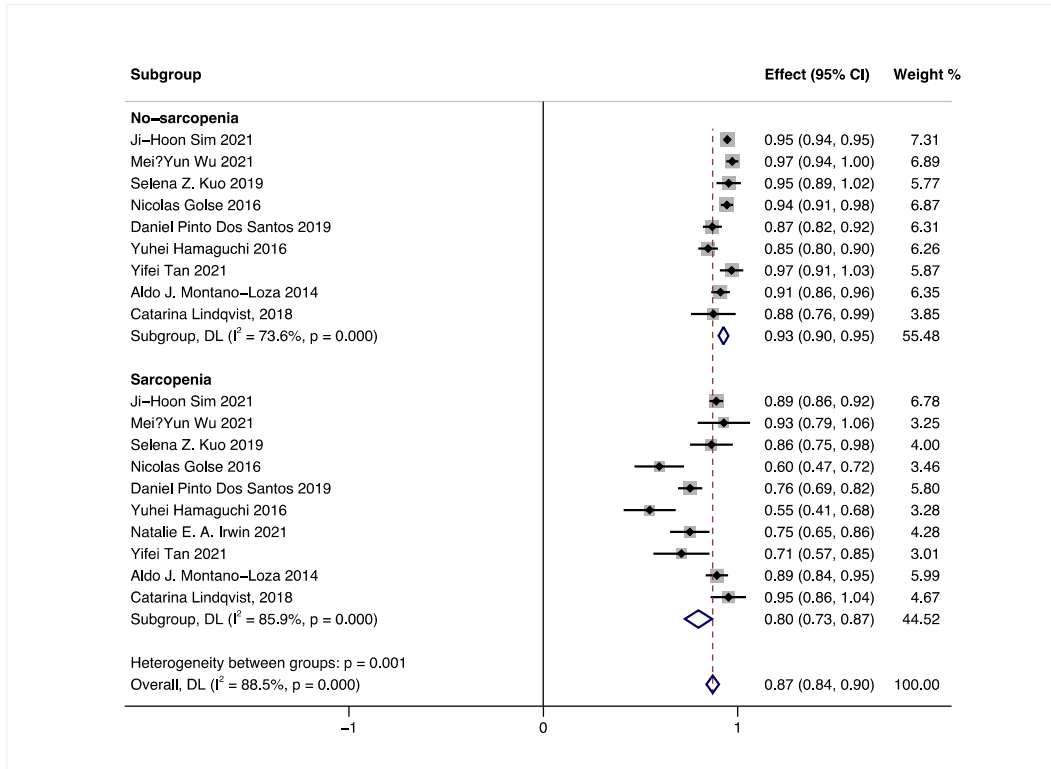


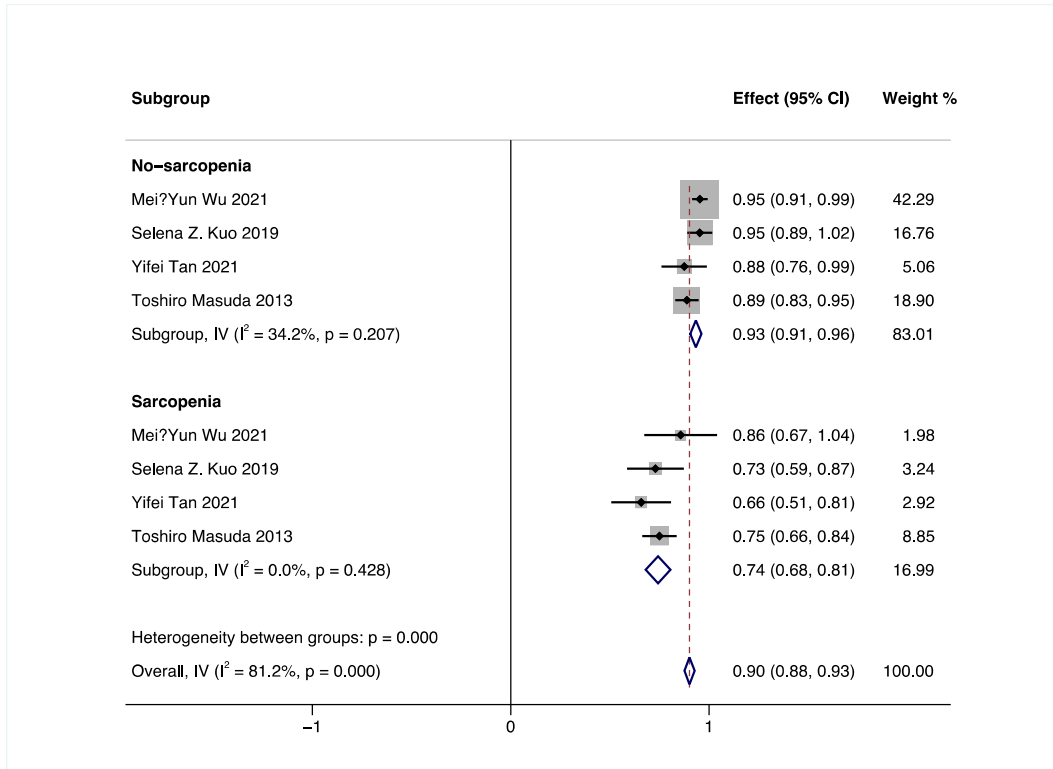
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 1 The 90-day cumulative probabilities of post-LT survival in patients with and without sarcopenia.



