Supplementary Figure 01: Risk of Bias interpretation of included Retrospective observational studies (ROS) and cohorts by Newcastle Ottawa quality assessment scale.

First author	Newcastle Ottawa Quality Assessment Scale										Meta analysis	
	Selection				Comparability		Outcome			Score	Eligible	selected
Kana Hosokawa, MD 2023	*	*	*	*	/	*	*	*	/	7	Yes	Yes
Yukari Suzuki 2023	*	/	*	*	*	*	*	*	*	8	Yes	Yes
Ya-Chin Hou 2022	*	*	*	*	/	*	*	/	*	7	Yes	Yes
Tsuyoshi Takeda 2021	*	*	*	/	*	*	*	/	*	7	Yes	Yes
Yusuke Kurita 2019	*	*	*	*	/	*	*	/	*	7	Yes	Yes
Henry C. Y. Wong 2019	*	*	*	*	*	*	/	*	/	7	Yes	Yes
Junji Furuse 2023	*	/	*	*	*	*	*	/	*	8	Yes	Yes

Newcastle-Ottawa Quality Assessment Scale		
Selection:	1	Representation of the intervention cohort?
	2	Selection of the non-intervention cohort?
	3	Has the correct intervention been utilized?
	4	Definition of intervention?
Comparability	5	Are the cohorts comparable based on the basis of the design or analysis: age, sex and injury severity?
	6	Are the cohorts comparable on the basis of the design or analysis? Additional factors
Outcome:	7	Was the outcome assessed?
	8	Was the follow up long enough for measured outcomes to occur?
	9	Was the cohort follow up long enough?

Supplementary figure 02

Statistics table for incidence of cachexia

Model		Effect size and 95% interval			Test of null (2-Tail)		Heterogeneity				Tau-squared			
Model	Number Studies	Point estimate	Lower limit	Upper limit	Z-value	P-value	Q-value	df (Q)	P-value	I-squared	Tau Squared	Standard Error	Variance	Tau
Fixed	7	0.311	0.292	0.330	-17.747	0.000	321.462	6	0.000	98.134	1.171	0.936	0.876	1.082
Random	7	0.454	0.269	0.653	-0.444	0.657								

Supplementary figure 03

Statistics table for Incidence of sarcopenia

Model		Effect size and 95% interval			Test of null (2-Tail)		Heterogeneity				Tau-squared			
Model	Number Studies	Point estimate	Lower limit	Upper limit	Z-value	P-value	Q-value	df (Q)	P-value	I-squared	Tau Squared	Standard Error	Variance	Tau
Fixed	3	0.517	0.470	0.565	0.712	0.477	22.747	2	0.000	91.208	0.337	0.396	0.157	0.581
Random	3	0.571	0.400	0.727	0.810	0.418								

Supplementary figure 04

Statistics Table for TTF

Model		Effect size and 95% confidence interval					Test of null (2-Tail)		Heterogeneity				Tau-squared			
Model	Number Studies	Point estimate	Standard error	Variance	Lower limit	Upper limit	Z-value	P-value	Q-value	df (Q)	P-value	I-squared	Tau Squared	Standard Error	Variance	Tau
Fixed	4	-2.525	0.064	0.004	-2.652	-2.399	-39.198	0.000	13.729	3	0.003	78.148	0.171	0.201	0.040	0.414
Random	4	-2.222	0.241	0.058	-2.694	-1.749	-9.220	0.000								

Supplementary figure 05

Statistics table for mortality

Model		Effect size and 95% interval			Test of null (2-Tail)		Heterogeneity				Tau-squared			
Model	Number Studies	Point estimate	Lower limit	Upper limit	Z-value	P-value	Q-value	df (Q)	P-value	I-squared	Tau Squared	Standard Error	Variance	Tau
Fixed	3	1.862	1.327	2.614	3.594	0.000	3.663	2	0.160	45.398	0.100	0.236	0.056	0.316
Random	3	2.019	1.172	3.477	2.532	0.011								

