

Supplementary Online Content

Machado S, Sumarsono A, Vaduganathan M. Midlife wealth mobility and long-term cardiovascular health. *JAMA Cardiol.* Published online June 30, 2021.
doi:10.1001/jamacardio.2021.2056

eMethods. Subgroup Analyses of Participants at the Extremes of Wealth

eResults. Subgroup Analyses of Participants at the Extremes of Wealth

eTable 1. Combined Demographics of Participants With and Without Underlying Cardiovascular Disease

eTable 2. Birth Cohort-Specific Wealth Quintile Ranges by 5-Year Age Intervals

eTable 3. Incidence Rates of Cardiovascular Events by Starting and Ending Wealth Quintile

eTable 4. Incidence Proportion of Nonfatal Cardiovascular Event or Cardiovascular Death by Wealth Quintile Change

eTable 5. Incidence Rates and Adjusted Hazards for Nonfatal Cardiovascular Event or Cardiovascular Death by Race

eFigure 1. Participant Selection Flow Diagram

eFigure 2. Hazards of Nonfatal Cardiovascular Event or Cardiovascular Death by Magnitude of Wealth Mobility

eFigure 3. Hazards of Total Absolute Wealth Change (Including Housing and Nonhousing Assets and Debts) and Nonfatal Cardiovascular Event or Cardiovascular Death

eFigure 4. Kaplan Meier Survival Curve for Freedom From Cardiovascular Death Alone Among Participants With and Without Upward Wealth Mobility

eFigure 5. Hazards of Cardiovascular Death by Wealth Mobility Among Participants With Cardiovascular Disease

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

eMethods. Subgroup Analyses of Participants at the Extremes of Wealth

At the bottom quintile, we compared participants who began and remained in quintile #1 with 1) participants who began in quintile #1 and had upward wealth mobility and 2) participants who experienced downward wealth mobility and ended in quintile #1. Similarly, at the top quintile, we compared participants who began in and remained in quintile #5 with 1) participants who had upward wealth mobility and ended in quintile #5 and 2) participants who started in quintile #5 and experienced downward wealth mobility.

eResults. Subgroup Analyses of Participants at the Extremes of Wealth

Starting or Ending in the Poorest Quintile

Participants who started and ended in quintile #1 had 18.3 non-fatal CV events or CV deaths (95% CI: 15.8-21.4) per 1000 person-years (**Figure 3**). By comparison, participants who started in quintile #1 and experienced upward wealth mobility had a lower incidence rate of non-fatal CV events or CV deaths (-8.2 CV per 1000 person-years difference: 95% CI -12.1 to -4.3, $P < 0.001$). Participants from other quintiles with downward wealth mobility to quintile #1 had similar event rates as participants stably in quintile #1 (-2.2 non-fatal CV events or CV deaths per 1000 person-years difference: 95% CI -6.7 to 2.3, $P = 0.174$).

Starting or Ending in the Wealthiest Quintile

Participants who started and ended in quintile #5 experienced 12.5 non-fatal CV events or CV deaths per 1000 person-years (95% CI 10.9 to 14.4). There was no statistically significant difference between participants stably in quintile #5 compared with participants who started in lower quintiles and had upward wealth mobility to quintile #5 (0.3 non-fatal CV events or CV deaths per 1000 person-years difference, 95% CI -3.6 to 3.0, $P = 0.436$) or participants who started in quintile 5 and had downward wealth mobility (2.3 non-fatal CV events or CV deaths per 1000 person-years difference, 95% CI -1.3 to 6.0, $P = 0.099$).

eTable 1. Combined Demographics of Participants With and Without Underlying Cardiovascular Disease

