15.5)	114.5 (12.2)	108.7 (10.2)	131.6 (20.3)	117.5 (14.0)	110.1 (9.3)	121.4 (18.1)	111.1 (14.0)	104.6 (10.1)	131.1 (19.1)	119.0 (15.0)	112.9 (12.1)
Diastolic blood pressure, mmHg	76.4 (10.1)	71.8 (8.1)	68.4 (7.0)	83.9 (12.2)	76.1 (9.8)	72.3 (7.7)	72.3 (10.0)	68.2 (8.9)	65.2 (7.2)	80.0 (10.6)	74.7 (9.2)	71.0 (7.4)
Fasting glucose, mg/dL	107.8 (28.1)	96.0 (10.5)	91.6 (7.1)	112.1 (42.7)	92.5 (12.4)	86.9 (7.2)	106.4 (35.0)	92.4 (12.7)	88.8 (7.9)	114.3 (51.7)	89.9 (13.4)	84.6 (7.5)
Aged ≥60 years												
Age, years	67.3 (5.4)	67.8 (5.6)	68.1 (5.8)	66.1 (5.2)	67.8 (5.6)	68.1 (5.6)	68.1 (5.4)	67.6 (5.5)	67.4 (5.6)	66.5 (5.0)	66.9 (5.3)	65.8 (4.6)
Current smoking, %	16.4	5.1	0.0	25.2	15.1	0.0	19.2	5.9	0.0	14.2	3.9	0.0
Antihypertensive med. use, %	40.3	26.1	9.0	54.9	46.4	18.8	45.9	25.5	10.4	58.9	39.7	14.0
Lipid-lowering med. use, %	8.3	7.6	3.0	12.6	8.4	0.0	9.1	7.1	6.0	18.4	14.7	8.8
History of diabetes, %	5.3	1.7	0.0	19.1	5.1	6.7	4.1	0.5	0.0	16.2	3.2	0.0
Body mass index, kg/m^2	28.0 (3.7)	25.7 (3.0)	24.0 (2.4)	28.3 (4.7)	25.7 (3.9)	24.1 (2.7)	28.0 (4.9)	24.3 (3.4)	22.6 (2.3)	31.2 (6.1)	26.8 (4.7)	23.6 (3.3)
Physical activity, z-score	0.08 (1.05)	0.61 (1.11)	1.01 (0.99)	-0.22 (0.88)	0.25 (1.22)	1.21 (2.15)	-0.25 (0.77)	0.24 (0.95)	0.92 (1.27)	-0.20 (0.97)	0.26 (0.96)	0.80 (1.27)
aHEI diet score	44.9 (10.1)	52.6 (11.8)	62.6 (9.8)	46.4 (11.1)	55.1 (12.3)	65.0 (8.2)	45.1 (11.1)	53.6 (12.8)	63.3 (10.9)	51.8 (11.1)	61.3 (10.7)	65.5 (8.6)
Total cholesterol, mg/dL	208.9 (38.8)	190.5 (30.9)	175.9 (23.9)	200.2 (40.1)	176.0 (33.6)	180.9 (24.9)	229.4 (38.9)	209.2 (32.0)	190.8 (24.7)	227.1 (44.3)	207.6 (36.1)	193.8 (29.3)
Systolic blood pressure, mmHg	136.1 (19.7)	123.9 (17.9)	114.8 (11.2)	137.9 (19.8)	126.3 (18.4)	115.3 (11.7)	136.2 (20.5)	124.5 (18.8)	114.9 (14.0)	137.7 (20.1)	126.7 (16.9)	116.3 (9.7)
Diastolic blood pressure, mmHg	74.8 (10.3)	70.9 (9.4)	67.7 (7.9)	79.5 (11.7)	74.8 (8.4)	72.8 (7.7)	71.0 (10.5)	67.5 (9.6)	64.8 (7.9)	76.9 (10.3)	73.6 (9.2)	70.0 (7.3)
Fasting glucose, mg/dL	114.6 (37.6)	96.0 (14.6)	89.3 (8.0)	114.8 (42.5)	92.4 (20.2)	87.8 (8.6)	108.0 (32.6)	92.1 (11.5)	88.0 (7.9)	110.5 (42.6)	90.7 (13.9)	88.3 (8.2)

aHEI, adjusted Healthy Eating Index 2010; CVH, cardiovascular health; DBP, diastolic blood pressure; HDL, high-density lipoprotein; SBP, systolic blood pressure

* Values are expressed as mean (standard deviation) or %.

Table S5. Associations Between Individual Cardiovascular Health Metrics and Incident Cardiovascular Disease Events: The Lifetime Risk Pooling Project.