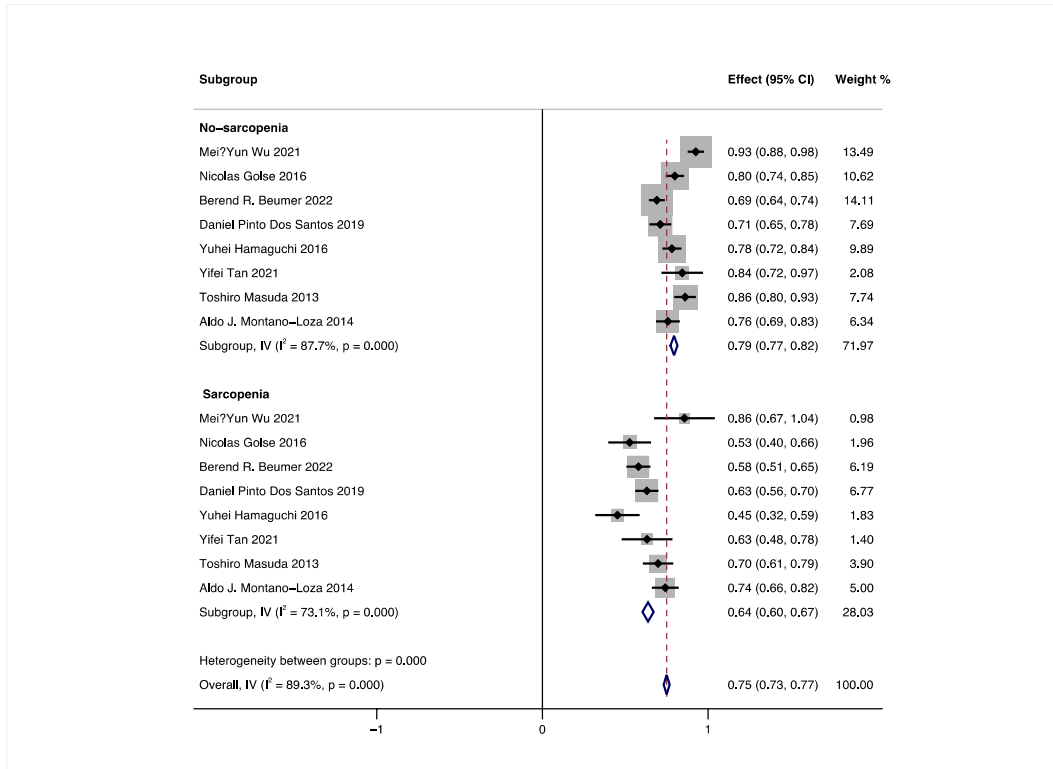
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 2 The 1-year cumulative probabilities of post-LT survival in patients with and without sarcopenia.



