Web Table 1. Characteristics of included and excluded participants, Cardiovascular Health Study.

Characteristics	5 indicators measured (N = 4,243)	≥1 indicator unmeasured (N = 695)	*p*[a]
Age, years, mean (SD)	72.1 (5.0)	74.4 (6.5)	<.001
Male, No. (%)	1,788 (42.1)	239 (34.4)	<.001
White (vs. Black), No. (%)	3,683 (86.8)	531 (76.4)	<.001
Education			<.001
< High school, No. (%)	1,058 (25.0)	289 (41.8)	
= High school, No. (%)	1,212 (28.6)	157 (22.7)	
> High school, No. (%)	1,964(46.4)	245 (35.5)	
Smoking status			.039
Never, No. (%)	1,882 (45.2)	327 (49.6)	
Former, No. (%)	1,888 (45.4)	264 (40.0)	
Current, No. (%)	392 (9.4)	68 (10.3)	
Body mass index, kg/m^2			.737
Underweight/normal[b], No. (%)	1,589 (37.5)	135 (37.7)	
Overweight, No. (%)	1,793 (42.3)	145 (40.5)	
Obese, No. (%)	861 (20.3)	78 (21.8)	
Coronary heart disease, No. (%)	926 (21.8)	194 (27.9)	<.001
Heart failure, No. (%)	241 (5.7)	99 (14.2)	<.001
Stroke, No. (%)	209 (4.9)	79 (11.4)	<.001
Hypertension			<.001
Borderline, No. (%)	632 (14.9)	79 (13.8)	
Hypertensive, No. (%)	1,738 (41.0)	306 (53.3)	
Diabetes			<.001
Prediabetes, No. (%)	407 (9.9)	33 (7.8)	
Diabetes, No. (%)	620 (15.1)	107 (25.4)	
Cancer[c], No. (%)	600 (14.2)	98 (14.1)	.963
Arthritis, No. (%)	1,929 (46.6)	372 (58.7)	<.001
3MS[d], mean (SD)	91.2 (8.4)	82.2 (17.6)	<.001
ADL disability[e], No. (%)	430 (10.2)	204 (30.8)	<.001
Systolic BP, mmHg, mean (SD)	135.6 (21.2)	138.6 (21.4)	.002
Diastolic BP, mmHg, mean (SD)	70.7 (11.2)	70.4 (12.9)	.583
C reactive protein, µg/L, mean (SD)	5.2 (9.7)	6.2 (11.7)	.101
Cystatin C, mg/L, mean (SD)	1.1 (0.3)	1.2 (0.5)	<.001
Total cholesterol, mg/dL, mean (SD)	208.2 (38.5)	210.0 (42.7)	.421
Fasting glucose, mg/dL, mean (SD)	108.1 (33.0)	108.9 (36.4)	.665

Abbreviations: SD, standard deviation; ADL, activities of daily living; BP, blood pressure.

[a] *p*-values were obtained from t test with unequal variance or χ^2 test for comparison between adults with complete frailty assessment and those with at least one indicator not measured.

[b] Underweight and normal were collapsed due to small cell size in the underweight category.

[c] Non-melanoma skin cancer was excluded.

[d] Ranging from 0 to 100 with higher score indicating a better global cognitive function.

[e] Having difficulty in any of the following six basic activities of daily living: dressing, eating, toileting, bathing, transferring or getting out of bed, and walking across a room.

Web Table 2. Characteristics of included and excluded participants, Health and Retirement Study.

Characteristics	5 indicators measured (N = 7,600)	≥1 indicator unmeasured (N = 1,621)	*p* [a]
Age, years, mean (SD)	74.9 (6.9)	75.5 (7.8)	.005
Male, No. (%)	3,315 (43.6)	586 (36.2)	<.001
White (vs. others), No. (%)	6,763 (89.0)	1,260 (77.7)	<.001
Education			<.001
< High school, No. (%)	1,838 (24.2)	568 (35.1)	
= High school, No. (%)	2,729 (35.9)	545 (33.6)	
> High school, No. (%)	3,032 (39.9)	507 (31.3)	
Smoking status			.897
Never, No. (%)	3,279 (43.4)	660 (41.1)	
Former, No. (%)	3,575 (47.3)	737 (45.9)	
Current, No. (%)	702 (9.3)	210 (13.1)	
Body mass index, kg/m^2, mean (SD)			.289
Underweight/normal[b], No. (%)	2,009 (26.4)	417 (26.5)	
Overweight, No. (%)	2,856 (37.6)	544 (34.5)	
Obese, No. (%)	2,735 (36.0)	615 (39.0)	
Cardiac disease[c], No. (%)	2,341 (30.8)	585 (36.1)	<.001
Stroke, No. (%)	518 (6.9)	205 (12.7)	<.001
Hypertension, No. (%)	4,850 (63.9)	1,114 (68.9)	<.001
Lung disease, No (%)	867 (11.4)	1,369 (15.5)	<.001
Diabetes, No. (%)	1,653 (21.8)	458 (28.3)	<.001
Cancer[d], No. (%)	1,453 (19.1)	295 (18.2)	.389
Arthritis, No. (%)	5,196 (68.4)	1,210 (74.7)	<.001
TICS[e], mean (SD)	9.3 (1.2)	8.9 (1.7)	<.001
ADL disability[f], No. (%)	1,146 (21.0)	598 (44.3)	<.001
Systolic BP, mmHg, mean (SD)	134.4 (20.8)	133.7 (22.3)	.287
Diastolic BP, mmHg, mean (SD)	78.4 (11.6)	78.1 (12.6)	.431
C reactive protein, µg/L, mean (SD)	4.3 (8.6)	6.5 (12.6)	<.001
Cystatin C, mg/L, mean (SD)	1.2 (0.5)	1.3 (0.8)	<.001
HDL cholesterol, mg/dL, mean (SD)	54.2 (15.9)	52.0 (15.1)	<.001
Total cholesterol, mg/dL, mean (SD)	197.9 (41.7)	192.1 (40.9)	<.001
HbA1c, %, mean (SD)	5.9 (0.9)	6.0 (1.0)	<.001

