

Corrigendum

Physical-function derived cut-points for the diagnosis of sarcopenia and dynapenia from the Canadian Longitudinal Study on Aging.

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In the original full paper,¹ appendicular lean mass data obtained from the CLSA inadvertently included bone mineral content. Because sarcopenia is typically defined by low appendicular soft lean mass (without bone), cut-points to identify sarcopenia were overestimated. Bone mineral content data were subsequently obtained from the CLSA and subtracted from lean mass for correction; all original analyses were repeated.

Correct appendicular (soft) lean mass and index values are found in Table 1. Cut-points for low appendicular (soft) lean mass are 7.31 kg/m² in men and 5.43 kg/m² in women (Figure 3). This correction impacted mostly descriptive data by sarcopenia category and estimations of sarcopenia prevalence in this cohort (Tables 2 and 3; Suppl. Figure 2), and in comparison to other cohorts (Tables 4 and 5). However, the correction did not affect the relationships between low appendicular lean soft mass, handgrip strength and physical

function (Figure 1) and therefore, the original interpretation of data and conclusions remain.

Corrected data are identified in red font in Tables 1-5 below, Figure 3, Supplemental Figure 2 and in the article text:

Online supplementary material

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table S1. Agreement of low handgrip strength cut-points with impaired physical performance.

Table S2. Agreement of low lean mass cut-points with low handgrip strength.

Table S3. Agreement of the CLSA with the FNIIH criteria for sarcopenia (low lean mass).

Table S4. Agreement of the CLSA with the FNIIH criteria for sarco-dynapenia.

Figure S2. Prevalence rates of impaired physical performance, low strength and low lean mass.

Table 1 Baseline characteristics of the Canadian longitudinal study on aging participants by sex, 2011–2015

	Men (n = 4,725)	Women (n = 4,363)
Age, year	72.7 ± 5.5	72.5 ± 5.5
Caucasian, %	96.1	97.5
Anthropomorphic measurements height, cm	1.74 ± 0.07	1.60 ± 0.06
Weight, kg	83.9 ± 13.5	70.1 ± 13.5
BMI, kg/m ²	27.8 ± 4.0	27.5 ± 5.1
Current smoker, %	5	5
Nutritional risk (SCREEN II-AB; 0–48)	39.6 ± 5.5	39.0 ± 5.9
Medication number (range 0–11)	0.8 ± 0.9	1.0 ± 1.0
PASE score (range 0–629)	129 ± 59	111 ± 53
Body composition		
ALM, kg	24.36 ± 3.59	16.23 ± 2.74
ALM index, kg/m ²	8.05 ± 0.99	6.34 ± 0.95
Fat mass, kg	25.02 ± 7.59	29.01 ± 8.89
Strength		
Maximum grip strength, kg	39.8 ± 8.4	23.9 ± 5.1
Physical performance		
BMI-adjusted physical performance, Z score	0.17 ± 2.14	−0.18 ± 2.16
TUG, s	9.9 ± 1.9	10.0 ± 2.0
Gait speed, m/s	0.95 ± 0.19	0.92 ± 0.18
Balance (range 0–60 s)	28.6 ± 23.1	25.1 ± 22.3
Chair rise average time, s	2.8 ± 0.8	2.9 ± 0.8

Values are mean ± SD. ALM, appendicular lean mass; BMI, body mass index; PASE, Physical Activity Scale for Elderly; SCREEN II, Seniors in the Community Risk Evaluation for Eating and Nutrition; TUG, timed-up-and-go.