	1931-1935	1936-1940	1941-1945	1946-1951	All
Participants	2699	3490	1882	1628	9688
Men	1193 (44%)	1581 (45%)	880 (47%)	786 (48%)	4440 (46%)
White	2010 (75%)	2504 (72%)	1378 (73%)	1088 (67%)	6980 (72%)
Black	424 (16%)	556 (16%)	295 (16%)	291 (18%)	1569 (16%)
Hispanic	201 (8%)	361 (10%)	163 (9%)	192 (12%)	917 (9%)
Other Race	52 (2%)	69 (2%)	45 (2%)	56 (3%)	222 (2%)
College Educated	457 (17%)	632 (18%)	442 (24%)	475 (29%)	2006 (21%)
Married	2033 (76%)	2794 (80%)	1480 (79%)	1171 (72%)	7478 (77%)
Obese	1135 (42%)	1584 (45%)	877 (47%)	678 (42%)	4274 (44%)
Smoker	497 (18%)	639 (18%)	322 (17%)	238 (15%)	1696 (18%)
Mean Wealth on First Measurement, in \$1000s	276.3 (717.4)	238.6 (664.3)	265.3 (791.0)	260.3 (674.1)	257.9 (706.9)
Mean Wealth on Second Measurement, in \$1000s	304.9 (744.1)	306.5 (801.2)	368.6 (1229.2)	308.0 (755.9)	319.3 (889.6)
Mean Wealth on Third Measurement, in \$1000s		371.1 (1336.8)	412.8 (1400.5)	325.3 (670.8)	373.7 (1243.0)
Data are presented as n (%) or mean (standard deviation). Obese is defined as any measurement of body mass index >30 kg/m ² between ages 50-64.					
Smoker is defined as any reported tobacco use between ages 50-64.					
Wealth is expressed in 2012 US dollars.					

eTable 2. Birth Cohort-Specific Wealth Quintile Ranges by 5-Year Age Intervals

<u>Birth cohort: 1931-1935</u>			
Quintile	50-54 years	55-59 years	60-64 years
Lower to Upper Bounds of Wealth Range for Each Quintile in Inflation Adjusted \$			
1		-189.79 to 6.38	-271.15 to 6.59
2		6.60 to 37.69	6.85 to 52.31
3		37.82 to 114.21	52.46 to 155.8
4		114.64 to 293.69	156.85 to 388.15
5		295.17 to 8647.54	390.04 to 7968.25
<u>Birth cohort: 1936-1940</u>			
Quintile	50-54 years	55-59 years	60-64 years
Lower to Upper Bounds of Wealth Range for Each Quintile in Inflation Adjusted \$			
1	-581.45 to 5.91	-482.187 to 7.41	-263.1 to 6.61
2	5.93 to 29.33	7.58 to 44.17	6.8 to 44.73
3	29.67 to 80.84	44.24 to 120.12	45.16 to 144.35
4	80.92 to 217.48	120.31 to 329.92	144.87 to 408.73
5	218.41 to 14364.56	331.66 to 10692.02	409.29 to 17668.61
<u>Birth cohort: 1941-1945</u>			
Quintile	50-54 years	55-59 years	60-64 years
Lower to Upper Bounds of Wealth Range for Each Quintile in Inflation Adjusted \$			
1	-168.51 to 5.97	-129.36 to 7.56	-106 to 8.17
2	6.12 to 33.65	7.66 to 46.47	8.29 to 51.82
3	33.99 to 98.63	46.6 to 136.57	52.06 to 176.71
4	99.35 to 278.64	137.32 to 387.87	178.1 to 506.17
5	280.96 to 22661.45	389.62 to 31698.76	508.43 to 34014.18
<u>Birth cohort: 1946-1951</u>			
Quintile	50-54 years	55-59 years	60-64 years
Lower to Upper Bounds of Wealth Range for Each Quintile in Inflation Adjusted \$			
1	-118.28 to 7.3	-173.75 to 6.28	-299.64 to 2.59
2	7.41 to 32.63	6.35 to 38.68	2.67 to 28.43
3	33.35 to 108.5	40.13 to 138.83	29.2 to 121.76

4	109.15 to 320.77	140.96 to 398.21	121.94 to 422.93
5	327.06 to 9292.08	398.27 to 11218.14	423.74 to 7980.77

Wealth is given in thousands of dollars. Each participant was divided into quintiles based on their wealth at the time of survey response for each 5-year interval, stratified by birth cohort. Because each wealth quintile is specific for age of interview and birth cohort, the ranges presented for each quintile will vary. All numbers are adjusted for inflation and represented in 2012 US dollars.

eTable 3. Incidence Rates of Cardiovascular Events by Starting and Ending Wealth Quintile