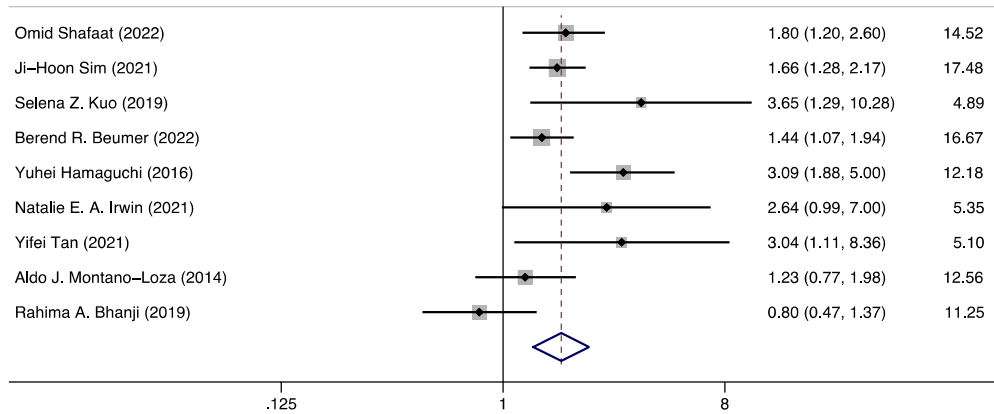
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 3 The 3-year cumulative probabilities of post-LT survival in patients with and without sarcopenia.



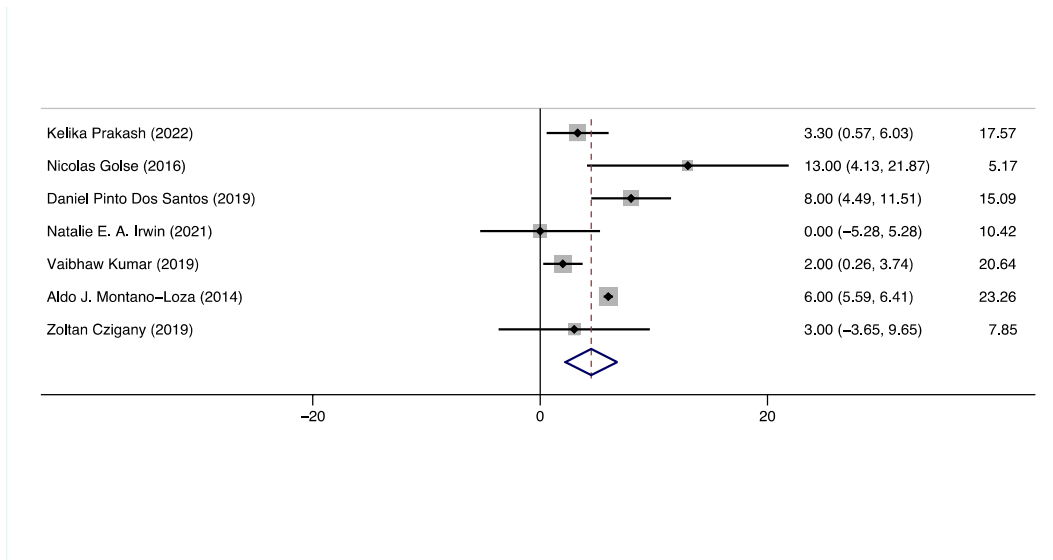
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 4 The 5-year cumulative probabilities of post-LT survival in patients with and without sarcopenia.