Abbreviations: SD, standard deviation; ADL, activities of daily living; BP, blood pressure; HDL, high-density lipoprotein; HbA1c, glycosylated hemoglobin.

[a] *p*-values were obtained from generalized linear regression with clustered sandwich estimator for comparison between included and excluded participants.

[b] Underweight and normal were collapsed due to small cell size in the underweight category.

[c] Myocardial infarction, coronary heart disease, angina, heart failure, or other heart problems.

[d] Non-melanoma skin cancer was excluded.

[e] Ranging from 0 to 10 with higher score indicating a better global cognitive function.

[f] Having difficulty in any of the following six basic activities of daily living: dressing, eating, toileting, bathing, transferring or getting out of bed, and walking across a room.

Web Table 3. Sample variance-covariance matrix between five frailty indicators.

	Cardiovascular Health Study				
	Gait speed	Grip strength	Exhaustion	Physical activity	Weight loss
Gait speed[*]	46.44				
Grip strength[†]	0.30	0.05			
Exhaustion[‡]	-2.14	-0.14	7.60		
Physical activity[§]	14.10	0.68	-7.13	315.41	
Weight loss[‖]	-0.13	-0.01	0.02	-0.83	0.01
	Health and Retirement Study				
	Gait speed	Grip strength	Exhaustion	Physical activity	Weight loss
Gait speed[*]	51.67				
Grip strength[†]	0.53	0.07			
Exhaustion[‡]	-0.65	-0.04	0.45		
Physical activity[§]	31.11	1.49	-3.22	453.76	
Weight loss[‖]	-0.02	-0.01	0.01	-0.04	0.01

[*] Gait speed (m/s) was measured over a 4.6-meter and a 2.5-meter course in the Cardiovascular Health Study and the Health and Retirement Study, respectively.

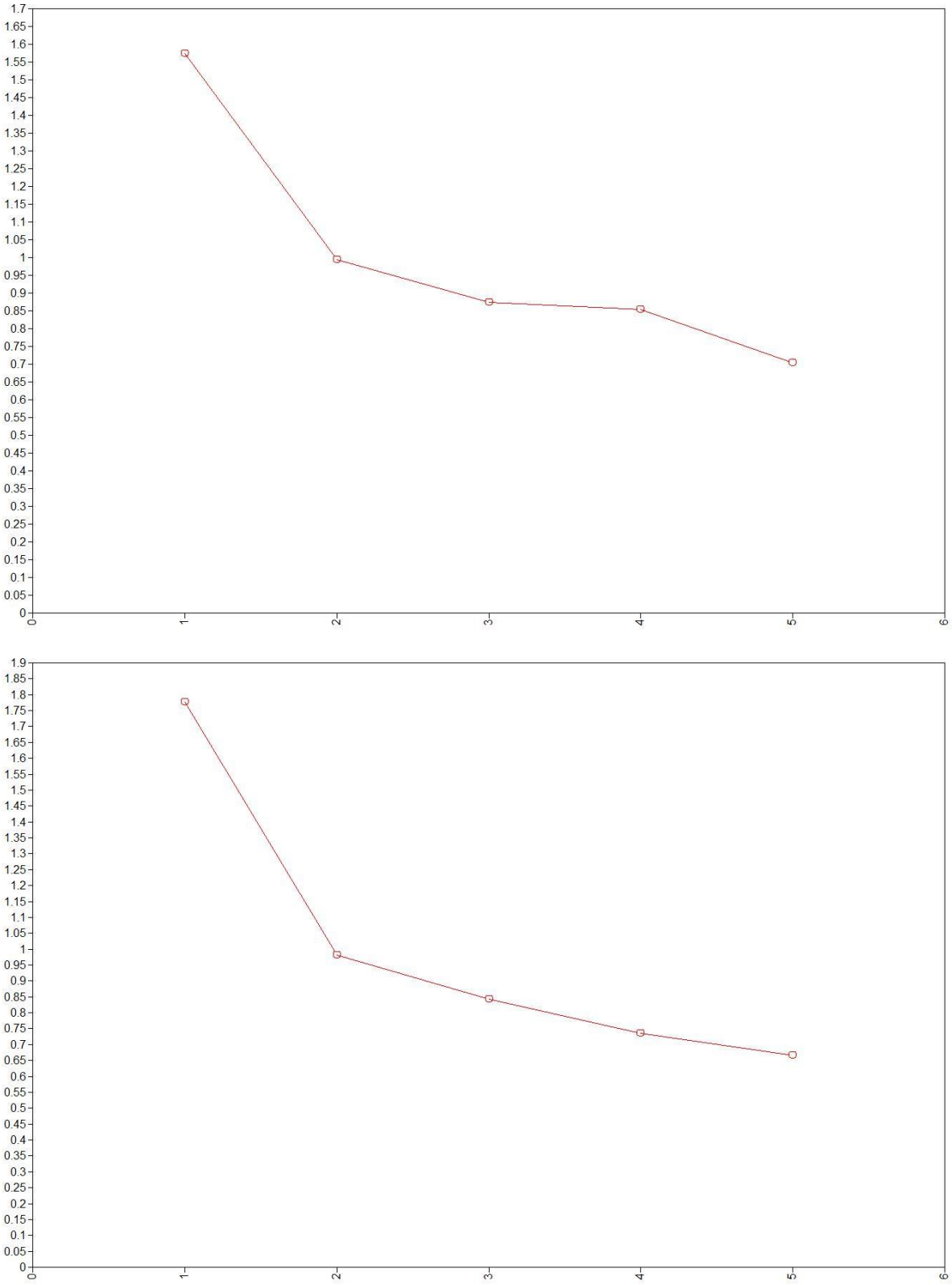
[†] Grip strength (kg) was measured by a hand dynamometer in both cohorts.

