

Supplemental Material

Table S1. Sample sizes and definitions for lifestyle risk factors and cardiometabolic diseases.

Outcome	Sample size*	Definition
Lifestyle risk factors		
Current smoking	10094	Reporting at least 100 cigarettes smoked during their lifetime and were currently smoking
Excessive drinking	8908	Reporting having an average of ≥ 14 drinks per week for men and ≥ 7 drinks per week for women or at least 4 or 5 drinks in a single day
Poor diet quality	7981	Having a Healthy Eating Index 2015 score < 50 out of 100 or $<$ the 25th percentile or < 60 out of 100
Inadequate physical activity	10381	Having < 150 minutes of moderate to vigorous physical activity per week (including work-related activity, leisure-time activity, and transportation activity)
Inappropriate sleep duration	10383	Having < 7 hours or > 9 hours of sleep per night
Cardiometabolic diseases		
Obesity	9844	Having body mass index ≥ 30 kg/m ²
Severe obesity	9844	Having body mass index ≥ 40 kg/m ²
Dyslipidemia	9323	Having a total cholesterol level ≥ 240 mg/dL, self-reported current use of lipid-lowering medications or a high-density lipoprotein cholesterol level < 40 mg/dL for men and < 50 mg/dL for women
Hypertension	9544	Blood pressure $\geq 140/90$ mm Hg or self-reported current use of antihypertensive medications
Prediabetes	4437	Having a hemoglobin A1c level of 5.7-6.4% or a fasting plasma glucose level of 100-125 mg/dL among participants who did not report a diabetes diagnosis
Diabetes	4437	Having a self-reported previous diabetes diagnosis, a hemoglobin A1c level $\geq 6.5\%$ or a fasting plasma glucose level ≥ 126 mg/dL
Chronic kidney disease	9249	Having a urine albumin-to-creatinine ratio ≥ 30 mg/g or an estimated glomerular filtration rate < 60 mL/min/1.73 m ²
Non-alcoholic fatty liver disease	7911	Having serum alanine aminotransferase activity > 30 IU/L for men and > 19 IU/L for women in the absence of excessive drinking and other identifiable causes of liver disease.
Metabolic syndrome	4107	Having at least 3 of the following 5 criteria: waist circumference > 102 cm for men or > 88 cm for women, a triglycerides level ≥ 150 mg/dL, a high-density lipoprotein cholesterol level < 40 mg/dL for men or < 50 mg/dL for women, blood pressure $\geq 130/85$ mm Hg, and a fasting glucose level ≥ 100 mg/dL
30-year atherosclerotic cardiovascular disease risk	4108	Based on the equation with body mass index included as a covariate from the Framingham Heart Study

* Sample sizes were unweighted.

Table S2. Missing data for stratification and outcome variables.

Variables	Missing data, N (%)
Stratification variables	
Age	0 (0.0%)
Sex	0 (0.0%)
Race and ethnicity	0 (0.0%)
Education level	5 (0.0%)
Family income-to-poverty ratio	1001 (9.6%)
Food security status	303 (2.9%)
Employment status	8 (0.1%)
Home ownership	320 (3.1%)
Insurance status	26 (0.2%)
Regular health care access	0 (0.0%)
Country of birth	5 (0.0%)
Outcome variables	
Current smoking	311 (3.0%)
Excessive drinking	1047 (10.5%)
Poor diet quality	0 (0.0%)
Inadequate physical activity	24 (0.2%)
Inappropriate sleep duration	22 (0.2%)
Obesity/Severe obesity	112 (1.1%)
Dyslipidemia	633 (6.4%)
Hypertension	412 (4.1%)
Prediabetes/Diabetes	10 (0.2%)
Chronic kidney disease	707 (7.1%)
Non-alcoholic fatty liver disease	596 (7.0%)
Metabolic Syndrome	60 (1.4%)
30-year risk of atherosclerotic cardiovascular disease	328 (7.4%)

Table S3. Sample sizes* for lifestyle risk factors by demographic variables and social risk factors.

Characteristics	Current smoking[†]	Excessive drinking[‡]	Poor diet quality[§]	Inadequate physical activity	Inappropriate sleep duration[#]
Total	10094	8908	7981	10381	10383
Age group, y					
18-24	2732	2691	2346	3031	3035
25-29	1782	1517	1337	1782	1780
30-34	1907	1607	1478	1902	1902
35-39	1795	1503	1363	1790	1791
40-44	1878	1590	1457	1876	1875
Sex					
Male	4961	4507	3894	5106	5110
Female	5133	4401	4087	5275	5273
Race and ethnicity					
Non-Hispanic Asian	1493	1195	1069	1526	1527
Non-Hispanic Black	2192	1965	1802	2289	2286
Hispanic	2635	2316	2016	2719	2724
Non-Hispanic White	3292	2978	2688	3354	3351
Other**	482	454	406	493	495
Education level					
Less than high school	1902	1693	1462	2000	2008
High school graduate	2374	2132	1872	2463	2458
Some college	3338	2975	2660	3438	3438
College graduate or higher	2475	2107	1985	2475	2474
Family income-to-poverty ratio					
≤100%	2432	2171	1947	2551	2556
≥100%-299%	3739	3364	3012	3826	3821
≥300%-499%	1600	1445	1335	1630	1632
≥500%	1360	1179	1073	1376	1377
Food security status ^{††}					
Secure	5981	5259	4757	6134	6135

Marginal	1456	1306	1181	1513	1512
Insecure	2355	2148	1899	2432	2433
Employment status					
Employed	7100	6186	5472	7192	7196
Unemployed	2985	2714	2502	3180	3178
Home ownership					
Owned home	4429	3993	3607	4549	4552
Not owned home ^{††}	5346	4709	4220	5514	5511
Insurance status					
Insured	7247	6409	5783	7467	7468
Uninsured	2824	2479	2178	2889	2889
Regular health care access					
≥1 Health care facilities	7331	6438	5830	7549	7543
None	2763	2470	2151	2832	2840
Country of birth					
America	7054	6395	5741	7285	7283
Other countries	3035	2509	2237	3091	3095

* Sample sizes were unweighted.

[†] Smoked at least 100 cigarettes during their lifetime and were currently smoking.