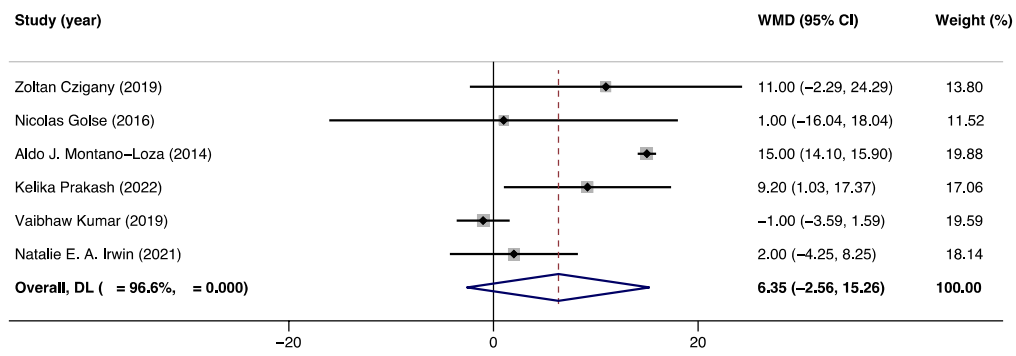
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 5 Forest plot for unadjusted hazard ratios relating sarcopenia to the risk of mortality.



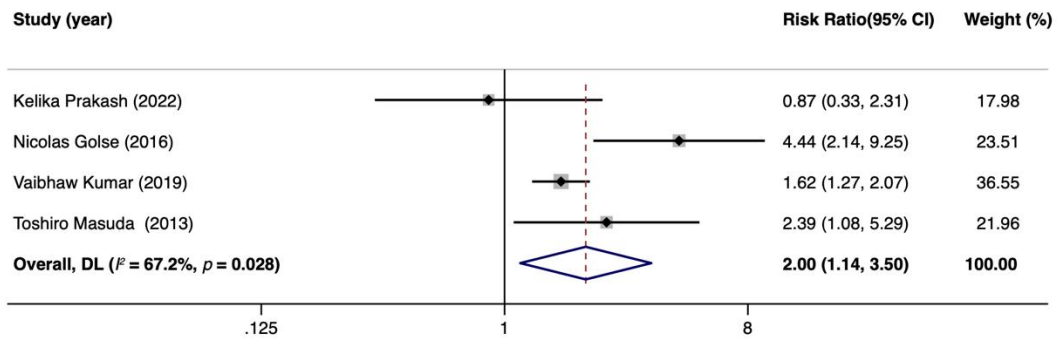
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 6 Forest plot for ICU stay with sarcopenia vs without sarcopenia.



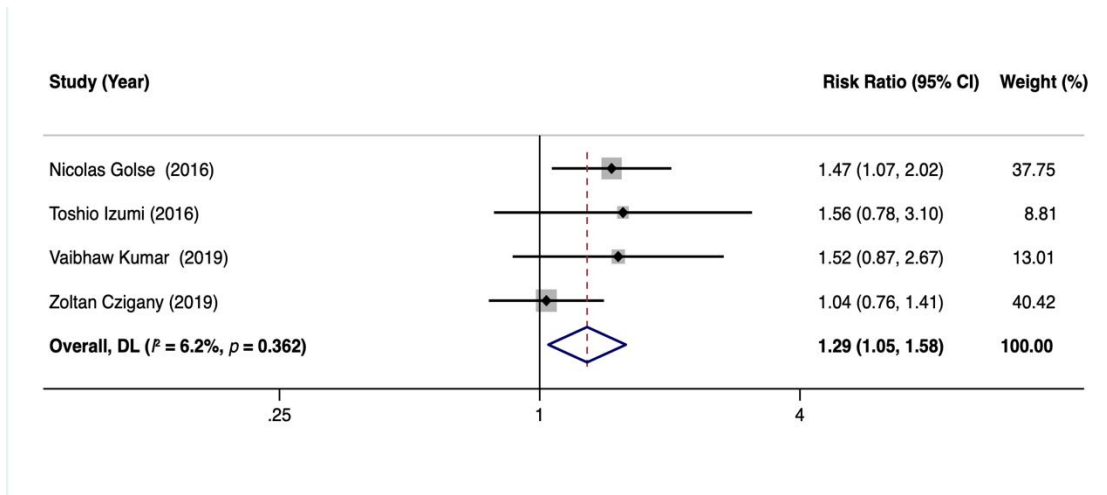
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 7 Forest plot for length of stay for patients with and without sarcopenia.



