

Table S1. Baseline characteristics of sarcopenic and non-sarcopenic subjects

	Male			Female		
	Sarcopenia (n = 36)	No sarcopenia (n = 321)	P - value	Sarcopenia (n = 35)	No sarcopenia (n = 335)	P - value
Anthropometry and clinical assessments						
Mean (SD)						
Age (years)	79.0 (6.3)	73.4 (5.9)	< 0.001	76.9 (6.5)	72.8 (5.9)	< 0.001
BMI (kg/m²)	24.1 (3.0)	28.1 (3.9)	< 0.001	23.4 (3.6)	28.3 (4.6)	< 0.001
Waist circumference (cm)	93.3 (9.9)	101.8 (10.7)	< 0.001	83.6 (11.4)	91.6 (11.3)	< 0.001
ASM (kg)	19.3 (1.7)	24.0 (2.9)	< 0.001	13.7 (1.6)	16.3 (2.2)	< 0.001
ASM/height² (kg/m²)	6.93 (0.33)	8.22 (0.78)	< 0.001	5.43 (0.33)	6.52 (0.72)	< 0.001
Grip strength (kg)	25.0 (4.4)	35.3 (8.4)	< 0.001	15.1 (3.7)	21.3 (6.4)	< 0.001
Co-morbidities						
% (n)						
Hypertension	77.8% (28)	71.7% (230)	0.436	62.9% (22)	69.6% (233)	0.415
Cardiovascular disease*	44.4% (16)	30.1% (95)	0.078	27.3% (9)	35.5% (117)	0.347
Diabetes	8.3% (3)	19.4% (62)	0.104	17.6% (6)	12.8% (43)	0.427
Asthma	19.4% (7)	17.8% (54)	0.811	31.3% (10)	18.8% (61)	0.091
COPD	33.3% (12)	22.2% (69)	0.134	12.5% (4)	8.6% (28)	0.510
Arthritis (OA, RA, or others)	30.6% (11)	41.1% (130)	0.219	60.6% (20)	61.2% (202)	0.946
Depression (CES-D ≥ 16)	9.7% (3)	5.3% (15)	0.404	15.4% (4)	8.9% (25)	0.287
Mental health condition**	16.7% (6)	8.9% (28)	0.138	21.2% (7)	15.5% (51)	0.389
CCI, % (n)						
0	47.2% (17)	48.5% (148)	0.004	55.2% (16)	67.7% (218)	0.393
1	38.9% (14)	38.7% (118)		37.9% (11)	23.6% (76)	
2	2.8% (1)	10.8% (33)		6.9% (2)	8.4% (27)	
3	8.3% (3)	2.0% (6)		0.0%	0.3% (1)	
4	2.8% (1)	0.0%		-	-	
Risk factors % (n)						
Physical activity level						
Sedentary	34.6% (9)	30.0% (76)	0.795	58.6% (17)	40.8% (107)	0.253
Low	23.1% (6)	29.6% (75)		24.1% (7)	29.4% (77)	
Moderate	30.8% (8)	32.8% (83)		17.2% (5)	26.0% (68)	
High	11.5% (3)	7.5% (19)		0.0%	3.8% (10)	
Alcohol risk						
No risk	80.6% (29)	79.8% (256)	0.156	37.1% (13)	44.5% (149)	0.792
Low risk	13.9% (5)	11.8% (38)		60.0% (21)	51.6% (173)	
Intermediate risk	0%	6.9% (22)		2.9% (1)	3.3% (11)	
High to very high risk	5.6% (2)	1.6% (5)		0.0%	0.6% (2)	
Smoking status						
Non-smoker	27.8% (10)	30.3% (97)	0.236	68.6% (24)	64.8% (215)	0.879
Ex-smoker	58.3% (21)	63.4% (203)		25.7% (9)	29.8% (99)	
Current smoker	13.9% (5)	6.3% (20)		5.7% (2)	5.4% (18)	
Demographics % (n)						
Family structure						
Adults living together	54.3% (19)	59.9% (185)	0.447	25.7% (9)	47.9% (158)	0.003
Adult living alone	37.1% (13)	27.5% (85)		74.3% (26)	45.2% (149)	
Family with child/children	8.6% (3)	12.6% (39)		0.0%	7.0% (23)	

SD: Standard deviation, BMI: Body mass index, ASM: Appendicular skeletal muscle mass, COPD: Chronic obstructive pulmonary disease, OA: Osteoarthritis, RA: Rheumatoid arthritis, CES-D: Centre for Epidemiology Studies Depression Scale, CCI: Charlson Co-morbidity Index.