[‡] Exhaustion was measured by two items from the Center for Epidemiologic Studies Depression Scale ("I could not get going" and "I felt that everything I did was an effort"); the total score ranged from 0-12 in the Cardiovascular Health Study and from 0-2 in the Health and Retirement Study.

[§] Physical activity was measured by self-reported total energy expenditure in the Cardiovascular Health Study and by self-reported frequency of light, moderate, and vigorous activities in the Health and Retirement Study.

[‖] Weight loss was defined as (weight in previous visit - current weight measure)/(weight in previous visit)×100%.

Web Figure 1. Scree plots of eigenvalues from the exploratory factor analysis (top: Cardiovascular Health Study; bottom: Health and Retirement Study).



Web Table 4. Standardized factor loadings, goodness-of fit-indices, and calculation of the continuous frailty score.

	Cardiovascular Health Study *N*=4,243	Health and Retirement Study *N*=7,600
Indicators	**Standardized factor loadings (standard error)**	
Gait speed*	-0.55 (0.03)	-0.61 (0.02)
Grip strength†	-0.33 (0.02)	-0.43 (0.01)
Exhaustion‡	0.37 (0.02)	0.40 (0.02)
Physical activity§	-0.33 (0.02)	-0.47 (0.02)
Weight loss‖	0.09 (0.02)	0.15 (0.02)
Indices	**Goodness-of-fit indices of CFA**	
χ^2_5 (*P*-value)	10.56 (0.061)	52.65 (<0.001)
CFI	0.991	0.976
TLI	0.982	0.951
RMSEA (90% CI)	0.016 (0.000, 0.030)	0.035 (0.027, 0.044)
Ill localized fit	None	None
	Calculation of continuous frailty score	
	Continuous frailty score = $-.55\times\frac{\text{Gait Speed}}{0.23} + -.33\times\frac{\text{Grip strength}}{6.81} + .37\times\frac{\text{Exhaustion}-1.93}{2.76} + -.33\times\frac{\text{Physical activity}-1452.06}{1775.96} + .09\times\frac{\text{Weight loss}-0.54}{3.48}$	Continuous frailty score = $-.61\times\frac{\text{Gait Speed}}{0.26} + -.43\times\frac{\text{Grip strength}}{7.19} + .40\times\frac{\text{Exhaustion}-0.40}{0.67} + -.47\times\frac{\text{Physical activity}-25.86}{21.30} + .15\times\frac{\text{Weight loss}-(-0.62)}{3.74}$

Abbreviations: CFA, confirmatory factor analysis; CFI, Comparative Fit Index; TLI, Tucker-Lewis Index; RMSEA, root mean square error of approximation; CI, confidence interval.

* Gait speed (m/s) was measured over a 4.6-meter and a 2.5-meter course in the Cardiovascular Health Study and the Health and Retirement Study, respectively. Gait speed residual was calculated using sex-specific regression models regression gait speed on standing height.

† Grip strength (kg) was measured by a hand dynamometer in both cohorts. Grip strength residual was calculated using sex-specific regression models regression gait speed on body mass index.

‡ Exhaustion was assessed by 2 questions ("I could not get going" and "I felt that everything I did was an effort"); the total score ranged from 0-12 in the Cardiovascular Health Study and from 0-2 in the Health and Retirement Study.

§ Physical activity was measured by self-reported total energy expenditure in the Cardiovascular Health Study and by self-reported frequency of light, moderate, and vigorous activities in the Health and Retirement Study.

‖ Weight loss was defined as (weight in previous visit - current weight measure)/(weight in previous visit)×100%.

Web Table 5. Standardized factor loadings and goodness-of-fit indices of confirmatory factor analysis in the Health and Retirement Study (sensitivity analysis).

	Health and Retirement Study	
	Exhaustion	
	Continuous	Ordered categorical
Standardized factor loadings (standard error)		
Gait speed[*]	-0.61 (0.02)	-0.61 (0.02)
Grip strength[†]	-0.43 (0.01)	-0.45 (0.01)
Exhaustion[‡]	0.40 (0.02)	0.45 (0.02)
Physical activity[§]	-0.47 (0.02)	-0.49 (0.02)
Weight loss[‖]	0.15 (0.02)	0.12 (0.02)
Goodness-of-fit indices of CFA		
χ^2_5 (*P*-value)	52.65 (<0.001)	81.95 (<0.001)
CFI	0.976	0.977
TLI	0.951	0.954
RMSEA (90% CI)	0.035 (0.027, 0.044)	0.045 (0.037, 0.052)
Ill localized fit	None	None

Abbreviations: CFA, confirmatory factor analysis; CFI, Comparative Fit Index; TLI, Tucker-Lewis Index; RMSEA, root mean square error of approximation; CI, confidence interval.