Starting Quintile	Person-years	# of Total Events	# of Non-Fatal CV Events	# of CV Deaths	Incidence Rate of Total Events (per 1000 py)	95% Confidence Interval
1	15148	232	167	65	15.3	13.5-17.4
2	17497	281	221	60	16.05	14.3-18.1
3	18295	261	220	41	14.3	12.6-16.1
4	20393	281	227	54	13.8	12.3-15.5
5	21583	281	252	29	13.0	11.6-14.6
Total	92916	1336	1087	249	14.4	13.6-15.2
Ending Quintile	Person-years	# of Total Events	# of Non-Fatal CV Events	# of CV Deaths	Incidence Rate of Total Events (per 1000 py)	95% Confidence Interval
1	14568	256	178	78	17.6	15.5-19.9
2	17124	266	212	54	15.3	13.8-17.5
3	18514	274	230	44	14.8	13.1-16.7
4	20463	266	225	41	13.0	11.5-14.7
5	22247	274	242	32	12.3	10.9-13.9
Total	92916	1336	1087	249	14.4	13.6-15.2

eTable 4. Incidence Proportion of Nonfatal Cardiovascular Event or Cardiovascular Death by Wealth Quintile Change

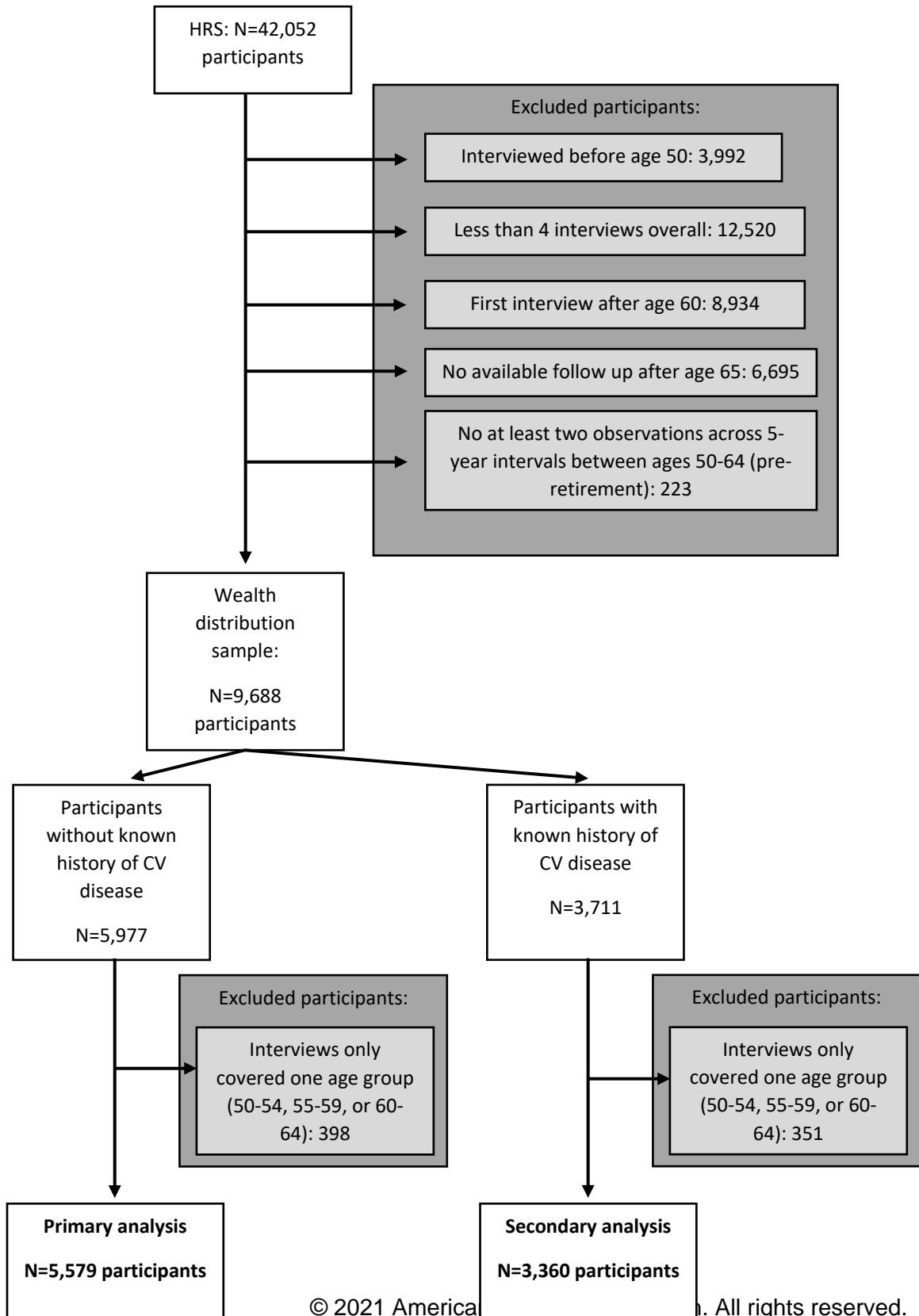
	Proportion of Non-fatal CV event or CV death	95% Confidence Interval
-2 Quintiles	0.272	0.220 – 0.331
-1 Quintiles	0.281	0.254 – 0.301
No Quintile Change	0.259	0.244 – 0.275
+1 Quintiles	0.225	0.200 – 0.251
+2 Quintiles	0.230	0.184 – 0.283