* Cardiovascular disease is defined as angina, myocardial infarction, stroke, or transient ischaemic attack.

** Mental health condition is defined as current depression, anxiety, stress related problem, and other mental health disorders.

Table S2. Univariate analysis of SF-36 quality of life domains for sarcopenic and non-sarcopenic subjects

	All subjects			Male			Female		
	Sarcopenia (n = 71)	No sarcopenia (n = 656)	P - value	Sarcopenia (n = 36)	No sarcopenia (n = 321)	P - value	Sarcopenia (n = 35)	No sarcopenia (n = 335)	P - value
SF-36 score*									
PCS score	56.2 (27.3)	65.9 (23.2)	0.002	57.0 (28.9)	67.8 (22.3)	0.012	55.3 (25.9)	64.0 (23.9)	0.060
Physical function	52.2 (27.7)	64.6 (25.6)	< 0.001	56.0 (30.6)	68.9 (24.7)	0.005	48.3 (24.3)	60.7 (25.8)	0.009
Role physical	46.8 (44.5)	62.6 (43.0)	0.004	49.3 (42.9)	63.7 (42.5)	0.055	44.3 (46.6)	61.5 (43.5)	0.028
General health	57.2 (22.1)	63.9 (19.6)	0.009	55.9 (24.6)	63.6 (19.4)	0.033	58.6 (19.3)	64.2 (19.9)	0.130
Bodily pain	64.2 (30.3)	71.3 (23.6)	0.018	65.3 (32.3)	75.0 (22.2)	0.019	63.0 (28.5)	67.9 (24.5)	0.270
MCS score	71.8 (22.4)	79.8 (18.0)	0.001	72.4 (24.7)	81.8 (16.0)	0.002	71.2 (20.3)	78.1 (19.5)	0.051
Vitality	54.5 (24.2)	63.0 (20.8)	0.001	56.1 (26.9)	65.3 (19.6)	0.012	52.9 (21.5)	60.8 (21.8)	0.041
Role emotion	79.8 (37.2)	89.4 (28.8)	0.010	79.6 (37.6)	90.5 (26.8)	0.028	80.0 (37.2)	88.4 (30.5)	0.133
Social function	78.5 (26.1)	86.5 (20.8)	0.003	77.2 (28.6)	88.5 (18.3)	0.001	79.9 (23.7)	84.6 (22.8)	0.240
Mental Health	73.8 (19.4)	79.8 (17.0)	0.005	75.3 (21.3)	81.9 (15.1)	0.018	72.2 (17.5)	77.8 (18.3)	0.086

* Data reported as mean (standard deviation)

PCS: Physical component summary, MCS: Mental component summary

Table S3. Relationship between sarcopenia and the physical and mental component summary scores in all subjects

	PCS		MCS	
		P - value		P - value
Unadjusted	B = - 9.71 SE _B = 3.15 β = - 0.119	0.002	B = - 8.04 SE _B = 2.32 β = - 0.129	0.001
Model 1	B = - 6.73 SE _B = 3.20 β = - 0.083	0.036	B = - 7.35 SE _B = 2.40 β = - 0.118	0.002
Model 2	B = - 5.01 SE _B = 3.60 β = - 0.060	0.165	B = - 6.32 SE _B = 2.71 β = - 0.101	0.020
Model 3	B = - 2.84 SE _B = 4.08 β = - 0.033	0.487	B = - 5.90 SE _B = 2.47 β = - 0.096	0.017

B: Unstandardized regression coefficient, SE_B: Standard error of the coefficient, β: Standardized coefficient

Model 1: sarcopenia + age

Model 2: model 1 + physical activity + smoking status

Model 3: model 2 + Charlson Co-morbidity Index + depression

Table S4. Relationship between sarcopenia and SF-36 quality of life domains in all subjects