[*] Gait speed (m/s) was measured over a 2.5-meter course in the Health and Retirement Study, respectively. Gait speed residual was calculated using sex-specific regression models regression gait speed on standing height.

[†] Grip strength (kg) was measured by a hand dynamometer in both cohorts. Grip strength residual was calculated using sex-specific regression models regression gait speed on body mass index.

[‡] Exhaustion was assessed by 2 questions ("I could not get going" and "I felt that everything I did was an effort"); the total score ranged from 0-2 in the Health and Retirement Study.

[§] Physical activity was measured by self-reported frequency of light, moderate, and vigorous activities in the Health and Retirement Study.

[‖] Weight loss was defined as (weight in previous visit - current weight measure)/(weight in previous visit)×100%.

Web Table 6. Standardized residual matrix from the one-factor model of frailty.

	Cardiovascular Health Study				
	Gait speed	Grip strength	Exhaustion	Physical activity	Weight loss
Gait speed[*]	-				
Grip strength[†]	-0.091	-			
Exhaustion[‡]	-0.857	1.311	-		
Physical activity[§]	-1.118	1.978	0.100	-	
Weight loss[‖]	-1.785	2.218	-0.342	0.480	-
	Health and Retirement Study				
	Gait speed	Grip strength	Exhaustion	Physical activity	Weight loss
Gait speed[*]	-				
Grip strength[†]	1.579	-			
Exhaustion[‡]	0.436	2.237	-		
Physical activity[§]	-1.407	0.036	-2.548	-	
Weight loss[‖]	-0.685	1.218	1.732	1.395	-

[*] Gait speed (m/s) was measured over a 4.6-meter and a 2.5-meter course in the Cardiovascular Health Study and the Health and Retirement Study, respectively.

[†] Grip strength (kg) was measured by a hand dynamometer in both cohorts.

[‡] Exhaustion was measured by two items from the Center for Epidemiologic Studies Depression Scale ("I could not get going" and "I felt that everything I did was an effort"); the total score ranged from 0-12 in the Cardiovascular Health Study and from 0-2 in the Health and Retirement Study.

[§] Physical activity was measured by self-reported total energy expenditure in the Cardiovascular Health Study and by self-reported frequency of light, moderate, and vigorous activities in the Health and Retirement Study.

[‖] Weight loss was defined as (weight in previous visit - current weight measure)/(weight in previous visit)×100%.

Web Table 7. Goodness of fit indices of confirmatory factor analyses (sensitivity analysis).

Goodness-of-fit Indices	Cardiovascular Health Study				Health and Retirement Study			
	5 indicators measured N = 4,243		≥1 indicator unmeasured N = 4,938		5 indicators measured N = 7,600		≥1 indicator unmeasured N = 9,221	
	Model A*	Model B†	Model A*	Model B†	Model A*	Model B†	Model A*	Model B†
χ^2_5 (*p*-value)	10.56 (.061)	11.74 (.038)	11.32 (.045)	12.43 (.029)	52.65 (<.001)	56.96 (<.001)	56.09 (<.001)	60.06 (<.001)
CFI	.991	.989	.992	.990	.976	.973	.978	.976
TLI	.982	.978	.984	.981	.951	.946	.957	.953
RMSEA (90% CI)	.016 (.000, .030)	.018 (.004, .031)	.016 (.002, .029)	.017 (.005, .030)	.035 (.027, .044)	.037 (.029, .046)	.033 (.026, .041)	.035 (.027, .043)
Ill localized fit	None	None	None	None	None	None	None	None

Abbreviations: CFI, Comparative Fit Index; TLI, Tucker-Lewis Index; RMSEA, root mean square error of approximation; CI, confidence interval.

Notes: CFI ≥ .95, TLI ≥ .95, and RMSEA ≤ .05 indicate ideal model fit; non-significant χ^2 statistic indicates ideal model fit.

* Gait speed adjusted for sex and standing height, grip strength adjusted for sex and body mass index, exhaustion, physical activity, and percentage weight loss were included.

† Gait speed adjusted for sex and standing height, grip strength adjusted for sex and body mass index, exhaustion, physical activity, and weight difference were included.

Web Table 8. Relative importance of five indicators in measuring frailty.

Tests	CHS		HRS	
	All 5 indicators measured N = 4,243		All 5 indicators measured N = 7,600	
	$\Delta\chi^2$	*p* value	$\Delta\chi^2$	*p* value
Gait speed[*] = Grip strength[†]	31.65	<.001	42.17	<.001
Gait speed = Exhaustion[‡]	22.92	<.001	51.23	<.001
Gait speed = Physical activity[§]	34.01	<.001	18.61	<.001
Gait speed = Weight loss[‖]	189.37	<.001	345.33	<.001
Grip strength = Exhaustion	0.56	.454	3.47	.063
Grip strength = Physical activity	0.40	.527	1.50	.220
Grip strength = Weight loss	70.56	<.001	207.36	<.001
Exhaustion = Physical activity	2.04	.153	13.37	<.001
Exhaustion = Weight loss	84.52	<.001	214.77	<.001
Physical activity = Weight loss	57.10	<.001	292.60	<.001

Abbreviations: CHS, Cardiovascular Health Study; HRS, Health and Retirement Study.

