Supplementary

Table S1 Search strategy in PubMed

Domain	Subdomain	Search number	Search form
Р	P1 adult cancers patients	1#	"Cancer" OR "oncology" OR "neoplasm" OR "carcinoma" OR "malignant" [All fields]
		2#	"pediatric" OR "children" OR "child" [All fields]
		3#	1# NOT 2#
	P2 receiving chemotherapy	4#	(chemotherap*) [All fields]
	Summary of P domain	5#	3# OR 4#
I and C	Oral nutritional supplement	6#	"Nutritional supplement" OR "oral nutritional supplement" OR "oral supplement" OR "oral nutrition" OR "dietary intervention" OR "nutritional intervention" [All fields]
	Nutritional Counseling	7#	"Nutritional Counseling" OR "dietary counseling" OR "nutritional advice" OR "dietary advice" OR "nutritional recommendation" OR "dietary recommendation" [All fields]
	Summary of I and C	8#	6# OR 7#
	Summary P + I/C	9#	5# AND 8#

Table S2 Search strategy in OVID

Domain	Subdomain	Search number	Search form
Р	P1 adult cancers patients	1#	"Cancer" OR "oncology" OR "neoplasm" OR "carcinoma" OR "malignant" [All fields]
		2#	"pediatric" OR "children" OR "child" [All fields]
		3#	1# NOT 2#
	P2 receiving chemotherapy	4#	(chemotherap*) [All fields]
	Summary of P domain	5#	3# OR 4#
I and C	Oral nutritional supplement	6#	"Nutritional supplement" OR "oral nutritional supplement" OR "oral supplement" OR "oral nutrition" OR "dietary intervention" OR "nutritional intervention" [All fields]
	Nutritional Counseling	7#	"Nutritional Counseling" OR "dietary counseling" OR "nutritional advice" OR "dietary advice" OR "nutritional recommendation" OR "dietary recommendation" [All fields]
	Summary of I and C	8#	6# OR 7#
	Summary P + I/C	9#	5# AND 8#

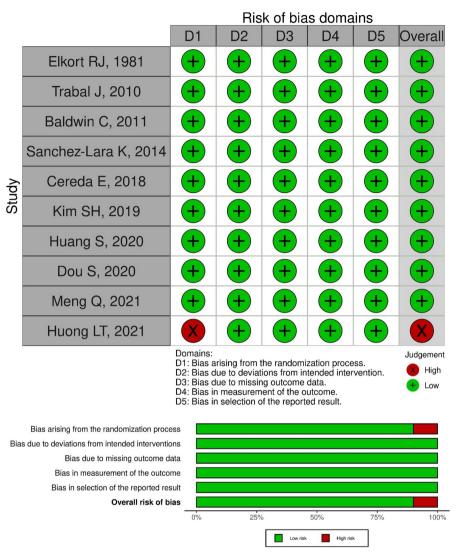
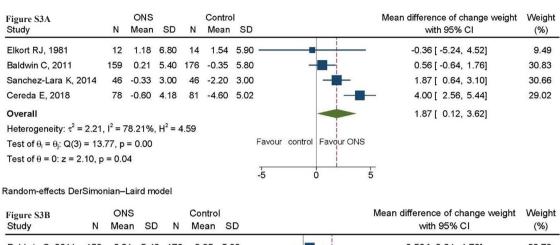


Figure S1 Risk of bias assessment according to the ROB2 algorithm.

Subgroup		Stud		patients Control			MD of final weight with 95% CI	12
All studies		9	615	627		-	-0.07 [-0.99, 0.84]	0.00
Phase	Phase II	8	444	166		<u>-</u>	-0.26 [-1.27, 0.75]	0.00
	Phase III	1	171	461			0.76 [-1.38, 2.90]	NA
Center	Single center	8	456	451		-	0.22 [-0.86, 1.29]	0.00
	Multi-center	1	159	176		-	-0.84 [-2.59, 0.91]	NA
Region	Asia	5	320	310		•	0.09 [-1.05, 1.23]	0.00
	Non-asia	4	295	317		-	0.08 [-2.39, 2.55]	32.80
Age	< 60 years	4	298	287		-	0.15 [-1.52, 1.82]	0.00
	≥ 60 years	3	252	276		-	-0.12 [-1.85, 1.62]	43.24
Gender	Female ≥ 50%	3	73	336		-	-0.61 [-2.24, 1.02]	0.00
	Female < 50%	6	542	291		-	0.22 [-0.95, 1.39]	6.72
Baseline body weight	< 65 kg	3	232	231		-	-0.16 [-1.47, 1.15]	0.00
	≥ 65 kg	5	330	346		-	0.19 [-1.66, 2.04]	18.64
Type of cancer included	GI cancer	3	383	392			-0.04 [-1.26, 1.18]	0.00
	HN cancer	3	159	156			1.45 [-1.93, 4.83]	36.13
	NSCLC	2	205	222			-1.01 [-2.66, 0.64]	0.00
Stage IV disease	< 50%	5	342	209		=	0.94 [-0.67, 2.54]	0.00
	≥ 50%	4	273	418			-0.56 [-1.67, 0.55]	0.00
ONS calories	< 500 Kcal/day	3	96	94		-	-0.43 [-1.96, 1.10]	0.00
	≥ 500 Kcal/day	6	519	533		-	0.17 [-1.05, 1.38]	6.35
ONS protein	< 20 g/day	4	244	265		-	-0.66 [-1.81, 0.49]	0.00
	≥ 20 g/day	5	371	362		-	0.92 [-0.58, 2.41]	0.00
EPA formula	No	8	46	581			0.01 [-0.92, 0.93]	0.00
	Yes	1	569	46		•	-2.50 [-7.64, 2.65]	NA
Duration of treatment	< 12 weeks	5	296	310		#	-0.46 [-1.55, 0.64]	0.00
	≥ 12 weeks	4	319	317		-	0.81 [-0.84, 2.46]	0.00
Risk of bias	Low	8	562	577		•	-0.16 [-1.12, 0.80]	0.00
	Some to high	1	53	50			0.70 [-2.19, 3.59]	NA
						trol Favors	ONS	
				-10	-5	0 5	10	