Subgroups	Men, Hazard Ratios (95% CIs) *			Women, Hazard Ratios (95% CIs) *		
	Poor	Intermediate	Ideal	Poor	Intermediate	Ideal
Aged 20-39						
Smoking	1 [Reference]	0.30 (0.14-0.63)	0.43 (0.29-0.63)	1 [Reference]	0.95 (0.50-1.80)	0.69 (0.43-1.11)
Body mass index	1 [Reference]	0.62 (0.36-1.07)	0.45 (0.27-0.76)	1 [Reference]	0.55 (0.30-1.01)	0.44 (0.26-0.73)
Physical activity	1 [Reference]	0.70 (0.44-1.13)	0.59 (0.35-0.99)	1 [Reference]	0.71 (0.45-1.13)	0.57 (0.27-1.20)
Healthy diet score	1 [Reference]	0.63 (0.42-0.94)	0.31 (0.15-0.65)	1 [Reference]	0.81 (0.50-1.31)	0.77 (0.41-1.45)
Total cholesterol	1 [Reference]	0.75 (0.41-1.38)	0.31 (0.17-0.56)	1 [Reference]	0.80 (0.30-2.15)	0.71 (0.28-1.77)
Blood pressure	1 [Reference]	0.58 (0.28-1.18)	0.39 (0.19-0.80)	1 [Reference]	0.27 (0.12-0.60)	0.10 (0.05-0.21)
Fasting glucose	1 [Reference]	0.87 (0.11-7.25)	0.50 (0.07-3.57)	1 [Reference]	0.20 (0.06-0.70)	0.07 (0.03-0.15)
Aged 40-59 y						
Smoking	1 [Reference]	0.54 (0.47-0.61)	0.44 (0.38-0.51)	1 [Reference]	0.37 (0.32-0.44)	0.40 (0.35-0.46)
Body mass index	1 [Reference]	0.69 (0.60-0.78)	0.56 (0.48-0.66)	1 [Reference]	0.68 (0.60-0.79)	0.51 (0.43-0.59)
Physical activity	1 [Reference]	0.81 (0.71-0.93)	0.67 (0.57-0.78)	1 [Reference]	0.81 (0.71-0.93)	0.75 (0.63-0.89)
Healthy diet score	1 [Reference]	0.77 (0.68-0.87)	0.57 (0.46-0.70)	1 [Reference]	0.81 (0.71-0.92)	0.48 (0.39-0.59)
Total cholesterol	1 [Reference]	0.77 (0.67-0.89)	0.68 (0.59-0.79)	1 [Reference]	0.74 (0.64-0.86)	0.68 (0.59-0.79)
Blood pressure	1 [Reference]	0.62 (0.53-0.71)	0.37 (0.31-0.43)	1 [Reference]	0.64 (0.56-0.74)	0.34 (0.29-0.41)
Fasting glucose	1 [Reference]	0.45 (0.37-0.53)	0.35 (0.30-0.42)	1 [Reference]	0.34 (0.29-0.41)	0.24 (0.20-0.28)
Aged ≥60 y						
Smoking	1 [Reference]	0.66 (0.58-0.76)	0.57 (0.49-0.66)	1 [Reference]	0.65 (0.57-0.74)	0.58 (0.51-0.65)
Body mass index	1 [Reference]	0.87 (0.77-0.98)	0.84 (0.74-0.96)	1 [Reference]	0.72 (0.65-0.80)	0.62 (0.56-0.69)
Physical activity	1 [Reference]	0.83 (0.73-0.94)	0.71 (0.62-0.82)	1 [Reference]	0.84 (0.76-0.92)	0.68 (0.60-0.77)
Healthy diet score	1 [Reference]	0.79 (0.72-0.87)	0.55 (0.47-0.66)	1 [Reference]	0.80 (0.73-0.87)	0.53 (0.46-0.61)
Total cholesterol	1 [Reference]	0.88 (0.76-1.01)	0.81 (0.71-0.93)	1 [Reference]	0.89 (0.81-0.98)	1.04 (0.93-1.16)
Blood pressure	1 [Reference]	0.73 (0.66-0.81)	0.47 (0.40-0.54)	1 [Reference]	0.72 (0.66-0.79)	0.43 (0.38-0.50)
Fasting glucose	1 [Reference]	0.58 (0.51-0.67)	0.46 (0.40-0.53)	1 [Reference]	0.56 (0.49-0.64)	0.42 (0.37-0.48)

CI, confidence interval; CVH, cardiovascular health

* Hazard ratios are adjusted for age (continuous) and race

Table S6. Expected Number of Annual Cardiovascular Disease Events and Rates in US Adults by Age, Sex, and Race Groups.

Subgroups	US Adults Aged ≥20 y, No. *	Events (95% CI) per 1000 Person-Years [†]	Expected CVD Events, No. per Year [†]
Aged 20-39 y			
White/other men	36,805,000	2.16 (1.60-2.72)	80,000
Black men	4,801,000	3.15 (2.34-3.95)	15,000
White/other women	35,689,000	0.98 (0.63-1.33)	35,000
Black women	5,732,000	1.87 (1.38-2.37)	11,000
Aged 40-59 y			
White/other men	36,008,000	12.49 (11.68-13.31)	450,000
Black men	4,201,000	18.94 (16.88-21.00)	80,000
White/other women	38,695,000	7.39 (6.82-7.95)	286,000
Black women	5,655,000	10.86 (9.86-11.86)	61,000
Aged ≥60 y			
White/other men	26,554,000	34.51 (32.80-36.23)	916,000
Black men	2,210,000	27.82 (24.14-31.49)	61,000
White/other women	29,774,000	26.87 (25.59-28.15)	800,000
Black women	3,083,000	17.89 (16.38-19.41)	55,000
Total	229,209,000	12.43	2,850,000

CVD, cardiovascular disease; NHANES, National Health and Nutrition Examination Survey

* US population numbers were estimated from NHANES 2011-2016 and are representative of the US non-institutionalized population.