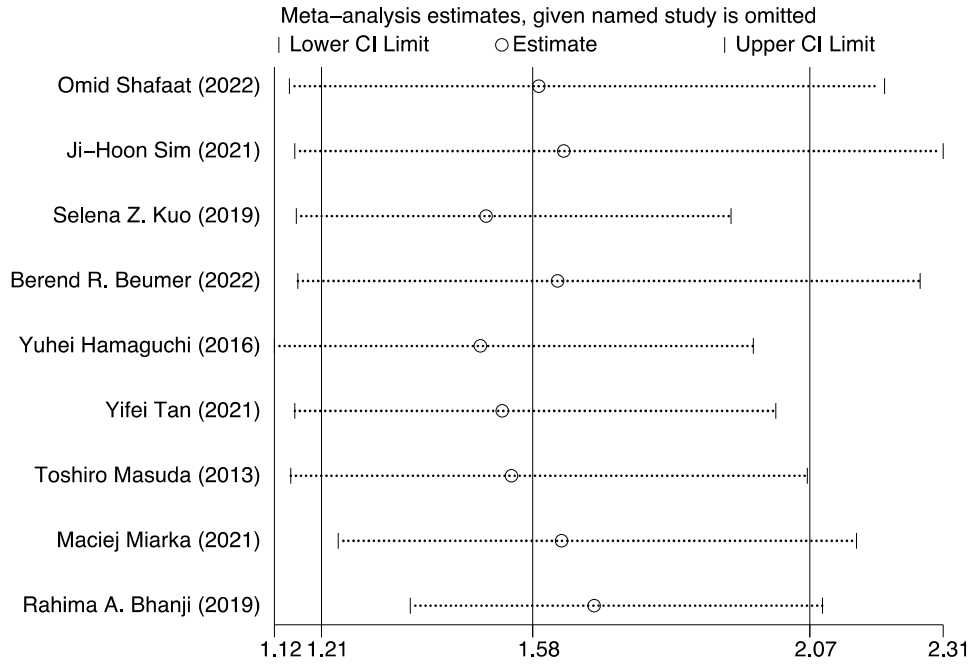
DOI: 10.4240/wjgs.v0.i0.0000 Copyright ©The Author(s) 2024.

Supplementary Figure 8 Effect of sarcopenia on sepsis in Liver transplantation.



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Supplementary Figure 9 Effect of sarcopenia on serious postoperative complications in Liver transplantation.



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Supplementary Figure 10 Sensitivity analysis for multivariate analysis by excluding a study at a time and then pooling the remaining studies.