[‡] Having an average of ≥14 drinks per week for men and ≥7 drinks per week for women or at least 4 or 5 drinks in a single day.

[§] Having a Healthy Eating Index -2015 score <50.

^{||} Having <150 minutes of moderate to vigorous physical activity per week (including work-related activity, leisure-time activity, and transportation activity).

[#] Having <7 hours or >9 hours of sleep per night.

^{**} The “other” group included other non-Hispanic races and mixed races.

^{††} Food security level was measured using the US Household Food Security Survey Module in which 10 questions were used to create 4 response levels: full food security, marginal food security, low food security, and very low food security. Low food security and very low food security were combined into the “Insecure” category.

^{††} Not owned home included participants renting a home or having other arrangements.

Table S4. Sample sizes* for cardiometabolic diseases by demographic variables and social risk factors.

Characteristics	Obesity [†]	Severe obesity [†]	Dyslipidemia [‡]	Hypertension [§]	Prediabetes	Diabetes	CKD [#]	NAFLD ^{**}	Metabolic syndrome ^{††}
Total	9844	9844	9323	9544	4437	4437	9249	7911	4107
Age group, y									
18-24	2865	2865	2678	2786	1199	1199	2655	2438	1167
25-29	1682	1682	1592	1624	715	715	1577	1333	686
30-34	1791	1791	1711	1739	802	802	1698	1435	750
35-39	1713	1713	1632	1650	809	809	1621	1312	735
40-44	1793	1793	1710	1745	912	912	1698	1393	769
Sex									
Male	4846	4846	4564	4718	2166	2166	4528	3647	2026
Female	4998	4998	4759	4826	2271	2271	4721	4264	2081
Race and ethnicity									
Non-Hispanic Asian	1425	1425	1317	1348	656	656	1305	1192	607
Non-Hispanic Black	2190	2190	2007	2135	942	942	1993	1711	849
Hispanic	2556	2556	2468	2464	1164	1164	2447	2166	1067
Non-Hispanic White	3193	3193	3076	3107	1465	1465	3050	2469	1396
Other ^{‡‡}	480	480	455	469	210	210	454	373	188
Education level									
Less than high school	1902	1902	1810	1829	909	909	1791	1500	819
High school graduate	2316	2316	2177	2250	1008	1008	2159	1802	931
Some college	3271	3271	3116	3187	1451	1451	3103	2622	1331
College graduate or higher	2353	2353	2218	2275	1068	1068	2194	1985	1025
Family income-to-poverty ratio									
≤100%	2426	2426	2277	2337	1134	1134	2259	1912	1039
>100%-299%	3677	3677	3512	3586	1661	1661	3485	2920	1537
>300%-499%	1565	1565	1492	1525	726	726	1477	1283	676
≥500%	1303	1303	1227	1265	550	550	1219	1083	524
Food security status ^{§§}									
Secure	5819	5819	5518	5635	2573	2573	5464	4775	2414

Marginal	1455	1455	1388	1413	696	696	1380	1165	644
Insecure	2339	2339	2209	2276	1075	1075	2199	1792	968
Employment status									
Employed	6832	6832	6487	6615	3040	3040	6441	5493	2839
Unemployed	3004	3004	2828	2921	1392	1392	2800	2411	1263
Home ownership									
Owned home	4354	4354	4170	4239	1956	1956	4137	3575	1825
Not owned home ^{llll}	5244	5244	4927	5070	2378	2378	4888	4142	2192
Insurance status									
Insured	7083	7083	6693	6884	3167	3167	6634	5793	2926
Uninsured	2739	2739	2611	2638	1263	1263	2596	2099	1174
Regular health care access									
≥1 Health care facilities	7154	7154	6772	6933	3230	3230	6723	5802	2955
None	2690	2690	2551	2611	1207	1207	2526	2109	1152
Country of birth									
America	6913	6913	6552	6751	3087	3087	6495	5451	2878
Other countries	2926	2926	2767	2789	1349	1349	2750	2457	1228

CKD, chronic kidney disease; NAFLD, non-alcoholic fatty liver disease.

* Sample sizes were unweighted.

[†] Obesity was defined as body mass index ≥ 30 kg/m²; Severe obesity was defined as body mass index ≥ 40 kg/m².

[‡] Having a total cholesterol level ≥ 240 mg/dL, self-reported current use of lipid-lowering medications or a high-density lipoprotein cholesterol level < 40 mg/dL for men and < 50 mg/dL for women.

[§] Blood pressure $\geq 140/90$ mm Hg or self-reported current use of antihypertensive medication.

^{||} Prediabetes was defined as having a hemoglobin A1c level of 5.7-6.4% or a fasting plasma glucose level of 100-125 mg/dL among participants who did not report a diabetes diagnosis; Diabetes was defined as having a self-reported previous diabetes diagnosis, a hemoglobin A1c level $\geq 6.5\%$ or a fasting plasma glucose level ≥ 126 mg/dL.

[#] Having a urine albumin-to-creatinine ratio ≥ 30 mg/g or an estimated glomerular filtration rate < 60 mL/min/1.73 m².

^{**} Having serum alanine aminotransferase activity > 30 IU/L for men and > 19 IU/L for women in the absence of excessive drinking and other identifiable causes of liver disease.

^{††} Having at least 3 of the following 5 criteria: waist circumference > 102 cm for men or > 88 cm for women, a triglycerides level ≥ 150 mg/dL, a high-density lipoprotein cholesterol level < 40 mg/dL for men or < 50 mg/dL for women, blood pressure $\geq 130/85$ mm Hg, and a fasting glucose level ≥ 100 mg/dL.

^{†††}The “other” group included other non-Hispanic races and mixed races.

^{§§} Food security level was measured using the US Household Food Security Survey Module in which 10 questions were used to create 4 response levels: full food security, marginal food security, low food security, and very low food security. Low food security and very low food security were combined into the “Insecure” category.

^{llll} Not owned home included participants renting a home or having other arrangements.

Table S5. Sample sizes* for clustering of lifestyle risk factors and cardiometabolic diseases by demographic variables and social risk factors.

