Data supplement

Evaluating agreement between bodies of evidence from randomized controlled trials and cohort studies in nutrition research: a meta-epidemiological study

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Supplementary Appendix 1: Search strategy for systematic reviews of randomized controlled trials in the Cochrane Database of Systematic Reviews.

ID	Search	Hits
#1	MeSH descriptor: [Diet, Carbohydrate-Restricted] explode all trees	385
#2	MeSH descriptor: [Healthy Diet] explode all trees	336
#3	MeSH descriptor: [Diet, Mediterranean] this term only	434
#4	MeSH descriptor: [Dietary Approaches To Stop Hypertension] explode all trees	15
#5	MeSH descriptor: [Micronutrients] explode all trees	4,992
#6	MeSH descriptor: [Dietary Supplements] explode all trees	11,620
#7	(mediterranean or dash diet or low-carb* or low-fat* or grain* or vegetable* or fruit* or milk or dairy or meat or processed meat* or fish or eggs or nuts or chocolate or oil*):ti,ab,kw	40,401
#8	(carbohydrate* or fructose or glucose or starch or sucrose or fibre or psyllium or inulin or cellulose or prebiotic* or probiotic* or synbiotic* or n-3 or omega 3 or omega-3 or n3 or n6 or n-6 or omega 6 or omega-6 or unsaturated or monounsaturated or polyunsaturated or EPA or DHA or linoleic acid or protein or amino acid*):ti,ab,kw	167,040
#9	(vitamin* or beta-carot* or ascorbic acid or cholecalciferol* or ergocalciferol or thiamine or riboflavin or niacin or pyridoxine or cobalamin or folic acid or magnesium or calcium or selenium or sodium or potassium or iron or zinc or copper or iodine):ti,ab,kw	118,402
#10	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9	283,530
#11	(diet* or nutrition or eat* or consum* or intake):ti,ab,kw	163,651
#12	#10 and #11	83,677
#13	(mortal* or cancer or diabetes or dementia or macular degeneration or body weight or blood pressure or glucose or cholester*):ti,ab,kw	448,002
#14	#12 and #13	48,529
#15	Limit to “Cochrane Reviews” published between "2010 - 2019"	**333**

Supplementary Appendix 2: Search strategy for systematic reviews of cohort studies in Ovid MEDLINE.

ID	Search	Hits
#1	(non-randomised or non-randomized or nrs or observational* or cohort or prospective or longitudinal* or follow* or case-cohort or nested case-control or epidemio*).ti,ab,kf.	4,466,200
#2	(meta-analys* or metaanalys* or "systematic review" or systematic-review).ti,ab.	238,477
#3	(Systematic Review or Meta-Analysis).pt.	177,170
#4	#1 and (#2 or #3)	104,427
#5	Diet, Mediterranean/ or Diet, Carbohydrate-Restricted/ or Healthy Diet/ or Dietary Abbroach to Stop Hypertension/ or Micronutrients/ or Dietary Supplements/	65,391
#6	(mediterranean or dash diet or low-carb* or low-fat* or grain* or vegetable* or fruit* or milk or dairy or meat or processed meat* or fish or eggs or nuts or chocolate or oil*).ti,ab.	733,079
#7	(carbohydrate* or fructose or glucose or starch or sucrose or fibre or psyllium or inulin or cellulose or prebiotic* or probiotic* or synbiotic* or n-3 or omega 3 or omega-3 or n3 or n6 or n-6 or omega 6 or omega-6 or unsaturated or monounsaturated or polyunsaturated or EPA or DHA or linoleic acid or protein or amino acid*).ti,ab.	3,445,283
#8	(vitamin* or beta-carot* or ascorbic acid or cholecalciferol* or ergocalciferol or thiamine or riboflavin or niacin or pyridoxine or cobalamin or folic acid or magnesium or calcium or selenium or sodium or potassium or iron or zinc or copper or iodine).ti,ab.	1,391,454
#9	(diet* or nutrition or eat* or consum* or intake).ti,ab.	1,173,600
#10	(#5 or #6 or #7 or #8) and #9	502,160
#11	#4 and #10	3,809
#12	limit #11 to yr="2010 - 2019"	**3,118**

Supplementary Table 1: Explanation and definition for Population (P), Intervention/Exposure (I/E), Comparator (C), Outcome (O) similarities.

	Patients/population	Intervention/Exposure	Comparator	Outcome
1 = more or less identical	Both bodies of evidence include primary or secondary prevention.	Both bodies of evidence use intake, supplements or status.	Both bodies of evidence use (no) intake, supplements/placebo or status.	Same outcome.
	e.g. people with cardiovascular disease in BoE from RCTs and CSs.	e.g. Folate supplements in BoE from RCTs and BoE from CSs.	e.g. see Intervention/Exposure.	e.g. Cardiovascular disease in BoE from RCTs and BoE from CSs.
2 = similar but not identical	Both bodies of evidence include primary and secondary prevention or mixed population vs. primary or secondary prevention.	- Intake vs. supplements. - Enriched / modified foods vs. intake. - Intake vs. urinary excretion. - Intake + supplements vs. intake. - Intake vs. intake on similar but not identical intervention /exposure - Supplements vs. supplements on similar but not identical intervention /exposure	see Intervention/Exposure.	Same cluster of outcomes.
	e.g. healthy people and people with cardiovascular disease in RCTs vs. general healthy population in CSs.	e.g. - Vitamin C supplements vs. Vitamin C intake. - Margarine enriched with α-Linolenic acid vs. α-Linolenic acid intake. - Substituted salt intake (with 65% sodium) vs. sodium intake. - Sodium intake vs. sodium intake and urinary sodium. - Fruit and vegetables intake vs. fruit or vegetables intake. - Low-fat intake vs. High-carbohydrate intake. - Increased fruit and vegetable intake + decreased fat intake vs. flavonoids intake. - Multi-micronutrient supplements vs. Multivitamin	e.g. see Intervention/Exposure.	e.g. - Cardiovascular disease vs. coronary heart disease. - Mortality vs. incidence.

		supplements.		
3 = broadly similar	Secondary (BoE from RCTs) vs. primary prevention (BoE from CSs), which means no healthy population in the BoE from RCTs.	- Intake or supplements vs. status. - Supplements vs. intake on broadly similar intervention/exposure.	see Intervention/Exposure.	Broadly similar outcomes. Continuous vs. dichotomous outcome (see also supplementary table 4).
	e.g. people with cardiovascular disease in RCTs vs. general healthy population in CSs.	e.g. - Vitamin D supplements vs. Vitamin D status. - Vitamin A supplements vs. β-carotene intake	e.g. see Intervention/Exposure.	e.g. Colorectal adenoma vs. colorectal cancer.

BoE: bodies of evidence; CS: cohort study; RCT: randomized controlled trial.

Supplementary Table 2: Overview of transformations made to the original data extraction.

Reference	Outcome	n (studies)	Original			What we used			Rationale
			HR	**95% CI**		**RR**	**95% CI**		
Al-Khudairy et al. 2017 [1]	Major cardiovascular events	1	0.99	0.89	1.10	0.99	0.89	1.10	Number of randomised patients and patients with an event, per arm, taken from p. 20, table 2, of Sesso et al. 2008[2].
Al-Khudairy et al. 2017 [1]	Cardiovascular mortality	1	1.02	0.85	1.22	1.01	0.85	1.20	
Al-Khudairy et al. 2017[1]	All-cause mortality	1	1.07	0.97	1.18	1.06	0.97	1.16	
Rees et al. 2019 [3]	Cardiovascular mortality	1	0.81	0.5	1.32	0.93	0.60	1.45	Number of randomised patients and patients with an event, per arm, taken from p. e34(8) table 3, of Estruch et al. 2018[4].
Rees et al. 2019 [3]	Combined cardiovascular events	1	0.7	0.58	0.85	0.81	0.64	1.02	
Rees et al. 2019[3]	All-cause mortality	1	1	0.81	1.24	1	0.81	1.25	
			OR	**95% CI**		**RR**	**95% CI**		
Hu et al. 2018 [5]	Gestational diabetes	21	0.76	0.64	0.90	0.87	0.69	1.09	ACR = 0.130, median of the risks observed in the control groups of the RCTs included in Palacios et al. 2019[6] (Gestational diabetes).
Tous et al. 2020 [7]	Preterm birth	19	0.78	0.65	0.93	0.79	0.66	0.93	ACR = 0.058, median of the risks observed in the control groups of the RCTs included in Palacios 2019[6] (Preterm birth)
Yuan et al. 2019 [8]	Pre-eclampsia	15	0.62	0.5	0.78	0.63	0.51	0.79	ACR = 0.044, median of the risks observed in the control groups of the RCTs included in Palacios et al. 2019[6] (Pre-eclampsia).
Goodwill et al. 2017 [9]	Dementia/MCI	14	0.88	0.81	0.95	0.88	0.81	0.95	ACR = 0.018, median of the risks observed in the control groups of the RCTs included in Rutjes et al. 2018[10] (Dementia).
Chia et al. 2019 [11]	Preterm birth	5	0.81	0.69	0.94	0.81	0.69	0.94	ACR = 0.021, median of the risks observed in the control groups of the RCTs included in Tieu et al. 2017[12] (Preterm birth).
Chia et al. 2019 [11]	Small gestational age	8	0.88	0.71	1.08	0.89	0.73	1.07	ACR = 0.077, median of the risks observed in the control groups of the RCTs included in Tieu et al. 2017[12] (Small gestational age).
Mijatovic-Vukas et al. 2018 [13]	Gestational diabetes	4	0.70	0.62	0.80	0.74	0.66	0.83	ACR = 0.164, median of the risks observed in the control groups of the RCTs included in Tieu et al. 2017[12] (Gestational diabetes).
Vinceti et al. 2018 [14]	Cancer	7	0.72	0.55	0.93	0.75	0.59	0.94	ACR = 0.151, median of the risks observed in the control groups of the RCTs included in Vinceti et al. 2018 (Any cancer).

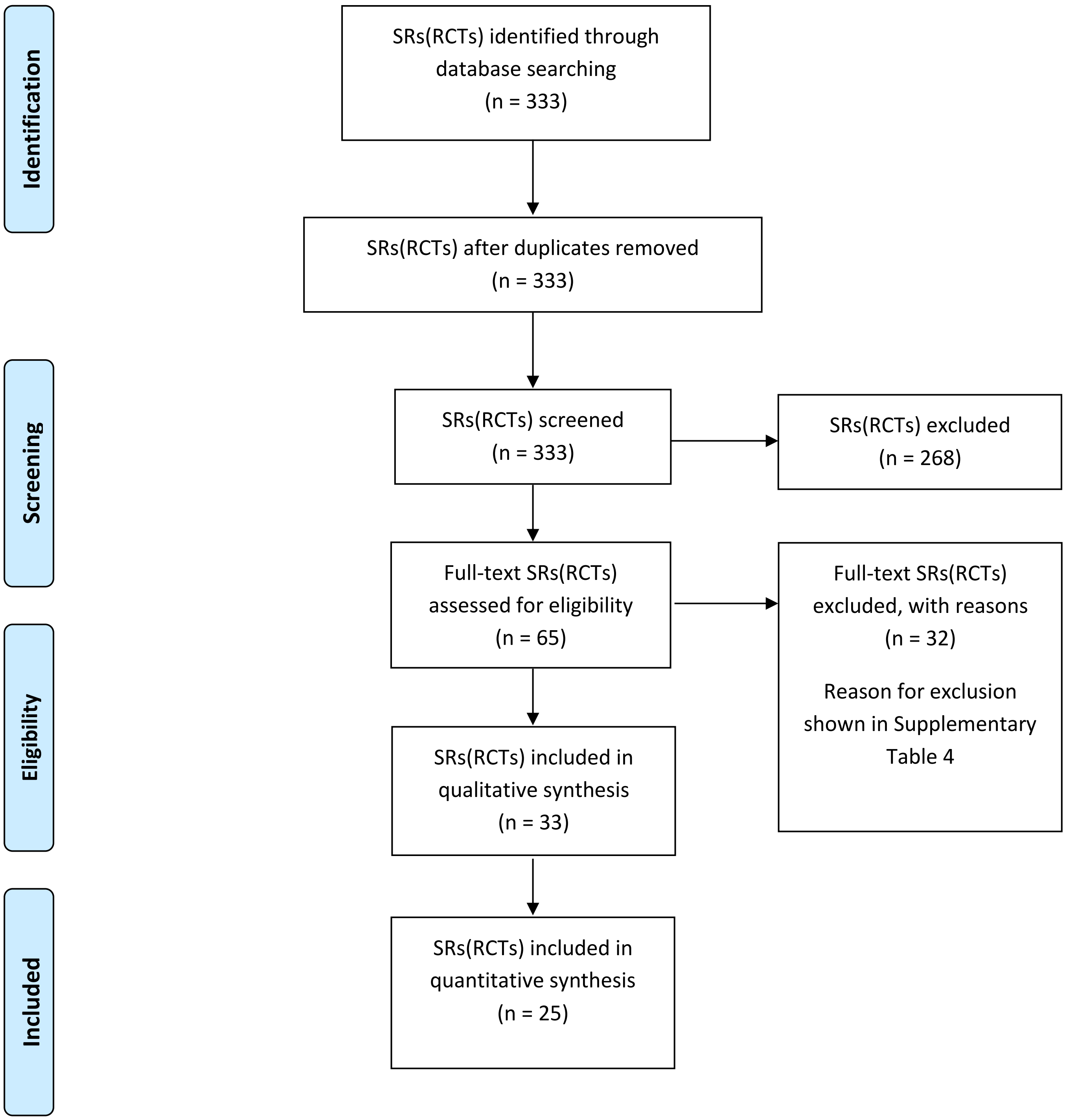
Vinceti et al. 2018 [14]	Cancer mortality	1	0.93	0.83	1.04	0.93	0.84	1.04	ACR = 0.060, median of the risks observed in the control groups of the RCTs included in Vinceti et al. 2018 (Cancer mortality).
Vinceti et al. 2018 [14]	Colorectal cancer	1	0.80	0.68	0.94	0.80	0.68	0.94	ACR = 0.008, median of the risks observed in the control groups of the RCTs included in Vinceti et al. 2018 (Colorectal cancer).
			MD	**95% CI**		**RR**	**95% CI**		
Abdelhamid et al. 2018a [15]	Body weight	12	-0.01	-0.84	0.82	1.03	0.83	1.29	The MD was standardised and the SMD re-expressed as an OR, by using the formula in paragraph 10.6 of the Cochrane Handbook. The OR was then transformed into a RR. ACR = 0.065, risk observed in the only one study considered in Schlesinger et al. 2019[16], Supplemental Table 13 (Schulz et al. 2002[17]).

ACR: assumed control risk; HR: hazard ratio; RR: risk ratio; OR: odds ratio; MD: mean difference.

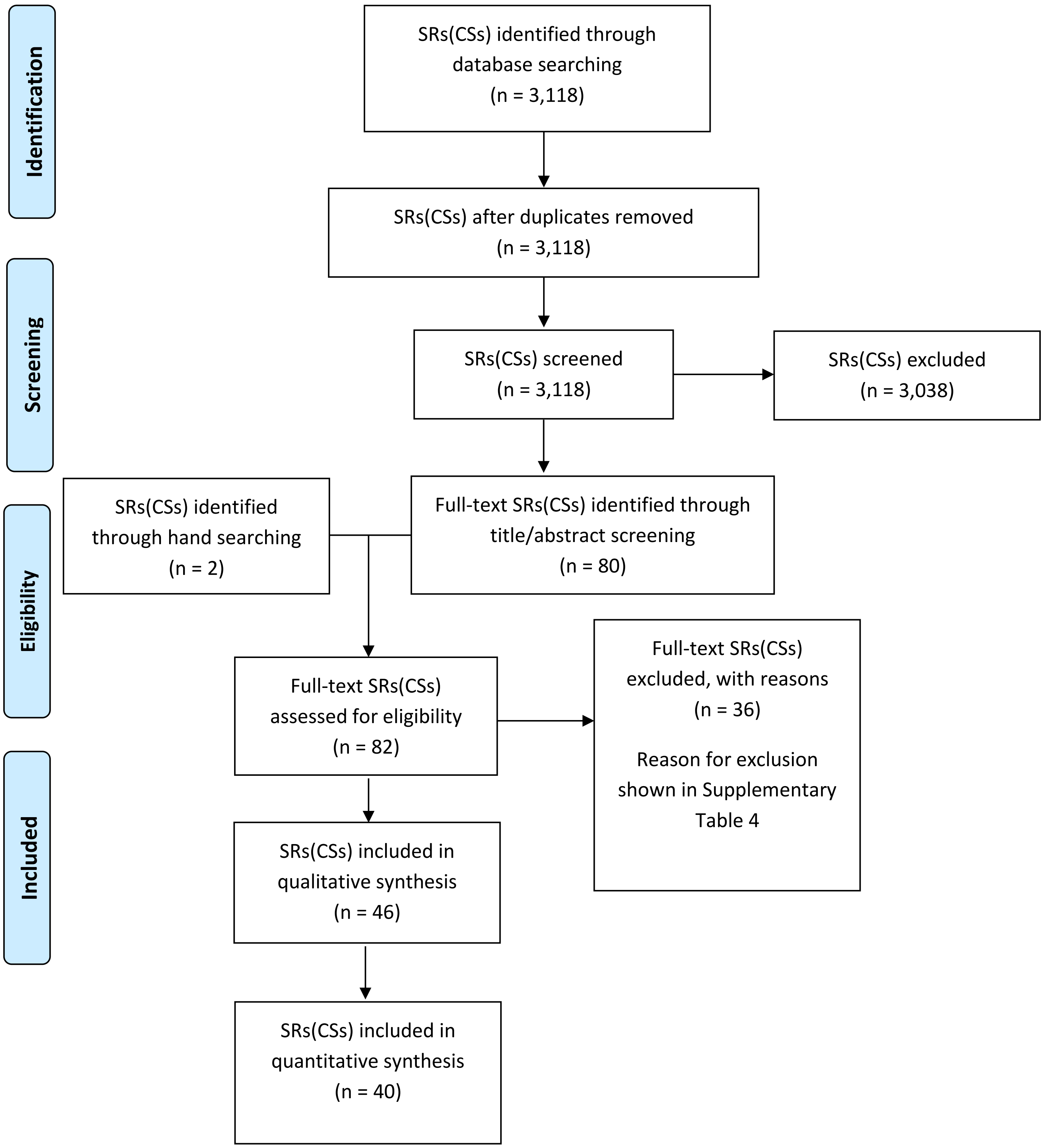
Supplementary Table 3: Exclusion reasons of highly correlated outcome pairs from the meta-analysis.

Reference pair	Intervention/Exposure	Outcome	Reason for exclusion
Abdelhamid et al. 2018a[15] + Chowdhury et al. 2014a[18]	Omega-3	Cardiovascular disease	Highly likely correlated with outcome cardiovascular mortality
Abdelhamid et al. 2018a[15] + Pan et al. 2012[19]	α-Linolenic acid	Cardiovascular disease	Highly likely correlated with outcome cardiovascular mortality
Abdelhamid et al. 2018a[15] + Wei et al. 2018[20]	α-Linolenic acid	Coronary heart disease	Highly likely correlated with outcome cardiovascular mortality
Abdelhamid et al. 2018b[21] + Zhu et al. 2019[22]	Polyunsaturated fat	Major cardiovascular events	Highly likely correlated with outcome coronary heart disease
Adler et al. 2014[23] + Aburto et al. 2013[24]	Low-sodium	Cardiovascular disease	Highly likely correlated with outcome cardiovascular mortality
Adler et al. 2014[23] + Leyvraz et al. 2018[25]	Low-sodium	Diastolic blood pressure	Highly likely correlated with outcome systolic blood pressure
Al-Khudairy et al. 2017[1] + Aune et al. 2018[26]	Vitamin C	Cardiovascular mortality	Highly likely correlated with outcome major cardiovascular events
Avenell et al. 2014[27] + Feng et al. 2017[28]	Vitamin D	Any fracture	Highly likely correlated with outcome hip fracture
Bjelakovic et al. 2014b[29] + Hossain et al. 2019[30]	Vitamin D3	Breast cancer	Highly likely correlated with outcome cancer
Bjelakovic et al. 2014b[29] + Zhang et al. 2015[31]	Vitamin D3	Lung cancer	Highly likely correlated with outcome cancer
Hofmeyr et al. 2018[32] + Newberry et al. 2014[33]	Calcium	High blood pressure	Highly likely correlated with outcome pre-eclampsia
Hooper et al. 2012[34] + Zhu et al. 2019[22]	Low-fat/modified fat	Combined cardiovascular events	Highly likely correlated with outcome cardiovascular mortality
Hooper et al. 2015b[35] + de Souza et al. 2015[36]	Low saturated fat	Combined cardiovascular events	Highly likely correlated with outcome cardiovascular mortality
Hooper et al. 2018[37] + Chowdhury et al. 2014a[18]	Omega-6	Combined cardiovascular events	Highly likely correlated with outcome cardiovascular mortality
Keats et al. 2019[38] + Wolf et al. 2017[39]	Micronutrients	Low birth weight	Highly likely correlated with outcome preterm birth
Keats et al. 2019[38] + Wolf et al. 2017[39]	Micronutrients	Small gestational age	Highly likely correlated with outcome preterm birth
Palacios et al. 2019[6] + Tous et al. 2020[7]	Vitamin D	Birth weight	Highly likely correlated with outcome birth length
Palacios et al. 2019[6] +	Vitamin D	Head circumference at birth	Highly likely correlated with outcome birth

Tous et al. 2020[7]			length
Rees et al. 2013a[40] + Kastorini et al. 2011[41]	Healthy diet	Diastolic blood pressure	Highly likely correlated with outcome systolic blood pressure
Rees et al. 2013b[42] + Zhang et al. 2016a[43]	Selenium	Combined cardiovascular events	Highly likely correlated with outcome cardiovascular mortality
Rees et al. 2019[3] + Kastorini et al. 2011[41]	Mediterranean diet	Triglycerides	Highly likely correlated with outcome high density lipoprotein
Rees et al. 2019[3] + Kastorini et al. 2011[41]	Mediterranean diet	Systolic blood pressure	Highly likely correlated with outcome high density lipoprotein
Rees et al. 2019[3] + Rosato et al. 2019[44]	Mediterranean diet	Combined cardiovascular events	Highly likely correlated with outcome cardiovascular mortality
Tieu et al. 2017[12] + Chia et al. 2019[11]	Healthy diet	Preterm birth	Highly likely correlated with outcome small gestational age
Vinceti et al. 2018[14] + Vinceti et al. 2018 [14]+	Selenium	Cancer mortality	Highly likely correlated with outcome cancer
Vinceti et al. 2018[14] + Vinceti et al. 2018[14] +	Selenium	Colorectal cancer	Highly likely correlated with outcome cancer
Yao et al. 2017[45] + Ben et al. 2014[46]	Fibre	Colorectal adenoma	Highly likely correlated with outcome colorectal cancer



Supplementary Figure 1: Flow diagram showing study selection process for eligible Cochrane Reviews. RCTs: randomized controlled trials; SR: systematic review.



Supplementary Figure 2: Flow diagram showing study selection process for systematic reviews (SRs) of cohort studies (CSs).

Supplementary Table 4: Reason for exclusion

Reference	Reason for exclusion
Systematic reviews of randomized controlled trials	
[47-60]	Did not fulfil PICO inclusion criteria (see PICO criteria Table 1).
[61-78]	No corresponding systematic review of cohort studies on dietary intake and or biomarker of dietary intake was available.
Systematic reviews of cohort studies	
[79-82]	Did not fulfil PECO inclusion criteria (see PECO criteria Table 1).
[83-89]	More recent or appropriate systematic review of cohort studies available (e.g. higher number of included studies, better matching PECO).
[90-114]	No body of randomized controlled trials (Cochrane Reviews) available.

PI/ECO: population, intervention/exposure, comparator, outcome.

Supplementary Table 5: Effect estimates of included bodies of evidence from randomized controlled trials and cohort studies.

Bodies of evidence from randomized controlled trials (Cochrane Reviews)					**Bodies of evidence from cohort studies**							
Reference	Intervention and type of intake	Outcome (as defined by the authors)	Studies, n	Summary measure, and effect estimate (95% CI)	Reference	Exposure and type of intake/exposure	Comparison	Outcome (as defined by the authors)	Studies, n	Summary measure, and effect estimate (95% CI)	Overall PI/ECO similarity degree (1 = more or less identical) (2 = similar but not identical) (3 = broadly similar)	Included in the meta-analysis (Yes/ No)
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular mortality	25	RR: 0.95 (0.87, 1.03)	Chowdhury et al. 2014a[18]	Omega-3 intake	T3 vs. T1	Coronary heart disease mortality	NA	RR: 0.90 (0.70, 1.14)	3	Y
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular disease	38	RR: 0.99 (0.94, 1.04)	Chowdhury et al. 2014a[18]	Omega-3 intake	T3 vs. T1	Coronary heart disease	16	RR: 0.87 (0.78, 0.97)	2	Y
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular disease	5	RR: 0.95 (0.83, 1.07)	Pan et al. et al. 2012[19]	α-Linolenic acid intake	High vs. Low	Cardiovascular disease	11	RR: 0.93 (0.85, 1.03)	2	Y
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Body weight (kg)	12	MD: -0.01 (-0.84, 0.82)	Schlesinger et al. 2019[16]	Fish intake	per 100 g/d increment	Weight gain	1	RR: 1.06 (0.83, 1.35)	3	Y
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	All-cause mortality	39	RR: 0.98 (0.93, 1.03)	Wan et al. 2017[115]	Omega-3 intake	High vs. Low	All-cause mortality	6	RR: 0.86 (0.80, 0.93)	2	Y
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular mortality	4	RR: 0.96 (0.74, 1.25)	Wei et al. 2018[20]	α-Linolenic acid intake	High vs. Low	Coronary heart disease mortality	9	RR: 0.85 (0.75, 0.96)	2	Y
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Coronary heart disease	4	RR: 1.00 (0.82, 1.22)	Wei et al. 2018[20]	α-Linolenic acid intake	High vs. Low	Coronary heart disease	13	RR: 0.91 (0.85, 0.97)	2	Y
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	All-cause mortality	24	RR: 0.98 (0.89, 1.07)	Li et al. 2020[116]	Linoleic acid intake	High vs. Low	All-cause mortality	11	RR: 0.87 (0.81, 0.94)	2	Y
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	Coronary heart disease	15	RR: 0.87 (0.72, 1.06)	Chowdhury et al. 2014a[18]	Omega-6 intake	T3 vs. T1	Coronary heart disease	8	RR: 0.98 (0.90, 1.06)	2	Y
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake	Major cardiovascular events	2	RR: 0.84 (0.59, 1.20)	Zhu et al. 2019[22]	Polyunsaturated fat intake	High vs. Low	Cardiovascular disease	30	RR: 0.97 (0.93, 1.00)	2	Y
Adler et al. 2014[23]	Low-sodium intake	All-cause mortality	7	RR: 0.96 (0.83, 1.10)	Aburto et al. 2013[24]	Low-sodium intake	Low vs. High	All-cause mortality	2	RR: 0.95 (0.71, 1.27)	2	Y
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular mortality	3	RR: 0.67 (0.45, 1.01)	Aburto et al. 2013[24]	Low-sodium intake	Low vs. High	Cardiovascular mortality	3	RR: 0.87 (0.64, 1.18)	2	Y
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular disease	4	RR: 0.76 (0.57, 1.01)	Aburto et al. 2013[24]	Low-sodium intake	Low vs. High	Cardiovascular disease	3	RR: 0.87 (0.64, 1.18)	2	Y
Adler et al. 2014[23]	Low-sodium intake	Systolic blood pressure (mmHg)	6	MD: -1.79 (-3.23, -0.36)	Leyvraz et al. 2018[25]	Low-sodium intake + status	Low vs. High	Systolic blood pressure (mmHg)	1	MD: -1.20 (-1.50, -0.90)	3	Y
Adler et al. 2014[23]	Low-sodium intake	Diastolic blood pressure (mmHg)	5	MD: -1.17 (-2.08, -0.26)	Leyvraz et al. 2018[25]	Low-sodium intake + status	Low vs. High	Diastolic blood pressure (mmHg)	1	MD: 1.20 (1.00, 1.50)	3	Y

Al-Khudairy et al. 2017[1]	Vitamin C supplements	Major cardiovascular events	1	HR: 0.99 (0.89, 1.10)	Aune et al. 2018[26]	Vitamin C intake	High vs. Low	Cardiovascular disease	9	RR: 0.84 (0.77, 0.91)	2		Y
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Cardiovascular mortality	1	HR: 1.02 (0.85, 1.22)	Aune et al. 2018[26]	Vitamin C intake	Per 100 mg/d increase	Cardiovascular mortality	9	RR: 0.88 (0.83, 0.94)	2		Y
Al-Khudairy et al. 2017[1]	Vitamin C supplements	All-cause mortality	1	HR: 1.07 (0.97, 1.18)	Aune et al. 2018[26]	Vitamin C intake	High vs. Low	All-cause mortality	16	RR: 0.86 (0.80, 0.92)	2		Y
Avenell et al. 2014[27]	Vitamin D supplements	Hip fracture	10	RR: 1.12 (0.97, 1.30)	Feng et al. 2017[28]	Vitamin D status	High vs. Low	Hip fracture	11	RR: 0.68 (0.60, 0.78)	3		Y
Avenell et al. 2014[27]	Vitamin D supplements	Any fracture	14	RR: 1.04 (0.96, 1.12)	Feng et al. 2017[28]	Vitamin D status	High vs. Low	Any fracture	11	RR: 0.80 (0.68, 0.94)	3		Y
Bjelakovic et al. 2012[117]	β-carotene supplements	All-cause mortality	31	RR: 1.02 (0.98, 1.07)	Aune et al. 2018[26]	β-carotene intake	High vs. Low	All-cause mortality	8	RR: 0.82 (0.78, 0.87)	2		Y
Bjelakovic et al. 2012[117]	Vitamin E supplements	All-cause mortality	64	RR: 1.02 (0.99, 1.04)	Aune et al. 2018[26]	Vitamin E intake	High vs. Low	All-cause mortality	9	RR: 0.98 (0.93, 1.04)	2		Y
Bjelakovic et al. 2012[117]	Vitamin C supplements	All-cause mortality	41	RR: 1.01 (0.97, 1.05)	Aune et al. 2018[26]	Vitamin C intake	High vs . Low	All-cause mortality	16	RR: 0.86 (0.80, 0.92)	2		Y
Bjelakovic et al. 2012[117]	Vitamin A supplements	All-cause mortality	18	RR: 1.04 (0.96, 1.13)	Aune et al. 2018[26]	β-carotene intake	High vs. Low	All-cause mortality	8	RR: 0.82 (0.78, 0.87)	3		Y
Bjelakovic et al. 2014a[118]	Vitamin D supplements	All-cause mortality	56	RR: 0.97 (0.94, 0.99)	Chowdhury et al. 2014b[119]	Vitamin D status	T3 vs. T1	All-cause mortality	68	RR: 0.69 (0.65, 0.75)	3		Y
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cardiovascular mortality	10	RR: 0.98 (0.90, 1.07)	Chowdhury et al. 2014b[119]	Vitamin D status	T3 vs. T1	Cardiovascular mortality	29	RR: 0.70 (0.61, 0.80)	3		Y
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cancer mortality	4	RR: 0.88 (0.78, 0.98)	Han et al. 2019[120]	Vitamin D status	High vs. Low	Cancer mortality	16	RR: 0.81 (0.71, 0.93)	3		Y
Bjelakovic et al. 2014b[29]	Vitamin D supplements	Cancer occurrence	18	RR: 1.00 (0.94, 1.06)	Han et al. 2019[120]	Vitamin D status	High vs. Low	Cancer incidence	8	RR: 0.86 (0.73, 1.02)	3		Y
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Breast cancer	7	RR: 0.97 (0.86, 1.09)	Hossain et al. 2019[30]	Vitamin D supplements	Yes vs. No	Breast cancer	2	RR: 0.94 (0.87, 1.02)	2		Y
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Lung cancer	5	RR: 0.86 (0.69, 1.07)	Zhang et al. 2015[31]	Vitamin D intake	High vs. Low	Lung cancer	3	RR: 0.89 (0.74, 1.06)	2		Y
Cormick et al. 2015[121]	Calcium supplements	Systolic blood pressure (mmHg)	16	MD: -1.43 (-2.15, -0.72)	Jayedi et al. 2019[122]	Calcium intake + supplements	High vs. Low	Hypertension	8	RR: 0.89 (0.86, 0.93)	3		N
Cormick et al. 2015[121]	Calcium supplements	Diastolic blood pressure (mmHg)	15	MD: -0.98 (-1.46, -0.50)	Jayedi et al. 2019[122]	Calcium intake + supplements	High vs. Low	Hypertension	8	RR: 0.89 (0.86, 0.93)	3		N
De-Regil et al. 2015[123]	Folate supplements	Neural tube defect	5	RR: 0.31 (0.17, 0.58)	Blencowe et al. 2010[124]	Folate supplements	Yes vs. No	Neural tube defect	3	RR: 0.37 (0.23, 0.58)	2		Y
De-Regil et al. 2015[123]	Folate supplements	Congenital cardiovascular anomalies	3	RR: 0.57 (0.24, 1.33)	Feng et al. 2015[125]	Folate supplements	Yes vs. No	Congenital heart defect	1	RR: 0.60 (0.38, 0.96)	2		Y
El Dib et al. 2015[126]	Zinc supplements	HOMA-IR	1	MD: -0.10 (-1.28, 1.08)	Fernandez-Cao et al. 2019[127]	Zinc supplements	Yes vs. No	Type 2 diabetes	2	RR: 0.94 (0.75, 1.19)	3		N
Hartley et al. 2013[128]	Fruit & Vegetables intake	Systolic blood pressure (mmHg)	2	MD: -3.00 (-4.92, -1.09)	Schwingshackl et al. 2017[129]	Fruit intake	High vs. Low	Hypertension	7	RR: 0.93 (0.87, 1.00)	3		N

