

Supplement Table 2.a: Sarcopenia: Clinical variables for cases and their matched controls. Cases defined by sarcopenia text or code or both, with no text nor code for either cachexia or frailty. Continuous variables are listed as median (1st, 3rd quartiles) with p value by Wilcoxon signed rank test. Categorical variables are listed as n (%) with odds ratio, its 95% CI and p value by conditional logistic regression.

	Cases	Controls	Odds Ratio (95% CI)	P value
n	89	89		
Age	64.5 (56.7, 76.9)	64.0 (55.5, 76.6)		
Female	55 (61.8)	55 (61.8)		
Race				
African American	7 (7.9)	7 (7.9)		
White	52 (58.4)	52 (58.4)		
Other	30 (33.7)	30 (33.7)		
BMI, kg/m² (n= 71 cases and 46 controls)	24.6 (21.2, 28.2)	29.0 (26.5, 33.9)		<0.0001
Weight, kg (n= 74 cases and 56 controls)	75.6 (61.0, 88.0)	87.0 (72.9, 99.3)		0.0002
Albumin, mg/dl (n= 82 cases and 48 controls)	3.2 (2.6, 3.8)	4.2 (3.8, 4.5)		<0.0001
Prealbumin, mg/dl (n= 14 cases and 1 controls)	13.5 (9.0, 19.0)	26 ****		N/A
Diabetes with complication	12 (13.5)	3 (3.4)	5.5 (1.2, 24.8)	0.0266
Diabetes without complications	20 (22.5)	15 (16.9)	1.5 (0.7, 3.1)	0.3387
HgbA1C, % (n= 35 cases and 13 controls)	5.6 (3.9, 6.3)	6.5 (5.8, 7.3)		0.5781
Hypertension	44 (49.4)	23 (25.8)	3.1 (1.5, 6.3)	0.0019
Cardiovascular disease	53 (59.6)	22 (24.7)	6.2 (2.6, 14.6)	<0.0001
Peripheral vascular disease	14 (15.7)	4 (4.5)	6.0 (1.3, 26.8)	0.0190
Chronic kidney disease stages 3-5	25 (28.1)	6 (6.7)	4.8 (1.8, 12.6)	0.0014
Chronic kidney disease stage 4	9 (10.1)	3 (3.4)	3.0 (0.8, 11.1)	0.0994
Chronic kidney disease stage 5 or End stage kidney disease	5 (5.6)	1 (1.1)	5.0 (0.6, 42.8)	0.1418
Any malignancy	16 (18.0)	6 (6.7)	3.0 (1.1, 8.3)	0.0334
Liver disease *	45 (50.6)	1 (1.1)	*	<0.0001
Depression	12 (13.5)	1 (1.1)	12.0 (1.6, 92.3)	0.0170
AIDS **	1 (1.1)	0 (0.0)	**	**
Neurologic conditions	52 (58.4)	13 (14.6)	14.0 (4.3, 45.2)	<0.0001
Fractures (excludes fingers, toes, craniofacial fractures)	7 (7.9)	2 (2.3)	3.5 (0.7, 16.8)	0.1182
Osteoporosis	6 (6.7)	4 (4.5)	1.5 (0.4, 5.3)	0.5299
Charlson comorbidity index value	4 (1, 7)	0 (0, 2)		<0.0001
Charlson comorbidity index > 2	57 (64.0)	11 (12.4)	24 (5.8, 98.7)	<0.0001
Number of hospitalizations during 2016~2017	2 (0, 4)	0 (0, 0)		<0.0001
Selected Medications post-index ***				
Glucocorticoids	0 (0.0)	10 (11.2)		
Dronabinol	2 (2.3)	0 (0.0)		
Megestrol	0 (0.0)	0 (0.0)		
Caloric Supplement	1 (0.0)	0 (0.0)		
Testosterone	0 (0.0)	1 (1.1)		

*: For liver disease, the conditional logistic regression did not converge. The p value was from McNemar test.