[†] Expected CVD event numbers were estimated using Poisson regression models calibrated to reflect an annual 2.85 million incident major CVD events in the US adult population per year, as reported by the American Heart Association.

Table S7. Cardiovascular Health Metrics and Potential Impact of Improving Cardiovascular Health Among US Adults by Age Group.

Subgroups	Proportion of US Adults in CVH Metric Categories, % (95% CI)			Achievement of Intermediate or Ideal Levels		Achievement of Ideal Levels	
	Poor	Intermediate	Ideal	PAF, % (95% CI)	Events Prevented (95% CI), Thousands *	PAF, % (95% CI)	Events Prevented (95% CI), Thousands †
Aged 20-39 y							
CVH Behaviors							
Smoking	21.2 (19.1-23.2)	4.3 (3.2-5.5)	74.5 (72.1-77.0)	23.8 (7.7, 39.6) ‡	33 (11, 55)	16.1 (8.0, 24.7) ‡	22 (11, 34)
Body mass index	33.9 (31.5-36.4)	30.2 (27.9-32.4)	35.9 (33.0-38.7)	NA §	NA §	35.2 (15.7, 53.5)	49 (22, 74)
Physical activity	35.6 (32.4-38.8)	15.5 (14.1-16.9)	48.9 (46.0-51.8)	NA §	NA §	13.9 (1.6, 26.8)	19 (2, 37)
Healthy diet score	80.2 (77.9-82.5)	19.6 (17.3-21.8)	0.2 (0.1-0.3)	22.6 (3.6, 36.4)	31 (5, 51)	45.8 (26.0, 57.0)	64 (36, 79)
CVH Factors							
Total cholesterol	6.5 (5.4-7.6)	22.0 (19.6-24.3)	71.5 (68.9-74.1)	NA §	NA §	23.3 (15.0, 32.0)	32 (21, 44)
Blood pressure	5.0 (4.1-5.8)	30.1 (28.1-32.2)	64.9 (62.8-67.0)	2.9 (0.7, 7.0)	4 (1, 10)	28.5 (13.3, 44.2)	40 (18, 61)
HbA1c	2.1 (1.5-2.7)	10.4 (9.1-11.8)	87.5 (85.8-89.1)	2.8 (0.3, 9.6)	4 (0, 13)	11.1 (5.5, 17.9)	15 (8, 25)
Aged 40-59 y							
CVH Behaviors							
Smoking	21.8 (19.4-24.1)	2.5 (1.6-3.4)	75.7 (73.5-77.9)	20.6 (15.5, 26.0)	178 (134, 225)	23.6 (18.5, 29.1)	204 (160, 251)
Body mass index	40.4 (37.5-43.3)	33.7 (31.2-36.2)	25.9 (23.8-28.0)	15.9 (10.2, 21.9)	138 (88, 189)	30.8 (23.7, 37.5)	266 (205, 325)
Physical activity	44.5 (41.0-48.1)	18.7 (16.0-21.5)	36.7 (33.7-39.8)	9.5 (3.2, 15.7)	82 (28, 136)	18.7 (11.2, 26.1)	161 (97, 225)
Healthy diet score	74.8 (72.1-77.6)	24.6 (21.9-27.4)	0.6 (0.3-0.8)	17.6 (8.8, 25.7)	152 (76, 222)	44.4 (33.8, 53.5)	384 (292, 463)
CVH Factors							
Total cholesterol	18.0 (16.1-19.9)	45.6 (42.6-48.7)	36.4 (33.7-39.1)	5.3 (2.4, 8.7)	46 (20, 75)	11.9 (5.6, 18.3)	103 (49, 158)
Blood pressure	14.2 (12.5-15.9)	49.3 (46.5-52.0)	36.5 (34.0-39.1)	8.5 (5.4, 12.0)	73 (46, 103)	39.6 (33.8, 45.3)	343 (293, 392)
HbA1c	9.4 (7.8-10.9)	26.3 (23.9-28.8)	64.3 (61.7-66.9)	12.9 (8.9, 17.5)	112 (77, 152)	24.3 (19.1, 29.8)	210 (165, 258)
Aged ≥60 y							
CVH Behaviors							
Smoking	10.6 (9.4-11.9)	1.1 (0.7-1.6)	88.2 (86.8-89.6)	5.3 (3.2, 7.6)	97 (60, 141)	7.5 (5.1, 10.2)	139 (95, 188)
Body mass index	39.1 (36.3-41.9)	35.8 (33.5-38.0)	25.1 (22.6-27.7)	9.1 (4.6, 13.6)	167 (86, 250)	14.4 (8.7, 20.1)	266 (161, 370)
Physical activity	53.7 (50.6-56.8)	16.4 (14.5-18.3)	29.9 (27.2-32.6)	9.6 (3.8, 15.4)	177 (71, 284)	20.9 (14.4, 27.4)	386 (266, 505)
Healthy diet score	66.6 (63.7-69.6)	32.0 (29.1-34.8)	1.4 (1.0-1.8)	14.9 (8.9, 20.8)	274 (165, 383)	41.2 (33.6, 48.0)	760 (621, 886)
CVH Factors							
Total cholesterol	12.0 (10.6-13.5)	62.1 (59.7-64.6)	25.8 (23.7-28.0)	0.9 (0.1, 1.8) ‡	17 (3, 33)	NA §	NA §
Blood pressure	29.9 (27.4-32.3)	54.7 (51.7-57.6)	15.5 (13.0-18.0)	10.0 (6.8, 13.4)	185 (126, 247)	40.6 (34.8, 46.1)	750 (642, 851)
HbA1c	14.7 (13.2-16.2)	42.9 (40.3-45.5)	42.4 (39.6-45.1)	9.9 (6.9, 13.2)	182 (128, 244)	23.2 (18.8, 27.7)	428 (347, 511)