Characteristics	Number of lifestyle risk factors [†]			Number of cardiometabolic diseases [‡]			30-year risk of atherosclerotic cardiovascular disease [§]
	0	1	≥2	0	1	≥2	
Total	7830	7555	7703	4043	3743	4089	4108
Age group, y							
18-24	2276	2127	2195	1100	1039	1125	1025
25-29	1318	1300	1319	642	598	668	688
30-34	1461	1436	1453	726	673	734	773
35-39	1335	1291	1318	733	663	735	770
40-44	1440	1401	1418	842	770	827	852
Sex							
Male	3838	3723	3777	1907	1742	1975	2012
Female	3992	3832	3926	2136	2001	2114	2096
Race and ethnicity							
Non-Hispanic Asian	1038	996	1027	598	564	612	611
Non-Hispanic Black	1774	1690	1716	860	801	869	848
Hispanic	1976	1892	1932	1086	1020	1092	398
Non-Hispanic White	2644	2589	2632	1307	1178	1322	1370
Other	398	388	396	194	180	194	197
Education level							
Less than high school	1420	1346	1386	831	753	815	810
High school graduate	1852	1791	1811	917	839	920	926
Some college	2614	2521	2566	1328	1226	1342	1344
College graduate or higher	1942	1895	1938	966	924	1011	1028
Family income-to-poverty ratio							
≤100%	1907	1826	1864	1041	960	1046	1020
>100%-299%	2963	2869	2918	1525	1398	1523	1559
≥300%-499%	1305	1270	1300	649	606	672	679
≥500%	1054	1020	1039	496	471	518	525
Food security status [#]							

Secure	4658	4492	4589	2344	2200	2401	2404
Marginal	1160	1107	1128	633	574	631	631
Insecure	1869	1817	1846	985	892	972	993
Employment status							
Employed	5396	5248	5323	2763	2556	2804	2868
Unemployed	2427	2300	2373	1276	1183	1280	1235
Home ownership							
Owned home	3539	3410	3477	1785	1659	1808	1825
Not owned home**	4138	3996	4076	2167	1999	2188	2194
Insurance status							
Insured	5667	5468	5582	2912	2719	2941	2921
Uninsured	2144	2069	2102	1124	1017	1141	1180
Regular healthcare access							
≥1 Health care facilities	5712	5511	5628	2978	2771	2992	2987
None	2118	2044	2075	1065	972	1097	1121
Country of birth							
America	5653	5479	5564	2808	2583	2833	2850
Other countries	2174	2073	2136	1234	1159	1255	1257

* Sample sizes were unweighted.

† Included current smoking, excessive drinking, poor diet quality, inadequate physical activity, and inappropriate sleep duration (definitions are shown in Table S1).

‡ Included dyslipidemia, hypertension, diabetes, chronic kidney disease, and non-alcoholic fatty liver disease (definitions are shown in Table S1).

§ Based on the equation with body mass index included as a covariate from the Framingham Heart Study.

|| The “other” group included other non-Hispanic races and mixed races.

Food security level was measured using the US Household Food Security Survey Module in which 10 questions were used to create 4 response levels: full food security, marginal food security, low food security, and very low food security. Low food security and very low food security were combined into the “Insecure” category.

** Not owned home included participants renting a home or having other arrangements.

Table S6. Racial and ethnic differences in the prevalence of lifestyle risk factors after adjusting for demographic variables and social risk factors.

Lifestyle risk factors [§]	N*	Difference in the prevalence, % (95% CI) [†]	
		Age-, age squared-, and sex-adjusted	Age-, age squared-, sex-, and social risk factors- adjusted [‡]
Current smoking			
Asian - White	9100	-14.7 (-17.8 to -11.5)	-5.2 (-10.2 to -0.2)
Black - White		-1.2 (-4.2 to 1.8)	-8.0 (-10.4 to -5.6)
Hispanic - White		-8.3 (-11.5 to -5)	-11.8 (-15.2 to -8.3)
Excessive drinking			
Asian - White	8132	-11.7 (-14.5 to -8.9)	-7.7 (-11.8 to -3.7)
Black - White		-2.6 (-5.5 to 0.2)	-4.9 (-7.5 to -2.4)
Hispanic - White		-5.7 (-8.4 to -2.9)	-6.4 (-9.1 to -3.6)
Inappropriate sleep duration			
Asian - White	9353	-4.8 (-8.0 to -1.5)	2.5 (-1.8 to 6.9)
Black - White		16.3 (13.2 to 19.5)	13.3 (9.9 to 16.7)
Hispanic - White		3.9 (0.8 to 7.0)	2.8 (-0.7 to 6.4)
Poor diet quality			
Asian - White	7339	-17.0 (-21.3 to -12.7)	-1.2 (-7.3 to 5.0)
Black - White		5.9 (1.6 to 10.3)	0.8 (-3.3 to 5.0)
Hispanic - White		-4.3 (-9.0 to 0.4)	-5.9 (-10.8 to -1.0)
Inadequate physical activity			
Asian - White	9352	10.2 (6.7 to 13.7)	8.4 (4.3 to 12.6)
Black - White		6.7 (3.9 to 9.5)	5.3 (2.7 to 8.0)
Hispanic - White		7.8 (5.1 to 10.5)	3.8 (1.0 to 6.6)
Having 0 lifestyle risk factors			
Asian - White	7202	8.5 (2.5 to 14.5)	-2.0 (-7.3 to 3.3)
Black - White		-9.5 (-12.6 to -6.4)	-5.4 (-8.3 to -2.6)
Hispanic - White		-3.7 (-7.3 to 0.0)	0.7 (-3.3 to 4.7)
Having only 1 lifestyle risk factors			
Asian - White	6959	2.9 (-3 to 8.7)	-2.8 (-9.3 to 3.8)
Black - White		-3.1 (-6.9 to 0.7)	0.4 (-3.9 to 4.8)
Hispanic - White		4.5 (0.2 to 8.9)	8.0 (3.1 to 12.9)
Having at least 2 lifestyle risk factors			
Asian - White	7094	-12.2 (-17.8 to -6.5)	3.7 (-3.2 to 10.5)
Black - White		12.4 (7.9 to 16.9)	4.0 (-0.3 to 8.3)
Hispanic - White		-1.2 (-6.2 to 3.8)	-7.2 (-12.0 to -2.4)

* Total unweighted sample sizes.