Supplementary Table 1 Detailed search strategy and process

Search number	Query	Results
PubMed search strategy		
1	“liver transplantation” [MesH]	62933
2	“liver transplant*” [Title/ Abstract]	68684
3	“liver graft*” [Title/ Abstract]	5165
4	“hepatic transplant*” [Title/ Abstract]	1152
5	“hepatic graft*” [Title/ Abstract]	388
6	1 OR 2 OR 3 OR 4 OR 5	83682
7	“Sarcopenia” [Mesh]	8131
8	sarcopeni* [Title/ Abstract]	14526
9	myopeni* [Title/ Abstract]	66
10	“muscle loss” [Title/ Abstract]	2564
11	“muscle depletion” [Title/ Abstract]	224
12	“muscle wasting” [Title/ Abstract]	5864
13	“muscle reduction” [Title/ Abstract]	66
14	“reduced muscle” [Title/ Abstract]	2502
15	“depleted muscle” [Title/ Abstract]	86
16	“muscle attenuation” [Title/ Abstract]	282
17	“muscle alteration” [Title/ Abstract]	44
18	“loss of muscle” [Title/ Abstract]	4135
19	“muscle atrophy” [Title/ Abstract]	9997
20	“muscular atrophy” [Title/ Abstract]	9842
21	“Muscular Atrophy” [Mesh]	20191
22	“muscle mass” [Title/ Abstract]	23544
23	“muscle index” [Title/ Abstract]	1870
24	“muscle size” [Title/ Abstract]	2151
25	“muscle thickness” [Title/ Abstract]	3034
26	“skeletal muscle” [Title/ Abstract]	118242
27	“Muscle, Skeletal” [Mesh]	296493

28	"psoas muscle"[Title/ Abstract]	2689
29	"fat free mass"[Title/ Abstract]	8998
30	"lean mass"[Title/ Abstract]	6884
31	"body composition"[Title/ Abstract]	44206
32	"Body Composition"[Mesh]	62361
33	"Malnutrition"[Mesh]	132715
34	malnutrition[Title/ Abstract]	48281
35	"muscle function"[Title/ Abstract]	13619
36	"muscle strength"[Title/ Abstract]	27803
37	"muscular strength"[Title/ Abstract]	4181
38	"Muscle Strength"[Mesh]	42791
39	"muscle power"[Title/ Abstract]	2763
40	"muscle fatigue"[Title/ Abstract]	5395
41	"Muscle Fatigue"[Mesh]	9073
42	"muscle weakness"[Title/ Abstract]	17158
43	"Muscle Weakness"[Mesh]	9433
44	"muscular weakness"[Title/ Abstract]	2038
45	"handgrip strength"[Title/ Abstract]	4856
46	"grip strength"[Title/ Abstract]	14760
47	"Hand Strength"[Title/ Abstract]	702
48	"Hand Strength"[Mesh]	19325
49	6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR 31 OR 32 OR 33 OR 34 OR 35 OR 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 OR 45 OR 46 OR 47 OR 48	
50	49 AND 6	1225
51	AND [Filter:Humans]	1042

Embase search strategy

1	'muscle atrophy'/exp OR 'muscle mass'/exp OR 'muscle thickness'/exp OR 'skeletal muscle'/exp OR 'psoas muscle'/exp OR 'fat free mass'/exp OR 'body composition'/exp OR 'malnutrition'/exp OR 'muscle function'/exp OR 'muscle strength'/exp OR 'muscle fatigue'/exp OR 'muscle weakness'/exp OR 'grip strength'/exp OR 'hand strength'/exp OR 'sarcopeni*':ab,ti OR 'myopeni*':ab,ti OR 'muscle loss':ab,ti OR 'muscle depletion':ab,ti OR 'muscle wasting':ab,ti OR 'muscle reduction':ab,ti OR 'reduced muscle':ab,ti OR 'depleted muscle':ab,ti OR 'muscle attenuation':ab,ti OR 'muscle alteration':ab,ti OR 'loss of muscle':ab,ti OR 'muscle atrophy':ab,ti OR 'muscular atrophy':ab,ti OR 'muscle mass':ab,ti OR 'muscle index':ab,ti OR 'muscle size':ab,ti OR 'muscle thickness':ab,ti OR 'skeletal muscle':ab,ti OR 'psoas muscle':ab,ti OR 'fat free mass':ab,ti OR 'lean mass':ab,ti OR 'body composiition':ab,ti OR 'malnutrition':ab,ti OR 'muscle function':ab,ti OR 'muscle strength':ab,ti OR 'muscle power':ab,ti OR 'musular strength':ab,ti OR 'muscle fatigue':ab,ti OR 'muscle weakness':ab,ti OR 'muscular weakness':ab,ti OR 'handgrip strength':ab,ti OR 'grip strength':ab,ti OR 'hand strength':ab,ti	1294096
2	'liver transplantation'/exp OR 'liver graft'/exp OR 'liver transplant*':ab,ti OR 'liver graft*':ab,ti OR 'hepatic transplant*':ab,ti OR 'hepatic graft*':ab,ti	145468
3	'human'/de	25427482
4	1 AND 2 AND 3	4312

