

**Appendix 1**—Demographic and physical information between analyzed subjects and non-subjects.

	<b>Total</b>	<b>Included</b>	<b>Excluded (missing data)</b>	<b>P value<sup>a</sup></b>
<b>Total, N</b>	17,795	14,939(86.0)	2,856 (14.0)	
<b>Sleep duration (hours), n (%)</b>				0.107
≤5	2,419	1,949 (12.4)	470 (14.6)	
6	4,315	3,548 (26.4)	767 (26.3)	
7	4,943	4,085 (29.9)	849 (28.9)	
8	3,816	3,157 (23.1)	659 (22.8)	
≥9	1,386	1,151 (8.1)	231 (7.3)	
<b>Sex, n (%)</b>				0.549
Male	7,562	6,225 (51.1)	1,337 (51.8)	
Female	9,501	7,862 (48.9)	1,639 (48.2)	
<b>Age (years), mean ± SE</b>	17,795	44.2 ± 0.3	43.5 ± 0.5	0.222
<b>Body mass index (kg/m<sup>2</sup>), n (%)</b>				
Thin	823	674 (5.0)	149 (5.4)	
Normal	10,877	8,987 (63.8)	1,890 (63.4)	
Overweight	5,268	4,345 (31.2)	923 (31.2)	
<b>Household income level, n (%)</b>				0.012
Q1 (Lowest)	3,214	2,675 (15.5)	539 (16.3)	
Q2	4,276	3,498 (25.5)	778 (30.1)	
Q3	4,740	3,960 (29.8)	780 (28.5)	
Q4 (Highest)	4,600	3,882 (29.2)	718 (25.1)	
<b>Educational level, n (%)</b>				0.810
Less than elementary school	4,176	3,469 (18.1)	707 (17.4)	
Middle school	1,786	1,475 (9.7)	311 (9.9)	
High school	5,876	4,854 (39.4)	1,022 (38.6)	
College	5,017	4,096 (32.8)	921 (34.1)	
<b>Regular exercise, n (%)</b>				0.002
Yes	8,877	7,519 (54.8)	1,358 (47.9)	
No	7,956	6,351 (45.2)	1,605 (52.1)	
<b>Current smoking, n (%)</b>				0.195
Yes	3,815	3,107 (26.8)	708 (28.4)	
No	13,116	10,848 (73.2)	2,268 (71.6)	
<b>Alcohol intake, n (%)</b>				0.538
Yes	4,132	3,398 (29.8)	734 (30.6)	
No	12,931	10,689 (70.2)	2,242 (69.4)	
<b>Diabetes, n (%)</b>				0.920
Yes	1,347	1,080 (7.0)	267 (7.1)	
No	14,877	12,168 (93.0)	2,709 (92.9)	
<b>Hypertension, n (%)</b>				0.005
Yes	5,027	4,154 (26.5)	873 (23.0)	
No	11,875	9,772 (73.5)	2,103 (77.0)	
<b>Employment status, n (%)</b>				0.175
Employed	10,520	8,674 (65.3)	1,846 (67.0)	
Unemployed	6,417	5,287 (34.7)	1,130 (33.0)	
<b>Sarcopenia, n (%)</b>				0.038
Yes	2,336	2,010 (14.8)	326 (12.3)	
No	16,286	13,824 (85.2)	2,465 (87.7)	

<sup>a</sup> = P values are determined by weighted chi-square tests of categorical variables and by weighted ANOVA of continuous variables.

**Appendix 2**—Adjusted odds ratios (95% confidence intervals)<sup>†</sup> for sleep duration from multinomial logistic regression.

	Sleep duration (hours)				
	≤5	6	7	8	≥9
<b>Sarcopenia</b>					
Yes	0.941 (0.667-1.328)	0.108 (0.819-1.444)	Ref	1.205 (0.934-1.555)	1.621 (1.108-2.371)
No	1.000				
<b>Sex</b>					
Male	0.763 (0.567-1.025)	0.887 (0.731-1.075)	Ref	1.093 (0.904-1.321)	0.564 (0.451-0.705)
Female	1.000				
<b>Age</b>	1.004 (0.992-1.017)	0.999 (0.991-1.007)	Ref	1.003 (0.996-1.010)	1.027 (1.017-1.037)
<b>Body mass index</b>					
Thin	1.391 (0.777-2.488)	1.261 (0.808-1.970)	Ref	1.589 (1.051-2.420)	2.032 (1.193-3.462)
Normal	1.000				
Overweight	1.241 (0.971-1.585)	1.126 (0.932-1.360)	Ref	0.888 (0.732-1.078)	0.578 (0.376-0.812)
<b>House income</b>					
Q1 (Lowest)	1.259 (0.904-1.753)	0.766 (0.571-1.027)	Ref	1.057 (0.768-1.455)	1.583 (1.032-2.438)
Q2	0.909 (0.676-1.223)	0.802 (0.630-1.020)	Ref	1.112 (0.866-1.428)	1.015 (0.729-1.413)
Q3	0.606 (0.452-0.812)	0.820 (0.657-1.024)	Ref	0.839 (0.663-1.060)	0.775 (0.546-1.099)
Q4 (Highest)	1.000				
<b>Regular exercise</b>					
Yes	1.000				
No	0.732 (0.585-0.917)	0.845 (0.709-1.005)	Ref	1.106 (0.918-1.332)	1.394 (1.021-1.903)
<b>Current smoking</b>					
Yes	1.371 (1.045-1.800)	1.165 (0.958-1.418)	Ref	1.163 (0.939-1.441)	1.509 (1.070-2.219)
No	1.000				
<b>Alcohol intake</b>					
Yes	1.234 (0.939-1.622)	1.114 (0.908-1.367)	Ref	0.946 (0.751-1.191)	1.003 (0.68-1.442)
No	1.000				
<b>Hypertension</b>					
Yes	1.126 (0.879-1.441)	0.907 (0.743-1.106)	Ref	0.981 (0.789-1.219)	1.133 (0.805-1.595)
No	1.000				
<b>Employment status</b>					
Yes	1.312 (0.890-1.933)	1.295 (0.968-1.732)	Ref	0.868 (0.636-1.185)	0.628 (0.418-0.942)
No	1.000				
<b>Day time work</b>	1.000				
Evening time work	1.445 (1.008-2.073)	0.929 (0.688-1.253)	Ref	1.218 (0.933-1.591)	1.269 (0.816-1.970)
Night time work	1.249 (0.754-2.068)	0.916 (0.589-1.423)	Ref	1.043 (0.662-1.642)	1.587 (0.869-2.897)
Shift work	2.003 (1.344-2.985)	1.076 (0.773-1.497)	Ref	0.969 (0.660-1.423)	0.930 (0.530-1.633)

<sup>†</sup> = adjusted for age, gender, body mass index, household income, education level, current smoking, regular exercise, alcohol drinking, hypertension, diabetes, employment status, and work schedule.