Hartley et al. 2013[128]	Fruit & Vegetables intake	Diastolic blood pressure (mmHg)	2	MD: -0.90 (-2.03, 0.24)	Schwingshackl et al. 2017[129]	Vegetables intake	High vs. Low	Hypertension	8	RR: 0.96 (0.91, 1.01)	3	N
Hartley et al. 2016[130]	Fibre intake + supplements	Systolic blood pressure (mmHg)	8	MD: -1.92 (-4.02, 0.19)	Schwingshackl et al. 2017[129]	Whole grain intake	High vs. Low	Hypertension	4	RR: 0.86 (0.79, 0.93)	3	N
Hartley et al. 2016[130]	Fibre intake +supplements	Diastolic blood pressure (mmHg)	8	MD: -1.77 (-2.61, -0.92)	Schwingshackl et al. 2017[129]	Whole grain intake	High vs. Low	Hypertension	4	RR: 0.86 (0.79, 0.93)	3	N
Hemmingsen et al. 2017[131]	Healthy diet (intake)	Type 2 diabetes	1	RR: 0.65 (0.52, 0.81)	Schwingshackl et al. 2018[132]	Diet quality (intake)	High vs. Low	Type 2 diabetes	10	RR: 0.82 (0.78, 0.85)	2	Y
Hemmingsen et al. 2017[131]	Healthy diet (intake)	All-cause mortality	1	RR: 1.02 (0.21, 4.98)	Schwingshackl et al. 2018[132]	Diet quality (intake)	High vs. Low	All-cause mortality	13	RR: 0.78 (0.77, 0.80)	2	Y
Hofmeyr et al. 2018[32]	Calcium supplements	Pre-eclampsia	13	RR: 0.45 (0.31, 0.65)	Newberry et al. 2014[33]	Calcium intake	High vs. Low	Pre-eclampsia	2	RR: 0.97 (0.78, 1.21)	2	Y
Hofmeyr et al. 2018[32]	Calcium supplements	High blood pressure	12	RR: 0.65 (0.53, 0.81)	Newberry et al. 2014[33]	Calcium intake	High vs. Low	High blood pressure	2	RR: 1.12 (0.83, 1.50)	2	Y
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Cardiovascular mortality	14	RR: 0.94 (0.85, 1.04)	Noto et al. 2013[133]	High-carbohydrate intake	High vs. Low	Cardiovascular mortality	3	RR: 0.91 (0.81, 1.02)	2	Y
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	All-cause mortality	20	RR: 0.98 (0.93, 1.04)	Seidelmann et al. 2018[134]	High-carbohydrate intake	High vs. Low	All-cause mortality	6	RR: 0.83 (0.76, 0.92)	2	Y
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Combined cardiovascular events	18	RR: 0.86 (0.77, 0.96)	Zhu et al. 2019[22]	Low-fat intake	Low vs. High	Cardiovascular disease	32	RR: 1.03 (0.99, 1.08)	2	Y
Hooper et al. 2012[34]	Low-fat intake	Body weight (kg)	16	MD: -0.83 (-1.37, -0.30)	Sartorius et al. 2018[135]	High-carbohydrate intake	High vs. Low	Obesity	2	RR: 1.06 (1.00, 1.12)	3	N
Hooper et al. 2015a[136]	Low-fat intake	Body weight (kg)	25	MD: -1.54 (-1.97, -1.12)	Sartorius et al. 2018[135]	High-carbohydrate intake	High vs. Low	Obesity	2	RR: 1.06 (1.00, 1.12)	3	N
Hooper et al. 2015b[35]	Low saturated fat intake	All-cause mortality	11	RR: 0.97 (0.90, 1.05)	de Souza et al. 2015[36]	Low saturated fat intake	Low vs. High	All-cause mortality	5	RR: 1.01 (0.92, 1.10)	2	Y
Hooper et al. 2015b[35]	Low saturated fat intake	Cardiovascular mortality	10	RR: 0.95 (0.80, 1.12)	de Souza et al. 2015[36]	Low saturated fat intake	Low vs. High	Cardiovascular mortality	3	RR: 1.03 (0.89, 1.19)	2	Y
Hooper et al. 2015b[35]	Low saturated fat intake	Combined cardiovascular events	11	RR: 0.83 (0.72, 0.96)	de Souza et al. 2015[36]	Low saturated fat intake	Low vs. High	Coronary heart disease	12	RR: 0.94 (0.85, 1.05)	2	Y
Hooper et al. 2018[37]	Omega-6 intake + supplements	Combined cardiovascular events	7	RR: 0.97 (0.81, 1.15)	Chowdhury et al. 2014a[18]	Omega-6 intake	High vs. Low	Coronary heart disease	8	RR: 0.98 (0.90, 1.06)	2	Y
Hooper et al. 2018[37]	Omega-6 intake + supplements	All-cause mortality	10	RR: 1.00 (0.88, 1.12)	Li et al. 2020[116]	Linoleic acid intake	High vs. Low	All-cause mortality	11	RR: 0.87 (0.81, 0.94)	2	Y

Hooper et al. 2018[37]	Omega-6 intake + supplements	Cardiovascular mortality	7	RR: 1.09 (0.76, 1.55)	Li et al. 2020[116]	Linoleic acid intake	High vs. Low	Cardiovascular mortality	14	RR: 0.87 (0.82, 0.92)	2	Y
Jin et al. 2012[137]	Total flavonoids intake	Colorectal adenoma	1	RR: 1.09 (0.93, 1.28)	Jin et al. 2012[137]	Total flavonoids intake	High vs. Low	Colorectal cancer	3	RR: 1.00 (0.80, 1.25)	3	Y
Jin et al. 2012[137]	Isoflavonoes intake	Colorectal adenoma	1	RR: 0.98 (0.83, 1.16)	Jin et al. 2012[137]	Isoflavonoes intake	High vs. Low	Colorectal cancer	1	RR: 1.16 (0.96, 1.41)	3	Y
Jin et al. 2012[137]	Flavonols intake	Colorectal adenoma	1	RR: 0.94 (0.80, 1.10)	Jin et al. 2012[137]	Flavonols intake	High vs. Low	Colorectal cancer	1	RR: 0.95 (0.83, 1.08)	3	Y
Keats et al. 2019[38]	Micronutrients supplements	Preterm birth	18	RR: 0.95 (0.90, 1.01)	Wolf et al. 2017[39]	Multivitamin supplements	Yes vs. No	Preterm birth	4	RR: 0.84 (0.69, 1.03)	2	Y
Keats et al. 2019[38]	Micronutrients supplements	Low birth weight	18	RR: 0.88 (0.85, 0.91)	Wolf et al. 2017[39]	Multivitamin supplements	Yes vs. No	Low birth weight	2	RR: 0.79 (0.45, 1.41)	2	Y
Keats et al. 2019[38]	Micronutrients supplements	Small gestational age	17	RR: 0.92 (0.88, 0.97)	Wolf et al. 2017[39]	Multivitamin supplements	Yes vs. No	Small gestational age	3	RR: 0.77 (0.63, 0.93)	2	Y
Kelly et al. 2017[138]	Whole grain intake	Systolic blood pressure (mmHg)	8	MD: 0.04 (-1.67, 1.75)	Schwingshackl et al. 2017[129]	Whole grain intake	High vs. Low	Hypertension	4	RR: 0.86 (0.79, 0.93)	3	N
Kelly et al. 2017[138]	Whole grain intake	Diastolic blood pressure (mmHg)	8	MD: 0.16 (-0.89, 1.21)	Schwingshackl et al. 2017[129]	Whole grain intake	High vs. Low	Hypertension	4	RR: 0.86 (0.79, 0.93)	3	N
Kelly et al. 2017[138]	Whole grain intake	Body weight (kg)	5	MD: -0.41 (-1.04, 0.23)	Ye et al. 2012[139]	Whole grain intake	High vs. Low	Body weight (kg)	3	MD: -0.30 (-0.37, -0.24)	2	Y
Mathew et al. 2012[140]	β-carotene supplements	Cataract	2	RR: 0.99 (0.91, 1.08)	Jiang et al. 2019[141]	β-carotene intake	High vs. Low	Cataract	7	RR: 0.90 (0.83, 0.99)	2	Y
Mathew et al. 2012[140]	Vitamin E supplements	Cataract	3	RR: 0.97 (0.91, 1.04)	Jiang et al. 2019[141]	Vitamin E intake	High vs. Low	Cataract	6	RR: 0.90 (0.80, 1.00)	2	Y
Mathew et al. 2012[140]	Vitamin C supplements	Cataract	1	RR: 1.02 (0.91, 1.14)	Jiang et al. 2019[141]	Vitamin C intake	High vs. Low	Cataract	7	RR: 0.80 (0.72, 0.88)	2	Y
Palacios et al. 2019[6]	Vitamin D supplements	Gestational diabetes	5	RR: 0.54 (0.34, 0.86)	Hu et al. 2018[5]	Vitamin D status	High vs. Low	Gestational diabetes	21	OR: 0.76 (0.64, 0.90)	3	Y
Palacios et al. 2019[6]	Vitamin D supplements	Preterm birth	4	RR: 1.25 (0.92, 1.69)	Tous et al. 2020[7]	Vitamin D status	High vs. Low	Preterm birth	19	OR: 0.78 (0.65, 0.93)	3	Y
Palacios et al. 2019[6]	Vitamin D supplements	Birth length (cm)	11	MD: -0.04 (-0.26, 0.19)	Tous et al. 2020[7]	Vitamin D status	High vs. Low	Birth length (cm)	7	MD: -0.12 (-0.33, 0.09)	3	Y
Palacios et al. 2019[6]	Vitamin D supplements	Birth weight (g)	13	MD: 32.61 (-9.51, 74.72)	Tous et al. 2020[7]	Vitamin D status	High vs. Low	Birth weight (g)	14	MD: 84.20 (52.59, 115.81)	3	Y
Palacios et al. 2019[6]	Vitamin D supplements	Head circumference at birth (cm)	10	MD: 0.08 (-0.09, 0.25)	Tous et al. 2020[7]	Vitamin D status	High vs. Low	Head circumference at birth (cm)	7	MD: 0.47 (-0.16, 1.11)	3	Y
Palacios et al. 2019[6]	Vitamin D supplements	Pre-eclampsia	5	RR: 0.96 (0.65, 1.42)	Yuan et al. 2019[8]	Vitamin D status	High vs. Low	Pre-eclampsia	15	OR: 0.62 (0.50, 0.78)	3	Y
Rees et al. 2013a[40]	Healthy diet (intake)	Systolic blood pressure (mmHg)	11	MD: -2.61 (-3.91, -1.31)	Kastorini et al. 2011[41]	Mediterranean diet (intake)	High vs. Low	Systolic blood pressure (mmHg)	1	MD: 0.80 (-0.84, 2.44)	2	Y

Rees et al. 2013a[40]	Healthy diet (intake)	Diastolic blood pressure (mmHg)	11	MD: -1.45 (-2.22, -0.68)	Kastorini et al. 2011[41]	Mediterranean diet (intake)	High vs. Low	Diastolic blood pressure (mmHg)	1	MD: 0.90 (-0.38, 2.18)	2	Y
Rees et al. 2013b[42]	Selenium supplements	All-cause mortality	2	RR: 0.97 (0.88, 1.08)	Jayedi et al. 2018[142]	Selenium intake	High vs. Low	All-cause mortality	3	RR: 0.79 (0.73, 0.85)	2	Y
Rees et al. 2013b[42]	Selenium supplements	Cardiovascular mortality	2	RR: 0.97 (0.79, 1.20)	Xiang et al. 2019[143]	Selenium status	High vs. Low	Cardiovascular mortality	3	RR: 0.77 (0.63, 0.94)	3	Y
Rees et al. 2013b[42]	Selenium supplements	Combined cardiovascular events	2	RR: 1.03 (0.95, 1.11)	Zhang et al. 2016a[43]	Selenium status	High vs. Low	Cardiovascular disease	14	RR: 0.87 (0.76, 0.99)	3	Y
Rees et al. 2019[3]	Mediterranean diet (intake)	High Density Lipoprotein (mmol/L)	6	MD: 0.02 (-0.01, 0.04)	Kastorini et al. 2011[41]	Mediterranean diet (intake)	High vs. Low	High Density Lipoprotein (mmol/L)	1	MD: 0.01 (-0.046, 0.061)	2	Y
Rees et al. 2019[3]	Mediterranean diet (intake)	Triglycerides (mmol/L)	7	MD: -0.09 (-0.16, -0.01)	Kastorini et al. 2011[41]	Mediterranean diet (intake)	High vs. Low	Triglycerides (mmol/L)	1	MD: -0.023 (-0.076, 0.031)	2	Y
Rees et al. 2019[3]	Mediterranean diet (intake)	Systolic blood pressure (mmHg)	4	MD: -1.50 (-3.92, 0.92)	Kastorini et al. 2011[41]	Mediterranean diet (intake)	High vs. Low	Systolic blood pressure (mmHg)	1	MD: 0.80 (-0.84, 2.44)	2	Y
Rees et al. 2019[3]	Mediterranean diet (intake)	Cardiovascular mortality	1	HR: 0.81 (0.50, 1.32)	Rosato et al. 2019[44]	Mediterranean diet (intake)	High vs. Low	Cardiovascular mortality	7	RR: 0.73 (0.67, 0.81)	2	Y
Rees et al. 2019[3]	Mediterranean diet (intake)	Combined cardiovascular events	1	HR: 0.70 (0.58, 0.85)	Rosato et al. 2019[44]	Mediterranean diet (intake)	High vs. Low	Cardiovascular disease	11	RR: 0.81 (0.74, 0.88)	2	Y
Rees et al. 2019[3]	Mediterranean diet (intake)	All-cause mortality	1	HR: 1.00 (0.81, 1.24)	Soltani et al. 2019[144]	Mediterranean diet (intake)	per 2-point increment	All-cause mortality	26	RR: 0.90 (0.89, 0.91)	2	Y
Rutjes et al. 2018[10]	B-Vitamin supplements	Dementia / MCI	1	RR: 1.01 (0.69, 1.48)	Doets et al. 2013[145]	Vitamin B12 intake	per 1 μg/d	Dementia	3	RR: 0.99 (0.99, 1.00)	3	Y
Rutjes et al. 2018[10]	Vitamin D3 supplements	Dementia	1	RR: 1.09 (0.70, 1.71)	Goodwill et al. 2017[9]	Vitamin D status	High vs. Low	Dementia / MCI	14	OR: 0.88 (0.81, 0.95)	3	Y
Sydenham et al. 2012[146]	Omega-3 supplements	Mini-Mental State Examination	2	MD: -0.07 (-0.25, 0.10)	Zhang et al. 2016b[147]	Omega-3 intake	per 0.1-g/d increment	Dementia	2	RR: 0.99 (0.85, 1.12)	3	N
Tieu et al. 2017[12]	Healthy diet (intake)	Preterm birth	3	RR: 0.51 (0.21, 1.25)	Chia et al. 2019[11]	Healthy diet (intake)	High vs. Low	Preterm birth	5	OR: 0.81 (0.69, 0.94)	2	Y
Tieu et al. 2017[12]	Healthy diet (intake)	Small gestational age	2	RR: 0.84 (0.49, 1.42)	Chia et al. 2019[11]	Healthy diet (intake)	High vs. Low	Small gestational age	8	OR: 0.88 (0.71, 1.08)	2	Y
Tieu et al. 2017[12]	Healthy diet (intake)	Birth weight (g)	5	MD: 5.94 (-51.11, 62.99)	Chia et al. 2019[11]	Healthy diet (intake)	High vs. Low	Birth weight (g)	12	MD: -9.61 (-53.12, 33.91)	2	Y
Tieu et al. 2017[12]	Healthy diet (intake)	Gestational diabetes	5	RR: 0.60 (0.35, 1.04)	Mijatovic-Vukas et al. 2018[13]	Mediterranean diet (intake)	High vs. Low	Gestational diabetes	4	OR: 0.70 (0.62, 0.80)	2	Y
Usinger et al. 2012[148]	Fermented milk intake + supplements	Systolic blood pressure (mmHg)	15	MD: -2.45 (-4.30, -0.60)	Soedamah-Muthu et al. 2012[149]	Fermented milk intake	per 150 g/d increment	Hypertension	4	RR: 0.99 (0.94, 1.04)	3	N
Usinger et al. 2012[148]	Fermented milk intake + supplements	Diastolic blood pressure (mmHg)	15	MD: -0.67 (-1.48, 0.14)	Soedamah-Muthu et al. 2012[149]	Fermented milk intake	per 150 g/d increment	Hypertension	4	RR: 0.99 (0.94, 1.04)	3	N

Vinceti et al. 2018[14]	Selenium supplements	Cancer	5	RR: 0.99 (0.86, 1.14)	Vinceti et al. 2018[14]	Selenium status	High vs. Low	Cancer	7	OR: 0.72 (0.55, 0.93)	3	Y
Vinceti et al. 2018[14]	Selenium supplements	Cancer mortality	2	RR: 0.81 (0.49, 1.32)	Vinceti et al. 2018[14]	Selenium intake	High vs. Low	Cancer mortality	1	OR: 0.93 (0.83, 1.04)	2	Y
Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	3	RR: 0.74 (0.41, 1.33)	Vinceti et al. 2018[14]	Selenium supplements	High vs. Low	Colorectal cancer	1	OR: 0.80 (0.68, 0.94)	2	Y
Yao et al. 2017[45]	Fibre intake	Colorectal cancer	2	RR: 2.70 (1.07, 6.85)	Aune et al. 2011[150]	Fibre intake	High vs. Low	Colorectal cancer	19	RR: 0.88 (0.82, 0.94)	2	Y
Yao et al. 2017[45]	Fibre intake	Colorectal adenoma	5	RR: 1.04 (0.95, 1.13)	Ben et al. 2014[46]	Fibre intake	High vs. Low	Colorectal adenoma	4	RR: 0.92 (0.76, 1.10)	3	Y

d: day; g: gram; HOMA-IR: homeostasis model assessment-insulin resistance; HR: hazard ratio; MCI: mild cognitive impairment; MD: mean difference; N: no; NA: not available; OR: odds ratio; RR: risk ratio; T: tertile; μg: microgram; Y: yes; 95% CI: 95% confidence interval.

Supplementary Table 6: Reason for exclusion form the statistical analysis.

Bodies of evidence from RCTs			Bodies of evidence from cohort studies			Reason for exclusion
Reference	**Intervention**	**Outcome**	**Reference**	**Exposure**	**Outcome**	
Cormick et al. 2015[121]	Calcium supplements	SBP (MD)	Jayedi et al. 2019[122]	Calcium intake + supplements	Hypertension (RR)	Impossibility to convert one outcome to the other one
Cormick et al. 2015[121]	Calcium supplements	DBP (MD)	Jayedi et al. 2019[122]	Calcium intake + supplements	Hypertension (RR)	Impossibility to convert one outcome to the other one
El Dib et al. 2015[126]	Zinc supplements	HOMA-IR (MD)	Fernandez-Cao et al. 2019[127]	Zinc supplements	T2D (RR)	Impossibility to convert one outcome to the other one
Hartley et al. 2013[128]	Fruit & Vegetables intake	SBP (MD)	Schwingshackl et al. 2017[129]	Fruit & Vegetables intake	Hypertension (RR)	Impossibility to convert one outcome to the other one
Hartley et al. 2013[128]	Fruit & Vegetables intake	DBP (MD)	Schwingshackl et al. 2017[129]	Fruit & Vegetables intake	Hypertension (RR)	Impossibility to convert one outcome to the other one
Hartley et al. 2016[130]	Fibre intake + supplements	SBP (MD)	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension (RR)	Impossibility to convert one outcome to the other one
Hartley et al. 2016[130]	Fibre intake + supplements	DBP (MD)	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension (RR)	Impossibility to convert one outcome to the other one
Hooper et al. 2012[34]	Low-fat intake	Body weight (MD) (the intervention is “dietary fat reduction”)	Sartorius et al. 2018[135]	High-carbohydrate intake	Obesity (RR) (the intervention is “high-carbohydrate intake”)	Impossibility to convert one outcome to the other one (moreover intervention in the RCTs meta-analysis too different from the intervention in the CSs meta-analysis)
Hooper et al. 2015a[136]	Low-fat intake	Body weight (MD) (the intervention is “dietary fat reduction”)	Sartorius et al. 2018[135]	High-carbohydrate intake	Obesity (RR) (the intervention is “high-carbohydrate intake”)	Impossibility to convert one outcome to the other one (moreover intervention in the RCTs meta-analysis too different from the intervention in the CSs meta-analysis)
Kelly et al. 2017[138]	Whole grain intake	SBP (MD)	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension (RR)	Impossibility to convert one outcome to the other one
Kelly et al. 2017[138]	Whole grain intake	DBP (MD)	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension (RR)	Impossibility to convert one outcome to the other one
Sydenham et al.	Omega-3	MMSE (MD)	Zhang et al.	Omega-3 intake	Dementia (RR)	Impossibility to convert one outcome to

2012[146]	supplements		2016b[147]			the other one
Usinger et al. 2012[148]	Fermented milk intake + supplements	SBP (MD)	Soedamah-Muthu et al. 2012[149]	Fermented milk intake	Hypertension (RR)	Impossibility to convert one outcome to the other one
Usinger et al. 2012[148]	Fermented milk intake + supplements	DBP (MD)	Soedamah-Muthu et al. 2012[149]	Fermented milk intake	Hypertension	Impossibility to convert one outcome to the other one

DBP: diastolic blood pressure; HOMA-IR: homeostasis model assessment-insulin resistance; MD: mean difference; MMSE: Mini-Mental State Examination; RCTs: randomized controlled trials; RR: risk ratio; SBP: systolic blood pressure; T2D: type 2 diabetes.

Supplementary Table 7: Categories of diseases for the description of population.

Category	Included diseases
Cancer	Breast cancer, colorectal cancer, skin cancer, stomach cancer
Cardiovascular diseases / chronic heart diseases	Angina, atrial fibrillation, cardiomyopathy, chronic heart failure, congestive heart failure, coronary arthrosclerosis, coronary artery disease, coronary heart disease, hypertension, ischaemic heart disease, myocardial infarction, peripheral artery disease, sinoatrial node disease, stroke, ventricular arrhythmia, ventricular fibrillation, ventricular tachycardia, participants with bypass / implanted cardioverter defibrillators or pacemaker or had percutaneous transluminal coronary angioplasty
Cognitive symptoms	Cognitive impairment with or without dementia (e.g. Alzheimer's disease)
Diseases of the digestive system	Adenoma, atrophic gastritis, Barrett oesophagus, colorectal tumours (unclear if malignant or benign), Crohn's disease, oesophageal dysplasia, polyp
Diseases of the eye	Cataract, macular degeneration, retinitis pigmentosa
Diseases of the genitourinary system	Haemodialysis patients, oophorectomy
Diseases of the liver	Alcoholic hepatitis, alcoholic liver disease, biliary cirrhosis, Hepatitis C, liver cirrhosis, non-alcoholic steatohepatitis, non-alcoholic fatty liver disease
Diseases of the nervous system	Amyotrophic lateral sclerosis, Huntington's disease, multiple sclerosis, Parkinson disease
Endocrine / nutritional / metabolic diseases	Diabetes or Prediabetes, dyslipidaemia, hypercholesterolemia, hyperlipidaemia, hypolipoproteinaemia, metabolic syndrome, overweight / obese participants
Musculoskeletal diseases	Fractures (general, low-trauma, osteoporotic or compression), Osteoarthritis, rheumatoid arthritis, systemic lupus erythematosus
Institutionalised	People living in care homes, geriatric care / medical unit, mental health institutes, mental health institute, mental hospital, nursing homes, old age hostel, residential home, Veterans retirement home / Administration Centres

Supplementary Table 8: Characteristics of included bodies of evidence from randomized controlled trials.

Reference	Intervention (as defined by the authors)	Outcome (as defined by the authors)	Studies, n	Sample size, n	Cases, n	Description of population	Age, mean	Description of intervention	Description of comparator	Description of outcome	Study design	Study length/ follow-up (years)
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular mortality	25	67,772	4,544	People with: history or risk of cardiovascular diseases / chronic heart diseases, cognitive symptoms, risk of diseases of the eye, endocrine / nutritional / metabolic diseases or musculoskeletal diseases	53-78	Dietary advice (0.5g/d EPA) or supplements: EPA (1.8g/d) or EPA + DHA (0.25-1.02g/d EPA + 0.2-0.72g/d DHA or 0.5-3.5g/d EPA + DHA) or total LCn3 (6g/d); supplementary food (1.1-1.5g/d EPA + 1.5-1.8g/d DHA); enriched food (0.4-4.5g/d EPA + DHA)	Nil; Placebo / Supplements: MUFA / Omega-6 / MUFA + Omega-6 / SFA + MUFA / CHO + SFA / low EPA + DHA	Cardiovascular mortality	Parallel and factorial	1-9
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular disease	38	90,378	14,737	Healthy people; people with: history or risk of cardiovascular diseases / chronic heart diseases, cognitive symptoms, diseases of the digestive system, risk of diseases of the eye, endocrine / nutritional / metabolic diseases, musculoskeletal diseases, diseases of the nervous system, diseases of the liver or cancer risk (breast); postmenopausal women	38-78	Dietary advice (0.5g/d EPA or 1.5g/d EPA + DHA); supplements: EPA (1.8-1.9g/d) or EPA + DHA (0.225-2.2g/d EPA + 0.2-1.72g/d DHA or 0.5-3.5g/d EPA + DHA) or total LCn3 (6g/d); supplementary food (1.1-3.2g/d EPA + 1.5-2.3g/d DHA); enriched food (0.4-4.5g/d EPA + DHA)	Nil; dietary advice; Placebo / Supplements: MUFA / Omega-6 / MUFA + Omega-6 / SFA / SFA + MUFA / CHO + SFA / low EPA + DHA / paraffin	Cardiovascular events	Parallel and factorial	1-9
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular disease	5	19,327	884	General population; healthy people; people with: endocrine / nutritional / metabolic diseases or risk or history of cardiovascular diseases / chronic heart diseases (peripheral artery disease, myocardial infarction, risk of CVD)	54-69	Enriched food (1.9-6.3g/d ALA) or supplementary food (5-6.8g/d ALA)	Nil or placebo: MUFA or Omega-6	Cardiovascular events	Parallel and factorial	1-3
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Body weight	12	15,812	NA	People with: history or risk of cardiovascular diseases / chronic heart diseases, endocrine / nutritional / metabolic diseases, musculoskeletal diseases, diseases of the nervous system, diseases of the liver or people with spinal cord injury	40-64	Supplements: EPA + DHA (0.13-1.84g/d EPA + 0.375-1.8g/d DHA or 0.45-3.36g/d EPA + DHA) or LCn3 (6g/d); dietary advice + supplement (0.42-1.98g/d EPA + 0.21-1.32g/d DHA or 0.63-3.3g/d EPA + DHA); enriched food (4.5g/d EPA + DHA)	Placebo / Supplements: MUFA / Omega-6 / SFA + MUFA / CHO + SFA / low EPA + DHA; dietary advice + placebo	Measures of adiposity; weight	Parallel and factorial	1-6

Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	All-cause mortality	39	92,653	8,189	Healthy people; people with: history or risk of cardiovascular diseases / chronic heart diseases, cognitive symptoms, diseases of the digestive system, history or risk of diseases of the eye, endocrine / nutritional / metabolic diseases, musculoskeletal diseases or diseases of the nervous system	34-78	Dietary advice (0.5g/d EPA or 1.4g/d EPA + DHA); supplements: EPA (1.8g/d) or DHA (1-2g/d) or EPA + DHA (0.2-2.2g/d EPA + 0.2-0.84g/d DHA or 0.5-3.5g/d EPA + DHA) or total LCn3 (6g/d); dietary advice and supplements (0.096g/d EPA + 0.36g/d DHA + ALA or 1.71g/d EPA + 1.14g/d DHA); supplementary food (1.1-1.5g/d EPA + 1.5-1.8g/d DHA); enriched food (0.4-4.5g/d EPA + DHA)	Nil; dietary advice; Placebo / Supplements: MUFA / Omega-6 / MUFA + Omega-6 / SFA / SFA + MUFA / CHO + SFA / low EPA + DHA; dietary advice + placebo: MUFA	Mortality	Parallel and factorial	1-9
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular mortality	4	18,619	219	General population; people with: endocrine / nutritional / metabolic diseases or risk or history of cardiovascular diseases / chronic heart diseases (peripheral artery disease, myocardial infarction, risk of CVD)	54-69	Enriched food (1.9-6.3g/d ALA) or supplementary food (5.5-6.8g/d ALA)	Placebo: MUFA or Omega-6	Cardiovascular mortality	Parallel and factorial	1-3
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Coronary heart disease	4	19,061	397	General population; healthy people; people with: endocrine / nutritional / metabolic diseases or cardiovascular diseases / chronic heart diseases (peripheral artery disease, myocardial infarction)	65-69	Enriched food (1.9g/d ALA) or supplementary food (5-6.8g/d ALA)	Nil or placebo: MUFA or Omega-6	Coronary heart disease events	Parallel	1-3
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	All-cause mortality	24	19,290	1,443	People with: cardiovascular diseases / chronic heart diseases, cancer, diseases of the nervous system, endocrine / nutritional / metabolic diseases, mental disorders or diseases of the digestive system; institutionalised people	32-78	Dietary advice: TF, PUFA, Omega-6 (-3.3-9.2%/E PUFA); supplements: Omega-6, Omega-3, GLA, EPA, EPA + DHA (0.6-10.4%/E PUFA); dietary advice + supplement: Omega-6, EPA + DHA (1.1-21.9%/E PUFA); provided diet: Omega-6 (7.5-17.7%/E PUFA); enriched food: ALA (1.02-1.3%/E PUFA); supplementary food: EPA + DHA (1.9-2%/E PUFA)	Nil: SFA, SFA + MUFA; dietary advice: SFA; placebo / supplements: MUFA, MCT	Death / all-cause mortality	Parallel and factorial	1-8

Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	Coronary heart disease	15	10,076	1,351	Healthy people; people with: endocrine / nutritional / metabolic diseases, cardiovascular diseases / chronic heart diseases (MI, ischaemic heart disease, had PTCA, had PCI, CHD, cardioverter defibrillator, ventricular tachycardia, ventricular fibrillation) or musculoskeletal diseases; institutionalised people	49-71	Dietary advice: Omega-6 (2.8-6.6%/E PUFA); supplements: EPA, EPA + DHA or Omega-3 (0.6-2.2%/E PUFA); dietary advice + supplement: Omega-6 (20.6-21.9%/E PUFA); provided diet: Omega-6 (12%/E PUFA); enriched food: ALA (1.02-1.3%/E PUFA); supplementary food: EPA + DHA (1.9-2.3%/E PUFA)	Nil: SFA, SFA + MUFA; placebo / supplements: MUFA; dietary advice + supplement: MUFA; provided usual diet	Coronary heart disease events: myocardial infarction or angina	Parallel and factorial	1-8
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake	Major cardiovascular events	2	2,879	817	Institutionalised men (Veterans); men with previous MI	56-66	Dietary advice: Omega-6 (2.8%/E PUFA); provided diet: Omega-6 (12%/E PUFA)	Nil (normal diet): SFA, provided usual diet	Cardiovascular events, coronary heart disease events	Parallel and factorial	2-8
Adler et al. 2014[23]	Low-sodium intake	All-cause mortality	7	6,603	625	General population; overweight people; people with: hypertension, diabetes or risk of vascular diseases; institutionalised people (Veterans, old age hostel)	39-83	Regularly dietary advice (sodium reduction to 49-50% or 70-100mmol/d), provided diet (containing 49% sodium), substitution (salt with 65% sodium)	Nil (normal diet: salt with 100% sodium), dietary advice once, provided diet with regular salt (99.6% sodium)	Deaths, all-cause mortality, mortality	Individual and cluster	1-3
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular mortality	3	2,656	106	People with: hypertension, diabetes or risk of vascular disease; institutionalised people (Veterans)	57-76	Regularly dietary advice (sodium reduction to 70-100mmol/d), provided diet (containing 49% sodium), substitution (salt with 65% sodium)	Nil (normal diet: salt with 100% sodium), provided diet with regular salt (99.6% sodium)	Cardiovascular disease deaths, cardiovascular mortality	Individual and cluster	1-3
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular events	4	3,397	194	People with: hypertension, diabetes or risk of vascular disease; institutionalised people (Veterans)	57-76	Regularly dietary advice (sodium reduction to 70-100mmol/d), provided diet (containing 49% sodium), substitution (salt with 65% sodium)	Nil (normal diet: salt with 100% sodium), provided diet with regular salt (99.6% sodium), dietary advice without disease context	Fatal and non-fatal myocardial infarction, stroke, angina, heart failure, peripheral vascular events, sudden death, revascularisation (coronary artery bypass surgery or angioplasty with or without stenting) and cardiovascular-related hospital admissions	Individual, factorial and cluster	1-3
Adler et al. 2014[23]	Low-sodium intake	Systolic blood pressure	6	3,362	NA	General population; overweight people; people with: hypertension, diabetes or risk of vascular diseases	39-66	Regularly dietary advice (sodium reduction to 50% or 70-100mmol/d), substitution (salt with 65% sodium)	Nil (normal diet: salt with 100% sodium), dietary advice without disease context	Blood pressure	Individual and factorial	1-3