[†] Multivariable weighted logistic regression models were used to assess racial and ethnic differences in the prevalence of lifestyle risk factors.

[‡] Social risk factors included education (< high school, high school graduate, some college, and ≥college graduate), family income-to-poverty ratio (≤100%, >100%-299%, 300%-499%, and ≥500%), home ownership (yes/no), employment status (yes/no), health insurance status (yes/no), regular health care access (yes/no), food security status (secure, marginal and insecure), and country of birth (America/others).

[§] Definitions for lifestyle risk factors are shown in Table S1.^{||} Included current smoking, excessive drinking, poor diet quality, inadequate physical activity, and inappropriate sleep duration (definitions are shown in Table S1).

Table S7. Prevalence of lifestyle risk factors and cardiometabolic diseases by education level among young adults aged 25 years or greater.

	N, prevalence % (95% CI)*									
	Overall		Less than high school		High school		Some college		College graduate or higher	
Lifestyle risk factors [†]										
Current smoking	7358	23.1 (21.6-24.7)	1333	34.4 (30.3-38.5)	1490	33.4 (30.0-36.9)	2292	27.0 (24.6-29.3)	2243	9.4 (7.8-11.1)
Excessive drinking	6216	18.7 (17.2-20.3)	1103	22.6 (19.6-25.7)	1262	23.8 (20.8-26.7)	1954	21.0 (18.3-23.6)	1897	12.2 (9.7-14.7)
Poor diet quality	5633	46.0 (43.1-48.8)	959	56.2 (50.9-61.4)	1119	58.6 (54.1-63.2)	1764	51.7 (47.6-55.8)	1791	30.7 (27.0-34.4)
Inadequate physical activity	7346	27.4 (26.1-28.7)	1325	35.5 (32.3-38.7)	1490	28.8 (25.8-31.7)	2288	26.0 (23.6-28.3)	2243	24.7 (21.9-27.4)
Inappropriate sleep duration	7344	35.8 (34.1-37.4)	1330	43.0 (39.2-46.8)	1484	40.7 (37.6-43.9)	2288	39.7 (36.8-42.7)	2242	26.4 (24.2-28.7)
Number of lifestyle risk factors										
0	5552	20.9 (18.5-23.3)	940	9.0 (6.4-11.7)	1112	11.2 (8.7-13.8)	1749	15.4 (12.5-18.4)	1751	35.0 (31.2-38.7)
1	5426	32.8 (31.0-34.5)	919	23.3 (19.1-27.6)	1092	25.8 (22.8-28.8)	1710	33.2 (29.7-36.7)	1705	39.4 (36.2-42.6)
≥2	5506	45.2 (42.8-47.7)	937	65.7 (60.7-70.6)	1099	62.6 (58.9-66.2)	1725	50.4 (46.6-54.3)	1745	24.6 (21.4-27.8)
Cardiometabolic diseases [†]										
Obesity	6977	39.0 (37.2-40.8)	1266	42.2 (38.3-46.0)	1400	45.5 (42.9-48.2)	2176	45.5 (43.1-48.0)	2135	28.1 (25.1-31.2)
Severe obesity	6977	8.6 (7.7-9.6)	1266	8.6 (6.5-10.8)	1400	10.4 (8.5-12.3)	2176	11.3 (9.6-12.9)	2135	5.3 (3.9-6.7)
Dyslipidemia	6643	39.5 (37.7-41.3)	1206	48.2 (44.5-52.0)	1331	42.0 (38.9-45.1)	2096	44.6 (41.7-47.5)	2010	30.0 (27.5-32.5)
Hypertension	6755	13.0 (11.7-14.3)	1207	13.8 (11.3-16.2)	1359	16.2 (13.6-18.7)	2127	14.8 (12.5-17.2)	2062	8.8 (7.0-10.5)
Prediabetes	3237	28.9 (26.3-31.4)	646	37.0 (32.0-41.9)	629	34.9 (29.3-40.5)	1001	27.3 (23.5-31.2)	961	22.3 (18.5-26.1)
Diabetes	3237	5.5 (4.9-6.1)	646	6.9 (5.1-8.7)	629	6.6 (5.2-8.1)	1001	6.6 (5.3-7.9)	961	2.7 (1.9-3.6)
Chronic kidney disease	6592	6.6 (5.8-7.3)	1197	9.8 (8.0-11.7)	1319	7.3 (5.7-9.0)	2089	6.1 (4.9-7.4)	1987	5.1 (3.8-6.4)
Non-alcoholic fatty liver disease	5471	33.5 (31.8-35.3)	958	39.6 (36.3-42.8)	1033	32.4 (28.7-36.1)	1683	36.0 (33.3-38.6)	1797	30.2 (26.9-33.5)
Metabolic Syndrome	2939	22.8 (20.7-24.9)	564	30.4 (25.2-35.7)	565	25.5 (21.3-29.7)	891	26.2 (22.1-30.3)	919	13.9 (11.3-16.4)
Number of cardiometabolic diseases										
0	2953	36.4 (33.9-38.9)	593	27.3 (22.3-32.4)	576	33.7 (29.1-38.3)	908	33.7 (29.4-38.1)	876	44.7 (40.5-49.0)
1	2711	31.8 (29.9-33.6)	531	32.9 (27.2-38.5)	515	31.3 (26.2-36.4)	832	31.0 (27.1-34.9)	833	32.5 (28.6-36.4)
≥2	2971	25.1 (23.4-26.8)	576	32.5 (27.9-37.1)	567	26.8 (23.1-30.5)	921	27.8 (23.9-31.7)	907	18.4 (15.7-21.2)
30-year risk of ASCVD	3083	17.6 (17.0-18.3)	605	19.6 (18.5-20.7)	598	20.0 (18.9-21.1)	955	18.2 (17.3-19.1)	925	14.1 (13.4-14.8)

ASCVD, atherosclerotic cardiovascular disease.

* Prevalence was age-standardized to the 2017-2018 National Health and Nutrition Examination Survey nonpregnant adult population, using the age groups 25 to 34 years and 35 to 44 years. Prevalence was weighted and sample sizes were unweighted.[†] Definitions for lifestyle risk factors and cardiometabolic diseases are shown in Table S1.