	PF		RP		GH		BP		VT		RE		SF		MH	
		P - value		P - value		P - value		P - value		P - value		P - value		P - value		P - value
Unadjusted	B = - 12.41 SE _B = 3.31 β = - 0.141	< 0.001	B = - 15.75 SE _B = 5.40 β = - 0.109	0.004	B = - 6.70 SE _B = 2.57 β = - 0.098	0.009	B = - 7.19 SE _B = 3.04 β = - 0.088	0.018	B = - 8.50 SE _B = 2.66 β = - 0.118	0.001	B = - 9.59 SE _B = 3.71 β = - 0.096	0.010	B = - 8.00 SE _B = 2.67 β = - 0.111	0.003	B = - 6.03 SE _B = 2.15 β = - 0.104	0.005
Model 1	B = - 7.35 SE _B = 3.31 β = - 0.084	0.027	B = - 11.00 SE _B = 5.51 β = - 0.076	0.046	B = - 5.18 SE _B = 2.64 β = - 0.076	0.050	B = - 7.23 SE _B = 3.14 β = - 0.088	0.021	B = - 7.15 SE _B = 2.74 β = - 0.099	0.009	B = - 9.10 SE _B = 3.83 β = - 0.091	0.018	B = - 6.94 SE _B = 2.75 β = - 0.096	0.012	B = - 6.58 SE _B = 2.21 β = - 0.113	0.003
Model 2	B = - 5.34 SE _B = 3.56 β = - 0.059	0.134	B = - 10.10 SE _B = 6.25 β = - 0.069	0.106	B = - 4.31 SE _B = 2.95 β = - 0.063	0.145	B = - 6.47 SE _B = 3.54 β = - 0.078	0.068	B = - 4.23 SE _B = 3.05 β = - 0.058	0.165	B = - 10.05 SE _B = 4.32 β = - 0.102	0.020	B = - 5.19 SE _B = 3.05 β = - 0.071	0.089	B = - 6.38 SE _B = 2.56 β = - 0.108	0.013
Model 3	B = - 5.46 SE _B = 4.08 β = - 0.058	0.182	B = - 6.41 SE _B = 7.06 β = - 0.042	0.365	B = - 3.62 SE _B = 3.32 β = - 0.051	0.276	B = - 4.22 SE _B = 3.87 β = - 0.050	0.277	B = - 4.76 SE _B = 3.22 β = - 0.064	0.141	B = - 9.01 SE _B = 4.03 β = - 0.093	0.026	B = - 4.81 SE _B = 3.10 β = - 0.067	0.122	B = - 5.89 SE _B = 2.36 β = - 0.103	0.013

B: Unstandardized regression coefficient, SE_B: Standard error of the coefficient, β: Standardized coefficient

Model 1: sarcopenia + age, Model 2: model 1 + physical activity + smoking status, Model 3: model 2 + Charlson Co-morbidity Index + depression

Table S5. Relationship between sarcopenia and SF-36 quality of life domains in males

	PF		RP		GH		BP		VT		RE		SF		MH	
		P - value		P - value		P - value		P - value		P - value		P - value		P - value		P - value
Unadjusted	B = - 12.82 SE _B = 4.58 β = - 0.151	0.005	B = - 14.38 SE _B = 7.48 β = - 0.102	0.055	B = - 7.72 SE _B = 3.61 β = - 0.115	0.033	B = - 9.70 SE _B = 4.11 β = - 0.125	0.019	B = - 9.16 SE _B = 3.63 β = - 0.133	0.012	B = - 10.88 SE _B = 4.95 β = - 0.117	0.028	B = - 11.30 SE _B = 3.44 β = - 0.173	0.001	B = - 6.62 SE _B = 2.78 β = - 0.126	0.018
Model 1	B = - 8.89 SE _B = 4.68 β = - 0.105	0.058	B = - 11.55 SE _B = 7.77 β = - 0.082	0.138	B = - 7.25 SE _B = 3.77 β = - 0.108	0.055	B = - 11.92 SE _B = 4.26 β = - 0.153	0.005	B = - 8.85 SE _B = 3.79 β = - 0.129	0.020	B = - 13.50 SE _B = 5.12 β = - 0.145	0.009	B = - 11.88 SE _B = 3.58 β = - 0.182	0.001	B = - 9.11 SE _B = 2.86 β = - 0.173	0.002
Model 2	B = - 9.87 SE _B = 5.21 β = - 0.111	0.059	B = - 11.24 SE _B = 9.07 β = - 0.077	0.217	B = - 9.65 SE _B = 4.32 β = - 0.140	0.026	B = - 12.50 SE _B = 5.08 β = - 0.152	0.014	B = - 10.23 SE _B = 4.18 β = - 0.150	0.015	B = - 13.02 SE _B = 5.92 β = - 0.138	0.029	B = - 13.46 SE _B = 4.10 β = - 0.200	0.001	B = - 11.16 SE _B = 3.36 β = - 0.202	0.001
Model 3	B = - 9.90 SE _B = 5.42 β = - 0.114	0.069	B = - 6.59 SE _B = 9.27 β = - 0.046	0.478	B = - 11.04 SE _B = 4.41 β = - 0.164	0.013	B = - 13.14 SE _B = 4.99 β = - 0.165	0.009	B = - 12.09 SE _B = 4.08 β = - 0.183	0.003	B = - 12.96 SE _B = 5.53 β = - 0.140	0.020	B = - 12.45 SE _B = 3.88 β = - 0.194	0.002	B = - 10.98 SE _B = 3.14 β = - 0.207	0.001