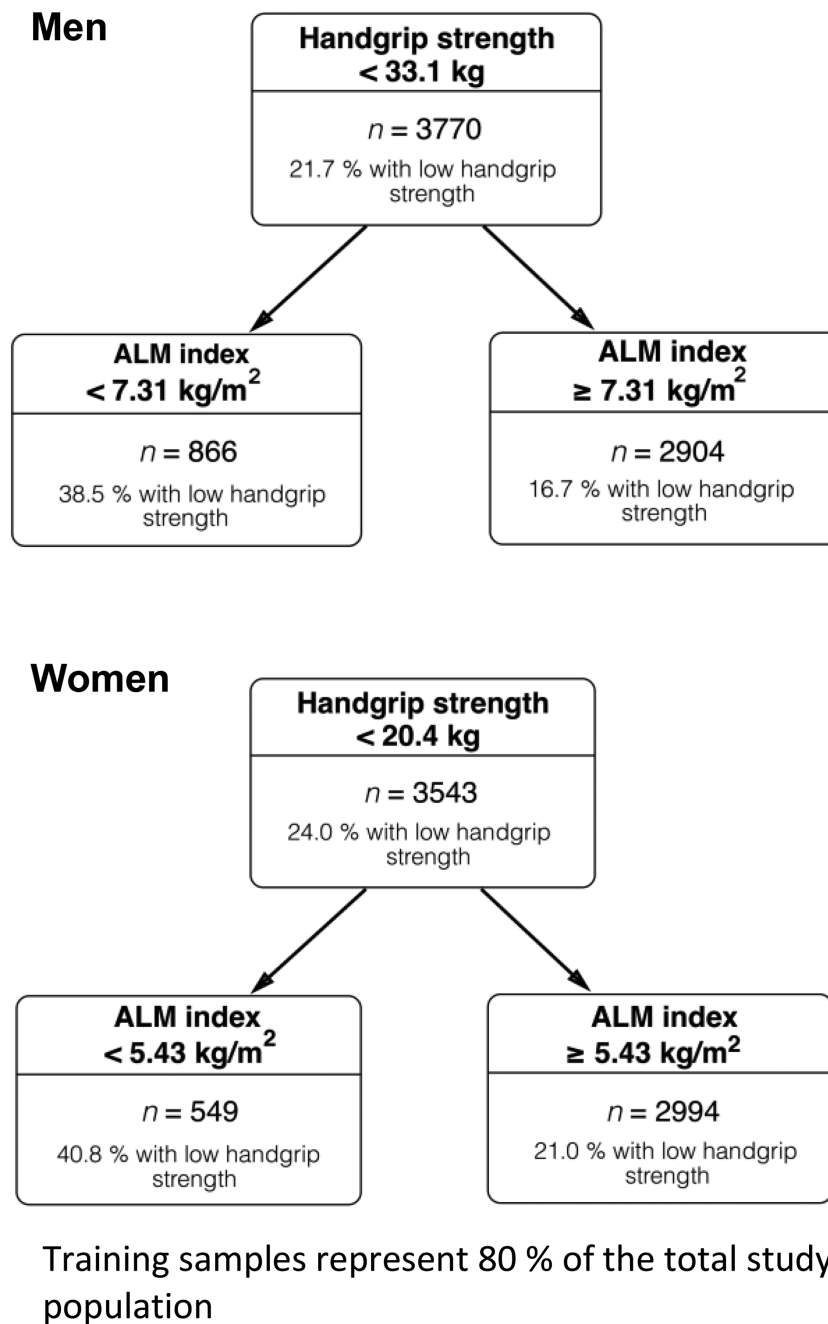


Figure 3 CART results from training samples illustrating the ALM index cut-points as predictors of low handgrip strength in men and women.

Table 2 Sensitivity analysis for strength as a predictor of limited physical performance and for low ALM as a predictor of low strength across subgroups in the CLSA cohort, 2011–2015