** : For AIDS, since the controls had a zero count, no odds ratio can be computed.

***: For medications, conditional logistic regressions did not converge because of zero counts.

****: for pre-albumin, only one control had value (as 26); hence no comparison.

Supplement Table 2.b: Cachexia: Clinical variables for cases and their matched controls. Cases defined by cachexia text or code or both, with no text nor code for either sarcopenia or frailty. Continuous variables are listed as median (1st, 3rd quartiles) with p value by Wilcoxon signed rank test. Categorical variables are listed as n (%) with odds ratio, its 95% CI and p value by conditional logistic regression.

	Cases	Controls	Odds Ratio (95% CI)	P value
n	2607	2607		
Age	63.1 (53.4, 74.8)	62.5 (52.8, 74.2)		<0.0001
Female	1210 (46.4)	1210 (46.4)		
Race				
African American	323 (12.4)	323 (12.4)		
White	1622 (62.2)	1622 (62.2)		
Other	662 (25.4)	662 (25.4)		
BMI, kg/m² (n= 2125 cases and 1289 controls)	19.8 (17.5, 23.0)	28.7 (25.2, 33.5)		<0.0001
Weight, kg (n= 2343 cases and 1623 controls)	56.8 (47.4, 66.9)	84.5 (71.0, 100.8)		<0.0001
Albumin, mg/dl (n= 2385 cases and 1396 controls)	3.5 (2.9, 4.0)	4.1 (3.9, 4.4)		<0.0001
Prealbumin, mg/dl (n= 458 cases and 26 controls)	12.1 (8.0, 18.8)	20.5 (9.0, 27.0)		0.5000
Diabetes with complication	202 (7.8)	78 (3.0)	2.7 (2.1, 3.6)	<0.0001
Diabetes without complications	474 (18.2)	340 (13.0)	1.5 (1.3, 1.8)	<0.0001
HgbA1C, % (n= 773 cases and 416controls)	5.8 (5.4, 6.5)	6.0 (5.6, 6.7)		0.8747
Hypertension	1247 (47.8)	807 (31.0)	2.3 (2.0, 2.6)	<0.0001
Cardiovascular disease	1532 (58.8)	822 (31.5)	3.9 (3.4, 4.5)	<0.0001
Peripheral vascular disease	361 (13.9)	114 (4.4)	4.0 (3.2, 5.2)	<0.0001
Chronic kidney disease stages 3-5	342 (13.1)	120 (4.6)	3.5 (2.8, 4.5)	<0.0001
Chronic kidney disease stage 4	99 (3.8)	19 (0.7)	5.7 (3.4, 9.6)	<0.0001
Chronic kidney disease stage 5 or End stage kidney disease	106 (4.1)	21 (0.8)	6.0 (3.6, 10.0)	<0.0001
Any malignancy	1005 (38.6)	211 (8.1)	7.8 (6.4, 9.4)	<0.0001
Liver disease	365 (14.0)	74 (2.8)	5.7 (4.3, 7.5)	<0.0001
Depression	302 (11.6)	48 (1.8)	7.2 (5.2, 10.0)	<0.0001
AIDS	69 (2.7)	10 (0.4)	7.6 (3.8, 15.1)	<0.0001
Neurologic conditions	1482 (56.9)	512 (19.6)	5.6 (4.9, 6.5)	<0.0001
Fractures (excludes fingers, toes, craniofacial fractures)	201 (7.7)	55 (2.1)	4.1 (3.0, 5.6)	<0.0001
Osteoporosis	234 (9.0)	98 (3.8)	2.8 (2.1, 3.6)	<0.0001
Charlson comorbidity index value	3 (1, 8)	0 (0, 1)		<0.0001
Charlson comorbidity index > 2	1471 (56.4)	325 (12.4)	11.2 (9.3, 13.6)	<0.0001
Number of hospitalizations during 2016~2017	2 (0, 4)	0 (0, 0)		<0.0001
Selected Medications post-index				
Glucocorticoids	263 (10.1)	373 (14.3)	0.6 (0.6, 0.8)	<0.0001
Dronabinol	33 (1.3)	3 (0.1)	11.0 (3.4, 35.9)	<0.0001
Megestrol	31 (1.2)	3 (0.1)	10.3 (3.2, 33.8)	<0.0001
Caloric Supplement	8 (0.3)	5 (0.2)	1.6 (0.5, 4.9)	0.4097
Testosterone	4 (0.2)	13 (0.5)	0.3 (0.1, 0.9)	00393

Supplement Table 2.c: Frailty: Clinical variables for cases and their matched controls. Cases defined by frailty text or code or both, with no text nor code for either sarcopenia or cachexia. Continuous variables are listed as median (1st, 3rd quartiles) with p value by Wilcoxon signed rank test. Categorical variables are listed as n (%) with odds ratio, its 95% CI and p value by conditional logistic regression.