[*] Gait speed (m/s) was measured over a 4.6-meter and a 2.5-meter course in the Cardiovascular Health Study and the Health and Retirement Study, respectively.

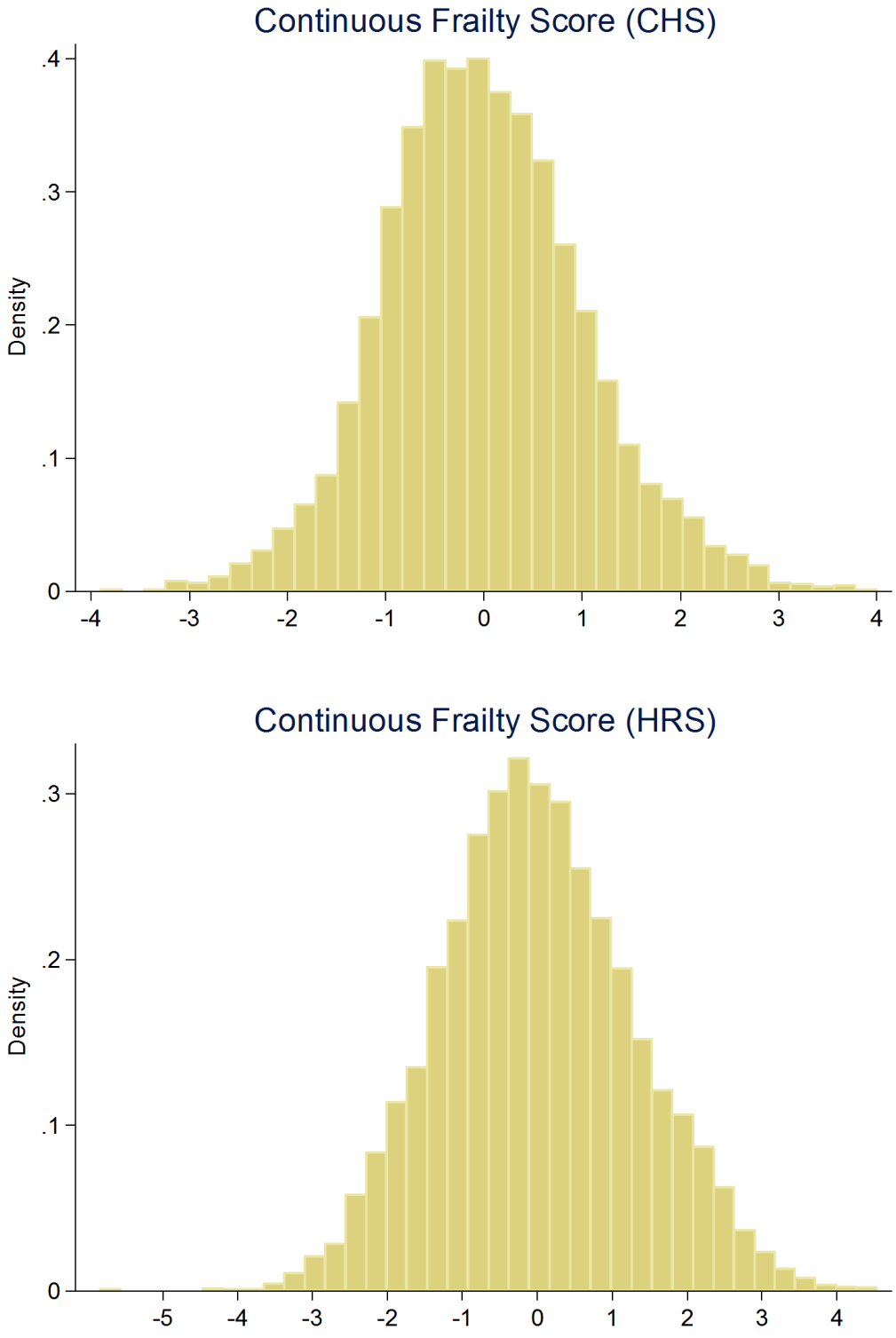
[†] Grip strength (kg) was measured by a hand dynamometer in both cohorts.

[‡] Exhaustion was measured by two items from the Center for Epidemiologic Studies Depression Scale ("I could not get going" and "I felt that everything I did was an effort"); the total score ranged from 0-12 in the Cardiovascular Health Study and from 0-2 in the Health and Retirement Study.

[§] Physical activity was measured by self-reported total energy expenditure in the Cardiovascular Health Study and by self-reported frequency of light, moderate, and vigorous activities in the Health and Retirement Study.

[‖] Weight loss was defined as (weight in previous visit - current weight measure)/(weight in previous visit)×100%.

Web Figure 2. Distribution of scores on the continuous frailty scale in the Cardiovascular Health Study (CHS) and the Health and Retirement Study (HRS).