Table S8. Racial and ethnic differences in the prevalence of cardiometabolic diseases adjusting for demographic variables, social risk factors (excluding family income-to-poverty ratio), and lifestyle factors.

Cardiometabolic diseases	N*	Difference in the prevalence, % (95% CI) [†]			
		Age-, age squared-, and sex-adjusted	Age-, age squared-, sex-, and social risk factors-adjusted [‡]	Age-, age squared-, sex-, and lifestyle factors-adjusted [‡]	Age-, age squared-, sex-, social risk factors-, and lifestyle factors-adjusted ^{‡,§}
Obesity					
Asian - White	7037	-18.1 (-22.2 to -13.9)	-8.2 (-14.4 to -2.0)	-16.2 (-20.6 to -11.8)	-7.8 (-13.9 to -1.7)
Black - White		11.6 (7.1 to 16.0)	8.5 (4.4 to 12.6)	9.9 (5.5 to 14.3)	7.3 (3.2 to 11.4)
Hispanic - White		10.0 (6.1 to 13.9)	13.0 (8.6 to 17.5)	10.2 (6.3 to 14.1)	12.8 (8.3 to 17.2)
Severe obesity					
Asian - White	7037	-6.3 (-8.1 to -4.5)	-4.6 (-7.7 to -1.5)	-6.0 (-7.9 to -4.1)	-4.5 (-7.6 to -1.3)
Black - White		5.2 (2.8 to 7.5)	3.3 (1.3 to 5.3)	4.7 (2.4 to 7.0)	3.2 (1.2 to 5.2)
Hispanic - White		1.4 (-0.9 to 3.8)	2.8 (-0.1 to 5.8)	1.7 (-0.6 to 4.0)	2.9 (-0.1 to 5.8)
Dyslipidemia					
Asian - White	6750	-3.5 (-8.9 to 1.9)	-0.5 (-7.2 to 6.3)	-1.7 (-7.0 to 3.5)	-1.2 (-7.7 to 5.2)
Black - White		-3.8 (-7.8 to 0.2)	-7.6 (-11.6 to -3.5)	-5.7 (-9.7 to -1.6)	-8.4 (-12.5 to -4.3)
Hispanic - White		7.5 (3.7 to 11.2)	2.2 (-2.5 to 6.8)	7.7 (4 to 11.3)	2.5 (-2.2 to 7.2)
Hypertension					
Asian - White	6961	-0.2 (-2.7 to 2.3)	6.0 (1.8 to 10.1)	1.1 (-1.7 to 3.8)	6.2 (2.2 to 10.3)
Black - White		8.7 (5.7 to 11.7)	6.9 (4.3 to 9.5)	8.3 (5.3 to 11.2)	6.8 (4.1 to 9.4)
Hispanic - White		0.6 (-1.5 to 2.7)	1.9 (-0.6 to 4.3)	0.8 (-1.3 to 2.8)	1.7 (-0.7 to 4.1)
Prediabetes					
Asian - White	3649	0.6 (-4.0 to 5.2)	3.0 (-2.8 to 8.8)	4.1 (-0.5 to 8.8)	4.2 (-1.6 to 9.9)
Black - White		9.3 (5.1 to 13.5)	7.5 (3.2 to 11.9)	9.0 (4.8 to 13.2)	7.9 (3.4 to 12.3)
Hispanic - White		9.7 (5.1 to 14.4)	6.7 (1.3 to 12.1)	10.6 (5.9 to 15.2)	7.6 (2.0 to 13.2)
Diabetes					
Asian - White	3649	0.6 (-0.9 to 2.2)	1.5 (-0.7 to 3.7)	0.8 (-0.9 to 2.4)	1.5 (-0.7 to 3.7)
Black - White		3.1 (1.5 to 4.6)	2.4 (0.8 to 4)	3.3 (1.6 to 4.9)	2.6 (0.9 to 4.2)
Hispanic - White		1.6 (0.2 to 3.1)	1.0 (-0.6 to 2.6)	1.7 (0.3 to 3.2)	0.9 (-0.6 to 2.5)
Chronic kidney disease					
Asian - White	6713	-0.7 (-3.1 to 1.8)	-1.1 (-4.0 to 1.9)	-0.7 (-3.2 to 1.8)	-1.1 (-4.0 to 1.8)