CI, confidence interval; CVH, cardiovascular health; HbA1c, glycated hemoglobin; NA, not available; PAF, population attributable fraction

* Number of CVD events prevented annually if (1) all adults with poor levels had intermediate levels; and (2) all adults with intermediate levels or ideal levels remained in these levels

† Number of CVD events prevented annually if all adults with poor levels or moderate levels had ideal levels

‡ The PAFs for achievement of intermediate or ideal CVH metric levels can be larger than the corresponding PAFs for achievement of high CVH if the magnitude of association comparing poor and intermediate levels is larger than the magnitude of association comparing poor and ideal levels.

§ The PAFs cannot be calculated for the CVH metrics with hazard ratios of 1 or greater

Table S8. Cardiovascular Health Metrics and Potential Impact of Improving Cardiovascular Health Among US Adults by Sex.

Subgroups	Proportion of US Adults in CVH Metric Categories, % (95% CI)			Achievement of Intermediate or Ideal Levels		Achievement of Ideal Levels	
	Poor	Intermediate	Ideal	PAF, % (95% CI)	Events Prevented (95% CI), Thousands *	PAF, % (95% CI)	Events Prevented (95% CI), Thousands †
Men							
CVH Behaviors							
Smoking	20.2 (18.3-22.1)	3.4 (2.6-4.3)	76.3 (74.3-78.3)	11.4 (7.1, 16.1)	181 (113, 255)	14.6 (10.4, 19.2)	232 (165, 305)
Body mass index	35.7 (33.1-38.2)	38.4 (36.3-40.4)	26.0 (24.3-27.6)	8.3 (3.7, 13.0)	131 (59, 206)	16.0 (8.5, 23.3)	254 (135, 369)
Physical activity	42.3 (39.4-45.2)	15.6 (13.9-17.3)	42.1 (40.0-44.2)	9.2 (3.1, 15.3)	146 (49, 243)	20.0 (12.4, 27.6)	316 (196, 437)
Healthy diet score	79.2 (77.3-81.1)	20.4 (18.5-22.3)	0.3 (0.2-0.5)	18.4 (9.8, 26.4)	292 (155, 418)	42.9 (31.9, 52.1)	680 (506, 825)
CVH Factors							
Total cholesterol	11.4 (10.0-12.7)	41.9 (39.4-44.3)	46.8 (44.3-49.2)	1.6 (.7, 2.7)	26 (10, 43)	6.1 (3.4, 8.9)	97 (54, 141)
Blood pressure	16.1 (14.2-17.9)	48.5 (46.5-50.5)	35.4 (33.2-37.7)	9.1 (5.9, 12.5)	144 (94, 198)	38.5 (31.9, 45.0)	610 (505, 712)
HbA1c	9.2 (7.9-10.4)	24.5 (22.9-26.1)	66.4 (64.4-68.3)	10.9 (7.5, 14.8)	172 (119, 234)	21.7 (17.1, 26.5)	344 (271, 420)
Women							
CVH Behaviors							
Smoking	17.0 (15.4-18.6)	2.2 (1.5-2.9)	80.8 (79.0-82.6)	10.0 (7.3, 13.1)	127 (92, 165)	10.5 (7.9, 13.4)	133 (101, 169)
Body mass index	39.6 (37.7-41.5)	27.9 (25.8-30.1)	32.4 (30.1-34.7)	13.7 (9.1, 18.4)	174 (115, 233)	25.8 (20.0, 31.6)	327 (253, 400)
Physical activity	45.1 (42.0-48.2)	18.2 (16.6-19.8)	36.7 (33.7-39.6)	8.9 (3.9, 14.0)	113 (50, 177)	19.8 (13.3, 26.1)	251 (169, 330)
Healthy diet score	70.2 (67.6-72.9)	28.8 (26.1-31.5)	1.0 (0.6-1.3)	13.1 (7.2, 18.8)	166 (91, 238)	41.7 (35.1, 47.7)	527 (444, 603)
CVH Factors							
Total cholesterol	13.1 (11.4-14.7)	41.1 (38.7-43.6)	45.8 (43.2-48.4)	3.0 (1.0, 5.2)	38 (13, 65)	3.1 (1.2, 4.9)	39 (16, 62)
Blood pressure	14.1 (12.9-15.4)	39.4 (37.7-41.1)	46.5 (44.6-48.4)	9.3 (6.3, 12.8)	118 (80, 162)	41.2 (35.4, 46.8)	522 (448, 592)
HbA1c	7.3 (6.5-8.0)	25.5 (24.0-27.1)	67.2 (65.6-68.8)	9.9 (6.8, 13.8)	125 (86, 175)	24.4 (19.7, 29.5)	309 (249, 374)