Cochrane search strategy

1	MeSH descriptor: [Liver Transplantation] explode all trees	1284
2	(liver transplant*):ti,ab,kw OR (liver graft*):ti,ab,kw OR (hepatic transplant*):ti,ab,kw OR (hepatic graft*):ti,ab,kw (Word variations have been searched)	7442
3	1 or 2	7442
4	MeSH descriptor: [Sarcopenia] explode all trees	634
5	(sarcopeni*):ti,ab,kw OR (myopeni*):ti,ab,kw OR (muscle loss):ti,ab,kw OR (muscle depletion):ti,ab,kw OR (muscle wasting):ti,ab,kw	9016
6	(muscle reduction):ti,ab,kw OR (reduced muscle):ti,ab,kw OR (depleted muscle):ti,ab,kw OR (muscle alteration):ti,ab,kw OR (loss of muscle):ti,ab,kw	22088
7	MeSH descriptor: [Muscular Atrophy] explode all trees	1012
8	(muscle atrophy):ti,ab,kw OR (Muscular Atrophy):ti,ab,kw OR (muscle mass):ti,ab,kw OR (muscle index):ti,ab,kw OR (muscle size):ti,ab,kw	25652
9	(muscle thickness):ti,ab,kw OR (muscle attenuation):ti,ab,kw	2748
10	MeSH descriptor: [Muscle, Skeletal] explode all trees	13430
11	(skeletal muscle):ti,ab,kw OR (psoas muscle):ti,ab,kw OR (fat free mass):ti,ab,kw OR (lean mass):ti,ab,kw	21411
12	MeSH descriptor: [Body Composition] explode all trees	5725
13	(body composition):ti,ab,kw	18303
14	MeSH descriptor: [Malnutrition] explode all trees	4789

15	(malnutrition):ti,ab,kw	5514
16	MeSH descriptor: [Muscle Strength] explode all trees	6791
17	(muscle function):ti,ab,kw OR (muscle strength):ti,ab,kw OR (muscular strength):ti,ab,kw OR (muscle power):ti,ab,kw OR (muscle power):ti,ab,kw	39933
18	MeSH descriptor: [Muscle Fatigue] explode all trees	1054
19	(muscle fatigue):ti,ab,kw	6729
20	MeSH descriptor: [Muscle Weakness] explode all trees	617
21	(muscle weakness):ti,ab,kw OR (muscular weakness):ti,ab,kw	4365
22	MeSH descriptor: [Hand Strength] explode all trees	1756
23	(handgrip strength):ti,ab,kw OR (grip strength):ti,ab,kw OR (Hand Strength):ti,ab,kw	9396
24	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23	96497
25	3 and 24	289
Web of science search strategy		
1	sarcopeni* (Topic) or myopeni* (Topic) or "muscle loss" (Topic) or "muscle depletion" (Topic) or "muscle wasting" (Topic) or "muscle reduction" (Topic) or "reduced muscle" (Topic) or "depleted muscle" (Topic) or "muscle attenuation" (Topic) or "muscle alteration" (Topic) or "loss of muscle" (Topic) or "muscle atrophy" (Topic) or "muscular atrophy" (Topic) or "muscle mass" (Topic) or "muscle index" (Topic) or "muscle size" (Topic) or "muscle thickness" (Topic) or "skeletal muscle" (Topic) or "psoas muscle" (Topic) or "fat free mass"	789555