eTable 5. Incidence Rates and Adjusted Hazards for Nonfatal Cardiovascular Event or Cardiovascular Death by Race

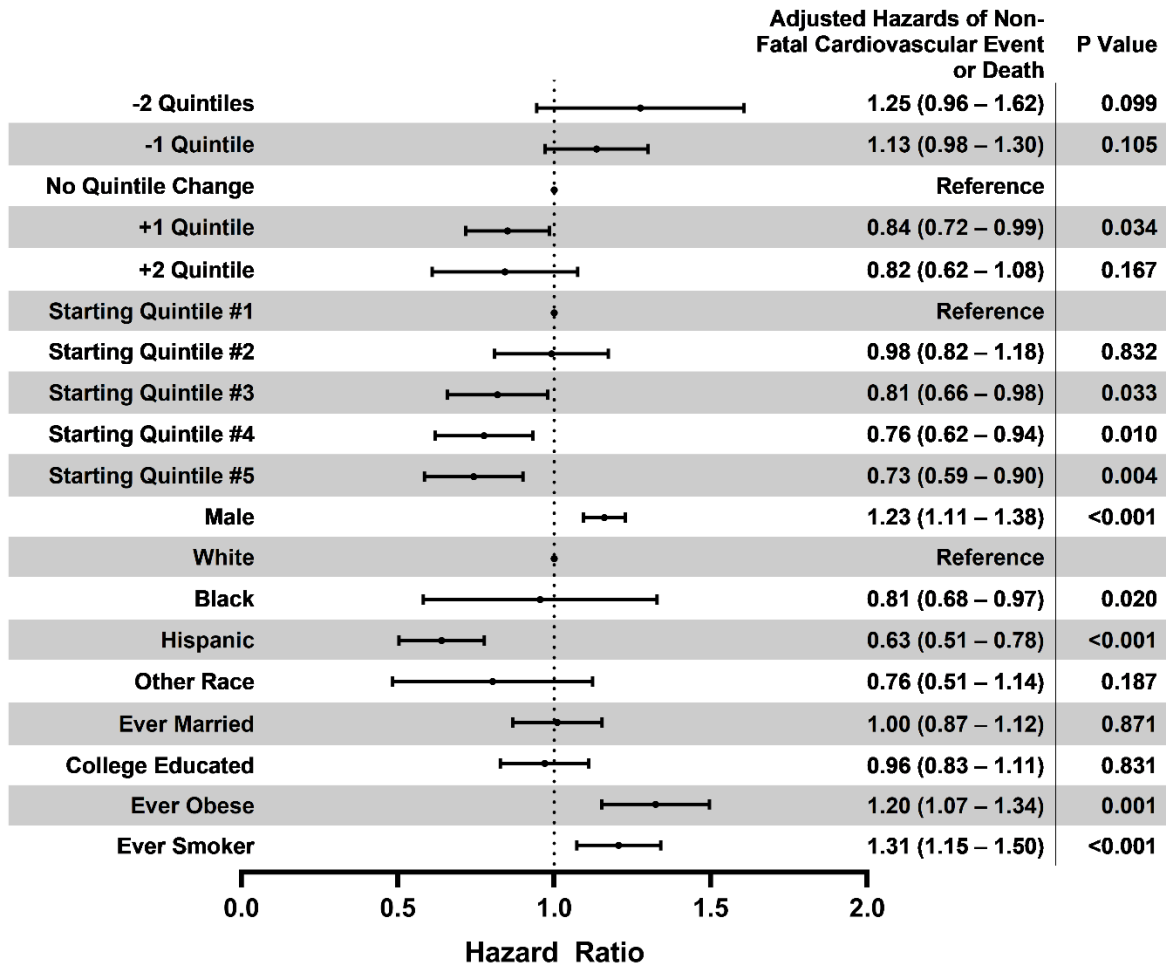
	Events	Incidence Rates	Adjusted Hazard Ratios (95% CI)	
			Upward Wealth Mobility	Downward Wealth Mobility
Overall n = 5579	1336	14.38	0.88 (0.75-1.03)	1.20 (1.04-1.40)
Non-Hispanic White n = 4260	1053	14.92	0.86 (0.73-1.02)	1.21 (1.05-1.41)
Non-Hispanic Black n = 654	156	14.38	0.77 (0.49-1.21)	0.98 (0.63-1.52)
Hispanic n = 545	103	10.92	0.71 (0.40 – 1.25)	0.72 (0.43-1.23)
Other race/ethnicity n = 120	24	11.56	0.24 (0.04-1.23)	1.23 (0.31-4.87)