	N	Prevalence Low HGS (%)	OR (95% CI) for impaired physical performance		<i>p</i> for interaction ¹	OR (95% CI) for low HGS		<i>p</i> for interaction ²
			Low HGS			Prevalence Low ALM (%)	Low ALM	
Men								
Overall	4725	21.5	4.51 (3.58, 5.68)			22.9	2.99 (2.58, 3.38)	
Age								
65-74	2878	14.8	4.50 (2.87, 7.04)	0.162	17.0	2.62 (2.07, 3.31)	0.897	
≥75	1847	32.0	3.09 (2.34, 4.07)		32.3	2.56 (2.09, 3.15)		
Nutritional risk (SCREEN II-AB)								
Yes	1332	24.2	3.09 (2.34, 4.07)	0.304	23.8	3.80 (2.95, 4.90)	0.032	
No	3393	20.5	4.50 (2.89, 7.04)		21.4	2.66 (2.17, 3.27)		
Heart disease								
Yes	1029	25.4	4.79 (3.17, 7.24)	0.640	23.6	2.72 (1.99, 3.70)	0.474	
No	3696	20.4	4.25 (3.21, 5.62)		22.7	3.09 (2.60, 3.67)		
Kidney disease								
Yes	173	28.9	2.74 (0.97, 7.76)	0.339	28.3	4.47 (2.19, 9.11)	0.254	
No	4552	21.2	4.61 (3.64, 5.84)		22.7	2.93 (2.51, 3.41)		
COPD								
Yes	273	26.0	3.55 (1.54, 8.20)	0.565	31.9	3.60 (2.04, 6.34)	0.500	
No	4452	21.2	4.58 (3.61, 5.82)		22.4	2.94 (2.51, 3.44)		
Diabetes								
Yes	630	27.6	4.21 (2.57, 6.90)	0.853	21.0	3.77 (2.52, 5.63)	0.253	
No	4095	20.6	4.44 (3.41, 5.76)		23.2	2.92 (2.48, 3.44)		
Women								
Overall	4363	24.1	4.66 (3.67, 5.92)			15.6	2.41 (2.02, 2.86)	
Age								
65-74	2706	15.4	5.43 (3.39, 8.70)	0.013	13.3	2.26 (1.74, 2.94)	0.894	
≥75	1657	38.2	2.69 (2.02, 3.58)		19.4	2.21 (1.72, 2.83)		
Nutritional risk (SCREEN II-AB)								
Yes	1427	27.4	2.69 (2.02, 3.58)	0.867	16.1	1.87 (1.42, 2.47)	0.019	
No	2936	22.4	5.43 (3.39, 8.70)		15.3	2.89 (2.28, 3.67)		
Heart disease								
Yes	519	28.7	3.01 (1.77, 5.11)	0.081	14.5	2.79 (1.64, 4.46)	0.642	
No	3844	23.4	5.11 (3.90, 6.70)		15.8	2.38 (1.98, 2.87)		
Kidney disease								
Yes	142	31.0	3.30 (1.25, 8.67)	0.480	18.3	0.79 (0.30, 2.04)	0.019	
No	4221	23.8	4.72 (3.69, 6.05)		15.5	2.51 (2.10, 2.99)		
COPD								
Yes	318	27.4	3.31 (1.64, 6.66)	0.314	17.9	1.90 (1.04, 3.36)	0.421	
No	4045	23.8	4.85 (3.75, 6.26)		15.4	2.45 (2.05, 2.94)		
Diabetes								
Yes	376	27.4	4.48 (2.41, 8.34)	0.909	9.3	2.16 (1.06, 4.40)	0.729	
No	3987	23.8	4.66 (3.59, 6.05)		16.2	2.46 (2.05, 2.94)		

HGS, handgrip strength; ALMI, appendicular lean mass index; SCREEN II-AB, abbreviated Seniors in the community risk evaluation for eating and nutrition, version II, score < 38 was considered as at risk of poor nutritional state; COPD, chronic obstructive pulmonary diseases.

¹Interaction for absence/presence of low HGS and subgroup characteristics in the prediction of impaired physical performance.

²Interaction for absence/presence of low ALM and subgroup characteristics in the prediction of low HGS.

Table 3 Baseline characteristics of men and women by absence or presence of sarco-dynapenia applying Canadian longitudinal study on aging cut-points, 2011–2015

	Men		Women	
	Non-sarco-dynapenic (n=4318)	Sarco-dynapenic (n=407)	Non-sarco-dynapenic (n=4095)	Sarco-dynapenic (n=268)
Prevalence, %	91.4	8.6	93.9	6.1
Age, year	72.4 ± 5.4	76.7 ± 5.4**	72.3 ± 5.5	75.8 ± 5.4**
Caucasian, % ^b	96.4	92.9*	97.6	96.3
Weight, kg	85.1 ± 13.3	71.7 ± 9.7**	71.0 ± 13.3	55.8 ± 7.3**
BMI, kg/m ²	28.1 ± 4.0	24.7 ± 2.8**	27.8 ± 5.1	22.7 ± 2.8**
Nutritional risk (SCREEN II-AB; 0-48)	39.8 ± 5.5	38.5 ± 5.9**	39.0 ± 5.9	38.8 ± 6.2
Medication number (0-11)	0.8 ± 0.9	1.0 ± 0.9*	1.0 ± 1.0	1.1 ± 1.0
PASE score (0-629)	131 ± 59	104 ± 57**	112 ± 53	94 ± 48**
Body composition				
ALM, kg	24.80 ± 3.38	19.66 ± 2.06**	16.48 ± 2.63	12.40 ± 1.16**
ALM index, kg/m ²	8.18 ± 0.94	6.76 ± 0.45**	6.43 ± 0.92	5.04 ± 0.31**
Total fat mass, kg	25.3 ± 7.6	21.6 ± 6.1**	29.4 ± 8.9	22.3 ± 5.7**
Muscle strength				
Maximal handgrip strength, kg	40.9 ± 7.8	28.3 ± 4.1**	24.4 ± 4.9	17.1 ± 2.7**
Physical performance				
TUG, s	9.8 ± 1.9	10.8 ± 2.2**	9.9 ± 2.0	10.6 ± 2.2**
Gait speed, m/s ^a	0.96 ± 0.18	0.88 ± 0.19**	0.93 ± 0.18	0.87 ± 0.18**
Average chair rise time, s	2.8 ± 0.7	3.0 ± 0.9**	2.9 ± 0.8	3.0 ± 0.9
Balance (0-60 s)	29.5 ± 23.1	18.9 ± 20.2**	25.5 ± 22.3	19.1 ± 20.2**
BMI-adjusted physical Performance, Z score	0.31 ± 2.08	-1.32 ± 2.22**	-0.10 ± 2.13	-1.42 ± 2.21**