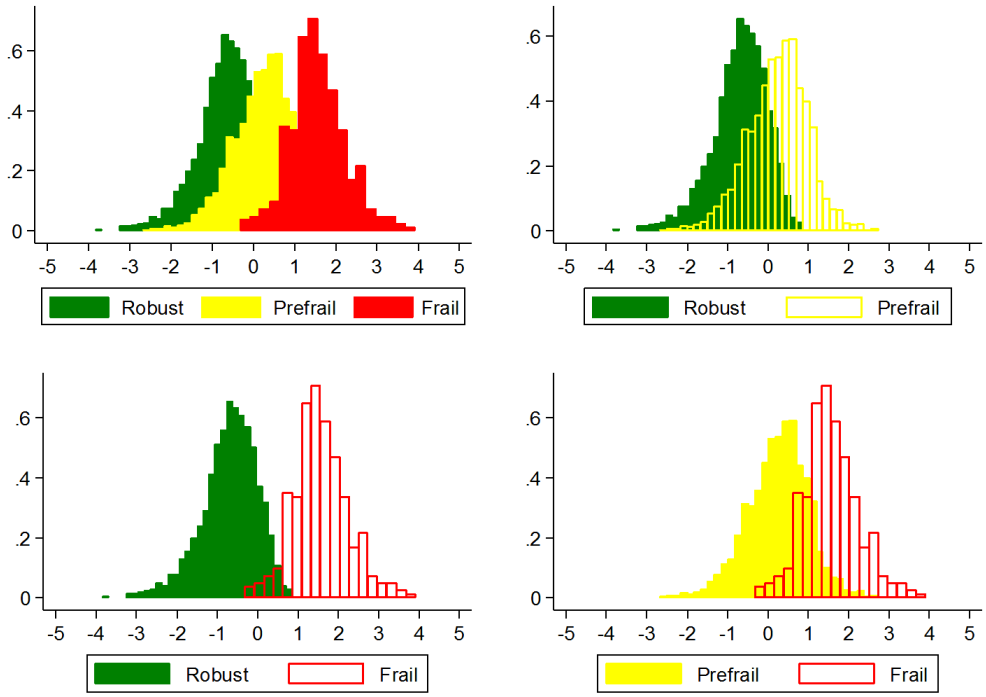
Web Table 9. Descriptive statistics of scores on the continuous frailty scale among robust, prefrail, and frail adults identified by the physical frailty phenotype scale.

	Score on the continuous frailty scale				
	Mean ± SD	Median	1st quartile	3rd quartile	*p* *
Cardiovascular Health Study (N = 4,243)					
Robust	-0.69 ± 0.68	-0.63	-1.06	-0.22	Ref.
Prefrail	0.25 ± 0.74	0.32	-0.21	0.75	<.001
Frail	1.57 ± 0.67	1.52	1.14	1.99	<.001
Health and Retirement Study (N = 7,600)					
Robust	-0.93 ± 0.85	-0.84	-1.48	-0.30	Ref.
Prefrail	0.45 ± 0.87	0.49	-0.10	1.02	<.001
Frail	2.10 ± 0.70	2.08	1.62	2.53	<.001

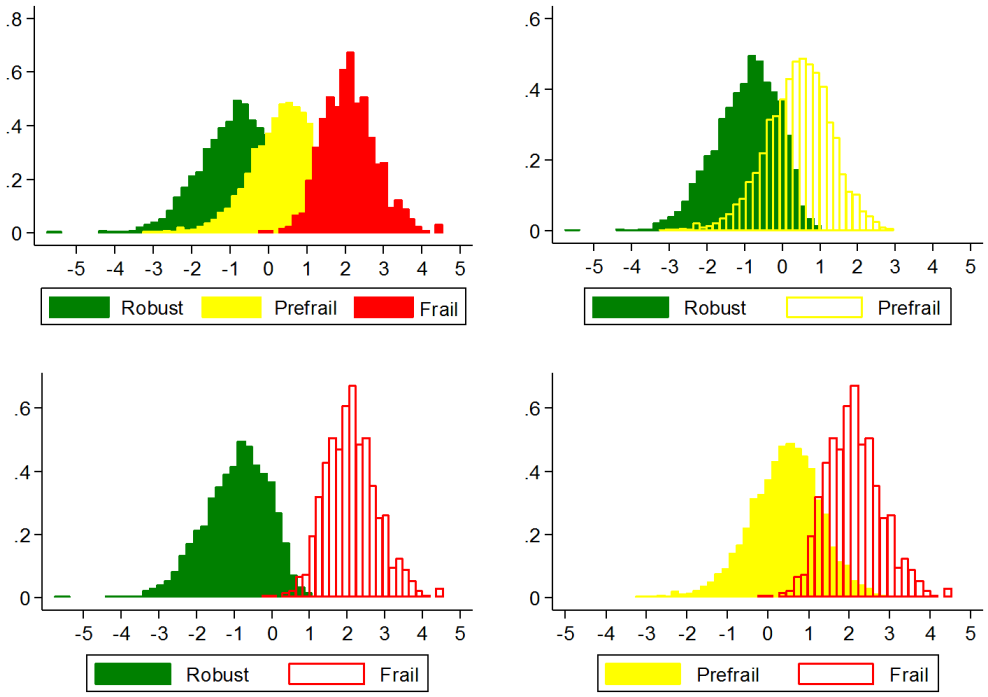
Abbreviations: SD, standard deviation.

* *p*-values from post hoc multiple comparisons in analysis of variance after Bonferroni correction.

Web Figure 3. Distribution of continuous frailty score among robust, prefrail, and frail persons identified by the physical frailty phenotype scale, Cardiovascular and Health Study.



Web Figure 4. Distribution of continuous frailty score among robust, prefrail, and frail persons identified by the physical frailty phenotype scale, Health and Retirement Study.