CI, confidence interval; CVH, cardiovascular health; HbA1c, glycated hemoglobin; PAF, population attributable fraction

* Number of CVD events prevented annually if (1) all adults with poor levels had intermediate levels; and (2) all adults with intermediate levels or ideal levels remained in these levels

† Number of CVD events prevented annually if all adults with poor levels or moderate levels had ideal levels

Table S9. Cardiovascular Health Metrics and Potential Impact of Improving Cardiovascular Health Among US Adults by Race.

Subgroups	Proportion of US Adults in CVH Metric Categories, % (95% CI)			Achievement of Intermediate or Ideal Levels		Achievement of Ideal Levels	
	Poor	Intermediate	Ideal	PAF, % (95% CI)	Events Prevented (95% CI), Thousands *	PAF, % (95% CI)	Events Prevented (95% CI), Thousands †
White/other							
CVH Behaviors							
Smoking	17.9 (16.4-19.4)	2.9 (2.3-3.5)	79.2 (77.7-80.8)	10.1 (6.7, 13.8)	258 (171, 354)	12.1 (8.8, 15.7)	309 (224, 401)
Body mass index	36.0 (34.0-37.9)	33.9 (32.2-35.7)	30.1 (28.3-31.9)	10.2 (5.8, 14.9)	262 (147, 381)	19.6 (12.9, 26.1)	500 (330, 667)
Physical activity	43.2 (40.4-45.9)	17.1 (15.6-18.5)	39.7 (37.5-42.0)	9.1 (3.4, 14.7)	232 (88, 376)	19.9 (12.9, 26.9)	510 (330, 689)
Healthy diet score	73.9 (71.7-76.1)	25.5 (23.3-27.7)	0.6 (0.4-0.8)	16.0 (8.7, 22.9)	409 (221, 586)	42.4 (33.5, 50.1)	1086 (856, 1283)
CVH Factors							
Total cholesterol	12.6 (11.4-13.8)	42.3 (40.1-44.4)	45.1 (43.1-47.2)	2.2 (0.8, 3.8)	57 (21, 97)	4.6 (2.4, 6.8)	118 (62, 174)
Blood pressure	14.4 (12.9-15.8)	43.4 (41.9-45.0)	42.2 (40.4-44.0)	8.9 (5.9, 12.2)	227 (152, 311)	39.3 (33.1, 45.3)	1006 (846, 1159)
HbA1c	7.6 (6.7-8.6)	23.7 (22.3-25.0)	68.7 (67.1-70.3)	9.8 (6.8, 13.5)	251 (174, 346)	22.1 (17.6, 26.9)	564 (449, 687)
Black							
CVH Behaviors							
Smoking	23.8 (21.2-26.4)	2.3 (1.5-3.1)	73.9 (71.0-76.8)	17.2 (11.5, 22.9)	50 (33, 67)	19.5 (14.3, 25.0)	57 (42, 73)
Body mass index	51.7 (48.9-54.5)	25.3 (22.9-27.7)	23.0 (21.0-25.0)	14.7 (9.2, 20.2)	43 (27, 59)	27.6 (19.7, 35.2)	80 (57, 103)
Physical activity	48.4 (45.5-51.3)	15.9 (14.2-17.6)	35.7 (32.9-38.5)	9.3 (3.4, 15.1)	27 (10, 44)	19.6 (12.0, 27.1)	57 (35, 79)
Healthy diet score	80.1 (77.3-82.9)	18.9 (16.2-21.5)	1.1 (0.6-1.5)	16.6 (8.4, 24.1)	48 (25, 70)	41.8 (32.0, 49.9)	122 (93, 145)
CVH Factors							
Total cholesterol	9.5 (7.9-11.2)	35.2 (32.7-37.8)	55.3 (52.7-57.8)	2.2 (0.8, 3.9)	6 (2, 11)	6.1 (2.6, 9.7)	18 (8, 28)
Blood pressure	20.7 (18.7-22.8)	46.4 (44.3-48.5)	32.9 (30.4-35.3)	11.9 (7.6, 16.8)	35 (22, 49)	43.4 (36.5, 49.9)	126 (106, 145)
HbA1c	12.4 (11.0-13.8)	35.8 (33.3-38.3)	51.8 (49.0-54.5)	15.9 (10.9, 21.9)	46 (32, 64)	30.6 (24.3, 36.6)	89 (71, 107)

CI, confidence interval; CVH, cardiovascular health; HbA1c, glycated hemoglobin; PAF, population attributable fraction