No statistical heterogeneity was observed in the relationships between relative wealth changes and CV events across racial/ethnic subgroups (all $P_{interaction} > 0.10$).

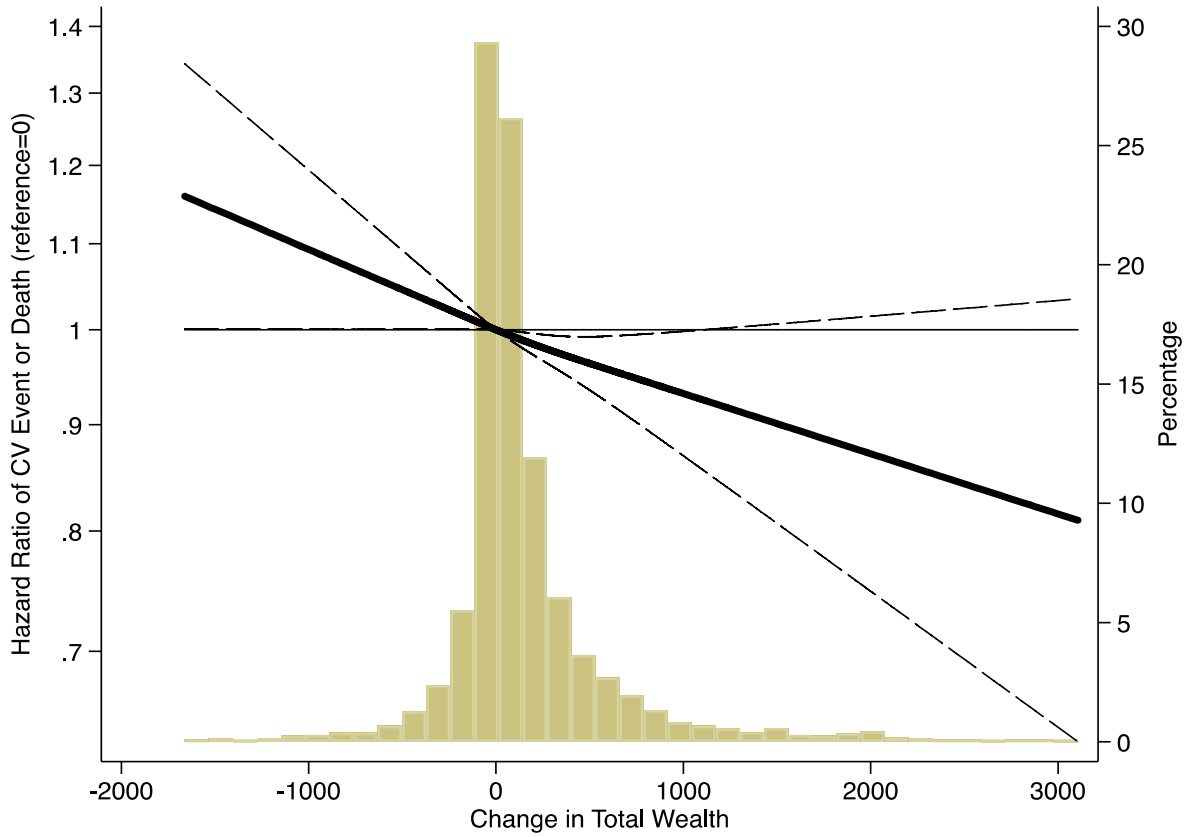
eFigure 1. Participant Selection Flow Diagram