Figure S2 Forest plot for subgroup analysis of ONS vs. dietary counseling treatment on mean difference of final weight outcomes. ONS, oral nutritional supplement; MD, mean difference; CI, confident interval; GI, gastrointestinal tract cancer; HN, head and nek cancer; NSCLC, non-small cell lung cancer; EPA, eicosatetraenoic acid.



Baldwin C, 2011 159 0.21 5.40 176 -0.35 5.80 0.56 [-0.64, 1.76] 32.73 Cereda E, 2018 78 -0.60 4.18 81 -4.60 5.02 4.00 [2.56, 5.44] 30.67 Kim SH, 2019 36.60 15 2.04 0.70 19 -0.86 1.20 2.90 [2.21, 3.59] Overall 2.47 [0.73, 4.21] Heterogeneity: $\tau^2 = 2.03$, $I^2 = 87.01\%$, $H^2 = 7.70$ Favour control Favour ONS Test of $\theta_i = \theta_i$: Q(2) = 15.40, p = 0.00 Test of θ = 0: z = 2.78, p = 0.01 -5

Random-effects DerSimonian-Laird model

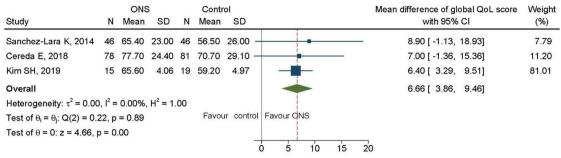
Study N	Mean	SD	N	Contro Mean				Mean difference of change weight with 95% CI	Weight (%)
Elkort RJ, 1981 12	1.18	6.80	14	1.54	5.90			-0.36 [-5.24, 4.52]	4.31
Sanchez-Lara K, 2014 46	-0.33	3.00	46	-2.20	3.00		_	1.87 [0.64, 3.10]	37.47
Kim SH, 2019 15	2.04	0.70	19	-0.86	1.20		-	2.90 [2.21, 3.59]	58.22
Overall Heterogeneity: $\tau^2 = 0.36$, $I^2 =$	o = 0.17	%, H² =	: 1.70	3		Favour control	Favour ONS	2.37 [1.33, 3.42]	

Random-effects DerSimonian-Laird model

Figure S3D Study	N	ONS Mean		N	Contro Mean					Mean difference of change weight with 95% CI	Weight (%)
Sanchez-Lara K, 2014	46	-0.33	3.00	46	-2.20	3.00			-	1.87 [0.64, 3.10]	26.59
Kim SH, 2019	15	2.04	0.70	19	-0.86	1.20			-	2.90 [2.21, 3.59]	38.43
Meng Q, 2021	171	-2.40	3.82	166	-3.92	4.01				1.52 [0.68, 2.36]	34.98
Overall Heterogeneity: $\tau^2 = 0.48$, $I^2 = 70.36\%$, $H^2 = 3.37$									2.14 [1.20, 3.09]		
Test of $\theta_i = \theta_j$: Q(2) = 6.75, p = 0.03							Favour	control	Favour ONS		
Test of θ = 0: z = 4.45, p	0.0	00					-5		0	5	

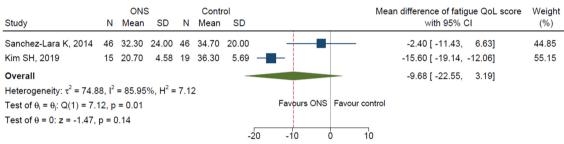
Random-effects DerSimonian-Laird model

Figure S3 Forest plot for subgroup analysis of ONS vs. dietary counseling on mean difference of change in weight outcomes in the following subgroups: (A) non-Asian region, (B) age more than 60 years old, (C) female patients 50% or more, (D) baseline bodyweight less than 65 kg. N, number of participants; ONS, oral nutritional supplement; SD, standard deviation; CI, confident interval.



Random-effects DerSimonian-Laird model

Figure S4 Sensitivity analysis of ONS vs. dietary counseling on global domain QoL outcomes (RCTs with baseline imbalance were excluded). N, number of participants; ONS, oral nutritional supplement; SD, standard deviation; CI, confident interval; QoL, quality of life; RCTs, randomized controlled trials.



Random-effects DerSimonian-Laird model

Figure S5 Sensitivity analysis of ONS *vs.* dietary counseling on fatigue domain QoL outcomes (RCTs with baseline imbalance were excluded). N, number of participants; ONS, oral nutritional supplement; SD, standard deviation; CI, confident interval; QoL, quality of life; RCTs, randomized controlled trials.

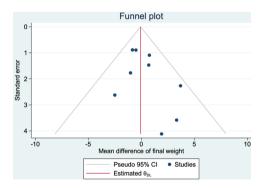


Figure S6 Funnel plot. CI, confident interval.