Black - White		2.1 (0.3 to 4.0)	1.4 (-0.6 to 3.4)	2.0 (0.1 to 3.8)	1.2 (-0.8 to 3.3)
Hispanic - White		0.4 (-1.6 to 2.5)	-1.0 (-3.1 to 1.2)	0.2 (-1.8 to 2.2)	-1.2 (-3.3 to 0.9)
Non-alcoholic fatty liver disease					
Asian - White	5631	-1.3 (-6.0 to 3.4)	-0.7 (-7.1 to 5.8)	-1.4 (-6.2 to 3.4)	-0.6 (-7.1 to 5.8)
Black - White		-9.7 (-14.7 to -4.7)	-11.2 (-16 to -6.3)	-10.6 (-15.5 to -5.7)	-12.0 (-16.8 to -7.2)
Hispanic - White		10.2 (5.6 to 14.7)	9.0 (4.0 to 14.0)	9.5 (5.0 to 14.1)	8.5 (3.4 to 13.5)
Metabolic Syndrome					
Asian - White	3417	-5.9 (-10.2 to -1.6)	2.4 (-3.1 to 7.9)	-4.0 (-8.8 to 0.9)	2.4 (-3.1 to 7.9)
Black - White		-0.3 (-4.4 to 3.8)	-2.7 (-6.2 to 0.9)	-0.7 (-4.7 to 3.3)	-2.7 (-6.3 to 0.9)
Hispanic - White		5.1 (1.6 to 8.6)	6.5 (2.8 to 10.3)	5.9 (2.3 to 9.4)	6.8 (3.0 to 10.6)
Having 0 cardiometabolic diseases [#]					
Asian - White	3337	7.0 (0.1 to 13.8)	4.4 (-3.8 to 12.7)	4.5 (-2.4 to 11.4)	5.5 (-3.1 to 14.1)
Black - White		0.4 (-4.7 to 5.5)	4.7 (-0.4 to 9.7)	3.2 (-1.6 to 8.1)	6.3 (1.3 to 11.3)
Hispanic - White		-7.3 (-12.6 to -1.9)	-5.0 (-11.3 to 1.2)	-8.3 (-13.7 to -3.0)	-6.3 (-12.7 to 0.1)
Having only 1 cardiometabolic disease [#]					
Asian - White	2095	-2.9 (-9.7 to 3.9)	-5.2 (-13.7 to 3.2)	-3.5 (-10.6 to 3.6)	-5.7 (-14.2 to 2.9)
Black - White		-1.4 (-5.7 to 2.8)	-1.5 (-5.6 to 2.5)	-1.4 (-5.6 to 2.9)	-1.8 (-5.8 to 2.3)
Hispanic - White		3.5 (-0.6 to 7.6)	3.9 (-1.7 to 9.5)	3.4 (-0.6 to 7.5)	3.8 (-1.6 to 9.3)
Having at least 2 cardiometabolic diseases [#]					
Asian - White	3381	-0.7 (-5.7 to 4.3)	2.5 (-3.2 to 8.3)	-0.7 (-5.8 to 4.4)	1.5 (-4.1 to 7.0)
Black - White		2.4 (-1.9 to 6.7)	-0.1 (-4.2 to 4.0)	1.2 (-3.0 to 5.4)	-0.8 (-4.9 to 3.3)
Hispanic - White		6.4 (2.5 to 10.3)	4.9 (0.4 to 9.4)	6.0 (2.3 to 9.7)	4.4 (0.0 to 8.7)
30-year risk of atherosclerotic cardiovascular disease ^{**}					
Asian - White	3359	-3.2 (-4.0 to -2.4)	0.0 (-0.9 to 0.9)	-2.5 (-3.4 to -1.6)	-0.2 (-0.9 to 0.6)
Black - White		2.9 (2.1 to 3.7)	1.9 (1.1 to 2.6)	2.5 (1.6 to 3.3)	2.1 (1.4 to 2.7)
Hispanic - White		-0.5 (-1.2 to 0.3)	0.0 (-0.9 to 0.9)	-0.2 (-0.9 to 0.6)	1.0 (0.3 to 1.7)

* Unweighted sample size.

[†] Multivariable weighted logistic regression models were used to assess racial and ethnic differences in the prevalence of cardiometabolic diseases.

[#] Social risk factors included education (<high school, high school graduate, some college, and ≥college graduate), home ownership (yes/no), employment status (yes/no), health insurance status (yes/no), regular health care access (yes/no), food security status (secure, marginal, and insecure), and country of birth (America/other).

[§] Lifestyle factors included smoking status (never, former, and current), drinking status (never, former, non-excessive, and excessive), Healthy Eating Index-2015 score, Healthy Eating Index-

2015 score squared, physical activity (minutes), physical activity squared, sleep hours and sleep hours squared.

|| Definitions for cardiometabolic diseases are shown in Table S1.

Included dyslipidemia, hypertension, diabetes, chronic kidney disease, and non-alcoholic fatty liver disease (definitions for cardiometabolic diseases are shown in Table S1).

** Based on the equation with body mass index included as a covariate from the Framingham Heart Study.

Table S9. Racial and ethnic differences in the prevalence of lifestyle risk factors after adjusting for demographic variables and social risk factors (excluding family income-to-poverty ratio).

Lifestyle risk factors [§]	N*	Difference in the prevalence, % (95% CI) [†]	
		Age-, age squared-, and sex-adjusted	Age-, age squared-, sex-, and social risk factors- adjusted [‡]
Current smoking			
Asian - White	9727	-14.3 (-17.6 to -10.9)	-4.6 (-9.5 to 0.2)
Black - White		-1.6 (-4.7 to 1.4)	-7.8 (-10.2 to -5.5)
Hispanic - White		-8.6 (-11.9 to -5.3)	-12.1 (-15.6 to -8.7)
Excessive drinking			
Asian - White	8662	-12.0 (-14.6 to -9.4)	-7.8 (-11.7 to -3.9)
Black - White		-2.7 (-5.6 to 0.3)	-4.9 (-7.5 to -2.2)
Hispanic - White		-5.3 (-7.9 to -2.6)	-5.7 (-8.5 to -2.9)
Inappropriate sleep duration			
Asian - White	10012	-4.5 (-7.7 to -1.3)	2.9 (-1.3 to 7.1)
Black - White		16.4 (13.4 to 19.5)	13.7 (10.4 to 17.0)
Hispanic - White		3.7 (0.7 to 6.7)	2.7 (-0.8 to 6.3)
Poor diet quality			
Asian - White	7792	-16.5 (-20.8 to -12.2)	-0.8 (-6.8 to 5.2)
Black - White		5.6 (1.0 to 10.1)	1.1 (-3.2 to 5.4)
Hispanic - White		-4.2 (-8.9 to 0.4)	-5.3 (-10.3 to -0.4)
Inadequate physical activity			
Asian - White	10013	10.8 (7.3 to 14.2)	8.5 (4.5 to 12.5)
Black - White		6.8 (4.1 to 9.5)	5.3 (2.7 to 8.0)
Hispanic - White		8.3 (5.8 to 10.8)	3.7 (1.1 to 6.3)
Having 0 lifestyle risk factors			
Asian - White	7643	8.6 (2.6 to 14.6)	-1.8 (-7.1 to 3.5)
Black - White		-9.3 (-12.3 to -6.2)	-5.7 (-8.4 to -2.9)
Hispanic - White		-3.7 (-7.2 to -0.2)	0.5 (-3.5 to 4.4)
Having only 1 lifestyle risk factors			
Asian - White	7373	2.5 (-3.2 to 8.3)	-3.2 (-9.9 to 3.4)
Black - White		-2.8 (-6.4 to 0.8)	0.7 (-3.3 to 4.7)
Hispanic - White		4.7 (0.6 to 8.8)	8.1 (3.4 to 12.9)
Having at least 2 lifestyle risk factors			
Asian - White	7519	-11.8 (-17.5 to -6.2)	4.2 (-2.5 to 10.9)
Black - White		12 (7.6 to 16.4)	4.1 (-0.1 to 8.2)
Hispanic - White		-1.3 (-6.2 to 3.6)	-7.1 (-11.8 to -2.5)

* Total unweighted sample sizes.