Adler et al. 2014[23]	Low-sodium intake	Diastolic blood pressure	5	2,754	NA	General population; overweight people; people with hypertension	39-66	Regularly dietary advice (sodium reduction to 50% or 70-100mmol/d)	Nil (normal diet), dietary advice without disease context	Blood pressure	Individual and factorial	2-3
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Major cardiovascular events	1	14,641	NA	Men aged 50+	50+	Supplements: Vitamin C (500mg)	Placebo	Major cardiovascular event	Parallel / factorial	8
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Cardiovascular mortality	1	14,641	NA	Men aged 50+	50+	Supplements: Vitamin C (500mg)	Placebo	Cardiovascular death	Parallel / factorial	8
Al-Khudairy et al. 2017[1]	Vitamin C supplements	All-cause mortality	1	14,641	NA	Men aged 50+	50+	Supplements: Vitamin C (500mg)	Placebo	All-cause mortality	Parallel / factorial	8
Avenell et al. 2014[27]	Vitamin D supplements	Hip fracture	10	26,549	670	Mostly general population; mostly postmenopausal women, older men; people with: history of hip fracture or osteoporotic fracture; institutionalised people (nursing homes)	76-85	Supplements orally: Cholecalciferol, Vitamin D3 (146,000-500,000IU/year) or Ergocalciferol, Vitamin D2 (300,000-401,500IU/year) or i.m. injection Vitamin D2 (300,000IU/year)	Placebo (orally and i.m. injection), nil	Hip fractures	Mostly NA, 1 cluster	1-5
Avenell et al. 2014[27]	Vitamin D supplements	Any fracture	14	27,127	2,326	Mostly general population; mostly postmenopausal women, older men; people with: history of hip fracture or osteoporotic fracture, endocrine / nutritional / metabolic diseases or cardiovascular diseases / chronic heart diseases; institutionalised people (nursing homes)	57-85	Supplements orally: Cholecalciferol, Vitamin D3 (146,000-730,000IU/year), Ergocalciferol, Vitamin D2 (300,000-480,000IU/year) or Calcifediol (21,900IU/year) or i.m. injection Vitamin D2 (300,000IU/year)	Placebo (orally and i.m. injection), nil	Any fractures, non-vertebral fractures, hip fractures, vertebral fractures	Mostly NA, 1 factorial, 1 cluster	0.3-5
Bjelakovic et al. 2012[117]	β-carotene supplements	All-cause mortality	31	195,503	23,182	Healthy people; people with: risk or history of cancer, diseases of the eye, risk or history of cardiovascular diseases / chronic heart diseases, endocrine / nutritional / metabolic diseases, diseases of the liver or diseases of the digestive system; smokers; institutionalised people; elderly people / people with age-related diseases; general population	42-85	Supplements: β-carotene (2.4-50mg or 15,000IU β-carotene) individually or combined with other antioxidants, multivitamins, multi-minerals, trace elements, medications	Placebo, placebo + calcium and magnesium, placebo + low Vitamin C (20-50mg)	All-cause mortality, overall mortality, total mortality	Parallel, factorial and cross-over	0.4-13

Bjelakovic et al. 2012[117]	Vitamin E supplements	All-cause mortality	64	211,957	22,058	Healthy people; people with: cognitive symptoms, risk of cancer, diseases of the eye, risk or history of cardiovascular diseases / chronic heart diseases, endocrine / nutritional / metabolic diseases, diseases of the liver, diseases of the digestive system, musculoskeletal diseases, diseases of the nervous system or diseases of the genitourinary system; smokers; institutionalised people; elderly people / people with age-related diseases; general population; postmenopausal women	37-85	Supplements: Vitamin E, (dl/d-)α-tocopherol, RRR-α-tocopheryl acetate, (dl/d-)-α-tocopheryl acetate, all-rac-(α-) tocopheryl acetate, d-α-tocopheryl succinate (0.01-5g or 10-2,000IU, natural or synthetic) individually or combined with other antioxidants, multivitamins, multi-minerals, trace elements, micronutrient, medications	Nil, placebo, placebo + calcium and magnesium, placebo + medicament, low Vitamin E (3mg)	All-cause mortality, overall mortality, total mortality	Parallel, factorial and cross-over	0.1-13
Bjelakovic et al. 2012[117]	Vitamin C supplements	All-cause mortality	41	90,191	8,020	Healthy people; people with: cognitive symptoms, risk of cancer, diseases of the eye, risk or history of cardiovascular diseases / chronic heart diseases, endocrine / nutritional / metabolic diseases, diseases of the liver, diseases of the digestive system, musculoskeletal diseases, diseases of the genitourinary system or pressure ulcers; smokers; institutionalised people; medical in-patients; elderly people / people with age-related diseases; general population; postmenopausal women	37-85	Supplements: Vitamin C, ascorbic acid, calcium ascorbate-Ester C R, active / synthetic Vitamin C, active / synthetic ascorbic acid, slow-release Vitamin C (60-3,000mg/d) individually or combined with other antioxidants, multivitamins, multi-minerals, trace elements, micronutrient, medications	Placebo, placebo + calcium and magnesium, placebo + Vitamin C	All-cause mortality, overall mortality, total mortality	Parallel, factorial and cross-over	0.1-9

Bjelakovic et al. 2012[117]	Vitamin A supplements	All-cause mortality	18	61,190	7,215	Healthy people; people with: risk or history of cancer, diseases of the eye, cardiovascular diseases / chronic heart diseases, endocrine / nutritional / metabolic diseases or diseases of the digestive system; institutionalised people; medical in-patients; elderly people / people with age-related diseases; general population	54-85	Supplements: Vitamin A, retinol, retinol equivalent, Vitamin A acetate (0.4-800mg/d or 1,333-200,000IU or 800 retinol equivalents), individually or combined with other antioxidants, multivitamins, multi-minerals, trace elements, micronutrient, medications	Placebo, placebo + calcium and magnesium	All-cause mortality, overall mortality	Parallel and factorial	0.1-10
Bjelakovic et al. 2014a[118]	Vitamin D supplements	All-cause mortality	56	95,286	11,998	Mostly women; healthy people; people with: risk or history of musculoskeletal diseases, diseases of the eye, diseases of the nervous system, cardiovascular diseases / chronic heart diseases or low serum Vitamin D levels or Vitamin D insufficiency; elderly people / people with age-related diseases; postmenopausal women; general population; institutionalised people; medical in-patients; bedridden people; people with history of falling	51-89 (range 18-107)	Supplements orally: Vitamin D3 (100-100,000IU/d), Vitamin D2 (143-9,000IU/d), α-calcidol (1μg), calcitriol (0.25-2μg), cholecalciferol (150,000IU/3m) or i.m. injection D2 (300.000IU/y) or enriched food D3 (800IU/d), individually or combined with calcium, Vitamin K1, multivitamins, medications, exercise, home safety assessment	Placebo, placebo + calcium, calcium, nil, information material	All-cause mortality	Parallel and factorial	0.1-7
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cardiovascular mortality	10	47,267	1,957	Mostly women; healthy people; people with: risk or history of musculoskeletal diseases (mostly fractures) or Vitamin D insufficiency; elderly people / people with age-related diseases; postmenopausal women	52-80	Supplements orally: Vitamin D3 (300-100,000IU/d), individually or combined with calcium, Vitamin K1	Placebo, nil	Cardiovascular mortality	Parallel and factorial	0.3-7
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cancer mortality	4	44,492	1,192	Mostly women; healthy people; people with musculoskeletal diseases (osteoporotic fracture); elderly people / people with age-related diseases; postmenopausal women	53-77	Supplements orally: Vitamin D3 (100-833IU/d), individually or combined with calcium, medications	Placebo	Cancer mortality	Parallel and factorial	5-7

Bjelakovic et al. 2014b[29]	Vitamin D supplements	Cancer occurrence	18	50,623	3,870	Mostly women; healthy people; people with: risk or history of musculoskeletal diseases (fractures) or cardiovascular diseases / chronic heart diseases (hypertension); elderly people / people with age-related diseases; postmenopausal women; general population; people with history of falling	47-79 (range 50-97)	Supplements: Vitamin D3 (100-6,666IU/d), Vitamin D2 (1,000IU/d), calcitriol (0.25-2µg), cholecalciferol (3,000IU/d or 150,000IU/3m) or enriched food D3 (800IU/d), individually or combined with calcium, Vitamin K1, medications	Placebo, placebo + calcium, nil	Cancer occurrence	Parallel and factorial	0.4-7
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Breast cancer	7	43,669	1,135	Mostly women; healthy people; people with musculoskeletal diseases (fractures) or cardiovascular diseases / chronic heart diseases (hypertension); elderly people / people with age-related diseases; postmenopausal women	47-77	Supplements: Vitamin D3 (400-6,666IU/d), cholecalciferol (3,000IU/d), individually or combined with calcium	Placebo	Breast cancer occurrence	Parallel and factorial	0.4-7
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Lung cancer	5	45,509	329	Mobile before developing a low-trauma fracture, geriatric women, healthy postmenopausal women	55-77	Supplements: Vitamin D3	Placebo	Lung cancer	Parallel and factorial	0.5-7
Cormick et al. 2015[121]	Calcium supplements	Systolic blood pressure	16	3,048	NA	Healthy people; general population; postmenopausal women; people with: endocrine / nutritional / metabolic diseases (overweight) or cardiovascular diseases / chronic heart diseases (hypertension)	24-74 (range 14-74)	Supplements: Calcium (as calcium carbonate, calcium lactate gluconate, calcium citrate) (0.5-2g/d) or calcium powder in juice (0.6-1.5g/d) or high-calcium powder milk	Placebo	Systolic blood pressure	Parallel and cross-over (NA in 12 studies!)	0.1-4
Cormick et al. 2015[121]	Calcium supplements	Diastolic blood pressure	15	2,947	NA	Healthy people; general population; postmenopausal women; people with: endocrine / nutritional / metabolic diseases (overweight) or cardiovascular diseases / chronic heart diseases (hypertension)	24-74 (range 14-74)	Supplements: Calcium (as calcium carbonate, calcium lactate gluconate, calcium citrate) (0.5-2g/d) or calcium powder in juice (1.5g/d) or high-calcium powder milk	Placebo	Diastolic blood pressure	Parallel and cross-over (NA in 11 studies!)	0.1-4
De-Regil et al. 2015[123]	Folate supplements	Neural tube defect	5	6,708	54	Pregnant women, previously pregnant but plan to have another pregnancy, history of giving birth child with neural tube defects	<35	Supplements: folic acid (6,000IU/d, 360-4,000ug/d)	Multivitamin supplement, control, placebo	Neural tube defect	Parallel and factorial	NA

De-Regil et al. 2015[123]	Folate supplements	Congenital cardiovascular anomalies	3	5,612	22	Pregnant women, previously pregnant but plan to have another pregnancy	<35	Supplements: folic acid (6,000IU/d, 360-4,000ug/d)	Multivitamin supplement, control	Congenital cardiovascular anomalies	Parallel and factorial	NA
El Dib et al. 2015[126]	Zinc supplements	HOMA-IR	1	56	NA	People with obesity	25-45	Supplements: Zinc	Placebo	HOMA-IR	Parallel	0.1
Hartley et al. 2013[128]	Fruit & Vegetables intake	Systolic blood pressure	2	891	NA	Healthy people, people with colorectal adenomas	46-59	Increase fruit and vegetable consumption	Usual diet	Systolic blood pressure	Parallel	0.5-1
Hartley et al. 2013[128]	Fruit & Vegetables intake	Diastolic blood pressure	2	891	NA	Healthy people, people with colorectal adenomas	46-59	Increase fruit and vegetable consumption	Usual diet	Diastolic blood pressure	Parallel	0.5-1
Hartley et al. 2016[130]	Fibre intake + supplements	Systolic blood pressure	8	661	NA	Healthy people; postmenopausal women; people with: endocrine / nutritional / metabolic diseases or cardiovascular diseases / chronic heart diseases (hypertension)	34-58 (range 19-65)	Supplements: soluble fibre (7-27.5g/d), individually or with dietary advice; or provided supplementary foods high in fibre	Placebo, nil, dietary advice	Systolic blood pressure	Parallel	0.2-0.5
Hartley et al. 2016[130]	Fibre intake + supplements	Diastolic blood pressure	8	661	NA	Healthy people; postmenopausal women; people with: endocrine / nutritional / metabolic diseases or cardiovascular diseases / chronic heart diseases (hypertension)	34-58 (range 19-65)	Supplements: soluble fibre (7-27.5g/d), individually or with dietary advice; or provided supplementary foods high in fibre	Placebo, nil, dietary advice	Diastolic blood pressure	Parallel	0.2-0.5
Hemmingsen et al. 2017[131]	Healthy diet (intake)	Type 2 diabetes	1	NA	NA	People with impaired glucose tolerance	NA	Healthy diet	Usual diet	Type 2 diabetes	Cluster	17
Hemmingsen et al. 2017[131]	Healthy diet (intake)	All-cause mortality	1	NA	NA	People with impaired glucose tolerance	NA	Healthy diet	Usual diet	All-cause-mortality	Cluster	17
Hofmeyr et al. 2018[32]	Calcium supplements	Pre-eclampsia	13	15,730	889	Pregnant women (nulliparous and primiparous); healthy; risk of gestational hypertension or pre-eclampsia (2x)	mostly NA; <17-30 (3studies)	Supplements: Calcium (elemental; calcium carbonate; calcium gluconate) (1.5-2g/d)	Placebo, placebo + prenatal vitamins	Pre-eclampsia	NA	NA (during pregnancy, from 34 weeks of pregnancy at the latest)
Hofmeyr et al. 2018[32]	Calcium supplements	High blood pressure	12	15,470	2,732	Pregnant women (nulliparous and primiparous); healthy; risk of gestational hypertension or pre-eclampsia (2x)	mostly NA; <17-30 (3studies)	Supplements: Calcium (elemental; calcium carbonate; calcium gluconate) (1.5-2g/d)	Placebo, placebo + prenatal vitamins	High blood pressure in pregnancy with or without proteinuria	NA	NA (during pregnancy, from 34 weeks of pregnancy at the latest)

Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Cardiovascular mortality	14	65,978	1,407	People with: history or risk of cardiovascular diseases / chronic heart diseases, cancer or endocrine / nutritional / metabolic diseases; institutionalised people; postmenopausal women	49-70 (range 30-70)	Modified fat (provided food: 40-45%/E total fat, 18-20%/E PUFA; dietary advice + supplementary food: 35g total fat); reduced fat (dietary advice: 15-20%/E or 40g total fat or dietary advice + supplements: 30%/E total fat); reduced and modified fat (dietary advice: 27-30%/E total fat, 8-10%/E SFA, 8%/E PUFA)	Nil, provided usual diet, dietary advice, information material, usual diet + supplements	Cardiovascular mortality	NA, factorial (1x)	1-11 (mean years in trial)
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	All-cause mortality	20	71,790	4,292	People with: history or risk of cardiovascular diseases / chronic heart diseases, cancer, diseases of the digestive system or endocrine / nutritional / metabolic diseases; institutionalised people; postmenopausal women	45-70 (range 20-73)	Modified fat (provided food: 30-45%/E total fat, 15-20%/E PUFA, <9%/E SFA; dietary advice: 10%/E SFA, 15%/E PUFA; dietary advice + supplementary food: 35g total fat); reduced fat (dietary advice: 15-25%/E or 40g total fat or dietary advice +supplements: 30%/E total fat); reduced and modified fat (dietary advice: 27-30%/E total fat, 8-10%/E SFA, 8%/E PUFA)	Nil, provided usual diet, dietary advice, information material, usual diet + supplements	All-cause mortality	NA, factorial (1x)	1-11 (mean years in trial)
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Combined cardiovascular events	18	65,508	4,887	Healthy people; general population; people with: history or risk of cardiovascular diseases / chronic heart diseases, cancer or endocrine / nutritional / metabolic diseases; institutionalised people; postmenopausal women	46-70 (range 30-70)	Modified fat (dietary advice: 40%/E total fat; provided food: 40-45%/E total fat, 18-20%/E PUFA; dietary advice + supplementary food: 35g total fat); reduced fat (dietary advice: 20-25%/E or 40g total fat or dietary advice + supplements: 30%/E total fat); reduced and modified fat (dietary advice: 27-30%/E total fat, 8-10%/E SFA, 8%/E PUFA; dietary advice + supplementary food: 30%/E total fat)	Nil, provided usual diet, dietary advice, information material, usual diet + supplements, dietary advice + supplementary food	Combined cardiovascular events (=cardiovascular deaths, cardiovascular morbidity (non-fatal myocardial infarction, angina, stroke, heart failure, peripheral vascular events, atrial fibrillation) and unplanned cardiovascular interventions (coronary artery bypass surgery or angioplasty))	NA, factorial (1x)	1-8 (mean years in trial)

Hooper et al. 2012[34]	Low-fat intake	Body weight	16	11,058	NA	Healthy people; people with: cardiovascular diseases / chronic heart diseases, risk or history of cancer, diseases of the digestive system or endocrine / nutritional / metabolic diseases; postmenopausal women	27-62 (range 20-73)	Reduced fat (dietary advice: 15-25%/E total fat or provided food: 20-30%/E total fat	Nil, usual provided diet (trial shop), dietary advice, information material	Weight	NA	0.4-11 (mean years in trial)
Hooper et al. 2015a[136]	Low-fat intake	Body weight	25	53,647	NA	Healthy people; general population; people with: cardiovascular diseases / chronic heart diseases, risk or history of cancer, diseases of the digestive system or endocrine / nutritional / metabolic diseases; postmenopausal women	33-62 (range 20-79)	Reduced fat (dietary advice: 15-30%/E total fat, 7-10%/E SFA, 15-20%/E MUFA; provided food); reduced and modified fat (dietary advice: 30%/E total fat, 16-18%/E SFA)	Nil, usual provided diet (study shop), dietary advice, modified fat, information material	Weight	NA, factorial (1x)	0.4-11 (mean years in trial)
Hooper et al. 2015b[35]	Low saturated fat intake	All-cause mortality	11	55,858	3,276	People with: cardiovascular diseases / chronic heart diseases, cancer or endocrine / nutritional / metabolic diseases; institutionalised people; postmenopausal women	49-66	Reduced a/o modified fat: 6.4-11%/E SFA; replaced by PUFA a/o CHO a/o protein	Nil, dietary advice, usual provided diet, information material	All-cause mortality, death from any cause	NA, factorial (1x)	2-8 (mean years in trial)
Hooper et al. 2015b[35]	Low saturated fat intake	Cardiovascular mortality	10	53,421	1,096	People with: cardiovascular diseases / chronic heart diseases, cancer or endocrine / nutritional / metabolic diseases; institutionalised people; postmenopausal women	49-66	Reduced a/o modified fat: 6.6-11%/E SFA; replaced by PUFA a/o CHO a/o protein	Nil, dietary advice, usual provided diet, information material	Cardiovascular (cardiovascular disease) mortality (deaths from myocardial infarction, stroke or sudden death)	NA, factorial (1x)	2-8 (mean years in trial)

Hooper et al. 2015b[35]	Low saturated fat intake	Combined cardiovascular events	11	53,300	4,377	People with: risk or history of cardiovascular diseases / chronic heart diseases, cancer or endocrine / nutritional / metabolic diseases; institutionalised people; postmenopausal women	46-66	Reduced a/o modified fat: 6.6-11.5%/E SFA; replaced by PUFA a/o CHO a/o protein	Nil, dietary advice, usual provided diet, information material	Combined cardiovascular disease events (cardiovascular deaths, cardiovascular morbidity (non-fatal myocardial infarction, angina, stroke, heart failure, peripheral vascular events, atrial fibrillation) and unplanned cardiovascular interventions (coronary artery bypass surgery or angioplasty))	NA, factorial (1x)	2-8 (mean years in trial)
Hooper et al. 2018[37]	Omega-6 intake + supplements	Combined cardiovascular events	7	4,962	1,404	People with: cardiovascular diseases / chronic heart diseases or endocrine / nutritional / metabolic diseases (diabetes); institutionalised people; general population	45-66	Supplements (0.48g GLA, 4%/E n-6), provided diet (40%/E total fat, 12-15%/E PUFA, 8.2-12.2%/E n-6), dietary advice (30%/E total fat, 15%/E PUFA), dietary advice + supplement (35g total fat, 18.9%/E LA), dietary advice + supplementary food (28.8%/E LA)	Nil, provided usual diet, placebo, supplementary food (MUFA)	Cardiovascular disease events (fatal and non-fatal myocardial infarction, angina, stroke)	Parallel	1-8 (mean years in trial)
Hooper et al. 2018[37]	Omega-6 intake + supplements	All-cause mortality	10	4,506	979	People with: cancer, cardiovascular diseases / chronic heart diseases or diseases of the nervous system; institutionalised people	32-66	Supplements (GLA or GLA +LA: 0.5-2.92g GLA, 0.34g LA), provided diet (30-40%/E total fat, 12-15%/E PUFA), dietary advice (20-30%/E total fat, 15%/E PUFA), enriched food (10.4%/E n-6 or 23g LA), supplementary food (15%/E n-6), dietary advice + supplement (35g total fat, 18.9%/E LA), dietary advice + supplementary food (28.8%/E LA)	Nil, provided usual diet, placebo, supplementary food (MUFA, SFA, oleic acid)	All-cause mortality	Parallel	1-8 (mean years in trial)

Hooper et al. 2018[37]	Omega-6 intake + supplements	Cardiovascular mortality	7	4,019	472	People with: cancer, cardiovascular diseases / chronic heart diseases or endocrine / nutritional / metabolic diseases (diabetes); institutionalised people	49-66	Provided diet (40%/E total fat, 12%/E PUFA), dietary advice (20-40%/E total fat, 15%/E PUFA, 13%/E LA), dietary advice + supplement (35g total fat, 18.9%/E LA), dietary advice + supplementary food (28.8%/E LA)	Nil, provided usual diet, supplementary food (MUFA)	Cardiovascular disease mortality	Parallel	2-8 (mean years in trial)
Jin et al. 2012[137]	Total flavonoids intake	Colorectal adenoma	1	929	358	People >35 years within 150% of recommended weight, with colorectal adenoma identified in six months before study entry	61	Intake: decrease fat by 30%, increase fibre intake by 75%, and increase 0.12servings/MJ of fruit and vegetable intake	Diet as usual	Adenoma recurrence	Parallel	4
Jin et al. 2012[137]	Isoflavonoes intake	Colorectal adenoma	1	929	353	People >35 years within 150% of recommended weight, with colorectal adenoma identified in six months before study entry	61	Intake: decrease fat by 30%, increase fibre intake by 75%, and increase 0.12servings/MJ of fruit and vegetable intake	Diet as usual	Adenoma recurrence	Parallel	4
Jin et al. 2012[137]	Flavonols intake	Colorectal adenoma	1	929	363	People >35 years within 150% of recommended weight, with colorectal adenoma identified in six months before study entry	61	Intake: decrease fat by 30%, increase fibre intake by 75%, and increase 0.12servings/MJ of fruit and vegetable intake	Diet as usual	Adenoma recurrence	Parallel	4
Keats et al. 2019[38]	Micronutrients supplements	Preterm birth	18	91,425	NA	Pregnant women, women with amenorrhoea	12-45 (NA in most studies!)	Supplements: Multiple-micronutrient with iron and folic acid	Placebo, iron with or without folic acid	Preterm birth (births before 37 weeks of gestation)	Cluster and factorial (NA in 10 studies)	1-5
Keats et al. 2019[38]	Micronutrients supplements	Low birth weight	18	68,801	NA	Pregnant women, women with amenorrhoea	12-45 (NA in most studies!)	Supplements: Multiple-micronutrient with iron and folic acid	Placebo, iron with or without folic acid	Low birthweight (birthweight less than 2,500g)	Cluster and factorial (NA in 10 studies)	1-5
Keats et al. 2019[38]	Micronutrients supplements	Small gestational age	17	57,348	NA	Pregnant women, women with amenorrhoea	12-45 (NA in most studies!)	Supplements: Multiple-micronutrient with iron and folic acid	Placebo, iron with or without folic acid	Small-for-gestational age	Cluster and factorial (NA in 10 studies)	1-5
Kelly et al. 2017[138]	Whole grain intake	Systolic blood pressure	8	768	NA	Healthy people; people endocrine / nutritional / metabolic diseases	40-70	Whole grain intake	Refined grains	Systolic blood pressure	Parallel	0.2-0.3
Kelly et al. 2017[138]	Whole grain intake	Diastolic blood pressure	8	768	NA	Healthy people; people endocrine / nutritional / metabolic diseases	40-70	Whole grain intake	Refined grains	Diastolic blood pressure	Parallel	0.2-0.3
Kelly et al. 2017[138]	Whole grain intake	Body weight	5	439	NA	Healthy people; people endocrine / nutritional / metabolic diseases	40-70	Whole grain intake	Refined grains	Body weight	Parallel	0.2

Mathew et al. 2012[140]	β-carotene supplements	Cataract	2	61,947	NA	General healthy men and women	53	Supplements: β-carotene (50mg on alternate days)	Placebo	Cataract	Factorial	2.7-12
Mathew et al. 2012[140]	Vitamin E supplements	Cataract	3	55,721	NA	General healthy men and women, prior cataract surgery	53-66	Supplements: Vitamin E (400IU on alternate days; 500IU/d in soybean oil	Placebo	Cataract	Parallel and factorial	4-8
Mathew et al. 2012[140]	Vitamin C supplements	Cataract	1	14,641	NA	General healthy men	62	Supplements: Vitamin C (500mg/d)	Placebo	Cataract	Factorial	8
Palacios et al. 2019[6]	Vitamin D supplements	Gestational diabetes	5	1,846	77	Pregnant women	18-40 range	Supplements: Vitamin D (4,200-50,000IU oral D3/week; 2,000IU/d)	Placebo, Vitamin D, multivitamin	Gestational diabetes	Parallel	0.2-0.5
Palacios et al. 2019[6]	Vitamin D supplements	Preterm birth	4	2,294	189	Pregnant women	18-40 range	Supplements: Vitamin D (50,000IU every two weeks, 28,000IU/w, 5,000IU/d)	Placebo, Vitamin D	Preterm birth	Parallel	0.2-0.5
Palacios et al. 2019[6]	Vitamin D supplements	Birth length	11	3,058	NA	Pregnant women, women with risk of pre-eclampsia, mother or father with history of asthma	16-40 range	Supplements: Vitamin D (4,200-28,000IU/w or 4,000-4,400IU/d or 50,000U/w) or cholecalciferol (60,000U/4 or 8w) or Vitamin D3 (3,600IU/d or 52,800IU/w or 300,000 twice during pregnancy) or Vitamin D + Vitamin D3 (3,800 IU/d)	Placebo, Vitamin D / D3 low or once, Vitamin D3 + placebo	Birth length	Parallel (NA in 10 studies)	0.3-7
Palacios et al. 2019[6]	Vitamin D supplements	Birth weight	13	3,240	NA	Pregnant women, women with risk of pre-eclampsia, mother or father with history of asthma	16-42 range	Supplements: Vitamin D (4,200-28,000IU/w or 4,000-4,400IU/d or 50,000U/w) or cholecalciferol (60,000U/4 or 8w) or Vitamin D3 (2,000IU/d or 52,800IU/w or 300,000IU twice during pregnancy) or Vitamin D + Vitamin D3 (3,800IU/d)	Placebo, Vitamin D / D3 low or once, Vitamin D3 + placebo	Birth weight	Parallel (NA in 12 studies)	0.3-7
Palacios et al. 2019[6]	Vitamin D supplements	Head circumference at birth	10	2,998	NA	Pregnant women, women with risk of pre-eclampsia, mother or father with history of asthma	16-40 range	Supplements: Vitamin D (4,200-28,000IU/w or 4,000-4,400IU/d or 50,000 U/w) or Vitamin D3 (3,600IU/d or 52,800IU/w or 300,000IU twice during pregnancy) or Vitamin D + Vitamin D3 (3,800IU/d)	Placebo, Vitamin D / D3 low or once, Vitamin D3 + placebo	Head circumference at birth	NA	0.3-7
Palacios et al. 2019[6]	Vitamin D supplements	Pre-eclampsia	5	1,553	96	Pregnant women	18-40	Supplements: Vitamin D (50,000IU every two weeks, 2,000-4,000 IU/d	Placebo, Vitamin D	Pre-eclampsia	Parallel	0.2-0.5

Rees et al. 2013a[40]	Healthy diet (intake)	Systolic blood pressure	11	6,406	NA	General population; healthy people; people with: risk or history of cardiovascular diseases / chronic heart diseases or endocrine / nutritional / metabolic diseases	44-56 (range 18-69)	Dietary advice (increase fruits & vegetables, reduce salt [with or without general health education], healthy lifestyle prompts, DASH diet)	Nil, dietary advice (not personalized, less frequently, general information)	Systolic blood pressure	Parallel, factorial, cross-over, multi-centre	0.2-3
Rees et al. 2013a[40]	Healthy diet (intake)	Diastolic blood pressure	11	6,406	NA	General population; healthy people; people with: risk or history of cardiovascular diseases / chronic heart diseases or endocrine / nutritional / metabolic diseases	44-56 (range 18-69)	Dietary advice (increase fruits & vegetables, reduce salt [with or without general health education], healthy lifestyle prompts, DASH diet)	Nil, dietary advice (not personalized, less frequently, general information)	Diastolic blood pressure	Parallel, factorial, cross-over, multi-centre	0.2-3
Rees et al. 2013b[42]	Selenium supplements	All-cause mortality	2	18,452	1,336	People with history of non-melanoma skin cancer, generally healthy	>50	Supplements: Selenium supplied as selenium yeast or selenomethionine (200µg/d)	Placebo	All-cause mortality	Parallel	7.6-12
Rees et al. 2013b[42]	Selenium supplements	Cardiovascular mortality	2	18,452	342	People with history of non-melanoma skin cancer, generally healthy	>50	Supplements: Selenium supplied as selenium yeast or selenomethionine (200µg/d)	Placebo	Cardiovascular mortality	Parallel	7.6-12
Rees et al. 2013b[42]	Selenium supplements	Combined cardiovascular events	2	18,452	2,329	People with history of non-melanoma skin cancer, generally healthy	>50	Supplements: Selenium supplied as selenium yeast or selenomethionine (200µg/d)	Placebo	Combined cardiovascular events	Parallel	7.6-12
Rees et al. 2019[3]	Mediterranean diet (intake)	High Density Lipoprotein	6	891	NA	Healthy; people with: cancer (breast), endocrine / nutritional / metabolic diseases or moderate or high risk for cardiovascular diseases / chronic heart diseases; postmenopausal women	50-67	Mediterranean diet: dietary advice (mostly menu plans), twice supplemented with olive oil (or nuts)	Hypolipidaemic diet, Central European diet, low-fat diet, American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention diet, lacto-ovo-vegetarian diet, American Heart Association-type diet	High Density Lipoprotein-Cholesterol	Parallel and cross-over	0.2-5
Rees et al. 2019[3]	Mediterranean diet (intake)	Triglycerides	7	939	NA	Healthy people; people with: cancer (breast), endocrine / nutritional / metabolic diseases, moderate or high risk for cardiovascular diseases / chronic heart diseases or HIV; postmenopausal women	50-67	Mediterranean diet: dietary advice (mostly menu plans), twice supplemented with olive oil (or nuts)	Hypolipidaemic diet, Central European diet, low-fat diet, American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention diet, lacto-ovo-vegetarian diet, American Heart Association-type diet, low-cholesterol diet	Triglycerides	Parallel and cross-over (1 parallel = pilot study)	0.2-5
Rees et al. 2019[3]	Mediterranean diet (intake)	Systolic blood pressure	4	448	NA	People with endocrine / nutritional / metabolic diseases or HIV	55-61	Mediterranean dietary pattern	Usual diet, low-fat diet	Systolic blood pressure	Parallel	0.3-1

Rees et al. 2019[3]	Mediterranean diet (intake)	Cardiovascular mortality	1	7,447	NA	People with high risk of CVD	55-80	Mediterranean diet supplemented with extra virgin olive oil (1l/w, or supplemented with nuts 30g/d)	Low-fat diet	Cardiovascular mortality	Parallel	4.8
Rees et al. 2019[3]	Mediterranean diet (intake)	Combined cardiovascular events	1	7,447	NA	People with high risk of CVD	55-80	Mediterranean diet supplemented with extra virgin olive oil (1l/w, or supplemented with nuts 30g/d)	Low-fat diet	Combined cardiovascular events	Parallel	4.8
Rees et al. 2019[3]	Mediterranean diet (intake)	All-cause mortality	1	7,447	NA	People with high risk of CVD	55-80	Mediterranean diet supplemented with extra virgin olive oil (1l/w, or supplemented with nuts 30g/d)	Low-fat diet	All-cause mortality	Parallel	4.8
Rutjes et al. 2018[10]	B-Vitamin supplements	Dementia / MCI	1	1,803	99	People with recent stroke or TIA	64	Supplements (folic acid 2mg/d, B6 25mg, B12 500ug)	Placebo	Dementia / MCI	Parallel	2-5
Rutjes et al. 2018[10]	Vitamin D3 supplements	Dementia	1	4,143	76	People >65 without probable dementia or cognitive impairment	71	Supplements: Vitamin D3 (400IU/d and 1,000mg/d calcium)	Placebo	Dementia	Parallel	7.8
Sydenham et al. 2012[146]	Omega-3 supplements	Mini-Mental State Examination	2	3,321	NA	Cognitively healthy people	60-80	Supplements: (400mg/d DHA + EPA; 500mg/d DHA + 200mg/d EPA)	Olive oil Placebo, placebo	Mini-Mental State Examination	Parallel and factorial	2-3.5
Tieu et al. 2017[12]	Healthy diet (intake)	Preterm birth	3	1,149	21	Women <17 weeks, 12-18 weeks gestation, obese, secunda gravidad if first infant weighted >4,000g	>18	Dietary counselling	Usual care	Preterm birth	Parallel	<1
Tieu et al. 2017[12]	Healthy diet (intake)	Small gestational age	2	715	51	Women 12-20 weeks gestation and at high risk of gestational diabetes mellitus	>18	Low glycaemic index diet	Moderate glycaemic index diet	Small gestational age	Parallel	<1
Tieu et al. 2017[12]	Healthy diet (intake)	Birth weight	5	1,324	NA	Women <17 weeks, 12-18 weeks gestation, overweight or obese, secunda gravidad if first infant weighted >4,000g	>18	Dietary counselling	Usual care	Birth weight	Parallel	<1
Tieu et al. 2017[12]	Healthy diet (intake)	Gestational diabetes	5	1,279	135	Women <17 weeks, 12-18 weeks gestation, overweight or obese, secunda gravidad if first infant weighted >4,000g	>18	Dietary counselling	Usual care	Gestational diabetes	Parallel	<1
Usinger et al. 2012[148]	Fermented milk intake + supplements	Systolic blood pressure	15	1,232	NA	Healthy people; people with and without hypertension	20-81 range	Fermented milk, enriched food (juice or yogurt enriched with LTP or VPP + IPP), supplements: Casein hydrolysis of A. Oryzae protease (1.8-3.6mg/d), fermented milk with added LTP	placebo, normal food (not enriched), fermented milk without added LTP	Systolic blood pressure	Cross-over (NA in 11 studies)	0.1-0.4

Usinger et al. 2012[148]	Fermented milk intake + supplements	Diastolic blood pressure	15	1,232	NA	Healthy people; people with and without hypertension	20-81 range	Fermented milk, enriched food (juice or yogurt enriched with LTP or VPP + IPP), supplements: Casein hydrolysis of A. Oryzae protease (1.8-3.6mg/d), fermented milk with added LTP	placebo, normal food (not enriched), fermented milk without added LTP	Diastolic blood pressure	Cross-over (NA in 11 studies)	0.1-0.4
Vinceti et al. 2018[14]	Selenium supplements	Cancer	5	21,860	2,332	Healthy people; people with: high risk for prostate cancer, completely resected stage I non-small-cell lung cancer, BRCA1+ mutation or history of skin cancer	62-66	Supplements: Selenium supplied as selenium yeast or sodium selenite or selenomethionine (200 - 400µg/d)	Placebo	Any cancer, lung cancer, prostate cancer	Parallel	3-13
Vinceti et al. 2018[14]	Selenium supplements	Cancer mortality	2	18,698	359	Healthy people; people with history of skin cancer	62-63	Supplements: Selenium supplied as selenium yeast or selenomethionine (200µg/d)	Placebo	Any cancer mortality	Parallel	8-13
Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	3	20,259	159	Healthy people; people with: history of skin cancer or completely resected stage I non-small-cell lung cancer	62-66	Supplements: Selenium supplied as selenium yeast or selenomethionine (200µg/d)	Placebo	Colorectal cancer	Parallel	8-13
Yao et al. 2017[45]	Fibre intake	Colorectal cancer	2	2,794	23	People with >1 colonic adenomas removed	61-66	High-fibre, low-fat diet	Low-fibre, usual diet	Colorectal cancer	Parallel	2.8-4
Yao et al. 2017[45]	Fibre intake	Colorectal adenoma	5	3,641	1,297	People with >1 colonic adenomas removed, 1->2 adenoma	53-68	High-fibre, low-fat diet	Low-fibre, usual diet, placebo	Colorectal adenoma	Parallel and factorial	2.8-4

a/o: and / or; ALA: α-Linolenic acid; A. Oryzae: Aspergillus oryzae; BRCA1+: breast cancer type 1 susceptibility protein; CHD: coronary heart disease; CHO: carbohydrate; CVD: cardiovascular disease; d: day; DASH: Dietary Approaches to Stop Hypertension; DHA: docosahexaenoic acid; E: energy; EPA: eicosapentaenoic acid; HIV: human immunodeficiency virus; HOMA-IR: homeostasis model assessment-insulin resistance; IPP: Isoleucine-Proline-Proline; g: gram; GLA: γ-linolenic acid; i.m.: intramuscular; IU: international unit; l: litre; LA: linoleic acid; LCn3: long-chain omega-3; LTP: lactotripeptides; m: month; MCI: mild cognitive impairment; MCT: medium-chain triglycerides; mg: milligram; MI: myocardial infarction; MJ: megajoule; mmol: millimole; MUFA: monounsaturated fatty acid; NA: not applicable/assessed; n-6: omega-6; PCI: percutaneous coronary intervention; PTCA: percutaneous transluminal coronary angioplasty; PUFA: polyunsaturated fatty acid; RCT: randomized controlled trial; SFA: saturated fatty acid; TIA: Transient ischemic attack; TF: total fat; VPP: Valine-Proline-Proline; w: week; y: year, µg: microgram.