Values are mean ± SD. ALM, appendicular lean mass; BMI, body mass index; PASE, Physical Activity Scale for Elderly; SCREEN II-AB, abbreviated Seniors in the Community Risk Evaluation for Eating and Nutrition, version II; TUG, timed-up-and-go. Mann–Whitney *U* test unless otherwise specified.

^aIndependent *t*-test;

^bChi-square test

**P*-value < 0.05;

***P*-value < 0.001;

Table 4 Descriptive statistics between men with presence or absence of low ALM applying the new Canadian and the FNIH cut-points, in the Canadian longitudinal study on aging cohort

Men	Canadian cut-points			FNIH cut-points		
	Non-sarcopenic (n=3641)	Sarcopenic (n=1084)	<i>P</i> ^a	Non-sarcopenic (n=4254)	Sarcopenic (n=471)	<i>P</i> ^a
Prevalence, %	77.1	22.9		90.0	10.0	
Age, year	72.1 ± 5.3	74.8 ± 5.7	<0.001	72.6 ± 5.5	74.2 ± 5.6	<0.001
Caucasian, %	96.5	94.6	0.004 ^c	96.5	92.6	<0.001 ^c
Weight, kg	87.1 ± 12.8	73.0 ± 9.5	<0.001	83.7 ± 13.3	86.1 ± 15.4	0.001
BMI, kg/m ²	28.8 ± 3.8	24.4 ± 2.7	<0.001	27.4 ± 3.8	31.2 ± 4.6	<0.001
Nutritional risk (SCREEN II-AB; 0-48)	39.8 ± 5.4	39.1 ± 5.8	0.006	39.8 ± 5.4	38.0 ± 6.1	<0.001
Medication number (0-11)	0.8 ± 0.9	0.8 ± 0.9	0.652	0.8 ± 0.8	1.1 ± 1.0	<0.001
PASE score (0-629)	132 ± 60	118 ± 57	<0.001	131 ± 59	108 ± 56	<0.001
Body composition						
ALM, kg	25.5 ± 3.1	20.5 ± 2.0	<0.001	24.7 ± 3.5	21.6 ± 3.3	<0.001
ALM index, kg/m ²	8.42 ± 0.80	6.83 ± 0.40	<0.001	8.08 ± 0.98	7.85 ± 1.07	<0.001
Total fat mass, kg	26.1 ± 7.7	21.5 ± 6.0	<0.001	24.4 ± 7.2	31.0 ± 8.6	<0.001
Muscle strength						
Maximal handgrip strength, kg	41.1 ± 8.2	35.7 ± 7.4	<0.001	40.5 ± 8.2	33.7 ± 7.6	<0.001 ^b
Physical performance						
Gait speed, m/s	0.96 ± 0.19	0.93 ± 0.19	<0.001 ^b	0.96 ± 0.19	0.87 ± 0.18	<0.001 ^b
TUG, s	9.8 ± 1.9	10.2 ± 2.0	<0.001	9.8 ± 1.9	10.8 ± 2.3	<0.001
Chair time average, s	2.7 ± 0.7	2.9 ± 0.8	<0.001	2.8 ± 0.7	2.9 ± 0.9	<0.001
Balance, s	29.4 ± 23.1	25.9 ± 22.7	<0.001	29.8 ± 23.1	17.4 ± 19.3	<0.001
BMI-adjusted physical performance Z score	0.39 ± 2.09	-0.56 ± 2.16	<0.001 ^b	0.26 ± 2.12	-0.65 ± 2.19	<0.001 ^b

Values are mean ± SD. ALM, appendicular lean mass; BMI, body mass index; FNIH, Foundation for the National Institute of Health; PASE, Physical Activity Scale for Elderly; SCREEN II-AB, abbreviated Seniors in the Community Risk Evaluation for Eating and Nutrition, version II; TUG, timed-up-and-go.