eFigure 2. Hazards of Nonfatal Cardiovascular Event or Cardiovascular Death by Magnitude of Wealth Mobility

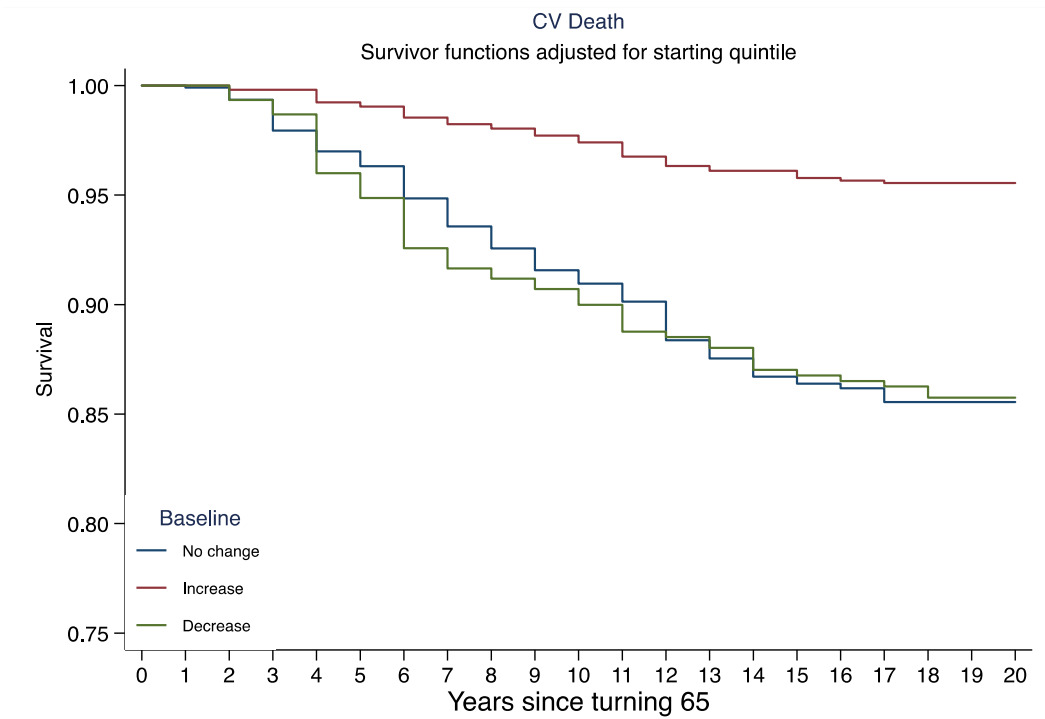


eFigure 3. Hazards of Total Absolute Wealth Change (Including Housing and Nonhousing Assets and Debts) and Nonfatal Cardiovascular Event or Cardiovascular Death



eFigure 4. Kaplan Meier Survival Curve for Freedom From Cardiovascular Death Alone Among Participants With and Without Upward Wealth Mobility

Survival Differences were compared using the log-rank test ($P = 0.032$)



eFigure 5. Hazards of Cardiovascular Death by Wealth Mobility Among Participants With Cardiovascular Disease