Supplementary Table 9: Certainty of evidence of the included bodies of evidence from randomized controlled trials.

Reference	Intervention (as defined by the authors)	Outcome (as defined by the authors)	Studies, n	Sample size, n	Cases, n	Certainty of evidence
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular mortality	25	67,772	4,544	Moderate
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular disease	38	90,378	14,737	High
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular disease	5	19,327	884	Low
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Body weight	12	15,812	NA	High
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	All-cause mortality	39	92,653	8,189	High
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular mortality	4	18,619	219	Moderate
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Coronary heart disease	4	19,061	397	Low
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	All-cause mortality	24	19,290	1,443	Moderate
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	Coronary heart disease	15	10,076	1,351	Moderate
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake	Major cardiovascular events	2	2,879	817	Very low
Adler et al. 2014[23]	Low-sodium intake	All-cause mortality	7	6,603	625	NA
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular mortality	3	2,656	106	NA
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular events	4	3,397	194	NA
Adler et al. 2014[23]	Low-sodium intake	Systolic blood pressure	6	3,362	NA	NA
Adler et al. 2014[23]	Low-sodium intake	Diastolic blood pressure	5	2,754	NA	NA
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Major cardiovascular events	1	14,641	NA	Low
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Cardiovascular mortality	1	14,641	NA	Very low
Al-Khudairy et al. 2017[1]	Vitamin C supplements	All-cause mortality	1	14,641	NA	Very low
Avenell et al. 2014[27]	Vitamin D supplements	Hip fracture	10	26,549	670	NA
Avenell et al. 2014[27]	Vitamin D supplements	Any fracture	14	27,127	2,326	NA
Bjelakovic et al. 2012[117]	β-carotene supplements	All-cause mortality	31	195,503	23,182	NA
Bjelakovic et al. 2012[117]	Vitamin E supplements	All-cause mortality	64	211,957	22,058	NA
Bjelakovic et al. 2012[117]	Vitamin C supplements	All-cause mortality	41	90,191	8,020	NA
Bjelakovic et al. 2012[117]	Vitamin A supplements	All-cause mortality	18	61,190	7,215	NA
Bjelakovic et al. 2014a[118]	Vitamin D supplements	All-cause mortality	56	95,286	11,998	NA

Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cardiovascular mortality	10	47,267	1,957	Low
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cancer mortality	4	44,492	1,192	Moderate
Bjelakovic et al. 2014b[29]	Vitamin D supplements	Cancer occurrence	18	50,623	3,870	Moderate
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Breast cancer	7	43,669	1,135	NA
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Lung cancer	5	45,509	329	NA
Cormick et al. 2015[121]	Calcium supplements	Systolic blood pressure	16	3,048	NA	High
Cormick et al. 2015[121]	Calcium supplements	Diastolic blood pressure	15	2,947	NA	High
De-Regil et al. 2015[123]	Folate supplements	Neural tube defect	5	6,708	54	High
De-Regil et al. 2015[123]	Folate supplements	Congenital cardiovascular anomalies	3	5,612	22	Low
El Dib et al. 2015[126]	Zinc supplements	HOMA-IR	1	56	NA	NA
Hartley et al. 2013[128]	Fruit & Vegetables intake	Systolic blood pressure	2	891	NA	NA
Hartley et al. 2013[128]	Fruit & Vegetables intake	Diastolic blood pressure	2	891	NA	NA
Hartley et al. 2016[130]	Fibre intake + supplements	Systolic blood pressure	8	661	NA	NA
Hartley et al. 2016[130]	Fibre intake + supplements	Diastolic blood pressure	8	661	NA	NA
Hemmingsen et al. 2017[131]	Healthy diet (intake)	Type 2 diabetes	1	NA	NA	NA
Hemmingsen et al. 2017[131]	Healthy diet (intake)	All-cause mortality	1	NA	NA	NA
Hofmeyr et al. 2018[32]	Calcium supplements	Pre-eclampsia	13	15,730	889	Low
Hofmeyr et al. 2018[32]	Calcium supplements	High blood pressure	12	15,470	2,732	NA
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Cardiovascular mortality	14	65,978	1,407	High
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	All-cause mortality	20	71,790	4,292	High
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Combined cardiovascular events	18	65,508	4,887	Moderate
Hooper et al. 2012[34]	Low-fat intake	Body weight	16	11,058	NA	NA
Hooper et al. 2015a[136]	Low-fat intake	Body weight	25	53,647	NA	High
Hooper et al. 2015b[35]	Low saturated fat intake	All-cause mortality	11	55,858	3,276	Moderate
Hooper et al. 2015b[35]	Low saturated fat intake	Cardiovascular mortality	10	53,421	1,096	Moderate
Hooper et al. 2015b[35]	Low saturated fat intake	Combined cardiovascular events	11	53,300	4,377	Moderate
Hooper et al. 2018[37]	Omega-6 intake + supplements	Combined cardiovascular events	7	4,962	1,404	Low

Hooper et al. 2018[37]	Omega-6 intake + supplements	All-cause mortality	10	4,506	979	Low
Hooper et al. 2018[37]	Omega-6 intake + supplements	Cardiovascular mortality	7	4,019	472	Very low
Jin et al. 2012[137]	Total flavonoids intake	Colorectal adenoma	1	929	358	NA
Jin et al. 2012[137]	Isoflavonoes intake	Colorectal adenoma	1	929	353	NA
Jin et al. 2012[137]	Flavonols intake	Colorectal adenoma	1	929	363	NA
Keats et al. 2019[38]	Micronutrients supplements	Preterm birth	18	91,425	NA	Moderate
Keats et al. 2019[38]	Micronutrients supplements	Low birth weight	18	68,801	NA	High
Keats et al. 2019[38]	Micronutrients supplements	Small gestational age	17	57,348	NA	Moderate
Kelly et al. 2017[138]	Whole grain intake	Systolic blood pressure	8	768	NA	NA
Kelly et al. 2017[138]	Whole grain intake	Diastolic blood pressure	8	768	NA	NA
Kelly et al. 2017[138]	Whole grain intake	Body weight	5	439	NA	NA
Mathew et al. 2012[140]	β-carotene supplements	Cataract	2	61,947	NA	NA
Mathew et al. 2012[140]	Vitamin E supplements	Cataract	3	55,721	NA	NA
Mathew et al. 2012[140]	Vitamin C supplements	Cataract	1	14,641	NA	NA
Palacios et al. 2019[6]	Vitamin D supplements	Gestational diabetes	5	1,846	77	Moderate
Palacios et al. 2019[6]	Vitamin D supplements	Preterm birth	4	2,294	189	Low
Palacios et al. 2019[6]	Vitamin D supplements	Birth length	11	3,058	NA	NA
Palacios et al. 2019[6]	Vitamin D supplements	Birth weight	13	3,240	NA	NA
Palacios et al. 2019[6]	Vitamin D supplements	Head circumference at birth	10	2,998	NA	NA
Palacios et al. 2019[6]	Vitamin D supplements	Pre-eclampsia	5	1,553	96	Low
Rees et al. 2013a[40]	Healthy diet (intake)	Systolic blood pressure	11	6,406	NA	NA
Rees et al. 2013a[40]	Healthy diet (intake)	Diastolic blood pressure	11	6,406	NA	NA
Rees et al. 2013b[42]	Selenium supplements	All-cause mortality	2	18,452	1,336	NA
Rees et al. 2013b[42]	Selenium supplements	Cardiovascular mortality	2	18,452	342	NA
Rees et al. 2013b[42]	Selenium supplements	Combined cardiovascular events	2	18,452	2,329	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	High Density Lipoprotein	6	891	NA	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	Triglycerides	7	939	NA	NA

Rees et al. 2019[3]	Mediterranean diet (intake)	Systolic blood pressure	4	448	NA	Low
Rees et al. 2019[3]	Mediterranean diet (intake)	Cardiovascular mortality	1	7,447	NA	Low
Rees et al. 2019[3]	Mediterranean diet (intake)	Combined cardiovascular events	1	7,447	NA	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	All-cause mortality	1	7,447	NA	Low
Rutjes et al. 2018[10]	B-Vitamin supplements	Dementia / MCI	1	1,803	99	Moderate
Rutjes et al. 2018[10]	Vitamin D3 supplements	Dementia	1	4,143	76	Low
Sydenham et al. 2012[146]	Omega-3 supplements	Mini-Mental State Examination	2	3,321	NA	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Preterm birth	3	1,149	21	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Small gestational age	2	715	51	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Birth weight	5	1,324	NA	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Gestational diabetes	5	1,279	135	Very low
Usinger et al. 2012[148]	Fermented milk intake + supplements	Systolic blood pressure	15	1,232	NA	NA
Usinger et al. 2012[148]	Fermented milk intake + supplements	Diastolic blood pressure	15	1,232	NA	NA
Vinceti et al. 2018[14]	Selenium supplements	Cancer	5	21,860	2,332	High (only for low RoB=3/5)
Vinceti et al. 2018[14]	Selenium supplements	Cancer mortality	2	18,698	359	High (only for low RoB=1/2)
Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	3	20,259	159	High (only for low RoB=2/3)
Yao et al. 2017[45]	Fibre intake	Colorectal cancer	2	2,794	23	Low
Yao et al. 2017[45]	Fibre intake	Colorectal adenoma	5	3,641	1,297	Low

HOMA-IR: homeostasis model assessment-insulin resistance; MCI: mild cognitive impairment; NA: not assessed; RoB: risk of bias.

Supplementary Table 10: Risk of bias of included bodies of evidence from randomized controlled trials: Reported as number of low risk of bias studies per domain.

Reference	Intervention (as defined by the authors)	Outcome (as defined by the authors)	Total Studies, n	Random sequence generation, n	Allocation concealment, n	Blinding of participants and personnel, n	Blinding of outcome assessment, n	Incomplete outcome data, n	Selective reporting, n	Other bias, n	Additional quality assessment, n
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular mortality	25	22	16	11	23	18	7	24	Attention: 21 Compliance: 12
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular disease	38	33	24	18	30	26	10	37	Attention: 34 Compliance: 16
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular disease	5	4	4	4	4	5	0	5	Attention: 3 Compliance: 3
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Body weight	12	11	9	8	9	8	4	12	Attention: 11 Compliance: 7
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	All-cause mortality	39	34	27	19	32	27	11	36	Attention: 35 Compliance: 18
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular mortality	4	3	3	4	4	4	0	4	Attention: 3 Compliance: 2
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Coronary heart disease	4	4	4	3	3	4	0	4	Attention: 2 Compliance: 3
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	All-cause mortality	24	20	11	7	16	17	3	21	Attention: 17 Compliance 11
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	Coronary heart disease	15	12	5	6	12	9	0	14	Attention: 11 Compliance: 7
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake	Major cardiovascular events	2	2	0	1	2	2	0	2	Attention: 1 Compliance: 2
Adler et al. 2014[23]	Low-sodium intake	All-cause mortality	7	3	4	5	6	3	6	NA	Compliance: 6 Groups balanced at baseline: 6 intention-to-treat analysis: 6 free from follow-up bias: 3
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular mortality	3	2	1	2	3	1	3	NA	Compliance: 3 Groups balanced at baseline: 3 intention-to-treat analysis: 2 free from follow-up bias: 1
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular disease	4	3	2	2	4	1	3	NA	Compliance: 4 Groups balanced at baseline: 4 intention-to-treat analysis: 3 free from follow-up bias: 1
Adler et al. 2014[23]	Low-sodium intake	Systolic blood pressure	6	3	5	4	5	3	5	NA	Compliance: 6 Groups balanced at baseline: 6 intention-to-treat analysis: 5 free from follow-up bias: 1
Adler et al. 2014[23]	Low-sodium intake	Diastolic blood pressure	5	2	4	3	4	3	4	NA	Compliance: 5 Groups balanced at baseline: 5 intention-to-treat analysis: 5 free from follow-up bias: 1
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Major cardiovascular events	1	1	0	1	1	1	1	0	NA
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Cardiovascular mortality	1	1	0	1	1	1	1	0	NA

Al-Khudairy et al. 2017[1]	Vitamin C supplements	All-cause mortality	1	1	0	1	1	1	1	0	NA
Avenell et al. 2014[27]	Vitamin D supplements	Hip fracture	10	8	9	NA	NA	NA	NA	NA	NA
Avenell et al. 2014[27]	Vitamin D supplements	Any fracture	14	11	11	NA	NA	NA	NA	NA	NA
Bjelakovic et al. 2012[117]	β-carotene supplements	All-cause mortality	31	27	29	29		28	30	28	NA
Bjelakovic et al. 2012[117]	Vitamin E supplements	All-cause mortality	64	49	50	59		60	63	53	NA
Bjelakovic et al. 2012[117]	Vitamin C supplements	All-cause mortality	41	32	32	37		37	40	35	NA
Bjelakovic et al. 2012[117]	Vitamin A supplements	All-cause mortality	18	14	13	16		16	18	14	NA
Bjelakovic et al. 2014a[118]	Vitamin D supplements	All-cause mortality	56	43	37	34		54	51	54	Industry bias: 7
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cardiovascular mortality	10	9	7	7		10	9	10	Industry bias: 1
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cancer mortality	4	4	4	4		4	4	4	Industry bias: 1
Bjelakovic et al. 2014b[29]	Vitamin D supplements	Cancer occurrence	18	16	15	14	14	17	17	18	For-profit bias: 2
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Breast cancer	7	7	7	6	6	6	6	7	For-profit bias: 1
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Lung cancer	5	5	5	4	4	4	4	5	For-profit bias: 1
Cormick et al. 2015[121]	Calcium supplements	Systolic blood pressure	16	10	7	11	11	10	16	12	NA
Cormick et al. 2015[121]	Calcium supplements	Diastolic blood pressure	15	9	6	10	10	9	15	11	NA
De-Regil et al. 2015[123]	Folate supplements	Neural tube defect	5	3	2	5	0	0	0	0	NA
De-Regil et al. 2015[123]	Folate supplements	Congenital cardiovascular anomalies	3	2	1	3	0	0	0	0	NA
El Dib et al. 2015[126]	Zinc supplements	HOMA-IR	1	0	0	1	0	1	1	1	NA
Hartley et al. 2013[128]	Fruit & Vegetables intake	Systolic blood pressure	2	1	0	0	1	2	0	0	NA
Hartley et al. 2013[128]	Fruit & Vegetables intake	Diastolic blood pressure	2	1	0	0	1	2	0	0	NA
Hartley et al. 2016[130]	Fibre intake + supplements	Systolic blood pressure	8	3	3	4	2	1	0	0	NA
Hartley et al. 2016[130]	Fibre intake + supplements	Diastolic blood pressure	8	3	3	4	2	1	0	0	NA
Hemmingsen et al. 2017[131]	Healthy diet (intake)	Type 2 diabetes	1	0	0	1	0	0	0	0	NA

Hemmingsen et al. 2017[131]	Healthy diet (intake)	All-cause mortality	1	0	0	1	0	0	0	0	NA
Hofmeyr et al. 2018[32]	Calcium supplements	Pre-eclampsia	13	8	11	11	11	10	9	4	NA
Hofmeyr et al. 2018[32]	Calcium supplements	High blood pressure	12	7	10	10	10	10	9	4	NA
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Cardiovascular mortality	14	12	5	2		6	14	14	Free of systematic difference in care: 3 Free of dietary differences other than fat: 8
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	All-cause mortality	20	18	10	3		10	20	20	Free of systematic difference in care: 5 Free of dietary differences other than fat: 11
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Combined cardiovascular events	18	16	6	3		6	18	18	Free of systematic difference in care: 5 Free of dietary differences other than fat: 10
Hooper et al. 2012[34]	Low-fat intake	Body weight	16	16	11	1		4	16	16	Free of systematic difference in care: 7 Free of dietary differences other than fat: 9
Hooper et al. 2015a[136]	Low-fat intake	Body weight	25	18	10	1		7	3	25	Free of systematic difference in care: 6 Free of dietary differences other than fat: 17
Hooper et al. 2015b[35]	Low saturated fat intake	All-cause mortality	11	11	5	1		7	11	11	Free of systematic difference in care: 2 Stated aim to reduce SFA: 8 Achieved SFA reduction: 8 Achieved TC reduction: 6
Hooper et al. 2015b[35]	Low saturated fat intake	Cardiovascular mortality	10	10	4	1		6	10	10	Free of systematic difference in care: 2 Stated aim to reduce SFA: 8 Achieved SFA reduction: 7 Achieved TC reduction: 6
Hooper et al. 2015b[35]	Low saturated fat intake	Combined cardiovascular events	11	11	4	1		5	11	11	Free of systematic difference in care: 2 Stated aim to reduce SFA: 9 Achieved SFA reduction: 7 Achieved TC reduction: 7
Hooper et al. 2018[37]	Omega-6 intake + supplements	Combined cardiovascular events	7	6	2	4	6	5	0	7	Attention: 4 Compliance: 3
Hooper et al. 2018[37]	Omega-6 intake + supplements	All-cause mortality	10	8	2	4	7	8	0	9	Attention: 5 Compliance: 5
Hooper et al. 2018[37]	Omega-6 intake + supplements	Cardiovascular mortality	7	6	1	2	6	5	0	6	Attention: 2 Compliance: 4
Jin et al. 2012[137]	Total flavonoids intake	Colorectal adenoma	1	0	0	0	0	0	0	1	NA
Jin et al. 2012[137]	Isoflavonoes intake	Colorectal adenoma	1	0	0	0	0	0	0	1	NA
Jin et al. 2012[137]	Flavonols intake	Colorectal adenoma	1	0	0	0	0	0	0	1	NA
Keats et al. 2019[38]	Micronutrients supplements	Preterm birth	18	15	13	16	17	11	18	18	NA

Keats et al. 2019[38]	Micronutrients supplements	Low birth weight	18	15	13	16	17	11	18	18	NA
Keats et al. 2019[38]	Micronutrients supplements	Small gestational age	17	14	12	15	16	10	17	17	NA
Kelly et al. 2017[138]	Whole grain intake	Systolic blood pressure	8	4	3	NA	4	3	0	3	Intention to treat analysis: 1 Groups comparable at baseline: 4
Kelly et al. 2017[138]	Whole grain intake	Diastolic blood pressure	8	4	3	NA	4	3	0	3	Intention to treat analysis: 1 Groups comparable at baseline: 4
Kelly et al. 2017[138]	Whole grain intake	Body weight	5	4	1	NA	1	1	0	1	Intention to treat analysis: 0 Groups comparable at baseline: 3
Mathew et al. 2012[140]	β-carotene supplements	Cataract	2	2	2	2		2	2	2	NA
Mathew et al. 2012[140]	Vitamin E supplements	Cataract	3	3	3	3		2	3	2	NA
Mathew et al. 2012[140]	Vitamin C supplements	Cataract	1	1	1	1		1	1	1	NA
Palacios et al. 2019[6]	Vitamin D supplements	Gestational diabetes	5	5	2	4	4	4	4	3	NA
Palacios et al. 2019[6]	Vitamin D supplements	Preterm birth	4	4	3	3	3	3	3	3	NA
Palacios et al. 2019[6]	Vitamin D supplements	Birth length	11	11	8	8	9	8	8	7	NA
Palacios et al. 2019[6]	Vitamin D supplements	Birth weight	13	12	8	9	10	10	10	8	NA
Palacios et al. 2019[6]	Vitamin D supplements	Head circumference at birth	10	10	7	7	8	8	8	6	NA
Palacios et al. 2019[6]	Vitamin D supplements	Pre-eclampsia	5	5	2	4	4	4	4	3	NA
Rees et al. 2013a[40]	Healthy diet (intake)	Systolic blood pressure	11	1	1	0	1	2	1	0	NA
Rees et al. 2013a[40]	Healthy diet (intake)	Diastolic blood pressure	11	1	1	0	1	2	1	0	NA
Rees et al. 2013b[42]	Selenium supplements	All-cause mortality	2	1	1	1	1	2	0	0	NA
Rees et al. 2013b[42]	Selenium supplements	Cardiovascular mortality	2	1	1	1	1	2	0	0	NA
Rees et al. 2013b[42]	Selenium supplements	Combined cardiovascular events	2	1	1	1	1	2	0	0	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	High Density Lipoprotein	6	3	1	0	2	4	6	0	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	Triglycerides	7	4	1	0	2	4	7	0	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	Systolic blood pressure	4	2	1	0	1	2	3	0	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	Cardiovascular mortality	1	1	0	0	0	1	1	0	NA

Rees et al. 2019[3]	Mediterranean diet (intake)	Combined cardiovascular events	1	1	0	0	0	1	1	0	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	All-cause mortality	1	1	0	0	0	1	1	0	NA
Rutjes et al. 2018[10]	B-Vitamin supplements	Dementia / MCI	1	1	1	1	1	1	1	1	NA
Rutjes et al. 2018[10]	Vitamin D3 supplements	Dementia	1	1	0	1	1	1	1	1	NA
Sydenham et al. 2012[146]	Omega-3 supplements	Mini-Mental State Examination	2	2	2	2	2	2	2	2	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Preterm birth	3	3	3	0	0	2	1	2	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Small gestational age	2	2	0	0	1	1	1	1	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Birth weight	5	5	4	0	1	3	1	5	NA
Tieu et al. 2017[12]	Healthy diet (intake)	Gestational diabetes	5	5	4	0	1	3	1	5	NA
Usinger et al. 2012[148]	Fermented milk intake + supplements	Systolic blood pressure	15	4	4	11 (Blinding of participants)	8 (Blinding of investigators)	13	14	9	NA
Usinger et al. 2012[148]	Fermented milk intake + supplements	Diastolic blood pressure	15	4	4	11 (Blinding of participants)	8 (Blinding of investigators)	13	14	9	NA
Vinceti et al. 2018[14]	Selenium supplements	Cancer	5	4	4	3		NA	5	NA	NA
Vinceti et al. 2018[14]	Selenium supplements	Cancer mortality	2	2	2	1		NA	2	NA	NA
Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	3	3	3	2		NA	3	NA	NA
Yao et al. 2017[45]	Fibre intake	Colorectal cancer	2	1	1	0	0	0	2	0	NA
Yao et al. 2017[45]	Fibre intake	Colorectal adenoma	5	4	2	1	1	0	5	0	NA

HOMA-IR: homeostasis model assessment-insulin resistance; MCI: mild cognitive impairment; NA: not assessed; RCT: randomized controlled trial; SFA: saturated fatty acid; TC: total cholesterol.

Supplementary Table 11: Characteristics of included bodies of evidence from cohort studies.

Reference	Exposure (as defined by the authors)	Outcome (as defined by the authors)	Studies, n	Sample size, n	Cases, n	Description of population	Age, mean	Description of exposure	Description of comparator	Description of outcome	Study design	Study length / follow-up (years)
Aburto et al. 2013[24]	Low-sodium intake	All-cause mortality	2	22,550	NA	General population	25-74	Sodium intake	Sodium intake	All-cause mortality	Cohort studies	9-22
Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular mortality	3	81,280	NA	General population	25-79	Sodium intake	Sodium intake	Cardiovascular disease mortality	Cohort studies	9-22
Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular disease	3	81,280	NA	General population	25-79	Sodium intake	Sodium intake	Cardiovascular disease	Cohort studies	9-22
Aune et al. 2018[26]	Vitamin C intake	Cardiovascular diseases	9	246,711	7,986	General population	30-93	Dietary Vitamin C (ascorbic acid)	Dietary Vitamin C (ascorbic acid)	Cardiovascular disease	Prospective cohort studies, nested case-control	4-17
Aune et al. 2018[26]	Vitamin C intake	Cardiovascular mortality	9	NA	NA	NA, but we expect it to be similar to the population of the outcome cardiovascular disease	NA	Dietary Vitamin C (ascorbic acid)	Dietary Vitamin C (ascorbic acid)	Mortality from coronary heart disease, stroke and cardiovascular disease	NA	NA
Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	16	315,214	38,079	General population	16-101	Dietary Vitamin C (ascorbic acid)	Dietary Vitamin C (ascorbic acid)	All-cause mortality	Prospective cohort studies, nested case-control	4-32
Aune et al. 2018[26]	β-carotene intake	All-cause mortality	8	142,798	11,729	General population	30-93	Dietary β-carotene	Dietary β-carotene	All-cause mortality	Prospective cohort studies, nested case-control	4-21
Aune et al. 2018[26]	Vitamin E intake	All-cause mortality	9	229,830	15,321	General population	30-101	Dietary Vitamin E (tocopherol)	Dietary Vitamin E (tocopherol)	All-cause mortality	Prospective cohort studies, nested case-control	4-14
Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	16	315,214	38,079	General population	16-101	Dietary Vitamin C (ascorbic acid)	Dietary Vitamin C (ascorbic acid)	All-cause mortality	Prospective cohort studies, nested case-control	4-32
Aune et al. 2011[150]	Fibre intake	Colorectal cancer	19	1,797,670	14,794	General population, smokers	16-89	Dietary fibre intake	Dietary fibre intake	Colorectal cancer	Prospective cohort studies, case-cohort and nested case-control included. No separate statement for this outcome possible.	4-17
Ben et al. 2014[46]	Fibre intake	Colorectal adenoma	4	78,348	2,402	General population having a colonoscopy and / or sigmoidoscopy	30+	Dietary fibre, crude fibre, fruit fibre, vegetable fibre, grains fibre	Dietary fibre, crude fibre, fruit fibre, vegetable fibre, grains fibre	Colorectal adenoma	Cohort studies	2-26
Blencowe et al. 2010[124]	Folate supplements	Neural tube defect	3	NA	NA	Pregnant women	NA	Folic acid supplementation	Folic acid supplementation	Neural tube disorders mortality and morbidity	Cohort studies	NA

Chia et al. 2019[11]	Healthy diet (intake)	Preterm birth	5	113,703	NA	Pregnant women, generally healthy	mean 21-30	Healthy dietary patterns by the 2015 United States Dietary Guideline (high intake of 3 or more key components: vegetables, fruits, wholegrains, low-fat dairy, lean protein food)	Healthy dietary patterns by the 2015 United States Dietary Guideline (high intake of 3 or more key components: vegetables, fruits, wholegrains, low-fat dairy, lean protein food)	Preterm birth (<37 weeks of gestation)	Prospective cohort studies	NA
Chia et al. 2019[11]	Healthy diet (intake)	Small gestational age	8	75,446	NA	Pregnant women, generally healthy	mean 21-32	Healthy dietary patterns by the 2015 United States Dietary Guideline (high intake of 3 or more key components: vegetables, fruits, wholegrains, low-fat dairy, lean protein food)	Healthy dietary patterns by the 2015 United States Dietary Guideline (high intake of 3 or more key components: vegetables, fruits, wholegrains, low-fat dairy, lean protein food)	Small-for-gestational-age (<10th percentile)	Prospective cohort studies	NA
Chia et al. 2019[11]	Healthy diet (intake)	Birth weight	12	24,950	NA	Pregnant women, generally healthy	mean 23-33	Healthy dietary patterns by the 2015 United States Dietary Guideline (high intake of 3 or more key components: vegetables, fruits, wholegrains, low-fat dairy, lean protein food)	Healthy dietary patterns by the 2015 United States Dietary Guideline (high intake of 3 or more key components: vegetables, fruits, wholegrains, low-fat dairy, lean protein food)	Birth weight	Prospective cohort studies	NA
Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease mortality	NA	104,681	1,483	NA, but we expect it to be similar to the population of the outcome coronary heart disease	NA	Dietary long-chain Omega-3 intake	Dietary long-chain Omega-3 intake	Fatal coronary outcome	Prospective cohort studies	NA
Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease	16	422,786	9,089	General healthy population; people with history of CHD (1x)	18-84	Dietary long-chain Omega-3 intake	Dietary long-chain Omega-3 intake	Coronary diseases (myocardial infarction, coronary heart disease, sudden cardiac death, angina pectoris)	Prospective cohort studies	5-23
Chowdhury et al. 2014a[18]	Omega-6 intake	Coronary heart disease	8	206,376	8,155	General healthy population; people with risk of CHD (1x)	20-75	Dietary Omega-6 intake	Dietary Omega-6 intake	Coronary diseases (myocardial infarction, coronary heart disease, sudden cardiac death)	Prospective cohort studies	5-20

Chowdhury et al. 2014b[119]	Vitamin D status	All-cause mortality	68	840,908	64,636	Mostly general population; healthy people; postmenopausal women; people with chronic kidney disease, heart failure, diabetes, acute coronary syndrome, CHD, COPD, cancer (colorectal, breast, lung, skin, non-Hodgkin, leukaemia, head & neck); elderly people; medical-in patients	29-84	Circulating 25-hydroxyvitamin D (Serum and Plasma)	Circulating 25-hydroxyvitamin D (Serum and Plasma)	All-cause mortality	Cohort studies	0.3-29
Chowdhury et al. 2014b[119]	Vitamin D status	Cardiovascular mortality	29	101,649	10,203	Mostly general population; healthy people; postmenopausal women; people with chronic kidney disease, diabetes, acute coronary syndrome, CHD; elderly people	40-79	Circulating 25-hydroxyvitamin D (Serum and Plasma)	Circulating 25-hydroxyvitamin D (Serum and Plasma)	Death from cardiovascular disease	Cohort studies	0.3-29
de Souza et al. 2015[36]	Low saturated fat intake	All-cause mortality	5	99,906	14,090	Apparently healthy adults	16-89 (mean 56-60)	Saturated fat intake (self-reported or plasma)	Saturated fat intake (self-reported or plasma)	All-cause mortality	Prospective cohort studies	7-19
de Souza et al. 2015[36]	Low saturated fat intake	Cardiovascular mortality	3	90,501	3,792	Apparently healthy adults	35-89 (mean 56-59)	Saturated fat intake (self-reported)	Saturated fat intake (self-reported)	Cardiovascular disease mortality	Prospective cohort studies	7-19
de Souza et al. 2015[36]	Low saturated fat intake	Coronary heart disease	12	267,416	6,383	Apparently healthy adults	30-85	Saturated fat intake (self-reported or biomarker)	Saturated fat intake (self-reported or biomarker)	Coronary heart disease	Prospective cohort studies	1-20
Doets et al. 2013[145]	Vitamin B12 intake	Dementia	3	5,254	431	Elderly general population	mean 70-75	Vitamin B12 intake	Vitamin B12 intake	Alzheimer disease	Prospective cohort studies	4-9
Feng et al. 2017[28]	Vitamin D status	Hip fracture	11	34,557	2,996	General population	65-96 (mean 57-75)	Serum 25(OH) vitamin D level	Serum 25(OH) vitamin D level	Fractures (medical / radiological records or self-reported)	Prospective cohort studies, nested case-control	4-17
Feng et al. 2017[28]	Vitamin D status	Any fracture	11	30,489	4,279	General population	50-79 (mean 57-76)	Serum 25(OH) vitamin D level	Serum 25(OH) vitamin D level	Fractures (medical / radiological records or self-reported)	Prospective cohort studies, nested case-control	4-17
Feng et al. 2015[125]	Folate supplements	Congenital heart defect	1	6,112	NA	Pregnant women	NA	Maternal folic acid supplementation	No maternal folic acid supplementation	Congenital heart defect	Cohort study	3
Fernandez-Cao et al. 2019[127]	Zinc supplements	Type 2 diabetes	2	258,139	17,806	General population	50-71 (mean 58)	Supplementary zinc intake	Supplementary zinc intake	Type 2 diabetes mellitus	Prospective cohort studies	10-19