* Number of CVD events prevented annually if (1) all adults with poor levels had intermediate levels; and (2) all adults with intermediate levels or ideal levels remained in these levels
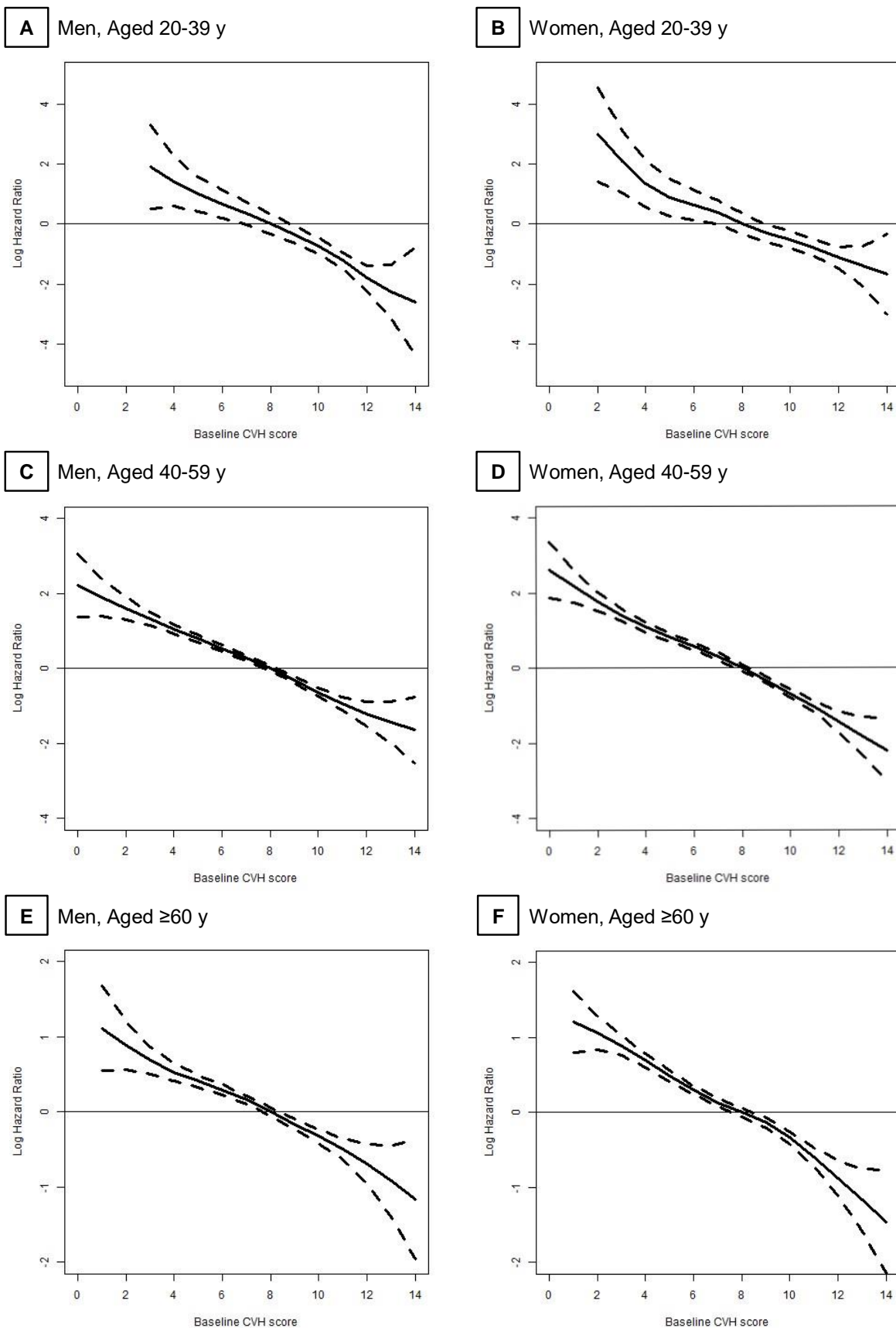
† Number of CVD events prevented annually if all adults with poor levels or moderate levels had ideal levels

Table S10. Mean Cardiovascular Health Scores and Potential Impact of Improving the Continuous Cardiovascular Health Score Among US Adults.