^aFrom Mann–Whitney *U* test unless otherwise specified; ^bIndependent t-test; ^cChi-square test.

Table 5 Descriptive statistics between women with presence or absence of low ALM applying the new Canadian and the FNIH cut-points, in the Canadian longitudinal study on aging cohort

Women	Canadian cut-points			FNIH cut-points		
	Non-sarcopenic (n=3682)	Sarcopenic (n=681)	P ^a	Non-sarcopenic (n=4013)	Sarcopenic (n=350)	P ^a
Prevalence, %	84.4	15.6		92.0	8.0	
Age, year	72.3 ± 5.5	73.6 ± 5.8	<0.001	72.5 ± 5.5	72.9 ± 5.7	0.294
Caucasian, %	97.6	97.2	0.595 ^c	97.8	94.3	<0.001 ^c
Weight, kg	72.6 ± 12.9	56.7 ± 7.4	<0.001	69.8 ± 13.4	74.0 ± 14.0	<0.001
BMI, kg/m ²	28.4 ± 4.9	22.4 ± 2.7	<0.001	27.0 ± 4.9	32.1 ± 5.4	<0.001
Nutritional risk (SCREEN II-AB; 0-48)	39.0 ± 5.8	38.9 ± 6.2	0.891	39.2 ± 5.8	36.8 ± 6.4	<0.001
Medication number (0-11)	1.0 ± 1.0	1.0 ± 1.0	0.419	1.0 ± 1.0	1.5 ± 1.1	<0.001
PASE score (0-629)	112 ± 53	107 ± 51	0.036	112 ± 53	96 ± 51	<0.001
Body composition						
ALM, kg	16.9 ± 2.5	12.8 ± 1.3	<0.001	16.4 ± 2.7	14.4 ± 2.5	<0.001
ALM index, kg/m ²	6.58 ± 0.83	5.05 ± 0.30	<0.001	6.35 ± 0.94	6.27 ± 1.04	0.086
Total fat mass, kg	30.3 ± 8.8	22.2 ± 5.6	<0.001	28.5 ± 8.7	35.4 ± 9.0	<0.001
Muscle strength						
Maximal handgrip strength, kg	24.3 ± 5.1	21.6 ± 4.7	<0.001	24.2 ± 5.1	20.8 ± 4.5	<0.001 ^b
Physical performance						
Gait speed, m/s	0.92 ± 0.18	0.92 ± 0.19	0.676 ^b	0.93 ± 0.18	0.84 ± 0.17	<0.001 ^b
TUG, s	10.0 ± 2.0	10.0 ± 2.0	0.956	9.9 ± 1.9	10.9 ± 2.4	<0.001
Chair time average, s	2.9 ± 0.8	2.9 ± 0.8	0.450	2.9 ± 0.8	2.9 ± 0.9	0.604
Balance, s	24.9 ± 22.2	25.9 ± 22.6	0.257	25.9 ± 22.4	15.4 ± 17.7	<0.001
BMI-adjusted physical Performance Z score	-0.09 ± 2.14	-0.71 ± 2.21	<0.001 ^b	-0.14 ± 2.14	-0.73 ± 2.30	<0.001 ^b

Values are mean ± SD. ALM, appendicular lean mass; BMI, body mass index; FNIH, Foundation for the National Institute of Health; PASE, Physical Activity Scale for Elderly; SCREEN II-AB, abbreviated Seniors in the Community Risk Evaluation for Eating and Nutrition, version II; TUG, timed up-and-go.

^aFrom Mann-Whitney *U* test unless otherwise specified.

^bIndependent t-test.

^cChi-square test.

Reference

1. Tessier AJ, Wing SS, Rahme E, Morais JA, Chevalier S. Physical function-derived cut-points for the diagnosis of sarcopenia and dynapenia from the Canadian longitudinal study on aging. *J Cachexia Sarcopenia Muscle* 2019;**10**:985–999.