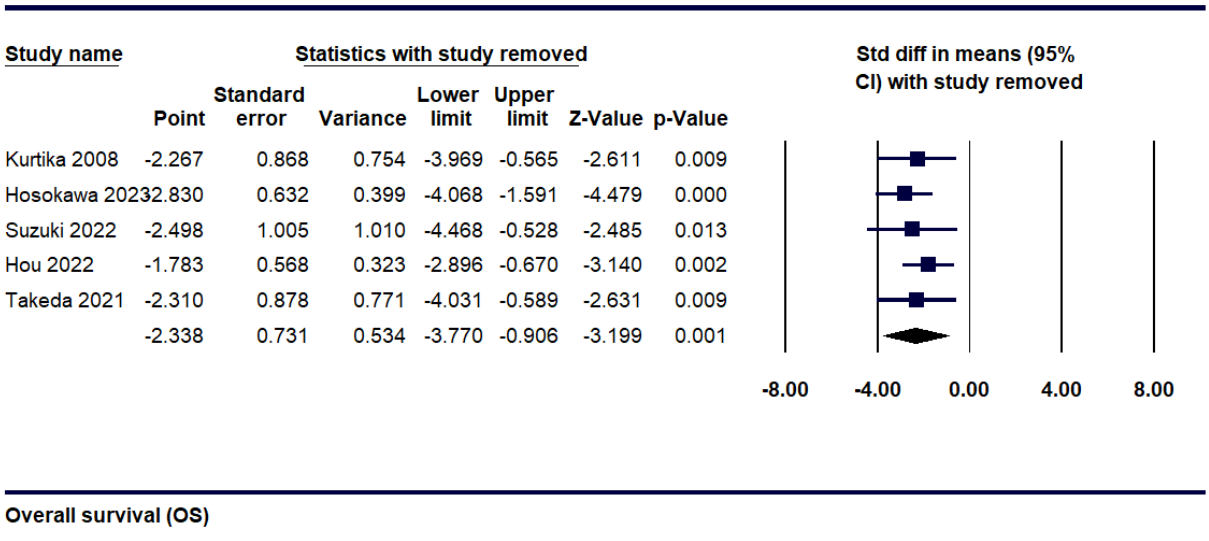
Supplementary figure 06

Statistics table for overall survival

Model		Effect size and 95% confidence interval					Test of null (2-Tail)		Heterogeneity				Tau-squared			
Model	Number Studies	Point estimate	Standard error	Variance	Lower limit	Upper limit	Z-value	P-value	Q-value	df (Q)	P-value	I-squared	Tau Squared	Standard Error	Variance	Tau
Fixed	5	-1.593	0.094	0.009	-1.778	-1.408	-16.903	0.000	209.201	4	0.000	98.088	2.607	2.116	4.478	1.615
Random	5	-2.338	0.731	0.534	-3.770	-0.906	-3.199	0.001								

Supplementary figure 07

Forest plot illustrating sensitivity analysis by leave-one-out for Overall survival



Supplementary figure 08

Statistics Table for country of origin Meta-Regression.

Main results for Model 1, Random effects (MM), Z-Distribution, Std diff in means

Covariate	Coefficient	Standard Error	95% Lower	95% Upper	Z-value	2-sided P-value
Intercept	-1.7831	0.5679	-2.8962	-0.6700	-3.14	0.0017
country: Taiwan	-2.7450	1.2763	-5.2464	-0.2436	-2.15	0.0315

Statistics for Model 1

Test of the model: Simultaneous test that all coefficients (excluding intercept) are zero
Q = 4.63, df = 1, p = 0.0315
Goodness of fit: Test that unexplained variance is zero
Tau^2 = 1.2306, Tau = 1.1093, I^2 = 96.26%, Q = 80.21, df = 3, p = 0.0000

Comparison of Model 1 with the null model

Total between-study variance (intercept only)
Tau^2 = 2.6074, Tau = 1.6147, I^2 = 98.09%, Q = 209.20, df = 4, p = 0.0000
Proportion of total between-study variance explained by Model 1
R^2 analog = 0.53

Number of studies in the analysis 5

Supplementary figure 09

Statistics table for age Meta-Regression.

Main results for Model 1, Random effects (MM), Z-Distribution, Std diff in means

Covariate	Coefficient	Standard Error	95% Lower	95% Upper	Z-value	2-sided P-value
Intercept	-4.6510	12.8116	-29.7612	20.4593	-0.36	0.7166
age	0.0325	0.1799	-0.3201	0.3851	0.18	0.8566

Statistics for Model 1

Test of the model: Simultaneous test that all coefficients (excluding intercept) are zero
Q = 0.03, df = 1, p = 0.8566
Goodness of fit: Test that unexplained variance is zero
Tau^2 = 3.5428, Tau = 1.8822, I^2 = 98.41%, Q = 189.25, df = 3, p = 0.0000

Comparison of Model 1 with the null model

Total between-study variance (intercept only)
Tau^2 = 2.6074, Tau = 1.6147, I^2 = 98.09%, Q = 209.20, df = 4, p = 0.0000
Proportion of total between-study variance explained by Model 1
R^2 analog = 0.00 (computed value is -0.36)

Number of studies in the analysis 5