Subgroups	CVH Score, Mean (95% CI)	Per Increase of Mean CVH Score						Achievement of Maximum CVH Score (14)	
		1 Point		2 Points		3 Points			
		PIF, % (95% CI)	Events Prevented, No. (95% CI), Thousands	PIF, % (95% CI)	Events Prevented, No. (95% CI), Thousands	PIF, % (95% CI)	Events Prevented, No. (95% CI), Thousands	PIF, % (95% CI)	Events Prevented, No. (95% CI), Thousands
Aged 20-39 y									
White/other men	8.77 (8.58-8.97)	30.8 (24.3-37.0)	25 (19-29)	52.2 (42.7-60.3)	41 (34-48)	66.9 (56.6-75.0)	53 (45-60)	85.4 (76.6-91.1)	68 (61-72)
Black men	8.54 (8.24-8.84)	30.8 (24.1-36.7)	5 (4-6)	52.2 (42.4-59.9)	8 (6-9)	66.9 (56.3-74.6)	10 (9-11)	86.6 (77.7-91.9)	13 (12-14)
White/other women	9.39 (9.22-9.56)	24.6 (16.3-32.0)	9 (6-11)	43.2 (30.0-53.8)	15 (10-19)	57.2 (41.5-68.6)	20 (14-24)	72.8 (56.0-83.2)	25 (20-29)
Black women	8.25 (8.02-8.47)	24.6 (16.4-32.1)	3 (2-3)	43.2 (30.1-53.8)	5 (3-6)	57.2 (41.5-68.6)	6 (4-7)	80.4 (64.2-89.3)	9 (7-10)
Total	8.99 (8.85-9.13)	28.8 (21.7-35.3)	40 (30-50)	49.3 (38.5-58.1)	69 (54-82)	63.8 (51.7-72.9)	89 (72-102)	82.1 (70.7-89.1)	115 (99-125)
Aged 40-59 y									
White/other men	7.49 (7.27-7.71)	23.1 (21.0-25.2)	104 (94-113)	40.9 (37.6-44.0)	184 (169-198)	54.5 (50.7-58.1)	245 (228-261)	81.9 (78.3-85.0)	369 (352-382)
Black men	6.53 (6.28-6.79)	23.1 (21.0-25.2)	18 (17-20)	40.9 (37.6-44.0)	33 (30-35)	54.5 (50.7-58.1)	43 (40-46)	85.9 (82.6-88.7)	68 (66-71)
White/other women	7.78 (7.58-7.99)	24.6 (22.5-26.6)	70 (64-76)	43.2 (40.0-46.1)	123 (114-132)	57.2 (53.5-60.4)	163 (153-173)	82.7 (79.4-85.5)	236 (227-244)
Black women	6.80 (6.53-7.08)	24.6 (22.6-26.6)	15 (14-16)	43.2 (40.1-46.2)	27 (25-28)	57.2 (53.6-60.5)	35 (33-37)	86.9 (84.0-89.4)	53 (52-55)
Total	7.53 (7.38-7.68)	23.7 (21.6-25.7)	208 (189-226)	41.8 (38.5-44.8)	366 (338-393)	55.6 (51.8-59.0)	487 (454-517)	82.9 (79.4-85.8)	727 (696-752)
Aged ≥60 y									
White/other men	7.04 (6.85-7.23)	16.7 (14.8-18.6)	153 (135-171)	30.7 (27.3-33.8)	281 (251-310)	42.3 (38.1-46.1)	387 (349-423)	72.0 (67.0-76.3)	660 (614-700)
Black men	6.31 (5.99-6.63)	16.7 (14.7-18.6)	10 (9-11)	30.7 (27.3-33.8)	19 (17-21)	42.3 (38.0-46.1)	26 (23-28)	75.5 (70.4-79.7)	46 (43-49)
White/other women	7.15 (6.96-7.35)	17.2 (15.5-18.8)	137 (124-150)	31.4 (28.6-34.1)	251 (229-272)	43.2 (39.7-46.4)	346 (317-372)	72.5 (68.3-76.1)	580 (546-609)
Black women	6.01 (5.79-6.24)	17.2 (15.5-18.8)	9 (9-10)	31.4 (28.6-34.1)	17 (16-19)	43.2 (39.7-46.5)	24 (22-26)	77.8 (73.8-81.2)	43 (41-45)
Total	7.02 (6.87-7.17)	16.9 (15.1-18.7)	311 (277-343)	31.0 (27.9-33.9)	568 (512-622)	42.7 (38.8-46.3)	783 (711-848)	72.5 (67.9-76.5)	1330 (1244-1402)
Men	7.79 (7.66-7.93)	19.7 (17.4-21.9)	315 (278-350)	35.3 (31.6-38.7)	566 (507-621)	47.8 (43.3-51.8)	765 (694-830)	76.4 (71.6-80.4)	1225 (1147-1288)
Women	8.04 (7.90-8.18)	19.5 (17.5-21.4)	244 (218-268)	35.1 (31.8-38.1)	438 (397-476)	47.6 (43.6-51.2)	594 (544-638)	75.9 (71.5-79.4)	947 (892-991)
White/other Adults	8.00 (7.87-8.13)	19.4 (17.3-21.5)	498 (443-551)	34.9 (31.4-38.1)	896 (807-979)	47.3 (43.1-51.1)	1215 (1107-1312)	75.5 (70.9-79.4)	1939 (1819-2037)
Black Adults	7.27 (7.14-7.40)	21.4 (18.9-23.7)	61 (54-67)	38.0 (34.1-41.6)	108 (97-118)	51.0 (46.4-55.1)	145 (131-156)	82.1 (77.6-85.6)	233 (220-243)
All Adults	7.92 (7.80-8.04)	19.6 (17.4-21.7)	559 (497-618)	35.2 (31.7-38.5)	1004 (904-1096)	47.7 (43.4-51.5)	1359 (1238-1468)	76.2 (71.5-80.0)	2171 (2039-2279)