Goodwill et al. 2017[9]	Vitamin D status	Dementia / MCI	14	30,452	NA	General population, general older population, nurses	mean 45-80	Vitamin D status (serum / plasma)	Vitamin D status (serum / plasma)	Cognition (via valid neuropsychological test)	Longitudinal cohort studies	2-13
Han et al. 2019[120]	Vitamin D status	Cancer mortality	16	10,794	8,729	General population; patients with coronary angiography	44-75	Circulating 25-hydroxyvitamin D (Serum and Plasma)	Circulating 25-hydroxyvitamin D (Serum and Plasma)	Cancer mortality	Prospective cohort studies	4-28
Han et al. 2019[120]	Vitamin D status	Cancer incidence	8	70,018	7,511	General population	54-74	Circulating 25-hydroxyvitamin D (Serum and Plasma)	Circulating 25-hydroxyvitamin D (Serum and Plasma)	Cancer incidence	Prospective cohort studies	5-28
Hossain et al. 2019[30]	Vitamin D supplements	Breast cancer	2	37,707	1,611 (1 study unclear)	General population	35-74 (56-62)	Vitamin D supplement use	No Supplement use	Breast cancer (self - reported)	Prospective cohort studies, nested case-control	18
Hu et al. 2018[5]	Vitamin D status	Gestational diabetes	13	12,958	1,358	Pregnant women	NA	Vitamin D sufficiency	Vitamin D insufficiency	Gestational diabetes	Cohort studies	NA
Jayedi et al. 2018[142]	Selenium intake	All-cause mortality	3	141,404	10,285	General population	40-80 (mean 53-67)	Dietary Selenium	Dietary Selenium	All-cause mortality	Cohort studies	4-14
Jayedi et al. 2019[122]	Calcium intake + supplements	Hypertension	8	248,398	30,838	General population	20-75	Dietary and supplementary calcium intake	Dietary and supplementary calcium intake	Hypertension	Prospective cohort studies	2-10
Jiang et al. 2019[141]	β-carotene intake	Cataract	7	154,449	NA	Men and women 40+, cases at baseline included	43-84	Dietary β-carotene intake	Dietary β-carotene intake	Age-related cataract	Prospective and non-longitudinal cohort	5-15
Jiang et al. 2019[141]	Vitamin E intake	Cataract	6	42,147	NA	Men and women 40+, cases at baseline included	43-84	Dietary Vitamin E intake	Dietary Vitamin E intake	Age-related cataract	Prospective and non-longitudinal cohort	5-15
Jiang et al. 2019[141]	Vitamin C intake	Cataract	7	77,333	NA	Men and women 40+, cases at baseline included	43-84	Dietary Vitamin C intake	Dietary Vitamin C intake	Age-related cataract	Prospective and non-longitudinal cohort	5-15
Jin et al. 2012[137]	Total flavonoids intake	Colorectal cancer	3	72,320	1,022	General population	45+ (NA in 2/3 studies)	Total flavonoids and 3-7 flavonoid subclasses, flavonoids intake	Total flavonoids and 3-7 flavonoid subclasses, flavonoids intake	Colorectal cancer, colorectal cancer risk	Cohort studies	10-18
Jin et al. 2012[137]	Isoflavonoes intake	Colorectal cancer	1	310,291	431	General population	45-74	Dietary soy and isoflavonols intake	Dietary soy and isoflavonols intake	Colorectal cancer risk	Prospective cohort studies	8
Jin et al. 2012[137]	Flavonols intake	Colorectal cancer	1	18,696	869	General population	55-69	Dietary flavonol, flavone and catechin intake	Dietary flavonol, flavone and catechin intake	Colorectal cancer risk	Case-cohort	13
Kastorini et al. 2011[41]	Mediterranean diet (intake)	Systolic blood pressure	1	2,563	NA	People without CVD risk factors	20-90	Mediterranean food pattern score	Mediterranean food pattern score	Systolic blood pressure	Prospective cohort studies	6
Kastorini et al. 2011[41]	Mediterranean diet (intake)	Diastolic blood pressure	1	2,563	NA	People without CVD risk factors	20-90	Mediterranean food pattern score	Mediterranean food pattern score	Diastolic blood pressure	Prospective cohort studies	6
Kastorini et al. 2011[41]	Mediterranean diet (intake)	High Density Lipoprotein	1	2,563	NA	People without CVD risk factors	20-90	Mediterranean food pattern score	Mediterranean food pattern score	High Density Lipoprotein-Cholesterol	Prospective cohort studies	6
Kastorini et al. 2011[41]	Mediterranean diet (intake)	Triglycerides	1	2,563	NA	People without CVD risk factors	20-90	Mediterranean food pattern score	Mediterranean food pattern score	Triglycerides	Prospective cohort studies	6

Leyvraz et al. 2018[25]	Low-sodium intake + status	Systolic blood pressure	1	435	NA	Boys and girls	4-18	Sodium intake, urinary sodium	Sodium intake, urinary sodium	Systolic blood pressure	Prospective cohort studies	NA
Leyvraz et al. 2018[25]	Low-sodium intake + status	Diastolic blood pressure	1	435	NA	Boys and girls	4-18	Sodium intake, urinary sodium	Sodium intake, urinary sodium	Diastolic blood pressure	Prospective cohort studies	NA
Li et al. 2020[116]	Linoleic acid intake	All-cause mortality	11	708,379	170,076	Mostly general population; people with breast cancer or high CVD risk	20-98 (mean 41-80)	Dietary linoleic acid intake	Dietary linoleic acid intake	All-cause mortality	Prospective cohort studies	5-30
Li et al. 2020[116]	Linoleic acid intake	Cardiovascular mortality	14	793,131	50,786	Mostly general population; people with high CVD risk or smokers	mean 46-75	Dietary linoleic acid intake	Dietary linoleic acid intake	CVD mortality (fatal CAD, myocardial infarction, ischemic heart disease, or stroke; death from CAD, stroke, or other CVD causes; and CVD mortality)	Prospective cohort studies	6-30
Mijatovic-Vukas et al. 2018[13]	Mediterranean diet (intake)	Gestational diabetes	4	23,488	NA	Pregnant women, women not pregnant at baseline but birth during follow-up, women with and without history of (gestational) diabetes	24-44 (mean 28)	Mediterranean diet	Mediterranean diet	Gestational Diabetes	Cohort studies, prospective multicentre study	9 (3x NA)
Newberry et al. 2014[33]	Calcium intake	Pre-eclampsia	2	5,913	385	Healthy pregnant women	30-40	Calcium intake	Calcium intake	Preeclampsia	Cohort studies	NA
Newberry et al. 2014[33]	Calcium intake	High blood pressure	2	5,973	866	Healthy pregnant women	30-40	Calcium intake	Calcium intake	High blood pressure with or without proteinuria	Cohort studies	NA
Noto et al. 2013[133]	High-carbohydrate intake	Cardiovascular mortality	3	249,272	5,960	People from Western countries, healthcare professionals. May not represent general population	30-75	Carbohydrate-score	Carbohydrate-score	CVD mortality	Cohort studies	10-26
Pan et al. 2012[19]	α-Linolenic acid intake	Cardiovascular disease	11	328,888	9,161	General population	20-84 (mean 41-71)	Dietary ALA intake	Dietary ALA intake	CVD (CHD, MI, IHD, CAD, stroke, CVD)	Prospective cohort studies	6-23
Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular mortality	4	NA	NA	Free of previous cardiovascular events	NA	Mediterranean diet score	Mediterranean diet score	Cardiovascular mortality	Cohort studies	NA
Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular disease	9	NA	NA	Free of previous cardiovascular events	20-90	Mediterranean diet score	Mediterranean diet score	CVD	Cohort studies	5-20
Sartorius et al. 2018[135]	High-carbohydrate intake	Obesity	2	102,340	NA	Healthy and overweight / obese adults	NA	Carbohydrate intake	Carbohydrate intake	Obesity	NA	NA
Schlesinger et al. 2019[16]	Fish intake	Weight gain	1	17,369	1,128	General population	24-69	Fish intake	Fish intake	Weight gain per 100g/d, risk of /adiposity	Prospective cohort studies	2

Schwingshackl et al. 2017[129]	Fruit intake	Hypertension	7	240,666	94,507	Mostly general population	20-95	Fruit intake	Fruit intake	Hypertension	Cohort, case-cohort, nested case-control	4-13
Schwingshackl et al. 2017[129]	Vegetables intake	Hypertension	8	242,210	94,772	Mostly general population	20-95	Vegetable intake	Vegetable intake	Hypertension	Cohort, case-cohort, nested case-control	3-13
Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension	4	109,615	28,069	Mostly general population	40-86	Whole grain intake (self-reported)	Whole grain intake (self-reported)	Hypertension (systolic blood pressure ≥140mmHg or diastolic blood pressure ≥90 mmHg)	Prospective cohort studies	9-18
Schwingshackl et al. 2018[132]	Diet quality (intake)	Type 2 diabetes	10	605,939	NA	General population	24-84	Diets of highest quality (assessed by HEI, AHEI, DASH)	Diets of lowest quality (assessed by HEI, AHEI, DASH)	Type 2 diabetes mellitus	Prospective cohort studies	8-24
Schwingshackl et al. 2018[132]	Diet quality (intake)	All-cause mortality	13	1,568,643	NA	General population	18-90	Diets of highest quality (assessed by HEI, AHEI, DASH)	Diets of lowest quality (assessed by HEI, AHEI, DASH)	All-cause mortality	Prospective cohort studies	6-22
Seidelmann et al. 2018[134]	High carb intake	All-cause mortality	6	287,644	30,942	General population; people with diabetes; people with cardiovascular disease	20-86	Carbohydrate consumption (>70%)	Carbohydrate consumption (<40%)	All-cause mortality, all-cause death	Cohort studies	5-26
Soedamah-Muthu et al. 2012[149]	Fermented milk intake	Hypertension	4	7,641	2,475	General population; excluding children, adolescents and pregnant women, patients, and hypertensive populations	NA (mean 54)	Mean total fermented dairy intake (buttermilk, yogurt, cheese, curds, sour cream) of 84-201g/d	Mean total fermented dairy intake (buttermilk, yogurt, cheese, curds, sour cream) of 84-201g/d	Hypertension (defined as SBP ≥140 mmHg, or DBP ≥90 mmHg, or use of antihypertensive medication)	Prospective cohort studies	5-10 (Mean: 7)
Soltani et al. 2019[144]	Mediterranean diet (intake)	All-cause mortality	26	1,624,280	218,928	Healthy population	16-88	Mediterranean diet score	Mediterranean diet score	All-cause mortality	Prospective cohort studies	4-32
Tous et al. 2020[7]	Vitamin D status	Preterm birth	19	24,498	3,130	Adult healthy pregnant women	NA	25(OH) in maternal or cord blood	25(OH) in maternal or cord blood	Preterm birth	Cohort studies	NA
Tous et al. 2020[7]	Vitamin D status	Birth length	7	6,929	NA	Adult healthy pregnant women	NA	25(OH) in maternal or cord blood	25(OH) in maternal or cord blood	Birth length	Cohort studies	NA
Tous et al. 2020[7]	Vitamin D status	Birth weight	14	15,972	NA	Adult healthy pregnant women	NA	25(OH) in maternal or cord blood	25(OH) in maternal or cord blood	Birth weight	Cohort studies	NA
Tous et al. 2020[7]	Vitamin D status	Head circumference at birth	7	5,979	NA	Adult healthy pregnant women	NA	25(OH) in maternal or cord blood	25(OH) in maternal or cord blood	Birth head circumference	Cohort studies	NA
Vinceti et al. 2018[14]	Selenium status	Cancer	7	76,239	1,940	General population; no history of cancer (2x); not institutionalised and bed-fast (1x)	15-74	Serum and plasma selenium	Serum and plasma selenium	Any cancer, stomach / rectal / lung / colon and bladder cancer	Cohort / subcohort controlled cohort study, Nested case-control	5-20
Vinceti et al. 2018[14]	Selenium intake	Cancer mortality	1	133,957	2,603	Men and women without history of cancer	40-74	Selenium intake	Selenium intake, serum and plasma selenium	Cancer mortality	Cohort studies	8-14

Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	1	54,208	990	Men and women without history of cancer	50-64	Selenium supplements	Selenium supplements	Colorectal cancer,	Cohort studies	13
Wan et al. 2017[115]	Omega-3 intake	All-cause mortality	6	430,579	26,093	General population	35-79	Fish, dietary long-chain Omega-3 PUFA / EPA + DHA	Fish, dietary long-chain Omega-3 PUFA / EPA + DHA	All-cause mortality, total death	Prospective cohort studies	6-15
Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease mortality	9	279,108	NA	General population without history of CHD	35-75 (mean 56-71)	Dietary ALA intake	Dietary ALA intake	Fatal CHD (CHD death, CHD mortality)	Prospective cohort studies	5-12
Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease	13	421,485	NA	General population without history of CHD	35-75 (mean 42-71)	Dietary ALA intake	Dietary ALA intake	Composite CHD (total CHD, fatal or non-fatal)	Prospective cohort studies	5-23
Wolf et al. 2017[39]	Multivitamin supplements	Preterm birth	4	42,592	2,280	Pregnant women	NA	Multivitamin supplement (3 or more vitamins or minerals in tablets or capsules)	No vitamin use / less than 3 vitamins	Preterm birth (<37 weeks of gestational age)	Prospective cohort studies, Cohort studies (2 matched cohorts)	3-10
Wolf et al. 2017[39]	Multivitamin supplements	Low birth weight	2	7,498	452	Pregnant women	NA	Multivitamin supplement (3 or more vitamins or minerals in tablets or capsules)	No vitamin use / less than 3 vitamins	Low birth weight (<2500 g)	Prospective cohort studies, Cohort studies (2 matched cohorts)	3-10
Wolf et al. 2017[39]	Multivitamin supplements	Small gestational age	3	36,965	1,413	Pregnant women	NA	Multivitamin supplement (3 or more vitamins or minerals in tablets or capsules)	No vitamin use / less than 3 vitamins	Small gestational weight (birthweight <10th centile)	Prospective cohort studies	6-10
Xiang et al. 2019[143]	Selenium status	Cardiovascular mortality	3	16,928	4,431	General population	20+ (mean 67-78)	Circulating Selenium (serum / plasma)	Circulating Selenium (serum / plasma)	Cardiovascular mortality	Prospective cohort studies, nested case-control	7-14
Ye et al. 2012[139]	Whole grain intake	Body weight	3	119,054	NA	Mostly general population (male and female health professionals)	38-84	Whole grain intake (self-reported)	Whole grain intake (self-reported)	Weight gain	Prospective cohort studies	8-13
Yuan et al. 2019[8]	Vitamin D status	Pre-eclampsia	15	29,101	1,909	Pregnant women	NA	Maternal serum 25-hydroxyvitamin D concentration	Maternal serum 25-hydroxyvitamin D concentration	Pre-eclampsia	Cohort studies, nested case-control	NA
Zhang et al. 2015[31]	Vitamin D intake	Lung cancer	3	135,244	3,004	General population; smokers; postmenopausal women	NA	Vitamin D intake	Vitamin D intake	Lung cancer incidence or mortality	Prospective cohort studies, nested case-control	NA
Zhang et al. 2016a[43]	Selenium status	Cardiovascular disease	14	34,109	3,749	Population-based, Physicians	20-90	Circulating Selenium (serum / plasma / erythrocyte)	Circulating Selenium (serum / plasma / erythrocyte)	Cardiovascular disease	Cohort studies, nested case-control	3-15
Zhang et al. 2016b[147]	Omega-3 intake	Dementia	2	6,237	286	Elderly general population	65-94 (1x), mean 55 (1x)	Dietary Omega-3 PUFA intake	Dietary Omega-3 PUFA intake	Alzheimer disease	Prospective cohort studies	4-6
Zhu et al. 2019[22]	Polyunsaturated fat intake	Cardiovascular disease	30	982,336	NA	General population	30-89	Dietary PUFA intake; weighted food record (2x)	Dietary PUFA intake; weighted food record (2x)	CVD events, CVD mortality	Prospective cohort studies	5-30

Zhu et al. 2019[22]	Low-fat intake	Cardiovascular disease	32	1,009,839	NA	Mostly general population	30-75 (mean 53-75)	Dietary total fat	Dietary total fat	Cardiovascular disease	Prospective cohort studies	4-32

AHEI: Alternate Healthy Eating Index; ALA: α-Linolenic acid; CAD: coronary artery disease; CHD: coronary heart disease; COPD: chronic obstructive pulmonary disease; CVD: cardiovascular disease; d: day; DASH: Dietary Approaches to Stop Hypertension; DBP: diastolic blood pressure; DHA: docosahexaenoic acid; EPA: eicosapentaenoic acid; g: gram; HEI: Healthy Eating Index; IHD: ischemic heart disease; MCI: mild cognitive impairment; MI: myocardial infarction; mmHg: millimetre of mercury; NA: not applicable/assessed; PUFA: polyunsaturated fatty acid; SBP: systolic blood pressure.

Supplementary Table 12: Study quality (risk of bias) and certainty of evidence of the included bodies of evidence from cohort studies.

Reference	Exposure (as defined by the authors)	Outcome (as defined by the authors)	Studies, n	Sample size, n	Cases, n	Certainty of evidence	Study quality/ risk of bias
Aburto et al. 2013[24]	Low-sodium intake	All-cause mortality	2	22,550	NA	NA	Selection of participants (0/2), Blinding of participants and personnel (0/2), Blinding of outcome assessment (1/2), Incomplete outcome date (1/2), Selective reporting (2/2), Defining exposure (0/2), Other confounding (2/2)
Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular mortality	3	81,280	NA	NA	Selection of participants (1/3), Blinding of participants and personnel (0/3), Blinding of outcome assessment (2/3), Incomplete outcome date (2/3), Selective reporting (3/3), Defining exposure (0/3), Other confounding (3/3)
Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular disease	3	81,280	NA	NA	Selection of participants (1/3), Blinding of participants and personnel (0/3), Blinding of outcome assessment (2/3), Incomplete outcome date (2/3), Selective reporting (3/3), Defining exposure (0/3), Other confounding (3/3)
Aune et al. 2018[26]	Vitamin C intake	Cardiovascular diseases	9	246,711	7,986	NA	NOS: majority of the included studies were in the subgroup with 7-9 points
Aune et al. 2018[26]	Vitamin C intake	Cardiovascular mortality	9	NA	NA	NA	NOS: majority of the included studies were in the subgroup with 7–9 points
Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	16	315,214	38,079	NA	NOS: majority of the included studies were in the subgroup with 7-9 points
Aune et al. 2018[26]	β-carotene intake	All-cause mortality	8	142,798	11,729	NA	NOS: majority of the included studies were in the subgroup with 7-9 points
Aune et al. 2018[26]	Vitamin E intake	All-cause mortality	9	229,830	15,321	NA	NOS: majority of the included studies were in the subgroup with 7–9 points
Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	16	315,214	38,079	NA	NOS: majority of the included studies were in the subgroup with 7–9 points
Aune et al. 2011[150]	Fibre intake	Colorectal cancer	19	1,797,670	14,794	NA	NA
Ben et al. 2014[46]	Fibre intake	Colorectal adenoma	4	78,348	2,402	NA	NOS: 7.5
Blencowe et al. 2010[124]	Folate supplements	Neural tube defect	3	NA	NA	NA	"Consistent, all studies showing benefit. Very different study sites."
Chia et al. 2019[11]	Healthy diet (intake)	Preterm birth	5	113,703	NA	NA	NOS: 8
Chia et al. 2019[11]	Healthy diet (intake)	Small gestational age	8	75,446	NA	NA	NOS: 8.3

Chia et al. 2019[11]	Healthy diet (intake)	Birth weight	12	24,950	NA	NA	NOS: 7.6
Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease mortality	NA	104,681	1,483	NA	NA
Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease	16	422,786	9,089	NA	NOS: 8.2
Chowdhury et al. 2014a[18]	Omega-6 intake	Coronary heart disease	8	206,376	8,155	NA	NOS: 7.9
Chowdhury et al. 2014b[119]	Vitamin D status	All-cause mortality	68	840,908	64,636	NA	NOS: 7.3
Chowdhury et al. 2014b[119]	Vitamin D status	Cardiovascular mortality	29	101,649	10,203	NA	NOS: 7.6
de Souza et al. 2015[36]	Low saturated fat intake	All-cause mortality	5	99,906	14,090	Very low	NOS: 7.2
de Souza et al. 2015[36]	Low saturated fat intake	Cardiovascular mortality	3	90,501	3,792	Very low	NOS: 6.7
de Souza et al. 2015[36]	Low saturated fat intake	Coronary heart disease	12	267,416	6,383	Very low	NOS: 7.7
Doets et al. 2013[145]	Vitamin B12 intake	Dementia	3	5,254	431	NA	low (1x), moderate or high (2x) (tool / scale NA)
Feng et al. 2017[28]	Vitamin D status	Hip fracture	11	34,557	2,996	NA	NOS. 7.3
Feng et al. 2017[28]	Vitamin D status	Any fracture	11	30,489	4,279	NA	NOS: 7.3
Feng et al. 2015[125]	Folate supplements	Congenital heart defect	1	6,112	NA	NA	NA
Fernandez-Cao et al. 2019[127]	Zinc supplements	Type 2 diabetes	2	258,139	17,806	NA	STROBE: 94% (max. 100%)
Goodwill et al. 2017[9]	Vitamin D status	Dementia / MCI	14	30,452	NA	NA	modified NOS: Participants (3/14), Sample size / power calculation (0/14), Confounders (13/14), Statistical analyses (11/14), Missing data (1/14), Appropriate outcome measurement (14/14), Objective measure of outcome (14/14)
Han et al. 2019[120]	Vitamin D status	Cancer mortality	16	10,794	8,729	NA	NOS: 7
Han et al. 2019[120]	Vitamin D status	Cancer incidence	8	70,018	7,511	NA	NOS: 6.8
Hossain et al. 2019[30]	Vitamin D supplements	Breast cancer	2	37,707	1,611 (1 study unclear)	NA	modified quality score: 6.5 (max. 8)
Hu et al. 2018[5]	Vitamin D status	Gestational diabetes	13	12,958	1,358	NA	NA
Jayedi et al. 2018[142]	Selenium intake	All-cause mortality	3	141,404	10,285	NA	NOS: 7.7
Jayedi et al. 2019[122]	Calcium intake + supplements	Hypertension	8	248,398	30,838	Moderate (NutriGrade)	NOS: 7.8

Jiang et al. 2019[141]	β-carotene intake	Cataract	7	154,449	NA	NA	NOS: 6
Jiang et al. 2019[141]	Vitamin E intake	Cataract	6	42,147	NA	NA	NOS: 6.2
Jiang et al. 2019[141]	Vitamin C intake	Cataract	7	77,333	NA	NA	NOS: 6.1
Jin et al. 2012[137]	Total flavonoids intake	Colorectal cancer	3	72,320	1,022	NA	NOS: 13/16
Jin et al. 2012[137]	Isoflavonoes intake	Colorectal cancer	1	310,291	431	NA	NOS: 13/16
Jin et al. 2012[137]	Flavonols intake	Colorectal cancer	1	18,696	869	NA	NOS: 12/16
Kastorini et al. 2011[41]	Mediterranean diet (intake)	Systolic blood pressure	1	2,563	NA	NA	NA
Kastorini et al. 2011[41]	Mediterranean diet (intake)	Diastolic blood pressure	1	2,563	NA	NA	NA
Kastorini et al. 2011[41]	Mediterranean diet (intake)	High Density Lipoprotein	1	2,563	NA	NA	NA
Kastorini et al. 2011[41]	Mediterranean diet (intake)	Triglycerides	1	2,563	NA	NA	NA
Leyvraz et al. 2018[25]	Low-sodium intake + status	Systolic blood pressure	1	435	NA	NA	Quality of sodium intake measurement (high), Quality of blood pressure measurement (high), External validity (high), Quality of reporting (high)
Leyvraz et al. 2018[25]	Low-sodium intake + status	Diastolic blood pressure	1	435	NA	NA	Quality of sodium intake measurement (high), Quality of blood pressure measurement (high), External validity (high), Quality of reporting (high)
Li et al. 2020[116]	Linoleic acid intake	All-cause mortality	11	708,379	170,076	NA	NOS: 7.2
Li et al. 2020[116]	Linoleic acid intake	Cardiovascular mortality	14	793,131	50,786	NA	NOS: 8
Mijatovic-Vukas et al. 2018[13]	Mediterranean diet (intake)	Gestational diabetes	4	23,488	NA	NA	Modified quality assessment & risk of bias form obtained from the Evidence Analysis Manual (American Dietetic Association): positive quality ranking
Newberry et al. 2014[33]	Calcium intake	Pre-eclampsia	2	5,913	385	NA	Study quality: B
Newberry et al. 2014[33]	Calcium intake	High blood pressure	2	5,973	866	NA	Study quality: B
Noto et al. 2013[133]	High-carbohydrate intake	Cardiovascular mortality	3	249,272	5,960	NA	NOS: 8.3
Pan et al. 2012[19]	α-Linolenic acid intake	Cardiovascular disease	11	328,888	9,161	NA	NA
Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular mortality	4	NA	NA	NA	NA
Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular disease	9	NA	NA	NA	NA

Sartorius et al. 2018[135]	High-carbohydrate intake	Obesity	2	102,340	NA	NA	Risk of Bias Tool for Prevalence Studies: 7.5
Schlesinger et al. 2019[16]	Fish intake	Weight gain	1	17,369	1,128	Very low (NutriGrade)	NA
Schwingshackl et al. 2017[129]	Fruit intake	Hypertension	7	240,666	94,507	NA	NA
Schwingshackl et al. 2017[129]	Vegetables intake	Hypertension	8	242,210	94,772	NA	NA
Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension	4	109,615	28,069	NA	NA
Schwingshackl et al. 2018[132]	Diet quality (intake)	Type 2 diabetes	10	605,939	NA	NA	NOS: 7.5
Schwingshackl et al. 2018[132]	Diet quality (intake)	All-cause mortality	13	1,568,643	NA	NA	NOS: 7.2
Seidelmann et al. 2018[134]	High-carbohydrate intake	All-cause mortality	6	287,644	30,942	NA	NA
Soedamah-Muthu et al. 2012[149]	Fermented milk intake	Hypertension	4	7,641	2,475	NA	NA
Soltani et al. 2019[144]	Mediterranean diet (intake)	All-cause mortality	26	1,624,280	218,928	Low	ROBINS-I tool: Bias due to confounding (13/26), Bias in selection of participants (17/23), Classification of intervention (0/23), Deviations from intended interventions (26/26), Missing data (13/26), Bias in measurement of outcomes (26/26), Selection of reported result (26/26), Overall bias (1/26)
Tous et al. 2020[7]	Vitamin D status	Preterm birth	19	24,498	3,130	NA	STROBE: 16.6 (max. 22, high = 17+)
Tous et al. 2020[7]	Vitamin D status	Birth length	7	6,929	NA	NA	STROBE: 17 (max. 22, high = 17+)
Tous et al. 2020[7]	Vitamin D status	Birth weight	14	15,972	NA	NA	STROBE: 16.9 (max. 22, high = 17+)
Tous et al. 2020[7]	Vitamin D status	Head circumference at birth	7	5,979	NA	NA	STROBE: 17 (max. 22, high = 17+)
Vinceti et al. 2018[14]	Selenium status	Cancer	7	76,239	1,940	Very low	NOS: 8
Vinceti et al. 2018[14]	Selenium intake	Cancer mortality	1	133,957	2,603	NA	NA
Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	1	54,208	990	NA	NA
Wan et al. 2017[115]	Omega-3 intake	All-cause mortality	6	430,579	26,093	NA	NOS: 8
Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease mortality	9	279,108	NA	NA	NOS: 7.1
Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease	13	421,485	NA	NA	NOS: 7.2
Wolf et al. 2017[39]	Multivitamin supplements	Preterm birth	4	42,592	2,280	Very low	NOS: Risk of bias: Low

Wolf et al. 2017[39]	Multivitamin supplements	Low birth weight	2	7,498	452	Very low	NOS: Risk of bias: Low
Wolf et al. 2017[39]	Multivitamin supplements	Small gestational age	3	36,965	1,413	Very low	NOS: Risk of bias: Low
Xiang et al. 2019[143]	Selenium status	Cardiovascular mortality	3	16,928	4,431	NA	NOS: 7.7
Ye et al. 2012[139]	Whole grain intake	Body weight	3	119,054	NA	NA	NA
Yuan et al. 2019[8]	Vitamin D status	Pre-eclampsia	15	29,101	1,909	NA	NA
Zhang et al. 2015[31]	Vitamin D intake	Lung cancer	3	135,244	3,004	NA	NOS: high (all studies 6 or more stars)
Zhang et al. 2016a[43]	Selenium status	Cardiovascular disease	14	34,109	3,749	NA	NA
Zhang et al. 2016b[147]	Omega-3 intake	Dementia	2	6,237	286	NA	NOS: 8.5
Zhu et al. 2019[22]	Polyunsaturated fat intake	Cardiovascular disease	30	982,336	NA	NA	NA
Zhu et al. 2019[22]	Low-fat intake	Cardiovascular disease	32	1,009,839	NA	NA	NA

MCI: mild cognitive impairment; NA: not applicable/assessed; NOS: Newcastle-Ottawa-Scale; ROBINS-I: Risk Of Bias In Non-randomised Studies - of Interventions; STROBE: Strengthening the Reporting of Observational studies in Epidemiology.

Supplementary Table 13: Population (P), Intervention/Exposure (I/E), Comparator (C), Outcome (O) matching similarities for all identified diet-disease associations.