B: Unstandardized regression coefficient, SE_B: Standard error of the coefficient, β: Standardized coefficient

Model 1: sarcopenia + age

Model 2: model 1 + physical activity + smoking status

Model 3: model 2 + Charlson Co-morbidity Index + depression

Table S6. Relationship between sarcopenia and SF-36 quality of life domains in females

	PF		RP		GH		BP		VT		RE		SF		MH	
		P - value		P - value		P - value		P - value		P - value		P - value		P - value		P - value
Unadjusted	B = - 12.32 SE _B = 4.68 β = - 0.139	0.009	B = - 17.22 SE _B = 7.80 β = - 0.116	0.028	B = - 5.58 SE _B = 3.68 β = - 0.081	0.130	B = - 4.88 SE _B = 4.42 β = - 0.058	0.270	B = - 8.00 SE _B = 3.87 β = - 0.107	0.041	B = - 8.35 SE _B = 5.55 β = - 0.079	0.133	B = - 4.78 SE _B = 4.06 β = - 0.061	0.240	B = - 5.58 SE _B = 3.24 β = - 0.089	0.086
Model 1	B = - 6.08 SE _B = 4.52 β = - 0.069	0.179	B = - 11.11 SE _B = 7.82 β = - 0.075	0.156	B = - 3.60 SE _B = 3.70 β = - 0.052	0.331	B = - 3.09 SE _B = 4.49 β = - 0.036	0.492	B = - 5.77 SE _B = 3.91 β = - 0.077	0.141	B = - 5.57 SE _B = 5.62 β = - 0.052	0.322	B = - 2.46 SE _B = 4.11 β = - 0.032	0.549	B = - 4.55 SE _B = 3.31 β = - 0.073	0.170
Model 2	B = - 0.593 SE _B = 4.75 β = - 0.007	0.901	B = - 9.18 SE _B = 8.62 β = - 0.063	0.288	B = 0.143 SE _B = 4.02 β = 0.002	0.972	B = - 0.360 SE _B = 4.83 β = - 0.004	0.941	B = 0.744 SE _B = 4.34 β = 0.010	0.864	B = - 7.11 SE _B = 6.22 β = - 0.069	0.253	B = 1.95 SE _B = 4.38 β = 0.025	0.657	B = - 2.28 SE _B = 3.76 β = - 0.037	0.544
Model 3	B = - 1.92 SE _B = 5.98 β = - 0.019	0.748	B = - 7.37 SE _B = 10.89 β = - 0.045	0.500	B = 5.34 SE _B = 5.04 β = 0.069	0.290	B = 5.64 SE _B = 5.82 β = 0.063	0.333	B = 3.39 SE _B = 5.00 β = 0.041	0.499	B = - 4.30 SE _B = 5.96 β = - 0.042	0.471	B = 3.97 SE _B = 4.90 β = 0.050	0.419	B = - 0.103 SE _B = 3.53 β = - 0.002	0.977

B: Unstandardized regression coefficient, SE_B: Standard error of the coefficient, β: Standardized coefficient

Model 1: sarcopenia + age

Model 2: model 1 + physical activity + smoking status

Model 3: model 2 + Charlson Co-morbidity Index + depression