	Cases	Controls	Odds Ratio (95% CI)	P value
n	5402	5402		
Age	80.2 (69.7, 87.3)	79.5 (69.1, 86.6)		
Female	3515 (65.1)	3515 (65.1)		
Race				
African American	458 (8.5)	458 (8.5)		
White	3925 (72.7)	3925 (72.7)		
Other	1019 (18.8)	1019 (18.8)		<0.0001
BMI, kg/m² (n= 4498 cases and 2803 controls)	24.1 (20.9, 28.2)	27.7 (24.2, 31.9)		<0.0001
Weight, kg (n= 4874 cases and 3405 controls)	65.5 (54.5, 78.6)	76.4 (63.6, 90.9)		<0.0001
Albumin, mg/dl (n= 4795 cases and 3155 controls)	3.7 (3.2, 4.0)	4.1 (3.8, 4.3)		<0.0001
Prealbumin, mg/dl (n= 535 cases and 62 controls)	15 (11, 21)	19 (12, 24)		0.2500
Diabetes with complication	863 (16.0)	203 (3.8)	5.3 (4.4, 6.2)	<0.0001
Diabetes without complications	1597 (29.6)	917 (17.0)	2.1 (1.9, 2.4)	<0.0001
HgbA1C, % (n= 2069 cases and 928 controls)	6.0 (5.5, 6.8)	6.0 (5.6, 6.7)		0.4334
Hypertension	3791 (70.2)	2218 (41.1)	3.8 (3.5, 4.2)	<0.0001
Cardiovascular disease	4095 (75.8)	2392 (44.3)	4.8 (4.3, 5.3)	<0.0001
Peripheral vascular disease	1108 (20.5)	380 (7.0)	3.5 (3.1, 4.0)	<0.0001
Chronic kidney disease stages 3-5	1470 (27.2)	459 (8.5)	4.2 (3.7, 4.8)	<0.0001
Chronic kidney disease stage 4	433 (8.0)	110 (2.0)	4.2 (3.4, 5.2)	<0.0001
Chronic kidney disease stage 5 or End stage kidney disease	281 (5.2)	31 (0.6)	9.9 (6.7, 14.6)	<0.0001
Any malignancy	1412 (26.1)	591 (10.9)	2.9 (2.6, 3.2)	<0.0001
Liver disease	399 (7.4)	132 (2.4)	3.2 (2.6, 3.9)	<0.0001
Depression	830 (15.4)	98 (1.8)	9.8 (7.8, 12.3)	<0.0001
AIDS	15 (0.3)	5 (0.1)	3.5 (1.2, 10.6)	0.0271
Neurologic conditions	3672 (68.0)	1190 (22.0)	8.4 (7.5, 9.4)	<0.0001
Fractures (excludes fingers, toes, craniofacial fractures)	692 (12.8)	225 (4.2)	3.4 (2.9, 4.0)	<0.0001
Osteoporosis	955 (17.7)	422 (7.8)	2.7 (2.4, 3.1)	<0.0001
Charlson comorbidity index value	3 (1, 6)	0 (0, 2)		<0.0001
Charlson comorbidity index > 2	3231 (59.8)	946 (17.5)	8.0 (7.1, 9.0)	<0.0001
Number of hospitalizations during 2016~2017	2 (0, 3)	0 (0, 0)		<0.0001
Selected Medications post-index				
Glucocorticoids	705 (13.1)	872 (16.1)	0.8 (0.7, 0.9)	<0.0001
Dronabinol	12 (0.2)	2 (0.0)	6.0 (1.3, 26.8)	0.0190
Megestrol	37 (0.7)	15 (0.3)	2.5 (1.4, 4.5)	0.0032
Caloric Supplement	16 (0.3)	4 (0.1)	4.0 (1.3, 12.0)	0.0132
Testosterone	7 (0.1)	15 (0.3)	0.5 (0.2, 1.1)	0.0959