Bodies of evidence from randomized controlled trials (Cochrane Reviews)			**Bodies of evidence from cohort studies**			**PI/ECO similarities**				
Reference	Intervention (as defined by the authors)	Outcome (as defined by the authors)	Reference	Exposure (as defined by the authors)	Outcome (as defined by the authors)	Patients / population	Intervention / Exposure	Comparator	Outcome	Overall
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular mortality	Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease mortality	3	2	2	2	3
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular disease	Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease	2	2	2	2	2
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake (Supplementary/ enriched foods)	Cardiovascular disease	Pan et al. 2012[19]	α-Linolenic acid intake	Cardiovascular disease	2	2	2	1	2
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Body weight	Schlesinger et al. 2019[16]	Fish intake	Weight gain	3	2	2	1	3
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	All-cause mortality	Wan et al. 2017[115]	Omega-3 intake	All-cause mortality	2	2	2	1	2
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake (Supplementary/ enriched foods)	Cardiovascular mortality	Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease mortality	2	2	2	2	2
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake (Supplementary/ enriched foods)	Coronary heart disease	Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease	2	2	2	1	2
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	All-cause mortality	Li et al. 2020[116]	Omega-3 intake	All-cause mortality	2	2	2	1	2
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	Coronary heart disease	Chowdhury et al. 2014a[18]	Omega-6 intake	Coronary heart disease	2	2	2	1	2
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake	Major cardiovascular events	Zhu et al. 2019[22]	Polyunsaturated fat intake	Cardiovascular disease	2	1	1	1	2
Adler et al. 2014[23]	Low-sodium intake	All-cause mortality	Aburto et al. 2013[24]	Low-sodium intake	All-cause mortality	2	2	2	1	2
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular mortality	Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular mortality	2	2	2	1	2
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular disease	Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular disease	2	2	2	1	2
Adler et al. 2014[23]	Low-sodium intake	Systolic blood pressure	Leyvraz et al. 2018[25]	Low-sodium intake + status	Systolic blood pressure	3	2	2	1	3
Adler et al. 2014[23]	Low-sodium intake	Diastolic blood pressure	Leyvraz et al. 2018[25]	Low-sodium intake + status	Diastolic blood pressure	3	2	2	1	3
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Major cardiovascular events	Aune et al. 2018[26]	Vitamin C intake	Cardiovascular disease	2	2	2	1	2
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Cardiovascular mortality	Aune et al. 2018[26]	Vitamin C intake	Cardiovascular mortality	2	2	2	1	2

Al-Khudairy et al. 2017[1]	Vitamin C supplements	All-cause mortality	Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	2	2	2	1	2
Avenell et al. 2014[27]	Vitamin D supplements	Hip fracture	Feng et al. 2017[28]	Vitamin D status	Hip fracture	2	3	3	1	3
Avenell et al. 2014[27]	Vitamin D supplements	Any fracture	Feng et al. 2017[28]	Vitamin D status	Any fracture	2	3	3	1	3
Bjelakovic et al. 2012[117]	β-carotene supplements	All-cause mortality	Aune et al. 2018[26]	β-carotene intake	All-cause mortality	2	2	2	1	2
Bjelakovic et al. 2012[117]	Vitamin E supplements	All-cause mortality	Aune et al. 2018[26]	Vitamin E intake	All-cause mortality	2	2	2	1	2
Bjelakovic et al. 2012[117]	Vitamin C supplements	All-cause mortality	Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	2	2	2	1	2
Bjelakovic et al. 2012[117]	Vitamin A supplements	All-cause mortality	Aune et al. 2018[26]	β-carotene intake	All-cause mortality	2	3	3	1	3
Bjelakovic et al. 2014a[118]	Vitamin D supplements	All-cause mortality	Chowdhury et al. 2014b[119]	Vitamin D status	All-cause mortality	2	3	3	1	3
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cardiovascular mortality	Chowdhury et al. 2014b[119]	Vitamin D status	Cardiovascular mortality	2	3	3	1	3
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cancer mortality	Han et al. 2019[120]	Vitamin D status	Cancer mortality	2	3	3	1	3
Bjelakovic et al. 2014b[29]	Vitamin D supplements	Cancer occurrence	Han et al. 2019[120]	Vitamin D status	Cancer incidence	2	3	3	1	3
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Breast cancer	Hossain et al. 2019[30]	Vitamin D supplements	Breast cancer	2	1	1	1	2
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Lung cancer	Zhang et al. 2015[31]	Vitamin D intake	Lung cancer	2	2	2	1	2
Cormick et al. 2015[121]	Calcium supplements	Systolic blood pressure	Jayedi et al. 2019[122]	Calcium intake + supplements	Hypertension	2	2	2	3	3
Cormick et al. 2015[121]	Calcium supplements	Diastolic blood pressure	Jayedi et al. 2019[122]	Calcium intake + supplements	Hypertension	2	2	2	3	3
De-Regil et al. 2015[123]	Folate supplements	Neural tube defect	Blencowe et al. 2010[124]	Folate supplements	Neural tube defect	2	1	1	1	2
De-Regil et al. 2015[123]	Folate supplements	Congenital cardiovascular anomalies	Feng et al. 2015[125]	Folate supplements	Congenital heart defect	1	1	1	2	2
El Dib et al. 2015[126]	Zinc supplements	HOMA-IR	Fernandez-Cao et al. 2019[127]	Zinc supplements	Type 2 diabetes	2	1	1	3	3
Hartley et al. 2013[128]	Fruit & Vegetables intake	Systolic blood pressure	Schwingshackl et al. 2017[129]	Fruit intake	Hypertension	2	2	2	3	3
Hartley et al. 2013[128]	Fruit & Vegetables intake	Diastolic blood pressure	Schwingshackl et al. 2017[129]	Vegetables intake	Hypertension	2	2	2	3	3
Hartley et al. 2016[130]	Fibre intake + supplements	Systolic blood pressure	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension	2	2	2	3	3
Hartley et al. 2016[130]	Fibre intake + supplements	Diastolic blood pressure	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension	2	2	2	3	3
Hemmingsen et al. 2017[131]	Healthy diet (intake)	Type 2 diabetes	Schwingshackl et al. 2018[132]	Diet quality (intake)	Type 2 diabetes	2	1	1	1	2

Hemmingsen et al. 2017[131]	Healthy diet (intake)	All-cause mortality	Schwingshackl et al. 2018[132]	Diet quality (intake)	All-cause mortality	2	1	1	1	2
Hofmeyr et al. 2018[32]	Calcium supplements	Pre-eclampsia	Newberry et al. 2014[33]	Calcium intake	Pre-eclampsia	2	2	2	1	2
Hofmeyr et al. 2018[32]	Calcium supplements	High blood pressure	Newberry et al. 2014[33]	Calcium intake	High blood pressure	2	2	2	1	2
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Cardiovascular mortality	Noto et al. 2013[133]	High-carbohydrate intake	Cardiovascular mortality	2	2	2	1	2
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	All-cause mortality	Seidelmann et al. 2018[134]	High-carbohydrate intake	All-cause mortality	2	2	2	1	2
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Combined cardiovascular events	Zhu et al. 2019[22]	Low-fat intake	Cardiovascular disease	2	2	2	1	2
Hooper et al. 2012[34]	Low-fat intake	Body weight	Sartorius et al. 2018[135]	High-carbohydrate intake	Obesity	2	2	2	3	3
Hooper et al. 2015a[136]	Low-fat intake	Body weight	Sartorius et al. 2018[135]	High-carbohydrate intake	Obesity	2	2	2	3	3
Hooper et al. 2015b[35]	Low saturated fat intake	All-cause mortality	de Souza et al. 2015[36]	Low saturated fat intake	All-cause mortality	2	1	1	1	2
Hooper et al. 2015b[35]	Low saturated fat intake	Cardiovascular mortality	de Souza et al. 2015[36]	Low saturated fat intake	Cardiovascular mortality	2	1	1	1	2
Hooper et al. 2015b[35]	Low saturated fat intake	Combined cardiovascular events	de Souza et al. 2015[36]	Low saturated fat intake	Coronary heart disease	2	1	1	1	2
Hooper et al. 2018[37]	Omega-6 intake + supplements	Combined cardiovascular events	Chowdhury et al. 2014a[18]	Omega-6 intake	Coronary heart disease	2	2	2	2	2
Hooper et al. 2018[37]	Omega-6 intake + supplements	All-cause mortality	Li et al. 2020[116]	Linoleic acid intake	All-cause mortality	2	2	2	1	2
Hooper et al. 2018[37]	Omega-6 intake + supplements	Cardiovascular mortality	Li et al. 2020[116]	Linoleic acid intake	Cardiovascular mortality	2	2	2	1	2
Jin et al. 2012[137]	Total flavonoids intake (+co-dietary intervention)	Colorectal adenoma	Jin et al. 2012[137]	Total flavonoids intake	Colorectal cancer	3	2	2	3	3
Jin et al. 2012[137]	Isoflavonoes intake (+co-dietary intervention)	Colorectal adenoma	Jin et al. 2012[137]	Isoflavonoes intake	Colorectal cancer	3	2	2	3	3
Jin et al. 2012[137]	Flavonols intake (+co-dietary intervention)	Colorectal adenoma	Jin et al. 2012[137]	Flavonols intake	Colorectal cancer	3	2	2	3	3
Keats et al. 2019[38]	Micronutrients supplements (folic acid + iron)	Preterm birth	Wolf et al. 2017[39]	Multivitamin supplements	Preterm birth	1	2	2	1	2
Keats et al. 2019[38]	Micronutrients supplements (folic acid + iron)	Low birth weight	Wolf et al. 2017[39]	Multivitamin supplements	Low birth weight	1	2	2	1	2

Keats et al. 2019[38]	Micronutrients supplements (folic acid + iron)	Small gestational age	Wolf et al. 2017[39]	Multivitamin supplements	Small gestational age	1	2	2	1	2
Kelly et al. 2017[138]	Whole grains intake	Systolic blood pressure	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension	2	1	1	3	3
Kelly et al. 2017[138]	Whole grains intake	Diastolic blood pressure	Schwingshackl et al. 2017[129]	Whole grain intake	Hypertension	2	1	1	3	3
Kelly et al. 2017[138]	Whole grains intake	Body weight	Ye et al. 2012[139]	Whole grain intake	Body weight	2	1	1	1	2
Mathew et al. 2012[140]	β-carotene supplements	Cataract	Jiang et al. 2019[141]	β-carotene intake	Cataract	2	2	2	1	2
Mathew et al. 2012[140]	Vitamin E supplements	Cataract	Jiang et al. 2019[141]	Vitamin E intake	Cataract	2	2	2	1	2
Mathew et al. 2012[140]	Vitamin C supplements	Cataract	Jiang et al. 2019[141]	Vitamin C intake	Cataract	2	2	2	1	2
Palacios et al. 2019[6]	Vitamin D supplements	Gestational diabetes	Hu et al. 2018[5]	Vitamin D status	Gestational diabetes	1	3	3	1	3
Palacios et al. 2019[6]	Vitamin D supplements	Preterm birth	Tous et al. 2020[7]	Vitamin D status	Preterm birth	1	3	3	1	3
Palacios et al. 2019[6]	Vitamin D supplements	Birth length	Tous et al. 2020[7]	Vitamin D status	Birth length	2	3	3	1	3
Palacios et al. 2019[6]	Vitamin D supplements	Birth weight	Tous et al. 2020[7]	Vitamin D status	Birth weight	2	3	3	1	3
Palacios et al. 2019[6]	Vitamin D supplements	Head circumference at birth	Tous et al. 2020[7]	Vitamin D status	Head circumference at birth	2	3	3	1	3
Palacios et al. 2019[6]	Vitamin D supplements	Pre-eclampsia	Yuan et al. 2019[8]	Vitamin D status	Pre-eclampsia	1	3	3	1	3
Rees et al. 2013a[40]	Healthy diet (intake)	Systolic blood pressure	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Systolic blood pressure	2	1	1	1	2
Rees et al. 2013a[40]	Healthy diet (intake)	Diastolic blood pressure	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Diastolic blood pressure	2	1	1	1	2
Rees et al. 2013b[42]	Selenium supplements	All-cause mortality	Jayedi et al. 2018[142]	Selenium intake	All-cause mortality	2	2	2	1	2
Rees et al. 2013b[42]	Selenium supplements	Cardiovascular mortality	Xiang et al. 2019[143]	Selenium status	Cardiovascular mortality	2	3	3	1	3
Rees et al. 2013b[42]	Selenium supplements	Combined cardiovascular events	Zhang et al. 2016a[43]	Selenium status	Cardiovascular disease	2	3	3	1	3
Rees et al. 2019[3]	Mediterranean diet (intake)	High Density Lipoprotein	Kastorini et al. 2011[41]	Mediterranean diet (intake)	High Density Lipoprotein	2	1	1	1	2
Rees et al. 2019[3]	Mediterranean diet (intake)	Triglycerides	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Triglycerides	2	1	1	1	2
Rees et al. 2019[3]	Mediterranean diet (intake)	Systolic blood pressure	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Systolic blood pressure	2	1	1	1	2
Rees et al. 2019[3]	Mediterranean diet (intake)	Cardiovascular mortality	Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular mortality	2	1	1	1	2
Rees et al. 2019[3]	Mediterranean diet (intake)	Combined cardiovascular events	Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular disease	2	1	1	1	2

Rees et al. 2019[3]	Mediterranean diet (intake)	All-cause mortality	Soltani et al. 2019[144]	Mediterranean diet (intake)	All-cause mortality	2	1	1	1	2
Rutjes et al. 2018[10]	B-Vitamin supplements	Dementia /MCI	Doets et al. 2013[145]	Vitamin B12 intake	Dementia	3	2	2	2	3
Rutjes et al. 2018[10]	Vitamin D3 supplements	Dementia	Goodwill et al. 2017[9]	Vitamin D status	Dementia / MCI	1	3	3	3	3
Sydenham et al. 2012[146]	Omega-3 supplements	Mini-Mental State Examination	Zhang et al. 2016b[147]	Omega-3 intake	Dementia	1	2	2	3	3
Tieu et al. 2017[12]	Healthy diet	Preterm birth	Chia et al. 2019[11]	Healthy diet (intake)	Preterm birth	2	1	1	1	2
Tieu et al. 2017[12]	Healthy diet	Small gestational age	Chia et al. 2019[11]	Healthy diet (intake)	Small gestational age	2	1	1	1	2
Tieu et al. 2017[12]	Healthy diet	Birth weight	Chia et al. 2019[11]	Healthy diet (intake)	Birth weight	2	1	1	1	2
Tieu et al. 2017[12]	Healthy diet	Gestational diabetes	Mijatovic-Vukas et al. 2018[13]	Mediterranean diet (intake)	Gestational diabetes	2	1	1	1	2
Usinger et al. 2012[148]	Fermented milk intake + supplements	Systolic blood pressure	Soedamah-Muthu et al. 2012[149]	Fermented milk intake	Hypertension	2	2	2	3	3
Usinger et al. 2012[148]	Fermented milk intake + supplements	Diastolic blood pressure	Soedamah-Muthu et al. 2012[149]	Fermented milk intake	Hypertension	2	2	2	3	3
Vinceti et al. 2018[14]	Selenium supplements	Cancer	Vinceti et al. 2018[14]	Selenium status	Cancer	2	3	3	1	3
Vinceti et al. 2018[14]	Selenium supplements	Cancer mortality	Vinceti et al. 2018[14]	Selenium intake	Cancer mortality	2	2	2	1	2
Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	2	1	1	1	2
Yao et al. 2017[45]	Fibre intake	Colorectal cancer	Aune et al. 2011[150]	Fibre intake	Colorectal cancer	2	1	1	1	2
Yao et al. 2017[45]	Fibre intake	Colorectal adenoma	Ben et al. 2014[46]	Fibre intake	Colorectal adenoma	3	1	1	1	3

HOMA-IR: homeostasis model assessment-insulin resistance; MCI: mild cognitive impairment; PI/ECO: population – intervention/exposure – comparator – outcome; RCT: randomized controlled trial.

Supplementary Table 14: Heterogeneity including I^2 (%) and tau (τ^2) of bodies of evidence from randomized controlled trials and cohort studies in the meta-analysis.

Bodies of evidence from randomized controlled trials (Cochrane Reviews)						**Bodies of evidence from cohort studies**					
Reference	Intervention and type of intake	Outcome (as defined by the authors)	Studies, n	Summary measure, and effect estimate (95% CI)	I^2 (%)/ τ^2	Reference	Exposure and type of intake/exposure	Outcome (as defined by the authors)	Studies, n	Summary measure, and effect estimate (95% CI)	I^2 (%)/ τ^2
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular mortality	25	RR: 0.95 (0.87, 1.03)	24/ 0.01	Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease mortality	NA	RR: 0.90 (0.70, 1.14)	NR
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Cardiovascular disease	38	RR: 0.99 (0.94, 1.04)	37/ 0.00	Chowdhury et al. 2014a[18]	Omega-3 intake	Coronary heart disease	16	RR: 0.87 (0.78, 0.97)	76/ 0.03
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular disease	5	RR: 0.95 (0.83, 1.07)	0/ 0.00	Pan et al. et al. 2012[19]	α-Linolenic acid intake	Cardiovascular disease	11	RR: 0.93 (0.85, 1.03)	41/ 0.01
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	Body weight	12	MD: -0.01 (-0.84, 0.82)	49	Schlesinger et al. 2019[16]	Fish intake	Weight gain	1	RR: 1.06 (0.83, 1.35)	NA
Abdelhamid et al. 2018a[15]	Omega-3 intake + supplements	All-cause mortality	39	RR: 0.98 (0.93, 1.03)	11/ 0.00	Wan et al. 2017[115]	Omega-3 intake	All-cause mortality	6	RR: 0.86 (0.80, 0.93)	56/ 0.00
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Cardiovascular mortality	4	RR: 0.96 (0.74, 1.25)	0/ 0.00	Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease mortality	9	RR: 0.85 (0.75, 0.96)	16/ 0.01
Abdelhamid et al. 2018a[15]	α-Linolenic acid intake	Coronary heart disease	4	RR: 1.00 (0.82, 1.22)	2/ 0.00	Wei et al. 2018[20]	α-Linolenic acid intake	Coronary heart disease	13	RR: 0.91 (0.85, 0.97)	6/ 0.00
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	All-cause mortality	24	RR: 0.98 (0.89, 1.07)	0/ 0.00	Li et al. 2020[116]	Linoleic acid intake	All-cause mortality	11	RR: 0.87 (0.81, 0.94)	68/ 0.01
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake + supplements	Coronary heart disease	15	RR: 0.87 (0.72, 1.06)	45/ 0.04	Chowdhury et al. 2014a[18]	Omega-6 intake	Coronary heart disease	8	RR: 0.98 (0.90, 1.06)	54/ 0.01
Abdelhamid et al. 2018b[21]	Polyunsaturated fat intake	Major cardiovascular events	2	RR: 0.84 (0.59, 1.20)	79/ 0.05	Zhu et al. 2019[22]	Polyunsaturated fat intake	Cardiovascular disease	30	RR: 0.97 (0.93, 1.00)	54/ 0.00
Adler et al. 2014[23]	Low-sodium intake	All-cause mortality	7	RR: 0.96 (0.83, 1.10)	0/ 0.00	Aburto et al. 2013[24]	Low-sodium intake	All-cause mortality	2	RR: 0.95 (0.71, 1.27)	82/ 0.05
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular mortality	3	RR: 0.67 (0.45, 1.01)	0/ 0.00	Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular mortality	3	RR: 0.87 (0.64, 1.18)	79/ 0.07
Adler et al. 2014[23]	Low-sodium intake	Cardiovascular disease	4	RR: 0.76 (0.57, 1.01)	0/ 0.00	Aburto et al. 2013[24]	Low-sodium intake	Cardiovascular disease	3	RR: 0.87 (0.64, 1.18)	79/ 0.07
Adler et al. 2014[23]	Low-sodium intake	Systolic blood pressure	6	MD: -1.79 (-3.23, -0.36)	74	Leyvraz et al. 2018[25]	Low-sodium intake + status	Systolic blood pressure	1	MD: -1.20 (-1.50, -0.90)	NA
Adler et al. 2014[23]	Low-sodium intake	Diastolic blood pressure	5	MD: -1.17 (-2.08, -0.26)	58	Leyvraz et al. 2018[25]	Low-sodium intake + status	Diastolic blood pressure	1	MD: 1.20 (1.00, 1.50)	NA
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Major cardiovascular events	1	HR: 0.99 (0.89, 1.10)	NA	Aune et al. 2018[26]	Vitamin C intake	Cardiovascular disease	9	RR: 0.84 (0.77, 0.91)	0/ 0.00
Al-Khudairy et al. 2017[1]	Vitamin C supplements	Cardiovascular mortality	1	HR: 1.02 (0.85, 1.22)	NA	Aune et al. 2018[26]	Vitamin C intake	Cardiovascular mortality	9	RR: 0.88 (0.83, 0.94)	29/ NR

Al-Khudairy et al. 2017[1]	Vitamin C supplements	All-cause mortality	1	HR: 1.07 (0.97, 1.18)	NA	Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	16	RR: 0.86 (0.80, 0.92)	69/ 0.01
Avenell et al. 2014[27]	Vitamin D supplements	Hip fracture	10	RR: 1.12 (0.97, 1.30)	0/ 0.00	Feng et al. 2017[28]	Vitamin D status	Hip fracture	11	RR: 0.68 (0.60, 0.78)	17/ 0.01
Avenell et al. 2014[27]	Vitamin D supplements	Any fracture	14	RR: 1.04 (0.96, 1.12)	18/ 0.01	Feng et al. 2017[28]	Vitamin D status	Any fracture	11	RR: 0.80 (0.68, 0.94)	72/ 0.06
Bjelakovic et al. 2012[117]	β-carotene supplements	All-cause mortality	31	RR: 1.02 (0.98, 1.07)	34/ 0.00	Aune et al. 2018[26]	β-carotene intake	All-cause mortality	8	RR: 0.82 (0.78, 0.87)	0/ 0.00
Bjelakovic et al. 2012[117]	Vitamin E supplements	All-cause mortality	64	RR: 1.02 (0.99, 1.04)	0/ 0.00	Aune et al. 2018[26]	Vitamin E intake	All-cause mortality	9	RR: 0.98 (0.93, 1.04)	6/ 0.00
Bjelakovic et al. 2012[117]	Vitamin C supplements	All-cause mortality	41	RR: 1.01 (0.97, 1.05)	0/ 0.00	Aune et al. 2018[26]	Vitamin C intake	All-cause mortality	16	RR: 0.86 (0.80, 0.92)	69/ 0.01
Bjelakovic et al. 2012[117]	Vitamin A supplements	All-cause mortality	18	RR: 1.04 (0.96, 1.13)	25/ 0.00	Aune et al. 2018[26]	β-carotene intake	All-cause mortality	8	RR: 0.82 (0.78, 0.87)	0/ 0.00
Bjelakovic et al. 2014a[118]	Vitamin D supplements	All-cause mortality	56	RR: 0.97 (0.94, 0.99)	0/ 0.00	Chowdhury et al. 2014b[119]	Vitamin D status	All-cause mortality	68	RR: 0.69 (0.65, 0.75)	83/ 0.05
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cardiovascular mortality	10	RR: 0.98 (0.90, 1.07)	0/ 0.00	Chowdhury et al. 2014b[119]	Vitamin D status	Cardiovascular mortality	29	RR: 0.70 (0.61, 0.80)	84/ 0.10
Bjelakovic et al. 2014a[118]	Vitamin D supplements	Cancer mortality	4	RR: 0.88 (0.78, 0.98)	0/ 0.00	Han et al. 2019[120]	Vitamin D status	Cancer mortality	16	RR: 0.81 (0.71, 0.93)	49/ 0.04
Bjelakovic et al. 2014b[29]	Vitamin D supplements	Cancer occurrence	18	RR: 1.00 (0.94, 1.06)	0/ 0.00	Han et al. 2019[120]	Vitamin D status	Cancer incidence	8	RR: 0.86 (0.73, 1.02)	71/ 0.03
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Breast cancer	7	RR: 0.97 (0.86, 1.09)	0/ 0.00	Hossain et al. 2019[30]	Vitamin D supplements	Breast cancer	2	RR: 0.94 (0.87, 1.02)	69/ 0.00
Bjelakovic et al. 2014b[29]	Vitamin D3 supplements	Lung cancer	5	RR: 0.86 (0.69, 1.07)	0/ 0.00	Zhang et al. 2015[31]	Vitamin D intake	Lung cancer	3	RR: 0.89 (0.74, 1.06)	0/ 0.00
De-Regil et al. 2015[123]	Folate supplements	Neural tube defect	5	RR: 0.31 (0.17, 0.58)	0/ 0.00	Blencowe et al. 2010[124]	Folate supplements	Neural tube defect	3	RR: 0.37 (0.23, 0.58)	30/ 0.06
De-Regil et al. 2015[123]	Folate supplements	Congenital cardiovascular anomalies	3	RR: 0.57 (0.24, 1.33)	0/ 0.00	Feng et al. 2015[125]	Folate supplements	Congenital heart defect	1	RR: 0.60 (0.38, 0.96)	NA
Hemmingsen et al. 2017[131]	Healthy diet (intake)	Type 2 diabetes	1	RR: 0.65 (0.52, 0.81)	NA	Schwingshackl et al. 2018[132]	Diet quality (intake)	Type 2 diabetes	10	RR: 0.82 (0.78, 0.85)	72/ 0.01
Hemmingsen et al. 2017[131]	Healthy diet (intake)	All-cause mortality	1	RR: 1.02 (0.21, 4.98)	NA	Schwingshackl et al. 2018[132]	Diet quality (intake)	All-cause mortality	13	RR: 0.78 (0.77, 0.80)	59/ 0.00
Hofmeyr et al. 2018[32]	Calcium supplements	Pre-eclampsia	13	RR: 0.45 (0.31, 0.65)	70/ 0.18	Newberry et al. 2014[33]	Calcium intake	Pre-eclampsia	2	RR: 0.97 (0.78, 1.21)	13/ 0.01
Hofmeyr et al. 2018[32]	Calcium supplements	High blood pressure	12	RR: 0.65 (0.53, 0.81)	74/ 0.06	Newberry et al. 2014[33]	Calcium intake	High blood pressure	2	RR: 1.12 (0.83, 1.50)	66/ 0.03
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Cardiovascular mortality	14	RR: 0.94 (0.85, 1.04)	0/ 0.00	Noto et al. 2013[133]	High-carbohydrate intake	Cardiovascular mortality	3	RR: 0.91 (0.81, 1.02)	0/ 0.00
Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	All-cause mortality	20	RR: 0.98 (0.93, 1.04)	0/ 0.00	Seidelmann et al. 2018[134]	High-carbohydrate intake	All-cause mortality	6	RR: 0.83 (0.76, 0.92)	40/ 0.00

Hooper et al. 2012[34]	Low-fat / modified fat (intake + supplements)	Combined cardiovascular events	18	RR: 0.86 (0.77, 0.96)	50/ 0.02	Zhu et al. 2019[22]	Low-fat intake	Cardiovascular disease	32	RR: 1.03 (0.99, 1.08)	55/ 0.01
Hooper et al. 2015b[35]	Low saturated fat intake	All-cause mortality	11	RR: 0.97 (0.90, 1.05)	3/ 0.00	de Souza et al. 2015[36]	Low saturated fat intake	All-cause mortality	5	RR: 1.01 (0.92, 1.10)	33/ 0.00
Hooper et al. 2015b[35]	Low saturated fat intake	Cardiovascular mortality	10	RR: 0.95 (0.80, 1.12)	30/ 0.02	de Souza et al. 2015[36]	Low saturated fat intake	Cardiovascular mortality	3	RR: 1.03 (0.89, 1.19)	18/ 0.00
Hooper et al. 2015b[35]	Low saturated fat intake	Combined cardiovascular events	11	RR: 0.83 (0.72, 0.96)	65/ 0.03	de Souza et al. 2015[36]	Low saturated fat intake	Coronary heart disease	12	RR: 0.94 (0.85, 1.05)	47/ 0.02
Hooper et al. 2018[37]	Omega-6 intake + supplements	Combined cardiovascular events	7	RR: 0.97 (0.81, 1.15)	45/ 0.02	Chowdhury et al. 2014a[18]	Omega-6 intake	Coronary heart disease	8	RR: 0.98 (0.90, 1.06)	54/ 0.01
Hooper et al. 2018[37]	Omega-6 intake + supplements	All-cause mortality	10	RR: 1.00 (0.88, 1.12)	0/ 0.00	Li et al. 2020[116]	Linoleic acid intake	All-cause mortality	11	RR: 0.87 (0.81, 0.94)	68/ 0.01
Hooper et al. 2018[37]	Omega-6 intake + supplements	Cardiovascular mortality	7	RR: 1.09 (0.76, 1.55)	61/ 0.1	Li et al. 2020[116]	Linoleic acid intake	Cardiovascular mortality	14	RR: 0.87 (0.82, 0.92)	6/ 0.00
Jin et al. 2012[137]	Total flavonoids intake	Colorectal adenoma	1	RR: 1.09 (0.93, 1.28)	NA	Jin et al. 2012[137]	Total flavonoids intake	Colorectal cancer	3	RR: 1.00 (0.80, 1.25)	66/ 0.02
Jin et al. 2012[137]	Isoflavonoes intake	Colorectal adenoma	1	RR: 0.98 (0.83, 1.16)	NA	Jin et al. 2012[137]	Isoflavonoes intake	Colorectal cancer	1	RR: 1.16 (0.96, 1.41)	NA
Jin et al. 2012[137]	Flavonols intake	Colorectal adenoma	1	RR: 0.94 (0.80, 1.10)	NA	Jin et al. 2012[137]	Flavonols intake	Colorectal cancer	1	RR: 0.95 (0.83, 1.08)	NA
Keats et al. 2019[38]	Micronutrients supplements	Preterm birth	18	RR: 0.95 (0.90, 1.01)	51/ 0.01	Wolf et al. 2017[39]	Multivitamin supplements	Preterm birth	4	RR: 0.84 (0.69, 1.03)	73/ 0.03
Keats et al. 2019[38]	Micronutrients supplements	Low birth weight	18	RR: 0.88 (0.85, 0.91)	0/ 0.00	Wolf et al. 2017[39]	Multivitamin supplements	Low birth weight	2	RR: 0.79 (0.45, 1.41)	89/ 0.15
Keats et al. 2019[38]	Micronutrients supplements	Small gestational age	17	RR: 0.92 (0.88, 0.97)	40/ 0.00	Wolf et al. 2017[39]	Multivitamin supplements	Small gestational age	3	RR: 0.77 (0.63, 0.93)	43/ 0.01
Kelly et al. 2017[138]	Whole grain intake	Body weight	5	MD: -0.41 (-1.04, 0.23)	0	Ye et al. 2012[139]	Whole grain intake	Body weight	3	MD: -0.30 (-0.37, -0.24)	99
Mathew et al. 2012[140]	β-carotene supplements	Cataract	2	RR: 0.99 (0.91, 1.08)	0/ 0.00	Jiang et al. 2019[141]	β-carotene intake	Cataract	7	RR: 0.90 (0.83, 0.99)	0/ 0.00
Mathew et al. 2012[140]	Vitamin E supplements	Cataract	3	RR: 0.97 (0.91, 1.04)	0/ 0.00	Jiang et al. 2019[141]	Vitamin E intake	Cataract	6	RR: 0.90 (0.80, 1.00)	31/ 0.01
Mathew et al. 2012[140]	Vitamin C supplements	Cataract	1	RR: 1.02 (0.91, 1.14)	NA	Jiang et al. 2019[141]	Vitamin C intake	Cataract	7	RR: 0.80 (0.72, 0.88)	78/ 0.07
Palacios et al. 2019[6]	Vitamin D supplements	Gestational diabetes	5	RR: 0.54 (0.34, 0.86)	0/ 0.00	Hu et al. 2018[5]	Vitamin D status	Gestational diabetes	21	OR: 0.76 (0.64, 0.90)	61/ 0.08
Palacios et al. 2019[6]	Vitamin D supplements	Preterm birth	4	RR: 1.25 (0.92, 1.69)	0/ 0.00	Tous et al. 2020[7]	Vitamin D status	Preterm birth	19	OR: 0.78 (0.65, 0.93)	63/ 0.08
Palacios et al. 2019[6]	Vitamin D supplements	Birth length	11	MD: -0.04 (-0.26, 0.19)	23	Tous et al. 2020[7]	Vitamin D status	Birth length	7	MD: -0.12 (-0.33, 0.09)	62
Palacios et al. 2019[6]	Vitamin D supplements	Birth weight	13	MD: 32.61 (-9.51, 74.72)	22	Tous et al. 2020[7]	Vitamin D status	Birth weight	14	MD: 84.20 (52.59, 115.81)	58

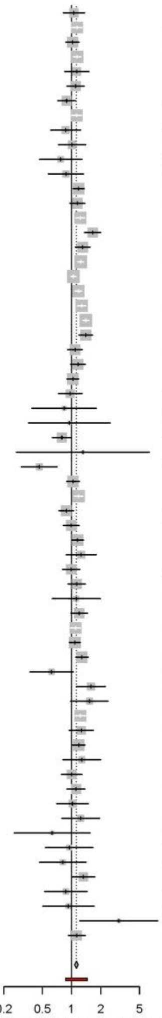
Palacios et al. 2019[6]	Vitamin D supplements	Head circumference at birth	10	MD: 0.08 (-0.09, 0.25)	40	Tous et al. 2020[7]	Vitamin D status	Head circumference at birth	7	MD: 0.47 (-0.16, 1.11)	98
Palacios et al. 2019[6]	Vitamin D supplements	Pre-eclampsia	5	RR: 0.96 (0.65, 1.42)	0/ 0.00	Yuan et al. 2019[8]	Vitamin D status	Pre-eclampsia	15	OR: 0.62 (0.50, 0.78)	60/ 0.10
Rees et al. 2013a[40]	Healthy diet (intake)	Systolic blood pressure	11	MD: -2.61 (-3.91, -1.31)	55	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Systolic blood pressure	1	MD: 0.80 (-0.84, 2.44)	NA
Rees et al. 2013a[40]	Healthy diet (intake)	Diastolic blood pressure	11	MD: -1.45 (-2.22, -0.68)	45	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Diastolic blood pressure	1	MD: 0.90 (-0.38, 2.18)	NA
Rees et al. 2013b[42]	Selenium supplements	All-cause mortality	2	RR: 0.97 (0.88, 1.08)	0/ 0.00	Jayedi et al. 2018[142]	Selenium intake	All-cause mortality	3	RR: 0.79 (0.73, 0.85)	0/ 0.00
Rees et al. 2013b[42]	Selenium supplements	Cardiovascular mortality	2	RR: 0.97 (0.79, 1.20)	44/ 0.03	Xiang et al. 2019[143]	Selenium status	Cardiovascular mortality	3	RR: 0.77 (0.63, 0.94)	6/ 0.00
Rees et al. 2013b[42]	Selenium supplements	Combined cardiovascular events	2	RR: 1.03 (0.95, 1.11)	0/ 0.00	Zhang et al. 2016a[43]	Selenium status	Cardiovascular disease	14	RR: 0.87 (0.76, 0.99)	4/ 0.00
Rees et al. 2019[3]	Mediterranean diet (intake)	High Density Lipoprotein	6	MD: 0.02 (-0.01, 0.04)	0	Kastorini et al. 2011[41]	Mediterranean diet (intake)	High Density Lipoprotein	1	MD: 0.01 (-0.046, 0.061)	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	Triglycerides	7	MD: -0.09 (-0.16, -0.01)	16	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Triglycerides	1	MD: -0.023 (-0.076, 0.031)	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	Systolic blood pressure	4	MD: -1.50 (-3.92, 0.92)	16	Kastorini et al. 2011[41]	Mediterranean diet (intake)	Systolic blood pressure	1	MD: 0.80 (-0.84, 2.44)	NA
Rees et al. 2019[3]	Mediterranean diet (intake)	Cardiovascular mortality	1	HR: 0.81 (0.50, 1.32)	NA	Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular mortality	7	RR: 0.73 (0.67, 0.81)	47/ 0.01
Rees et al. 2019[3]	Mediterranean diet (intake)	Combined cardiovascular events	1	HR: 0.70 (0.58, 0.85)	NA	Rosato et al. 2019[44]	Mediterranean diet (intake)	Cardiovascular disease	11	RR: 0.81 (0.74, 0.88)	80/ 0.01
Rees et al. 2019[3]	Mediterranean diet (intake)	All-cause mortality	1	HR: 1.00 (0.81, 1.24)	NA	Soltani et al. 2019[144]	Mediterranean diet (intake)	All-cause mortality	26	RR: 0.90 (0.89, 0.91)	80/ 0.00
Rutjes et al. 2018[10]	B-Vitamin supplements	Dementia / MCI	1	RR: 1.01 (0.69, 1.48)	NA	Doets et al. 2013[145]	Vitamin B12 intake	Dementia	3	RR: 0.99 (0.99, 1.00)	22/ 0.00
Rutjes et al. 2018[10]	Vitamin D3 supplements	Dementia	1	RR: 1.09 (0.70, 1.71)	NA	Goodwill et al. 2017[9]	Vitamin D status	Dementia / MCI	14	OR: 0.88 (0.81, 0.95)	56/ 0.01
Tieu et al. 2017[12]	Healthy diet (intake)	Preterm birth	3	RR: 0.51 (0.21, 1.25)	0/ 0.00	Chia et al. 2019[11]	Healthy diet (intake)	Preterm birth	5	OR: 0.81 (0.69, 0.94)	31/ 0.01
Tieu et al. 2017[12]	Healthy diet (intake)	Small gestational age	2	RR: 0.84 (0.49, 1.42)	0/ 0.00	Chia et al. 2019[11]	Healthy diet (intake)	Small gestational age	8	OR: 0.88 (0.71, 1.08)	36/ 0.03
Tieu et al. 2017[12]	Healthy diet (intake)	Birth weight	5	MD: 5.94 (-51.11, 62.99)	0	Chia et al. 2019[11]	Healthy diet (intake)	Birth weight	12	MD: -9.61 (-53.12, 33.91)	86
Tieu et al. 2017[12]	Healthy diet (intake)	Gestational diabetes	5	RR: 0.60 (0.35, 1.04)	54/ 0.18	Mijatovic-Vukas et al. 2018[13]	Mediterranean diet (intake)	Gestational diabetes	4	OR: 0.70 (0.62, 0.80)	6/ 0.00
Vinceti et al. 2018[14]	Selenium supplements	Cancer	5	RR: 0.99 (0.86, 1.14)	46/ 0.01	Vinceti et al. 2018[14]	Selenium status	Cancer	7	OR: 0.72 (0.55, 0.93)	46/ 0.06
Vinceti et al. 2018[14]	Selenium supplements	Cancer mortality	2	RR: 0.81 (0.49, 1.32)	79/ 0.10	Vinceti et al. 2018[14]	Selenium intake	Cancer mortality	1	OR: 0.93 (0.83, 1.04)	NA
Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	3	RR: 0.74 (0.41, 1.33)	48/ 0.13	Vinceti et al. 2018[14]	Selenium supplements	Colorectal cancer	1	OR: 0.80 (0.68, 0.94)	NA

Yao et al. 2017[45]	Fibre intake	Colorectal cancer	2	RR: 2.70 (1.07, 6.85)	0/ 0.00	Aune et al. 2011[150]	Fibre intake	Colorectal cancer	19	RR: 0.88 (0.82, 0.94)	4/ 0.00
Yao et al. 2017[45]	Fibre intake	Colorectal adenoma	5	RR: 1.04 (0.95, 1.13)	4/ 0.00	Ben et al. 2014[46]	Fibre intake	Colorectal adenoma	4	RR: 0.92 (0.76, 1.10)	33/ 0.01

HR: hazard ratio; MCI: mild cognitive impairment; MD: mean difference; N: no; NA: not applicable; NR: not reported; OR: odds ratio; RR: risk ratio; Y: yes; 95% CI: 95% confidence interval.