Web Table 10. Cross-tabulation of quintiles of scores on the continuous frailty scale and the physical frailty phenotype scale.

	Cardiovascular Health Study (N = 4,243)		
	Physical frailty phenotype scale		
Continuous frailty scale	Robust	Prefrail	Frail
1st quintile	698	145	0
2nd quintile	590	267	0
3rd quintile	439	407	7
4th quintile	174	648	19
5th quintile	4	515	330
Total	1,905	1,982	356
	Health and Retirement Study (N = 7,600)		
	Physical frailty phenotype scale		
Continuous frailty scale	Robust	Prefrail	Frail
1st quintile	1,358	166	0
2nd quintile	1,088	418	0
3rd quintile	740	792	2
4th quintile	181	1,305	35
5th quintile	0	770	745
Total	3,367	3,451	782

Web Table 11. Association of frailty with mortality and disability with persons not completing the gait speed or grip strength test included (sensitivity analysis).

	Cardiovascular Health Study *N* = 4558		Health and Retirement Study *N* = 8768	
	Adjusted[†]	Fully Adjusted[‡]	Adjusted[†]	Fully Adjusted[‖]
5-year Mortality	Hazard ratio (95% CI)		Hazard ratio (95% CI)	
Continuous frailty score	1.54 (1.43, 1.66)	1.23 (1.13, 1.36)	1.60 (1.54, 1.67)	1.39 (1.31, 1.48)
Quintiles				
1st quintile	Ref.	Ref.	Ref.	Ref.
2nd quintile	1.26 (0.93, 1.70)	1.08 (0.79, 1.49)	1.55 (1.20, 1.99)	1.34 (1.00, 1.79)
3rd quintile	1.39 (1.04, 1.86)	1.17 (0.86, 1.60)	2.09 (1.64, 2.65)	1.72 (1.31, 2.27)
4th quintile	2.10 (1.60, 2.76)	1.60 (1.19, 2.15)	3.52 (2.80, 4.42)	2.59 (1.98, 3.39)
5th quintile	3.67 (2.80, 4.80)	2.03 (1.49, 2.78)	5.97 (4.76, 7.50)	3.41 (2.57, 4.52)
	N = 3439 (initially non-disabled)		*N* = 6623 (initially non-disabled)	
	Adjusted[†]	Fully Adjusted[‡]	Adjusted[†]	Fully Adjusted[‖]
2-year incident Disability[*]	Risk ratio (95% CI)		Risk ratio (95% CI)	
Continuous frailty score	1.71 (1.59, 1.85)	1.48 (1.36, 1.62)	1.65 (1.60 ,1.70)	1.44 (1.36, 1.53)
Quintiles				
1st quintile	Ref.	Ref.	Ref.	Ref.
2nd quintile	1.46 (1.09, 1.96)	1.33 (0.98, 1.80)	1.71 (1.34, 2.20)	1.61 (1.19, 2.18)
3rd quintile	1.87 (1.41, 2.49)	1.54 (1.15, 2.08)	2.75 (2.18, 3.46)	2.24 (1.68, 2.98)
4th quintile	2.83 (2.16, 3.71)	2.25 (1.69, 2.99)	4.30 (3.45, 5.36)	2.92 (2.20, 3.87)
5th quintile	4.40 (3.35, 5.78)	2.92 (2.16, 3.96)	7.85 (6.32, 9.74)	4.21 (3.14, 5.63)

Abbreviations: PY, person-year; CI, confidence interval; ADL, activities of daily living.

For participants who were unable to conduct the gait speed or grip strength test, their scores were imputed as two standard deviations below the mean.

[*] Participants with difficulty in any ADLs (dressing, eating, toileting, bathing, transferring, and walking across a room) were considered disabled.

[†] Adjusted for clinic site (only for the Cardiovascular Health Study), age, sex, race/ethnicity, and education.

[‡] Adjusted for clinic site, age, sex, race/ethnicity, education, smoking status, body mass index, history of coronary heart disease, heart failure, stroke, hypertension, diabetes, cancer, and arthritis, cognitive function, disability (only for analyses of mortality), systolic and diastolic blood pressure, C-reactive protein, cystatin C, and total cholesterol.

[‖] Adjusted for age, sex, race/ethnicity, education, smoking status, body mass index, history of cardiac disease, stroke, hypertension, diabetes, cancer, and arthritis, cognitive function, disability (only for analyses of mortality), blood pressure, C-reactive protein, cystatin C, and total cholesterol.

Web Table 12. Association of frailty with mortality and disability among persons classified as robust, prefrail, and frail by the frailty phenotype scale with persons not completing the gait speed or grip strength test included (sensitivity analysis).