CI, confidence interval; CVH, cardiovascular health; PAF, population attributable fraction; PIF, potential impact fraction
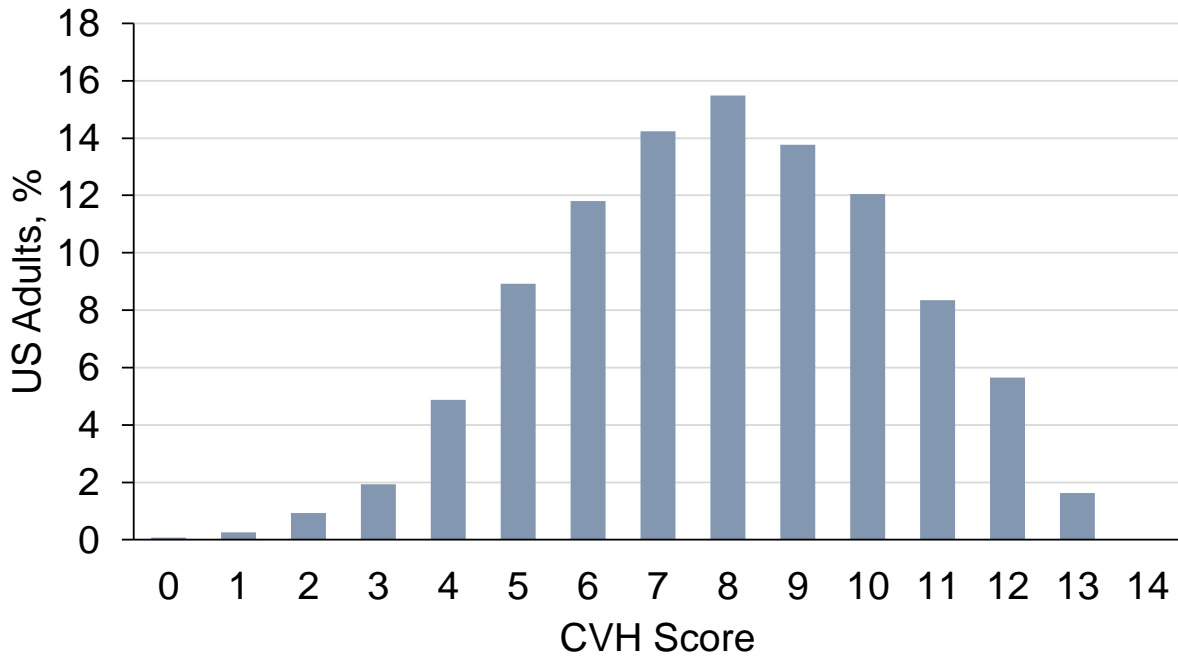
Figure S1. Associations Between Cardiovascular Health Score and Incident Cardiovascular Disease Events by Age Group and Sex: The Lifetime Risk Pooling Project.
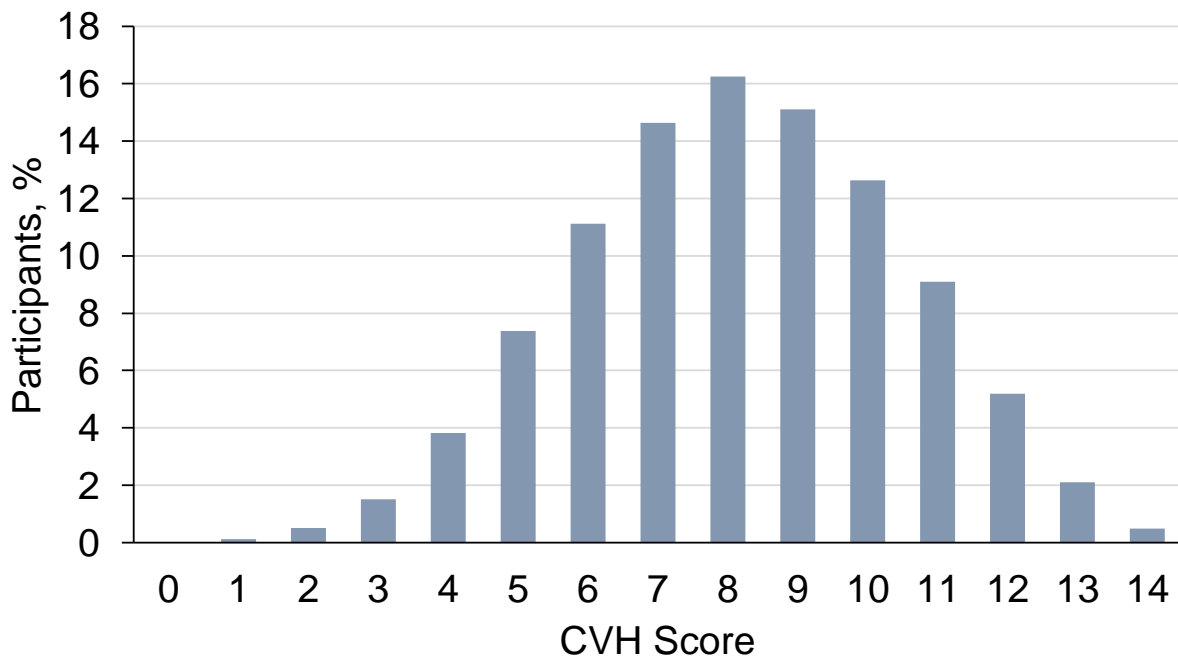

Dashed lines indicate 95% confidence intervals; CVH indicates cardiovascular health

Figure S2. Distribution of Cardiovascular Health Scores in US Adults: NHANES 2011-2016 and the LRPP.

A National Health and Nutrition Examination Survey 2011-2016

B Lifetime Risk Pooling Project

CVH indicates cardiovascular health; LRPP, Lifetime Risk Pooling Project