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	Ratio of Risk Ratios	RRR	95%−CI	Weight
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality		1.06	[0.82; 1.37]	1.4%
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular disease	Coronary heart disease		1.14	[1.01; 1.28]	2.4%
Abdelhamid 2018a+Pan 2012	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular disease	Cardiovascular disease		1.02	[0.87; 1.20]	2.1%
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality		1.14	[1.04; 1.25]	2.7%
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality		1.13	[0.85; 1.51]	1.3%
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Coronary heart disease	Coronary heart disease		1.10	[0.89; 1.35]	1.8%
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease		0.89	[0.72; 1.10]	1.8%
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality		1.13	[1.00; 1.27]	2.5%
Abdelhamid 2018b+Zhu 2019	Polyunsaturated fat	Intake	Polyunsaturated fat	Intake	Major cardiovascular events	Cardiovascular disease		0.87	[0.61; 1.24]	1.0%
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality		1.01	[0.73; 1.40]	1.1%
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality		0.77	[0.46; 1.28]	0.6%
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular disease	Cardiovascular disease		0.87	[0.57; 1.33]	0.8%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease		1.18	[1.03; 1.35]	2.3%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Cardiovascular mortality	Cardiovascular mortality		1.15	[0.96; 1.38]	1.9%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality		1.23	[1.10; 1.38]	2.5%
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture		1.65	[1.35; 2.00]	1.8%
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Any fracture	Any fracture		1.30	[1.09; 1.56]	2.0%
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality		1.24	[1.16; 1.33]	2.8%
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality		1.04	[0.98; 1.11]	2.8%
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality		1.17	[1.08; 1.27]	2.7%
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality		1.27	[1.15; 1.40]	2.6%
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality		1.41	[1.30; 1.52]	2.8%
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality		1.40	[1.19; 1.64]	2.1%
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality		1.09	[0.91; 1.30]	2.0%
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer		1.16	[0.97; 1.39]	2.0%
Bjelakovic 2014b+Hossain 2019	Vitamin D3	Supplements	Vitamin D	Supplements	Breast cancer	Breast cancer		1.03	[0.89; 1.19]	2.3%
Bjelakovic 2014b+Zhang 2015	Vitamin D3	Supplements	Vitamin D	Intake	Lung cancer	Lung cancer		0.97	[0.73; 1.28]	1.3%
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect		0.84	[0.39; 1.81]	0.3%
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect		0.95	[0.36; 2.51]	0.2%
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes		0.79	[0.63; 0.99]	1.6%
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality		1.31	[0.27; 6.37]	0.1%
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia		0.46	[0.30; 0.71]	0.7%
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality		1.03	[0.89; 1.20]	2.2%
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality		1.18	[1.06; 1.32]	2.5%
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Combined cardiovascular events	Coronary heart disease		0.88	[0.74; 1.06]	2.0%
Hooper 2018+Chowdhury 2014a	Omega−6	Intake + Supplements	Omega−6	Intake	Combined cardiovascular events	Coronary heart disease		0.99	[0.82; 1.20]	1.9%
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality		1.15	[1.00; 1.32]	2.3%
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality		1.25	[0.87; 1.80]	1.0%
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer		0.99	[0.80; 1.22]	1.8%
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Preterm birth	Preterm birth		1.13	[0.92; 1.39]	1.8%
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Low birth weight	Low birth weight		1.11	[0.63; 1.97]	0.5%
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Small gestational age	Small gestational age		1.19	[0.98; 1.46]	1.8%
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract		1.10	[0.97; 1.24]	2.4%
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract		1.08	[0.95; 1.23]	2.4%
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract		1.27	[1.10; 1.48]	2.2%
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes		0.62	[0.37; 1.04]	0.6%
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth		1.58	[1.12; 2.24]	1.0%
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia		1.52	[0.97; 2.38]	0.7%
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality		1.23	[1.08; 1.39]	2.4%
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality		1.26	[0.94; 1.68]	1.3%
Rees 2013b+Zhang 2016a	Selenium	Supplements	Selenium	Status	Combined cardiovascular events	Cardiovascular disease		1.18	[1.02; 1.38]	2.2%
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality		1.27	[0.81; 2.00]	0.7%
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Combined cardiovascular events	Cardiovascular disease		1.00	[0.78; 1.28]	1.5%
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality		1.11	[0.89; 1.38]	1.7%
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia		1.02	[0.70; 1.49]	0.9%
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI		1.24	[0.79; 1.95]	0.7%
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Preterm birth	Preterm birth		0.63	[0.25; 1.56]	0.2%
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age		0.94	[0.54; 1.66]	0.5%
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes		0.81	[0.46; 1.41]	0.5%
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer		1.32	[1.01; 1.73]	1.4%
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Intake	Cancer mortality	Cancer mortality		0.87	[0.52; 1.45]	0.6%
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Supplements	Colorectal cancer	Colorectal cancer		0.92	[0.50; 1.70]	0.4%
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer		3.07	[1.21; 7.78]	0.2%
Yao 2017+Ben 2014	Fibre	Intake	Fibre	Intake	Colorectal adenoma	Colorectal adenoma		1.13	[0.92; 1.39]	1.8%
Random effects model								**1.12**	**[1.07; 1.17]**	**100.0%**
Prediction interval									**[0.87; 1.45]**	

Heterogeneity: $I^2 = 60\%$, $\tau^2 = 0.0159$, $p < 0.01$

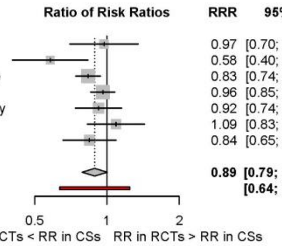


Supplementary Figure 3: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR <1.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%−CI	Weight
Abdelhamid 2018a+Schlesinger 2019	Omega−3	Intake + Supplements	Fish	Intake	Body weight	Weight gain	0.97	[0.70; 1.35]	9.1%
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	High blood pressure	High blood pressure	0.58	[0.40; 0.84]	7.9%
Hooper 2012+Zhu 2019	Low−fat/modified fat	Intake + Supplements	Low−fat	Intake	Combined cardiovascular events	Cardiovascular disease	0.83	[0.74; 0.94]	22.3%
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All−cause mortality	All−cause mortality	0.96	[0.85; 1.08]	22.3%
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Cardiovascular mortality	Cardiovascular mortality	0.92	[0.74; 1.15]	14.4%
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer	1.09	[0.83; 1.43]	11.5%
Jin 2012+Jin 2012	Isoflavonoes	Intake	Isoflavonoes	Intake	Colorectal adenoma	Colorectal cancer	0.84	[0.65; 1.09]	12.5%
Random effects model							**0.89**	**[0.79; 1.00]**	**100.0%**
Prediction interval								**[0.64; 1.24]**	

Heterogeneity: $I^2 = 44\%$, $\tau^2 = 0.0132$, $p = 0.10$

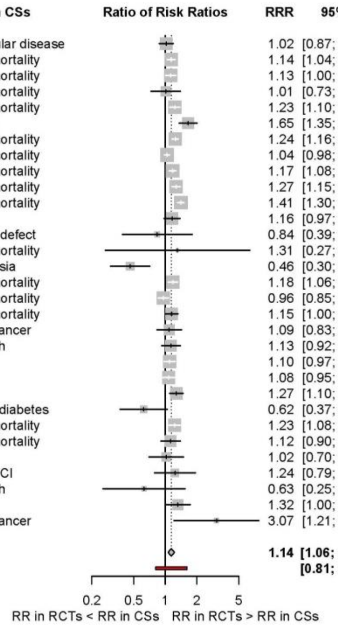


Supplementary Figure 4: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR ≥1.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%-CI	Weight
Abdelhamid 2018a+Pan 2012	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular disease	Cardiovascular disease	1.02	[0.87; 1.20]	3.9%
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]	4.5%
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]	4.3%
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality	1.01	[0.73; 1.40]	2.4%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]	4.3%
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]	3.5%
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.24	[1.16; 1.33]	4.6%
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]	4.7%
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]	4.6%
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.27	[1.15; 1.40]	4.4%
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality	1.41	[1.30; 1.52]	4.6%
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]	3.7%
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]	0.7%
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality	1.31	[0.27; 6.37]	0.2%
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia	0.46	[0.30; 0.71]	1.7%
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality	1.18	[1.06; 1.32]	4.3%
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All−cause mortality	All−cause mortality	0.96	[0.85; 1.08]	4.3%
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]	4.1%
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer	1.09	[0.83; 1.43]	2.8%
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamin	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]	3.4%
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]	4.2%
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]	4.2%
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]	4.0%
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.05]	1.3%
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]	4.2%
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality	1.12	[0.90; 1.39]	3.3%
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]	2.0%
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]	1.6%
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Preterm birth	Preterm birth	0.63	[0.25; 1.55]	0.5%
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.00; 1.73]	2.8%
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]	0.5%
Random effects model							**1.14**	**[1.06; 1.22]**	**100.0%**
Prediction interval								**[0.81; 1.61]**	

Heterogeneity: $I^2 = 72\%$, $\tau^2 = 0.0269$, $p < 0.01$

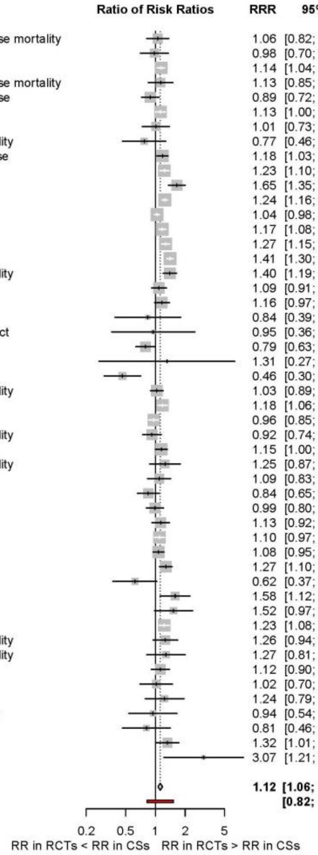


Supplementary Figure 5: Forest plot of comparisons: Sensitivity analysis (where only one outcome with the largest number of RCTs) for bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR).

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

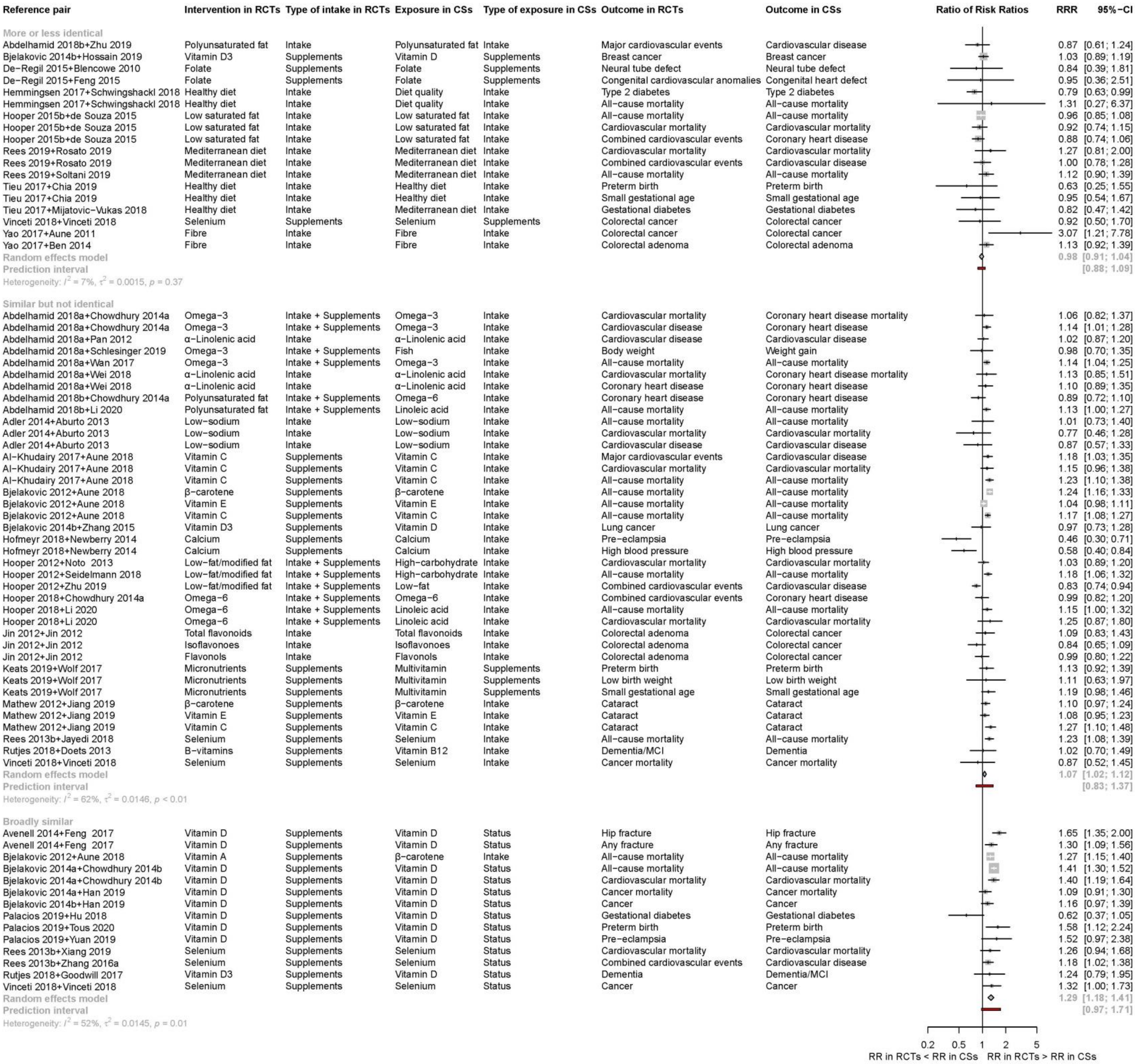
Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%−CI	Weight
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]	1.9%
Abdelhamid 2018a+Schlesinger 2019	Omega−3	Intake + Supplements	Fish	Intake	Body weight	Weight gain	0.98	[0.70; 1.35]	1.5%
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]	3.1%
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.13	[0.85; 1.51]	1.7%
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]	2.3%
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]	2.9%
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality	1.01	[0.73; 1.40]	1.5%
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality	0.77	[0.46; 1.28]	0.9%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]	2.8%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]	3.0%
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]	2.3%
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.24	[1.16; 1.33]	3.2%
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]	3.2%
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]	3.2%
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.27	[1.15; 1.40]	3.1%
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality	1.41	[1.30; 1.52]	3.2%
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality	1.40	[1.19; 1.64]	2.6%
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality	1.09	[0.91; 1.30]	2.5%
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]	2.5%
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]	0.4%
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect	0.95	[0.36; 2.51]	0.3%
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes	0.79	[0.63; 0.99]	2.1%
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality	1.31	[0.27; 6.37]	0.1%
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia	0.46	[0.30; 0.71]	1.1%
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality	1.03	[0.89; 1.20]	2.7%
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality	1.18	[1.06; 1.32]	3.0%
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All−cause mortality	All−cause mortality	0.96	[0.85; 1.08]	2.9%
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Cardiovascular mortality	Cardiovascular mortality	0.92	[0.74; 1.15]	2.2%
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]	2.8%
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]	1.4%
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer	1.09	[0.83; 1.43]	1.8%
Jin 2012+Jin 2012	Isoflavonoes	Intake	Isoflavonoes	Intake	Colorectal adenoma	Colorectal cancer	0.84	[0.65; 1.09]	1.9%
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer	0.99	[0.80; 1.22]	2.3%
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]	2.3%
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]	2.9%
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]	2.8%
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]	2.7%
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.04]	0.8%
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth	1.58	[1.12; 2.24]	1.4%
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia	1.52	[0.97; 2.38]	1.0%
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]	2.9%
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality	1.26	[0.94; 1.68]	1.7%
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality	1.27	[0.81; 2.00]	1.0%
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality	1.12	[0.90; 1.39]	2.2%
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]	1.3%
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]	1.0%
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age	0.94	[0.54; 1.66]	0.7%
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes	0.81	[0.46; 1.41]	0.7%
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.01; 1.73]	1.8%
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]	0.3%
Random effects model							**1.12**	**[1.06; 1.18]**	**100.0%**
Prediction interval								**[0.82; 1.52]**	

Heterogeneity: $I^2 = 68\%$, $\tau^2 = 0.0227$, $p < 0.01$



Supplementary Figure 6: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) excluding highly correlated outcomes.

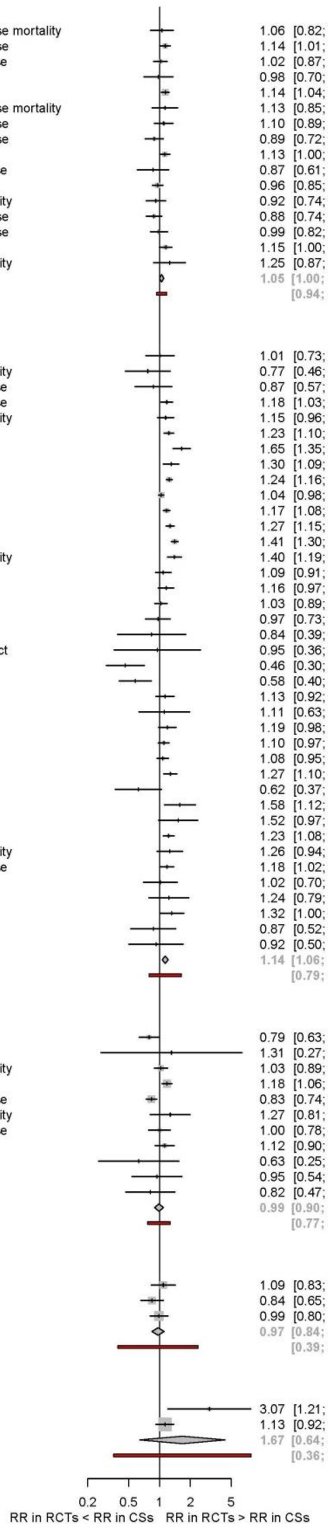
CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



Supplementary Figure 7: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) stratified by intervention/exposure similarity degree.

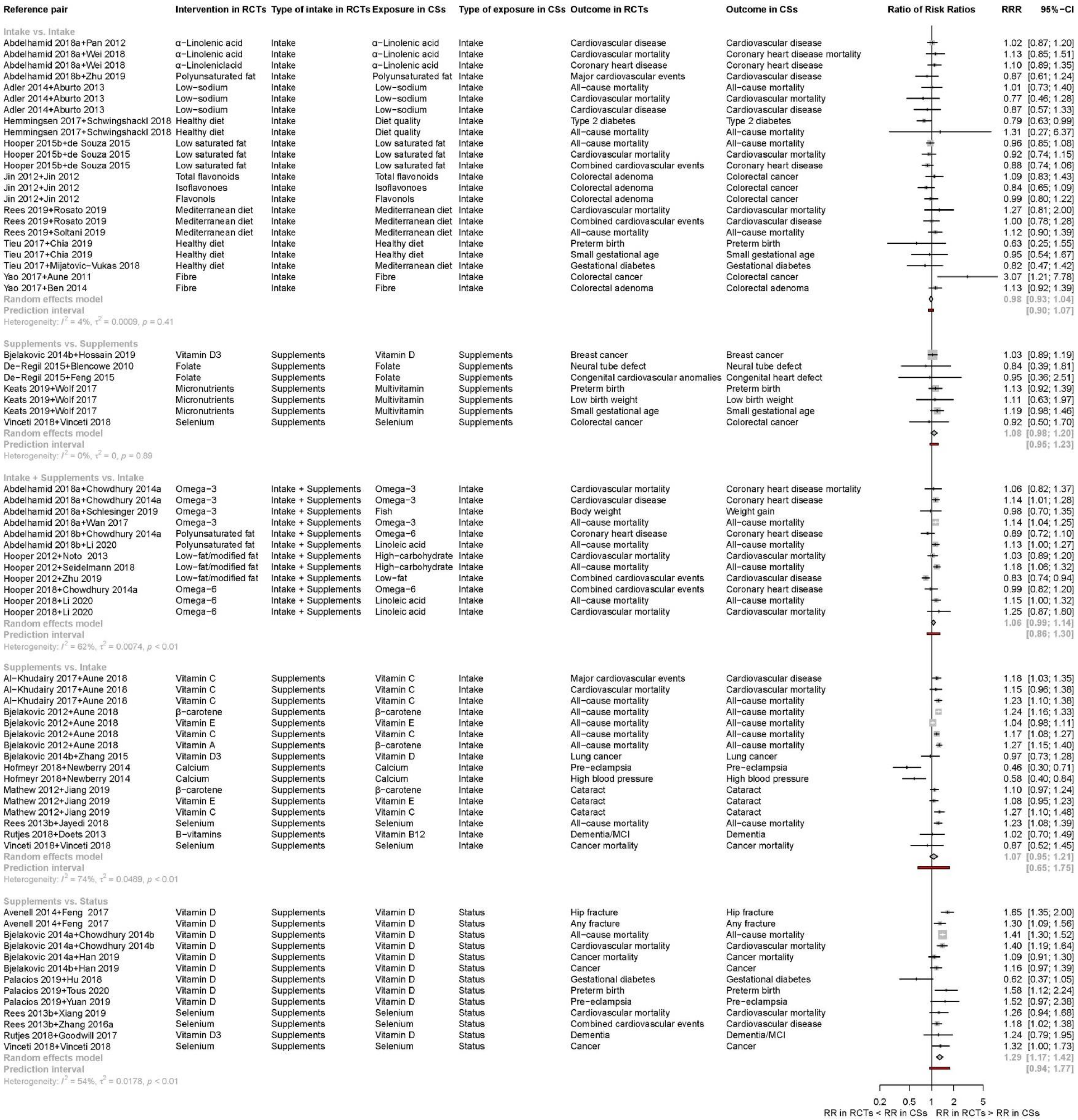
CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	Ratio of Risk Ratios	RRR	95%−CI
Fatty acids									
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality		1.06	[0.82; 1.37]
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular disease	Coronary heart disease		1.14	[1.01; 1.28]
Abdelhamid 2018a+Pan 2012	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular disease	Cardiovascular disease		1.02	[0.87; 1.20]
Abdelhamid 2018a+Schlesinger 2019	Omega−3	Intake + Supplements	Fish	Intake	Body weight	Weight gain		0.98	[0.70; 1.35]
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality		1.14	[1.04; 1.25]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality		1.13	[0.85; 1.51]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Coronary heart disease	Coronary heart disease		1.10	[0.89; 1.35]
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease		0.89	[0.72; 1.10]
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality		1.13	[1.00; 1.27]
Abdelhamid 2018b+Zhu 2019	Polyunsaturated fat	Intake	Polyunsaturated fat	Intake	Major cardiovascular events	Cardiovascular disease		0.87	[0.61; 1.24]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All−cause mortality	All−cause mortality		0.96	[0.85; 1.08]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Cardiovascular mortality	Cardiovascular mortality		0.92	[0.74; 1.15]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Combined cardiovascular events	Coronary heart disease		0.88	[0.74; 1.06]
Hooper 2018+Chowdhury 2014a	Omega−6	Intake + Supplements	Omega−6	Intake	Combined cardiovascular events	Coronary heart disease		0.99	[0.82; 1.20]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality		1.15	[1.00; 1.32]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality		1.25	[0.87; 1.80]
Random effects model								1.05	[1.00; 1.10]
Prediction interval									[0.94; 1.17]
Heterogeneity: $I^2 = 26\%$, $\tau^2 = 0.0021$, $p = 0.16$									
Micronutrients									
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality		1.01	[0.73; 1.40]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality		0.77	[0.46; 1.28]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular disease	Cardiovascular disease		0.87	[0.57; 1.33]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease		1.18	[1.03; 1.35]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Cardiovascular mortality	Cardiovascular mortality		1.15	[0.96; 1.38]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality		1.23	[1.10; 1.38]
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture		1.65	[1.35; 2.00]
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Any fracture	Any fracture		1.30	[1.09; 1.56]
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality		1.24	[1.16; 1.33]
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality		1.04	[0.98; 1.11]
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality		1.17	[1.08; 1.27]
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality		1.27	[1.15; 1.40]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality		1.41	[1.30; 1.52]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality		1.40	[1.19; 1.64]
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality		1.09	[0.91; 1.30]
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer		1.16	[0.97; 1.39]
Bjelakovic 2014b+Hossain 2019	Vitamin D3	Supplements	Vitamin D	Supplements	Breast cancer	Breast cancer		1.03	[0.89; 1.19]
Bjelakovic 2014b+Zhang 2015	Vitamin D3	Supplements	Vitamin D	Intake	Lung cancer	Lung cancer		0.97	[0.73; 1.28]
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect		0.84	[0.39; 1.81]
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect		0.95	[0.36; 2.51]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia		0.46	[0.30; 0.71]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	High blood pressure	High blood pressure		0.58	[0.40; 0.84]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamin	Supplements	Preterm birth	Preterm birth		1.13	[0.92; 1.39]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamin	Supplements	Low birth weight	Low birth weight		1.11	[0.63; 1.97]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamin	Supplements	Small gestational age	Small gestational age		1.19	[0.98; 1.46]
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract		1.10	[0.97; 1.24]
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract		1.08	[0.95; 1.23]
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract		1.27	[1.10; 1.48]
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes		0.62	[0.37; 1.05]
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth		1.58	[1.12; 2.24]
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia		1.52	[0.97; 2.38]
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality		1.23	[1.08; 1.39]
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality		1.26	[0.94; 1.68]
Rees 2013b+Zhang 2016a	Selenium	Supplements	Selenium	Status	Combined cardiovascular events	Cardiovascular disease		1.18	[1.02; 1.38]
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia		1.02	[0.70; 1.49]
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI		1.24	[0.79; 1.95]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer		1.32	[1.00; 1.73]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Intake	Cancer mortality	Cancer mortality		0.87	[0.52; 1.45]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Supplements	Colorectal cancer	Colorectal cancer		0.92	[0.50; 1.70]
Random effects model								1.14	[1.06; 1.22]
Prediction interval									[0.79; 1.63]
Heterogeneity: $I^2 = 69\%$, $\tau^2 = 0.0305$, $p < 0.01$									
Dietary approach									
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes		0.79	[0.63; 0.99]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality		1.31	[0.27; 6.37]
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality		1.03	[0.89; 1.20]
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality		1.18	[1.06; 1.32]
Hooper 2012+Zhu 2019	Low−fat/modified fat	Intake + Supplements	Low−fat	Intake	Combined cardiovascular events	Cardiovascular disease		0.83	[0.74; 0.94]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality		1.27	[0.81; 2.00]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Combined cardiovascular events	Cardiovascular disease		1.00	[0.78; 1.28]
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality		1.12	[0.90; 1.39]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Preterm birth	Preterm birth		0.63	[0.25; 1.55]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age		0.95	[0.54; 1.67]
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes		0.82	[0.47; 1.42]
Random effects model								0.99	[0.90; 1.09]
Prediction interval									[0.77; 1.27]
Heterogeneity: $I^2 = 61\%$, $\tau^2 = 0.0098$, $p < 0.01$									
Phytonutrients									
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer		1.09	[0.83; 1.43]
Jin 2012+Jin 2012	Isoflavonoes	Intake	Isoflavonoes	Intake	Colorectal adenoma	Colorectal cancer		0.84	[0.65; 1.09]
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer		0.99	[0.80; 1.22]
Random effects model								0.97	[0.84; 1.11]
Prediction interval									[0.39; 2.38]
Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.40$									
Other									
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer		3.07	[1.21; 7.78]
Yao 2017+Ben 2014	Fibre	Intake	Fibre	Intake	Colorectal adenoma	Colorectal adenoma		1.13	[0.92; 1.39]
Random effects model								1.67	[0.64; 4.35]
Prediction interval									[0.36; 7.81]
Heterogeneity: $I^2 = 76\%$, $\tau^2 = 0.3803$, $p = 0.04$									



Supplementary Figure 8: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) stratified by type of dietary intervention/exposure.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

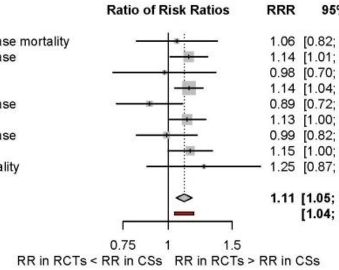


Supplementary Figure 9: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) stratified by type of intake/exposure.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

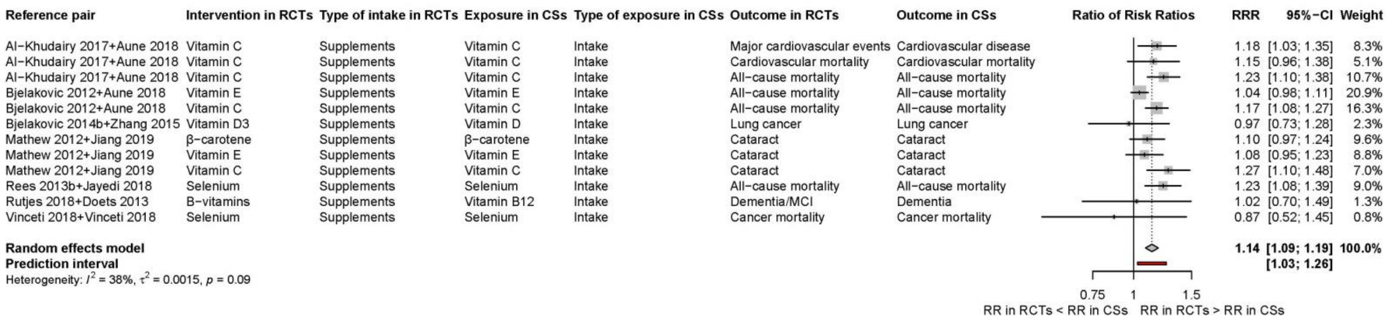
Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%−CI	Weight
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]	3.8%
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular disease	Coronary heart disease	1.14	[1.01; 1.28]	17.6%
Abdelhamid 2018a+Schlesinger 2019	Omega−3	Intake + Supplements	Fish	Intake	Body weight	Weight gain	0.98	[0.70; 1.35]	2.4%
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]	30.8%
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]	5.8%
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]	18.2%
Hooper 2018+Chowdhury 2014a	Omega−6	Intake + Supplements	Omega−6	Intake	Combined cardiovascular events	Coronary heart disease	0.99	[0.82; 1.20]	6.8%
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]	12.7%
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]	2.0%
Random effects model							**1.11**	**[1.05; 1.16]**	**100.0%**
Prediction interval								**[1.04; 1.18]**	

Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.47$



Supplementary Figure 10: Forest plot of comparisons: Sensitivity analysis of n-3, n-6 and PUFA for bodies of evidence from randomized controlled trials (dietary intake + dietary supplements) vs. cohort studies (dietary intake) for dichotomous outcomes as pooled ratio of risk ratios (RRR).