	(Topic) or "lean mass" (Topic) or "body composition" (Topic) or malnutrition (Topic) or "muscle function" (Topic) or "muscle strength" (Topic) or "muscular strength" (Topic) or "muscle power" (Topic) or "muscle fatigue" (Topic) or "muscle weakness" (Topic) or "muscular weakness" (Topic) or "handgrip strength" (Topic) or "grip strength" (Topic) or "Hand Strength" (Topic)	
2	"liver transplant*" (Topic) or "liver graft*" (Topic) or "hepatic transplant*" (Topic) or "hepatic graft*" (Topic)	142420
3	1 AND 2	2098
4	mouse (Topic) or rat (Topic) or mice (Topic)	5362922
	3 NOT 4	1930

Supplementary Table 2 Quality assessment of observational studies using Newcastle-Ottawa Scale

Author (year)	Selection Representativeness of the exposed cohort (1 point)	Selection of the nonexposed cohort (1 point)	Ascertainment of exposure (1 point)	Demonstration that interest was not present at start of study (1 point)	Comparability of controls on the basis of the design or analysis (2 point)	Assessment of outcome (1 point)	Was long enough for outcomes to occur (1 point)	Follow-up Adequacy of follow up of cohorts (1 point)	Quality Total scores (9 point)
Shafaat et al. 2022	1	1	1	1	2	1	1	1	9
Ji-Hoon et al. 2021	1	1	1	1	2	1	1	-	8
Kelika et al. 2022	1	1	1	1	2	1	1	-	7
Wu et al. 2021	1	1	1	1	2	1	1	-	8

Selena et al. 2019	1	1	1	1	2	1	1	-	8
Nicolas et al. 2016	1	1	1	1	2	1	1	-	8
Berend et al. 2022	1	1	1	1	2	1	1	1	9
Daniel et al. 2019	1	1	1	1	1	1	1	-	7
Toshio et al. 2016	1	1	1	1	2	1	-	-	7
Yuhei et al. 2016	1	1	1	1	2	1	1	-	8
Natalie et al. 2021	1	1	1	1	2	1	1	1	9
Tan et al. 2021	1	1	1	1	1	1	1	1	8
Vaibhaw et al.	1	1	1	1	2	1	-	-	7

al.											
2019											
Toshiro et al.	1	1	1	1	1	1	1	1			7
al.											
2013											
Maciej et al.	1	1	1	1	1	1	1	1	-		7
2021											
Aldo J et al.	1	1	1	1	2	1	1	1	1		9
2014											
Rahima A et al.	1	1	1	1	2	1	1	1			8
al.											
2019											
Maria et al.	1	1	1	1	2	1	1	1	-		8
2017											
Zoltan et al.	1	1	1	1	2	1	-	1	1		8
2019											
Penelope et al.	1	1	1	1	2	1	1	1	-		8

2022											
Catarina et al.	1	1	1	1	2	1	1	-	8		
2018											
Riccardo et al.	1	1	1	1	2	1	1	-	8		
2019											
Andrea et al.	1	1	1	1	2	1	1	1	9		
2013											
Young et al.	1	1	1	1	1	1	1	-	7		
2018											
Hassan et al.	1	1	1	1	2	1	-	-	7		
2022											

Supplementary Table 3 Meta-regression of relative risk of mortality among sarcopenia vs. non-sarcopenia groups

Variables	Coefficient	SE	Z value	P	CI lower	CI upper
Sample size	-0.0001132	0.0004344	-0.26	0.819	-0.0019821	0.0017557
Proportion of male	0.0106096	0.0207189	0.51	0.660	-0.0785368	0.099756
Average follow-up time	-0.077206	0.2079391	-0.37	0.746	-0.9718959	0.8174839
Region	-0.13491	0.4352092	-0.31	0.786	-2.007464	1.737644
Definition ways	0.4877217	0.6894086	0.71	0.553	-2.478564	3.454008
NOS	0.1312047	0.6785168	0.19	0.865	-2.788217	3.050627

SE = standard error; CI = confidence interval.