[†] Multivariable weighted logistic regression models were used to assess racial and ethnic differences in the prevalence of lifestyle risk factors.

[‡] Social risk factors included education (<high school, high school graduate, some college, and ≥college graduate), home ownership (yes/no), employment status (yes/no), health insurance status (yes/no), regular health care access (yes/no), food security status (secure, marginal and insecure), and country of birth (America/others).

[§] Definitions for lifestyle risk factors are shown in Table S1.

^{||} Included current smoking, excessive drinking, poor diet quality, inadequate physical activity, and inappropriate sleep duration (definitions are shown in Table S1).

Table S10. Prevalence of poor diet quality defined by different criteria according to demographic variables and social risk factors.

Characteristics	Prevalence, % (95% CI)*	
	<41 out of 100 [†]	<60 out of 100
Total	24.2 (22.1-26.2)	74.9 (72.8-76.9)
Age group, y		
18-24	30.8 (27.2-34.3)	81.6 (78.9-84.2)
25-29	26.4 (23.2-29.7)	75.4 (71.3-79.5)
30-34	22.7 (19.0-26.5)	71.0 (66.8-75.2)
35-39	20.2 (16.7-23.8)	71.6 (67.9-75.2)
40-44	16.7 (13.1-20.3)	71.1 (67.3-74.9)
Sex		
Male	25.9 (23.7-28.0)	78.8 (76.7-80.9)
Female	22.3 (19.7-24.9)	70.6 (67.9-73.3)
Race and ethnicity		
Non-Hispanic Asian	13.2 (9.6-16.8)	59.2 (55.1-63.2)
Non-Hispanic Black	29.2 (25.7-32.7)	83.4 (80.9-85.9)
Hispanic	20.9 (18.1-23.8)	73.4 (70.6-76.2)
Non-Hispanic White	25.3 (22.5-28.1)	74.8 (71.9-77.8)
Other [‡]	26.5 (20.9-32.2)	79.8 (74.0-85.5)
Education level		
Less than high school	29.6 (25.6-33.6)	85.0 (82.2-87.8)
High school graduate	31.1 (27.7-34.4)	82.7 (80.1-85.4)
Some college	26.0 (23.0-29.1)	77.9 (75.2-80.7)
College graduate or higher	14.2 (11.8-16.5)	60.2 (56.4-63.9)
Family income-to-poverty ratio		
≤100%	30.5 (26.9-34.2)	81.5 (79.2-83.7)
>100%-299%	26.6 (24.0-29.2)	78.2 (75.9-80.6)
≥300%-499%	23.4 (19.1-27.8)	71.3 (67.4-75.3)
≥500%	15.3 (12.3-18.3)	65.4 (60.9-69.8)
Food security status [§]		
Secure	21.6 (19.3-23.9)	71.2 (68.6-73.7)
Marginal	26.2 (22.1-30.3)	78.1 (74.7-81.5)
Insecure	31.3 (28.1-34.6)	84.7 (82.2-87.1)
Employment status		
Employed	23.2 (21.0-25.5)	74.0 (71.5-76.4)
Unemployed	26.8 (24.0-29.7)	77.5 (74.8-80.2)
Home ownership		
Owned home	23.6 (20.9-26.3)	74.7 (72.0-77.3)
Not owned home	25.2 (22.8-27.6)	75.4 (72.9-77.9)
Insurance status		
Insured	22.9 (20.6-25.2)	72.7 (70.4-75.0)
Uninsured	28.4 (25.2-31.7)	81.9 (79.3-84.4)
Regular health care access		
≥1 Health care facilities	23.3 (21.0-25.5)	73.6 (71.2-76.0)
None	26.6 (23.7-29.5)	78.3 (75.2-81.4)

Country of birth

America	26.6 (24.3-29.0)	77.4 (75.1-79.6)
Other countries	13.5 (11.4-15.6)	64.8 (61.7-68.0)

* Estimates for overall and by age groups were unadjusted. Other estimates were age-standardized to the 2017-2018 National Health and Nutrition Examination Survey nonpregnant adult population, using the age groups 18 to 29 years, 30 to 39 years, and 40 to 44 years. All estimates were weighted.

† The 25th percentile of the HEI-2015 score.

‡ The “other” group included other non-Hispanic races and mixed races.

§ Food security level was measured using the US Household Food Security Survey Module in which 10 questions were used to create 4 response levels: full food security, marginal food security, low food security, and very low food security. Low food security and very low food security were combined into the “Insecure” category.

|| Renting a home or having other arrangements.

Figure S1. Flow chart of sample sizes for lifestyle risk factors.