	Cardiovascular Health Study		Health and Retirement Study	
	Adjusted[‡]	Fully Adjusted[§]	Adjusted[‡]	Fully Adjusted[‖]
5-year Mortality	Hazard ratio (95% CI)		Hazard ratio (95% CI)	
Robust[*]				
Continuous frailty score	1.33 (1.05, 1.68)	1.12 (0.87, 1.44)	1.50 (1.25, 1.81)	1.20 (1.01, 1.44)
Quintiles				
1st quintile	Ref.	Ref.	Ref.	Ref.
2nd quintile	1.21 (0.84, 1.75)	0.96 (0.64, 1.44)	1.47 (1.09, 1.98)	1.42 (1.05, 1.93)
3rd quintile	1.53 (1.04, 2.26)	1.11 (0.72, 1.70)	1.91 (1.37, 2.64)	1.74 (1.24, 2.44)
4th & 5th quintiles	1.61 (0.91, 2.84)	1.23 (0.67, 2.26)	2.82 (1.43, 5.49)	2.55 (1.27, 5.13)
Prefrail[*]				
Continuous frailty score	1.54 (1.33, 1.79)	1.26 (1.07, 1.49)	1.46 (1.34, 1.60)	1.26 (1.13, 1.41)
Quintiles				
1st quintile	Ref.	Ref.	Ref.	Ref.
2nd quintile	1.26 (0.73, 2.18)	1.16 (0.63, 2.13)	1.34 (0.77, 2.34)	1.30 (0.74, 2.27)
3rd quintile	1.06 (0.63, 1.79)	1.03 (0.58, 1.84)	1.72 (1.02, 2.91)	1.58 (0.93, 2.67)
4th quintile	1.61 (0.99, 2.61)	1.29 (0.74, 2.25)	2.74 (1.64, 4.58)	2.32 (1.39, 3.89)
5th quintile	2.72 (1.65, 4.48)	1.86 (1.05, 3.31)	3.13 (1.84, 5.33)	2.54 (1.48, 4.33)
Frail[*]				
Continuous frailty score	1.17 (0.94, 1.47)	1.04 (0.80, 1.34)	1.45 (1.29, 1.64)	1.26 (1.13, 1.41)
2-year incident Disability[†]	Adjusted[‡]	Fully Adjusted[§]	Adjusted[‡]	Fully Adjusted[‖]
	Risk ratio (95% CI)		Risk ratio (95% CI)	
Robust[*]				
Continuous frailty score	1.81 (1.38, 2.38)	1.57 (1.19, 2.07)	1.53 (1.28, 1.84)	1.35 (1.09, 1.67)
Quintiles				
1st quintile	Ref.	Ref.	Ref.	Ref.
2nd quintile	1.35 (0.93, 1.95)	1.20 (0.82, 1.76)	1.51 (1.12, 2.03)	1.39 (0.98, 1.97)
3rd quintile	1.51 (1.01, 2.27)	1.13 (0.73, 1.75)	2.19 (1.59, 3.01)	1.78 (1.23, 2.59)
4th & 5th quintiles	4.03 (2.67, 6.08)	3.03 (1.95, 4.71)	3.04 (1.56, 5.95)	2.97 (1.31, 6.75)
Prefrail[*]				
Continuous frailty score	1.54 (1.35, 1.76)	1.41 (1.22, 1.63)	1.53 (1.42, 1.64)	1.40 (1.25, 1.56)
Quintiles				
1st quintile	Ref.	Ref.	Ref.	Ref.

2nd quintile	1.31 (0.78, 2.19)	1.27 (0.72, 2.23)	1.47 (0.86, 2.50)	2.48 (1.01, 6.09)
3rd quintile	1.50 (0.93, 2.41)	1.38 (0.81, 2.36)	2.05 (1.24, 3.38)	3.34 (1.41, 7.93)
4th quintile	1.76 (1.11, 2.80)	1.58 (0.94, 2.65)	2.92 (1.78, 4.78)	3.97 (1.67, 9.42)
5th quintile	2.63 (1.64, 4.21)	2.14 (1.25, 3.67)	4.15 (2.51, 6.84)	5.02 (2.08, 12.12)
Frail*				
Continuous frailty score	1.33 (1.05, 1.67)	1.13 (0.81, 1.57)	1.38 (1.28, 1.48)	1.36 (1.16, 1.60)

Abbreviations: CI, confidence interval; ADL, activities of daily living.

For participants who were unable to conduct the gait speed or grip strength test, their scores on the continuous frailty scale were imputed as two standard deviations below the mean; their scores on the frailty phenotype scale were imputed as 1 (meeting the frailty criterion).

* Participants were identified as robust, prefrail, and frail based on the frailty phenotype scale (separately for two cohorts). In both cohorts, >90% of frail persons identified by the physical frailty phenotype scale were in the 5th quintile of the continuous frailty scale.

† Participants who reported having difficulty in any of six ADLs (dressing, eating, toileting, bathing, transferring or getting out of bed, and walking across a room) were considered disabled. Only initially non-disabled participants were included.

‡ Adjusted for clinic site (only for the Cardiovascular Health Study), age, sex, race/ethnicity, and education.

§ Adjusted for clinic site, age, sex, race (white, black), education (less than high school, high school or equivalent, and more than high school), smoking status (current, former, and never), body mass index (<25.0, 25.0-30.0, and >30.0), history of coronary heart disease, heart failure, stroke, hypertension, diabetes, cancer, and arthritis, cognitive function measured by the modified mini-mental status examination, ADL difficulty (none vs. any; only for analyses of mortality), systolic and diastolic blood pressure, C-reactive protein, cystatin C, and total cholesterol.

‖ Adjusted for age, sex, race (white, black, others), education (less than high school, high school or equivalent, and more than high school), smoking status (current, former, and never), body mass index (<25.0, 25.0-30.0, and >30.0), history of cardiac disease (heart attack, coronary heart disease, angina, heart failure, or other heart problems), stroke, hypertension, diabetes, cancer, and arthritis, cognitive function measured by the Telephone Interview for Cognitive Status, ADL difficulty (none vs. any; only for analyses of mortality), systolic and diastolic blood pressure, C-reactive protein, cystatin C, and total cholesterol.