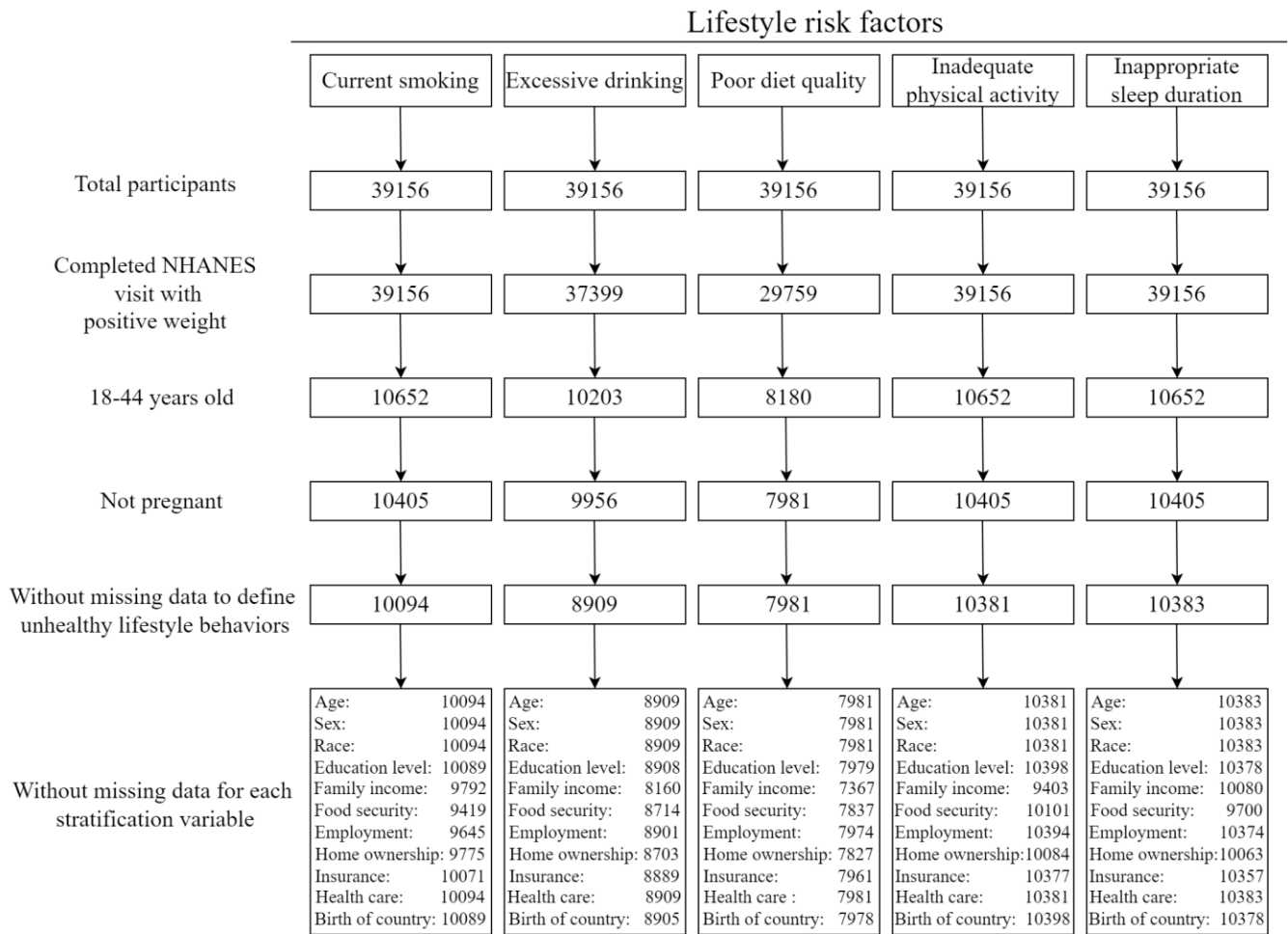


Figure S2. Flow chart of sample sizes for cardiometabolic diseases.

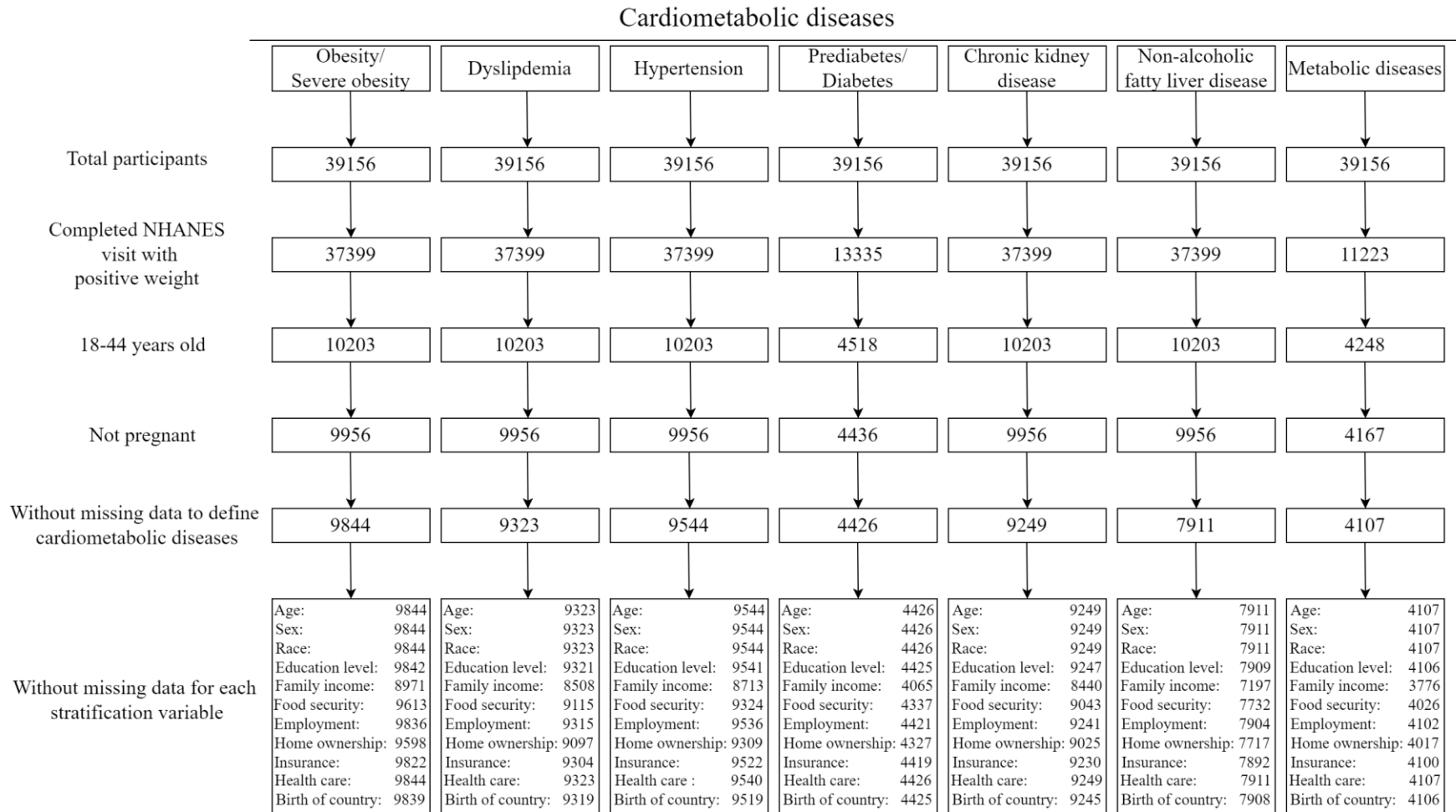


Figure S3. Flow chart of sample sizes for clustering of lifestyle risk factors and cardiometabolic diseases.