CS: cohort studies; PUFA: polyunsaturated fat; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



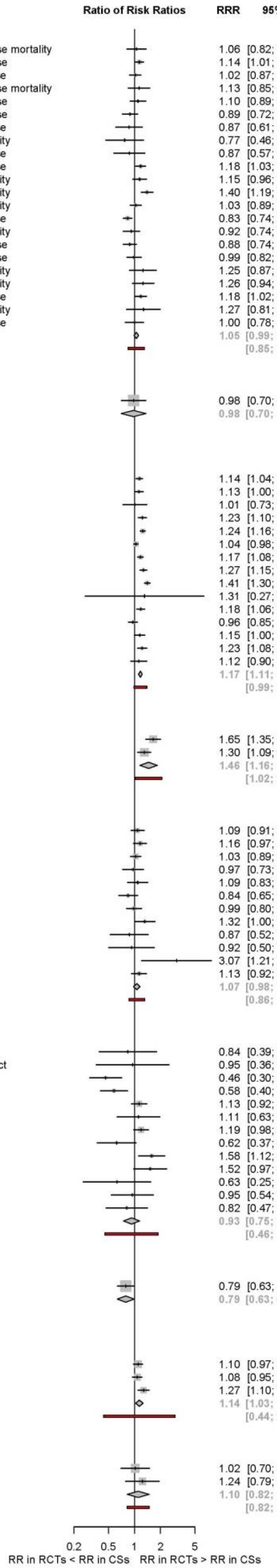
Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%−CI	Weight
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]	8.3%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Cardiovascular mortality	Cardiovascular mortality	1.15	[0.96; 1.38]	5.1%
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]	10.7%
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]	20.9%
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]	16.3%
Bjelakovic 2014b+Zhang 2015	Vitamin D3	Supplements	Vitamin D	Intake	Lung cancer	Lung cancer	0.97	[0.73; 1.28]	2.3%
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]	9.6%
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]	8.8%
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]	7.0%
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]	9.0%
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]	1.3%
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Intake	Cancer mortality	Cancer mortality	0.87	[0.52; 1.45]	0.8%
Random effects model							**1.14**	**[1.09; 1.19]**	**100.0%**
Prediction interval								**[1.03; 1.26]**	

Heterogeneity: $I^2 = 38\%$, $\tau^2 = 0.0015$, $p = 0.09$

Supplementary Figure 11: Forest plot of comparisons: Sensitivity analysis (excluding pregnancy outcomes, β-carotene, and vitamin A comparisons) for bodies of evidence from randomized controlled trials (dietary supplements) vs. cohort studies (dietary intake) for dichotomous outcomes as pooled ratio of risk ratios (RRR).

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%-CI
Cardiovascular disease								
Abdelhamid 2018a+Chowdhury 2014a	Omega-3	Intake + Supplements	Omega-3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]
Abdelhamid 2018a+Chowdhury 2014a	Omega-3	Intake + Supplements	Omega-3	Intake	Cardiovascular disease	Coronary heart disease	1.14	[1.01; 1.28]
Abdelhamid 2018a+Pan 2012	α-Linolenic acid	Intake	α-Linolenic acid	Intake	Cardiovascular disease	Cardiovascular disease	1.02	[0.87; 1.20]
Abdelhamid 2018a+Wei 2018	α-Linolenic acid	Intake	α-Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.13	[0.85; 1.51]
Abdelhamid 2018a+Wei 2018	α-Linolenic acid	Intake	α-Linolenic acid	Intake	Coronary heart disease	Coronary heart disease	1.10	[0.89; 1.35]
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega-6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]
Abdelhamid 2018b+Zhu 2019	Polyunsaturated fat	Intake	Polyunsaturated fat	Intake	Major cardiovascular events	Cardiovascular disease	0.87	[0.61; 1.24]
Adler 2014+Aburto 2013	Low-sodium	Intake	Low-sodium	Intake	Cardiovascular mortality	Cardiovascular mortality	0.77	[0.46; 1.28]
Adler 2014+Aburto 2013	Low-sodium	Intake	Low-sodium	Intake	Cardiovascular disease	Cardiovascular disease	0.87	[0.57; 1.33]
Al-Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]
Al-Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Cardiovascular mortality	Cardiovascular mortality	1.15	[0.96; 1.38]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality	1.40	[1.19; 1.64]
Hooper 2012+Noto 2013	Low-fat/modified fat	Intake + Supplements	High-carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality	1.03	[0.89; 1.20]
Hooper 2012+Zhu 2019	Low-fat/modified fat	Intake + Supplements	Low-fat	Intake	Combined cardiovascular events	Cardiovascular disease	0.83	[0.74; 0.94]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Cardiovascular mortality	Cardiovascular mortality	0.92	[0.74; 1.15]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Combined cardiovascular events	Coronary heart disease	0.88	[0.74; 1.06]
Hooper 2018+Chowdhury 2014a	Omega-6	Intake + Supplements	Omega-6	Intake	Combined cardiovascular events	Coronary heart disease	0.99	[0.82; 1.20]
Hooper 2018+Li 2020	Omega-6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality	1.26	[0.94; 1.68]
Rees 2013b+Zhang 2016a	Selenium	Supplements	Selenium	Status	Combined cardiovascular events	Cardiovascular disease	1.18	[1.02; 1.38]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality	1.27	[0.81; 2.00]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Combined cardiovascular events	Cardiovascular disease	1.00	[0.78; 1.28]
Random effects model							1.05	[0.99; 1.12]
Prediction interval								[0.85; 1.31]
Heterogeneity: $I^2 = 57\%$, $\tau^2 = 0.0098$, $p < 0.01$								
Intermediate disease markers								
Abdelhamid 2018a+Schlesinger 2019	Omega-3	Intake + Supplements	Fish	Intake	Body weight	Weight gain	0.98	[0.70; 1.35]
Random effects model							0.98	[0.70; 1.35]
Prediction interval								
Heterogeneity: not applicable								
Overall mortality								
Abdelhamid 2018a+Wan 2017	Omega-3	Intake + Supplements	Omega-3	Intake	All-cause mortality	All-cause mortality	1.14	[1.04; 1.25]
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All-cause mortality	All-cause mortality	1.13	[1.00; 1.27]
Adler 2014+Aburto 2013	Low-sodium	Intake	Low-sodium	Intake	All-cause mortality	All-cause mortality	1.01	[0.73; 1.40]
Al-Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All-cause mortality	All-cause mortality	1.23	[1.10; 1.38]
Bjelakovic 2012+Aune 2018	β-carotene	Supplements	β-carotene	Intake	All-cause mortality	All-cause mortality	1.24	[1.16; 1.33]
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All-cause mortality	All-cause mortality	1.04	[0.98; 1.11]
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All-cause mortality	All-cause mortality	1.17	[1.08; 1.27]
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β-carotene	Intake	All-cause mortality	All-cause mortality	1.27	[1.15; 1.40]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All-cause mortality	All-cause mortality	1.41	[1.30; 1.52]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All-cause mortality	All-cause mortality	1.31	[0.27; 6.37]
Hooper 2012+Seidelmann 2018	Low-fat/modified fat	Intake + Supplements	High-carbohydrate	Intake	All-cause mortality	All-cause mortality	1.18	[1.06; 1.32]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All-cause mortality	All-cause mortality	0.96	[0.85; 1.08]
Hooper 2018+Li 2020	Omega-6	Intake + Supplements	Linoleic acid	Intake	All-cause mortality	All-cause mortality	1.15	[1.00; 1.32]
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All-cause mortality	All-cause mortality	1.23	[1.08; 1.39]
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All-cause mortality	All-cause mortality	1.12	[0.90; 1.39]
Random effects model							1.17	[1.11; 1.23]
Prediction interval								[0.99; 1.39]
Heterogeneity: $I^2 = 75\%$, $\tau^2 = 0.0056$, $p < 0.01$								
Bone health								
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Any fracture	Any fracture	1.30	[1.09; 1.56]
Random effects model							1.46	[1.16; 1.84]
Prediction interval								[1.02; 2.08]
Heterogeneity: $I^2 = 67\%$, $\tau^2 = 0.0188$, $p = 0.08$								
Cancer								
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality	1.09	[0.91; 1.30]
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]
Bjelakovic 2014b+Hossain 2019	Vitamin D3	Supplements	Vitamin D	Supplements	Breast cancer	Breast cancer	1.03	[0.89; 1.19]
Bjelakovic 2014b+Zhang 2015	Vitamin D3	Supplements	Vitamin D	Intake	Lung cancer	Lung cancer	0.97	[0.73; 1.28]
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer	1.09	[0.83; 1.43]
Jin 2012+Jin 2012	Isoflavonoes	Intake	Isoflavonoes	Intake	Colorectal adenoma	Colorectal cancer	0.84	[0.65; 1.09]
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer	0.99	[0.80; 1.22]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.00; 1.73]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Intake	Cancer mortality	Cancer mortality	0.87	[0.52; 1.45]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Supplements	Colorectal cancer	Colorectal cancer	0.92	[0.50; 1.70]
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]
Yao 2017+Ben 2014	Fibre	Intake	Fibre	Intake	Colorectal adenoma	Colorectal adenoma	1.13	[0.92; 1.39]
Random effects model							1.07	[0.98; 1.16]
Prediction interval								[0.86; 1.31]
Heterogeneity: $I^2 = 20\%$, $\tau^2 = 0.0069$, $p = 0.25$								
Pregnancy outcomes								
De-Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]
De-Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect	0.95	[0.36; 2.51]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre-eclampsia	Pre-eclampsia	0.46	[0.30; 0.71]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	High blood pressure	High blood pressure	0.58	[0.40; 0.84]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamin	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamin	Supplements	Low birth weight	Low birth weight	1.11	[0.63; 1.97]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamin	Supplements	Small gestational age	Small gestational age	1.19	[0.98; 1.46]
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.05]
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth	1.58	[1.12; 2.24]
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre-eclampsia	Pre-eclampsia	1.52	[0.97; 2.38]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Preterm birth	Preterm birth	0.63	[0.25; 1.55]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age	0.95	[0.54; 1.67]
Tieu 2017+Mijatovic-Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes	0.82	[0.47; 1.42]
Random effects model							0.93	[0.75; 1.15]
Prediction interval								[0.46; 1.88]
Heterogeneity: $I^2 = 70\%$, $\tau^2 = 0.0919$, $p < 0.01$								
Diabetes								
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes	0.79	[0.63; 0.99]
Random effects model							0.79	[0.63; 0.99]
Prediction interval								
Heterogeneity: not applicable								
Eye disease								
Mathew 2012+Jiang 2019	β-carotene	Supplements	β-carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]
Random effects model							1.14	[1.03; 1.26]
Prediction interval								[0.44; 2.96]
Heterogeneity: $I^2 = 36\%$, $\tau^2 = 0.0031$, $p = 0.21$								
Neurodegenerative disease								
Rutjes 2018+Doets 2013	B-vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]
Random effects model							1.10	[0.82; 1.48]
Prediction interval								[0.82; 1.48]
Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.53$								



Supplementary Figure 12: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) stratified by type of outcome.

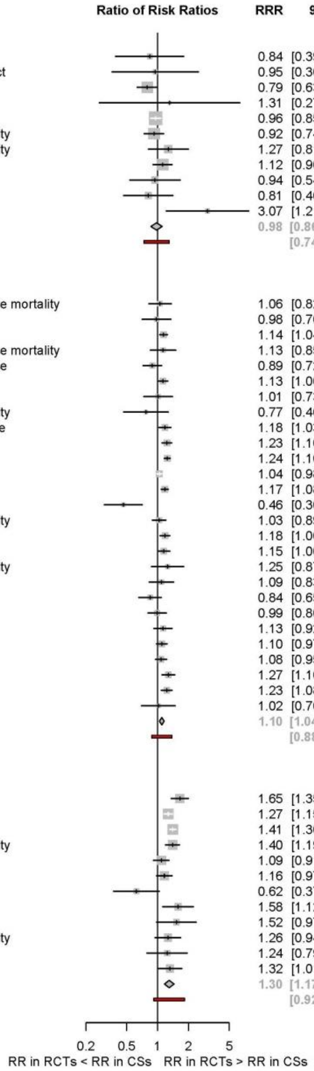
Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%−CI
Similar but not identical								
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.13	[0.85; 1.51]
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality	1.01	[0.73; 1.40]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality	0.77	[0.46; 1.28]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.24	[1.16; 1.33]
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect	0.95	[0.36; 2.51]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes	0.79	[0.63; 0.99]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality	1.31	[0.27; 6.37]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia	0.46	[0.30; 0.71]
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality	1.03	[0.89; 1.20]
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality	1.18	[1.06; 1.32]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All−cause mortality	All−cause mortality	0.96	[0.85; 1.08]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Cardiovascular mortality	Cardiovascular mortality	0.92	[0.74; 1.15]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality	1.27	[0.81; 2.00]
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality	1.12	[0.90; 1.39]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age	0.94	[0.54; 1.66]
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes	0.81	[0.46; 1.41]
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]
Random effects model							1.09	[1.02; 1.15]
Prediction interval								[0.83; 1.43]
Heterogeneity: $I^2 = 59\%$, $\tau^2 = 0.0171$, $p < 0.01$								
Broadly similar								
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]
Abdelhamid 2018a+Schlesinger 2019	Omega−3	Intake + Supplements	Fish	Intake	Body weight	Weight gain	0.98	[0.70; 1.35]
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.27	[1.15; 1.40]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality	1.41	[1.30; 1.52]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality	1.40	[1.19; 1.64]
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality	1.09	[0.91; 1.30]
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer	1.09	[0.83; 1.43]
Jin 2012+Jin 2012	Isoflavonoes	Intake	Isoflavonoes	Intake	Colorectal adenoma	Colorectal cancer	0.84	[0.65; 1.09]
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer	0.99	[0.80; 1.22]
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.04]
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth	1.58	[1.12; 2.24]
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia	1.52	[0.97; 2.38]
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality	1.26	[0.94; 1.68]
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.01; 1.73]
Random effects model							1.19	[1.08; 1.31]
Prediction interval								[0.83; 1.71]
Heterogeneity: $I^2 = 67\%$, $\tau^2 = 0.0270$, $p < 0.01$								

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Supplementary Figure 13: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) excluding highly correlated outcomes stratified by PI/ECO similarity degree.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

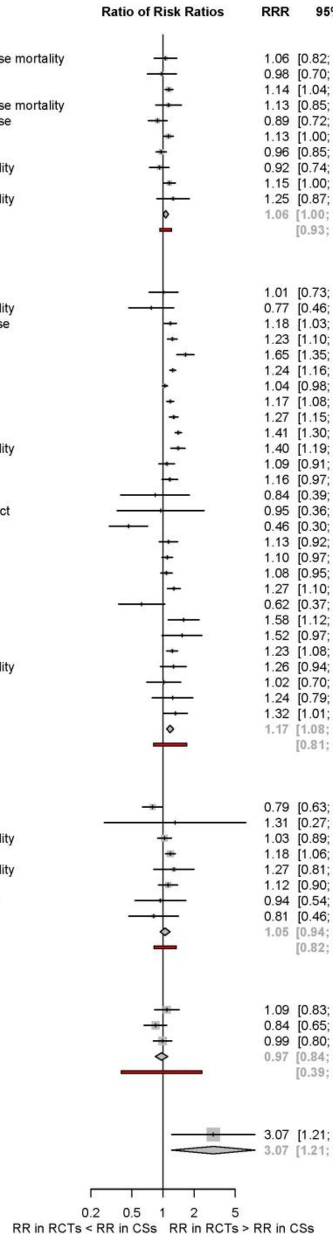
Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%-CI
More or less identical								
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect	0.95	[0.36; 2.51]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes	0.79	[0.63; 0.99]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality	1.31	[0.27; 6.37]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All−cause mortality	All−cause mortality	0.96	[0.85; 1.08]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Cardiovascular mortality	Cardiovascular mortality	0.92	[0.74; 1.15]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality	1.27	[0.81; 2.00]
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality	1.12	[0.90; 1.39]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age	0.94	[0.54; 1.66]
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes	0.81	[0.46; 1.41]
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]
Random effects model							**0.98**	**[0.86; 1.11]**
Prediction interval								**[0.74; 1.30]**
Heterogeneity: $I^2 = 23\%$, $\tau^2 = 0.0116$, $p = 0.22$								
Similar but not identical								
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]
Abdelhamid 2018a+Schlesinger 2019	Omega−3	Intake + Supplements	Fish	Intake	Body weight	Weight gain	0.98	[0.70; 1.35]
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.13	[0.85; 1.51]
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality	1.01	[0.73; 1.40]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality	0.77	[0.46; 1.28]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.24	[1.16; 1.33]
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia	0.46	[0.30; 0.71]
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality	1.03	[0.89; 1.20]
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality	1.18	[1.06; 1.32]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer	1.09	[0.83; 1.43]
Jin 2012+Jin 2012	Isoflavonoes	Intake	Isoflavonoes	Intake	Colorectal adenoma	Colorectal cancer	0.84	[0.65; 1.09]
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer	0.99	[0.80; 1.22]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]
Random effects model							**1.10**	**[1.04; 1.16]**
Prediction interval								**[0.88; 1.38]**
Heterogeneity: $I^2 = 54\%$, $\tau^2 = 0.0115$, $p < 0.01$								
Broadly similar								
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.27	[1.15; 1.40]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality	1.41	[1.30; 1.52]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality	1.40	[1.19; 1.64]
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality	1.09	[0.91; 1.30]
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.04]
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth	1.58	[1.12; 2.24]
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia	1.52	[0.97; 2.38]
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality	1.26	[0.94; 1.68]
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.01; 1.73]
Random effects model							**1.30**	**[1.17; 1.45]**
Prediction interval								**[0.92; 1.83]**
Heterogeneity: $I^2 = 56\%$, $\tau^2 = 0.0210$, $p < 0.01$								



Supplementary Figure 14: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) excluding highly correlated outcomes stratified by intervention/exposure similarity degree.

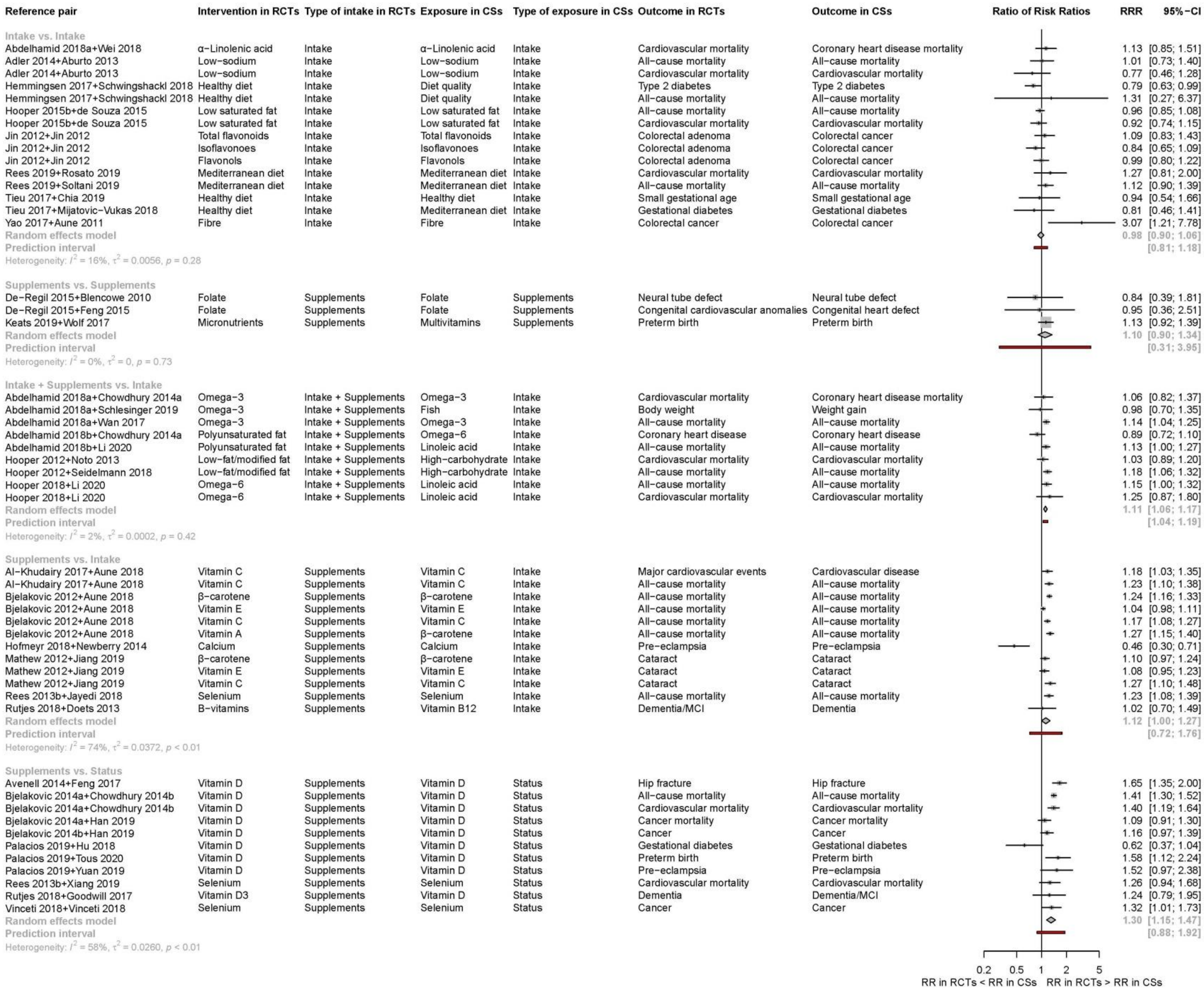
CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%-CI
Fatty acids								
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]
Abdelhamid 2018a+Schlesinger 2019	Omega−3	Intake + Supplements	Fish	Intake	Body weight	Weight gain	0.98	[0.70; 1.35]
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.13	[0.85; 1.51]
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	All−cause mortality	All−cause mortality	0.96	[0.85; 1.08]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Cardiovascular mortality	Cardiovascular mortality	0.92	[0.74; 1.15]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]
Random effects model							1.06	[1.00; 1.13]
Prediction interval								[0.93; 1.21]
Heterogeneity: I^2 = 29%, τ^2 = 0.0023, p = 0.18								
Micronutrients								
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality	1.01	[0.73; 1.40]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality	0.77	[0.46; 1.28]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.24	[1.16; 1.33]
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.27	[1.15; 1.40]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality	1.41	[1.30; 1.52]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality	1.40	[1.19; 1.64]
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality	1.09	[0.91; 1.30]
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect	0.95	[0.36; 2.51]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia	0.46	[0.30; 0.71]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.04]
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth	1.58	[1.12; 2.24]
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia	1.52	[0.97; 2.38]
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality	1.26	[0.94; 1.68]
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.01; 1.73]
Random effects model							1.17	[1.08; 1.27]
Prediction interval								[0.81; 1.70]
Heterogeneity: I^2 = 72%, τ^2 = 0.0310, p < 0.01								
Dietary approach								
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes	0.79	[0.63; 0.99]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality	1.31	[0.27; 6.37]
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality	1.03	[0.89; 1.20]
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality	1.18	[1.06; 1.32]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality	1.27	[0.81; 2.00]
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality	1.12	[0.90; 1.39]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age	0.94	[0.54; 1.66]
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes	0.81	[0.46; 1.41]
Random effects model							1.05	[0.94; 1.17]
Prediction interval								[0.82; 1.34]
Heterogeneity: I^2 = 41%, τ^2 = 0.0073, p = 0.10								
Phytonutrients								
Jin 2012+Jin 2012	Total flavonoids	Intake	Total flavonoids	Intake	Colorectal adenoma	Colorectal cancer	1.09	[0.83; 1.43]
Jin 2012+Jin 2012	Isoflavonoes	Intake	Isoflavonoes	Intake	Colorectal adenoma	Colorectal cancer	0.84	[0.65; 1.09]
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer	0.99	[0.80; 1.22]
Random effects model							0.97	[0.84; 1.11]
Prediction interval								[0.39; 2.38]
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.40								
Other								
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]
Random effects model							3.07	[1.21; 7.78]
Prediction interval								
Heterogeneity: not applicable								



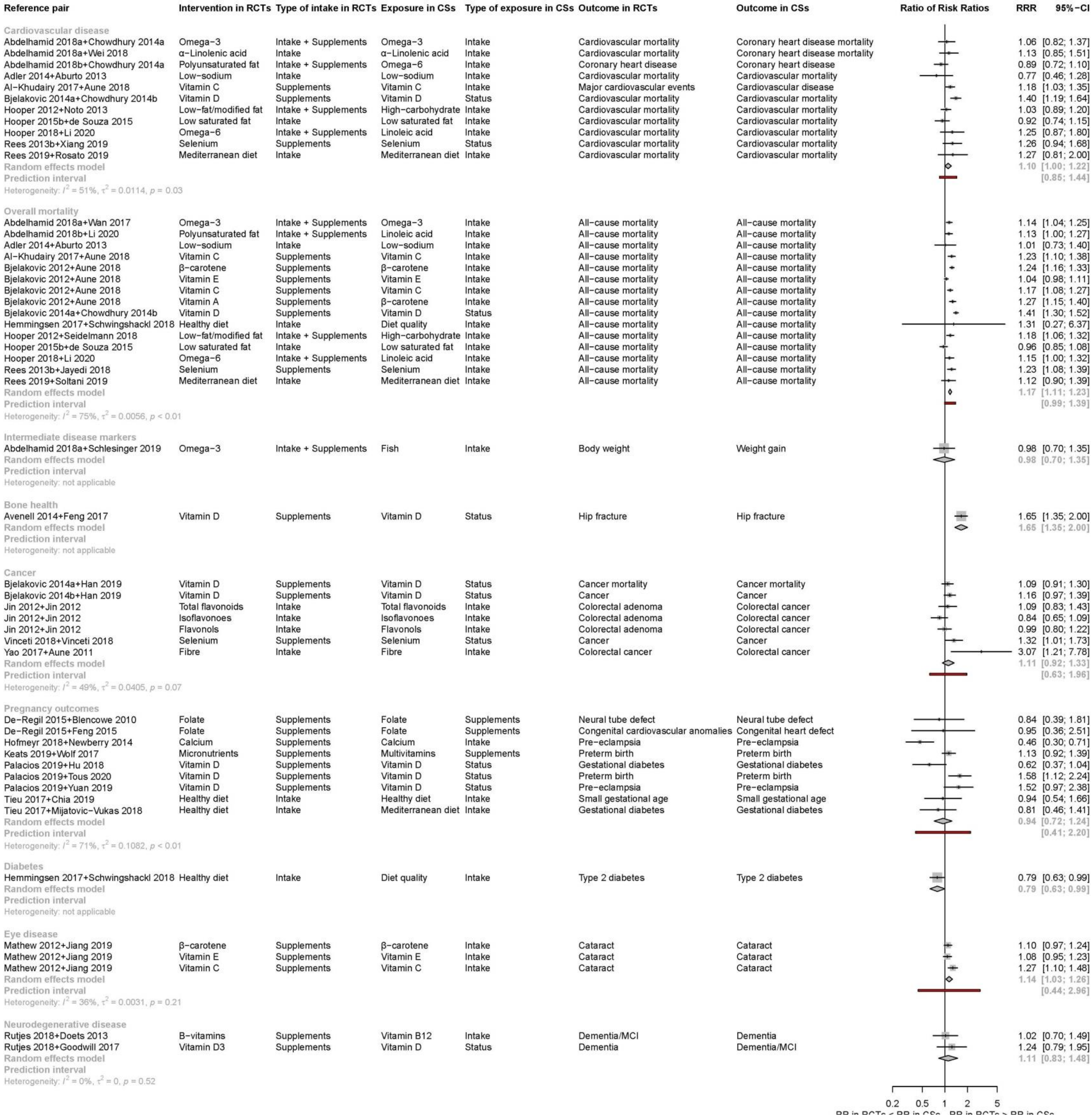
Supplementary Figure 15: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) excluding highly correlated outcomes stratified by type of dietary intervention/exposure.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



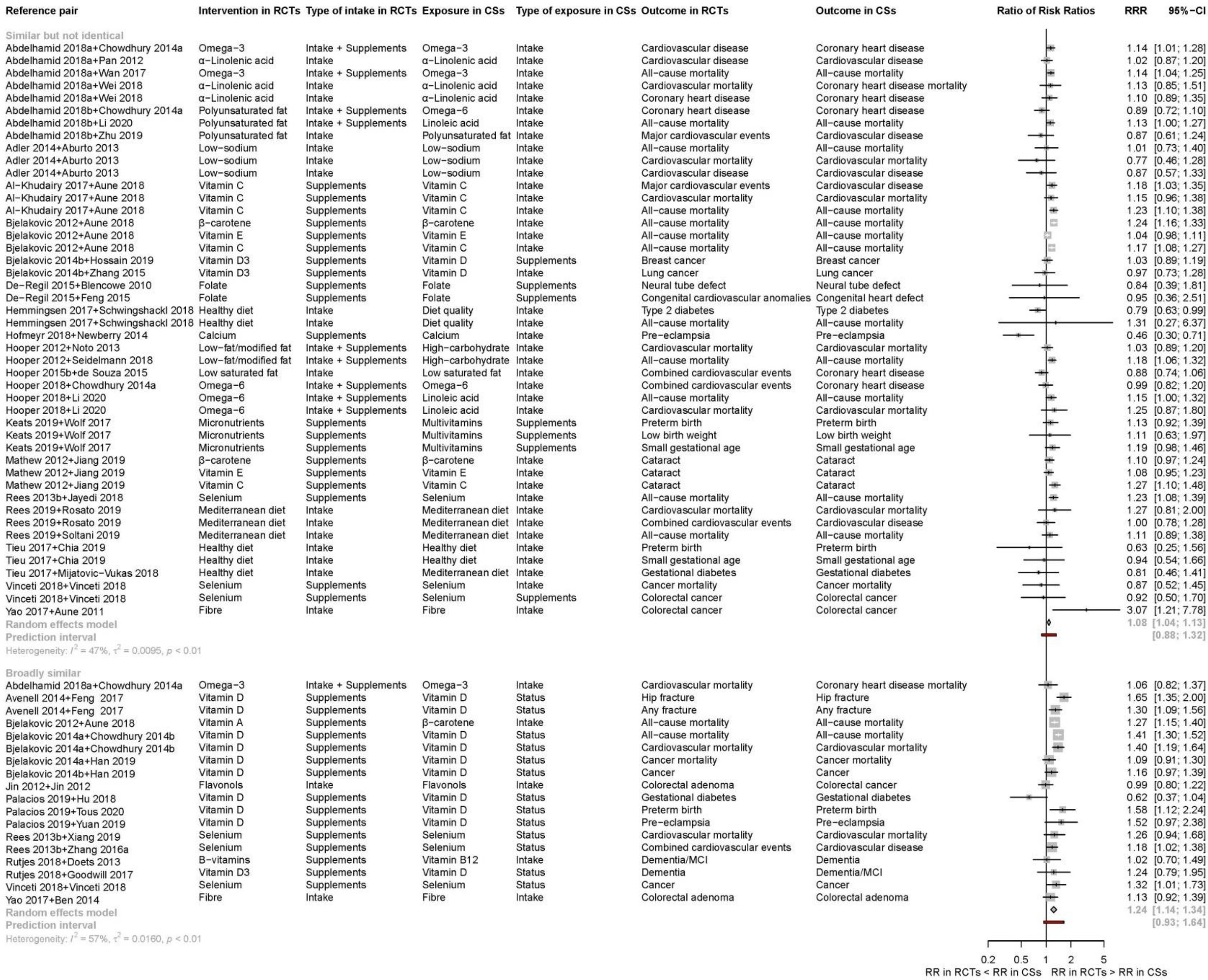
Supplementary Figure 16: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) excluding highly correlated outcomes stratified by type of intake/exposure.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



Supplementary Figure 17: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) excluding highly correlated outcomes stratified by type of outcome.

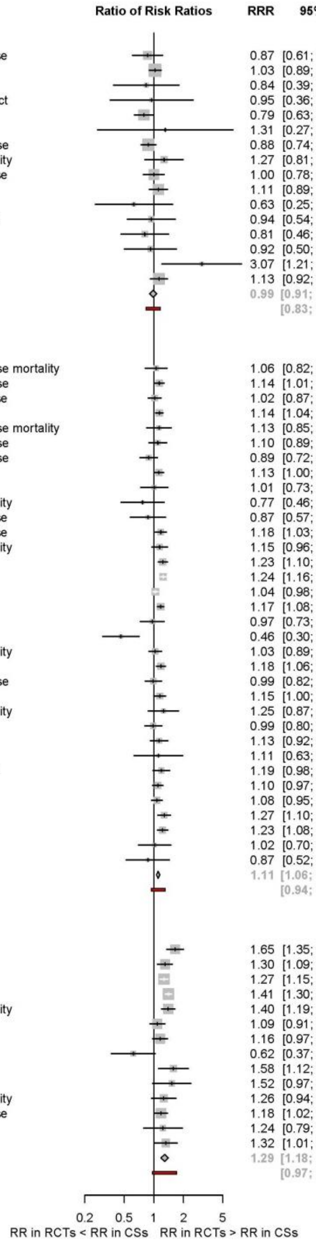
CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



Supplementary Figure 18: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR <1 stratified by PI/ECO similarity degree.

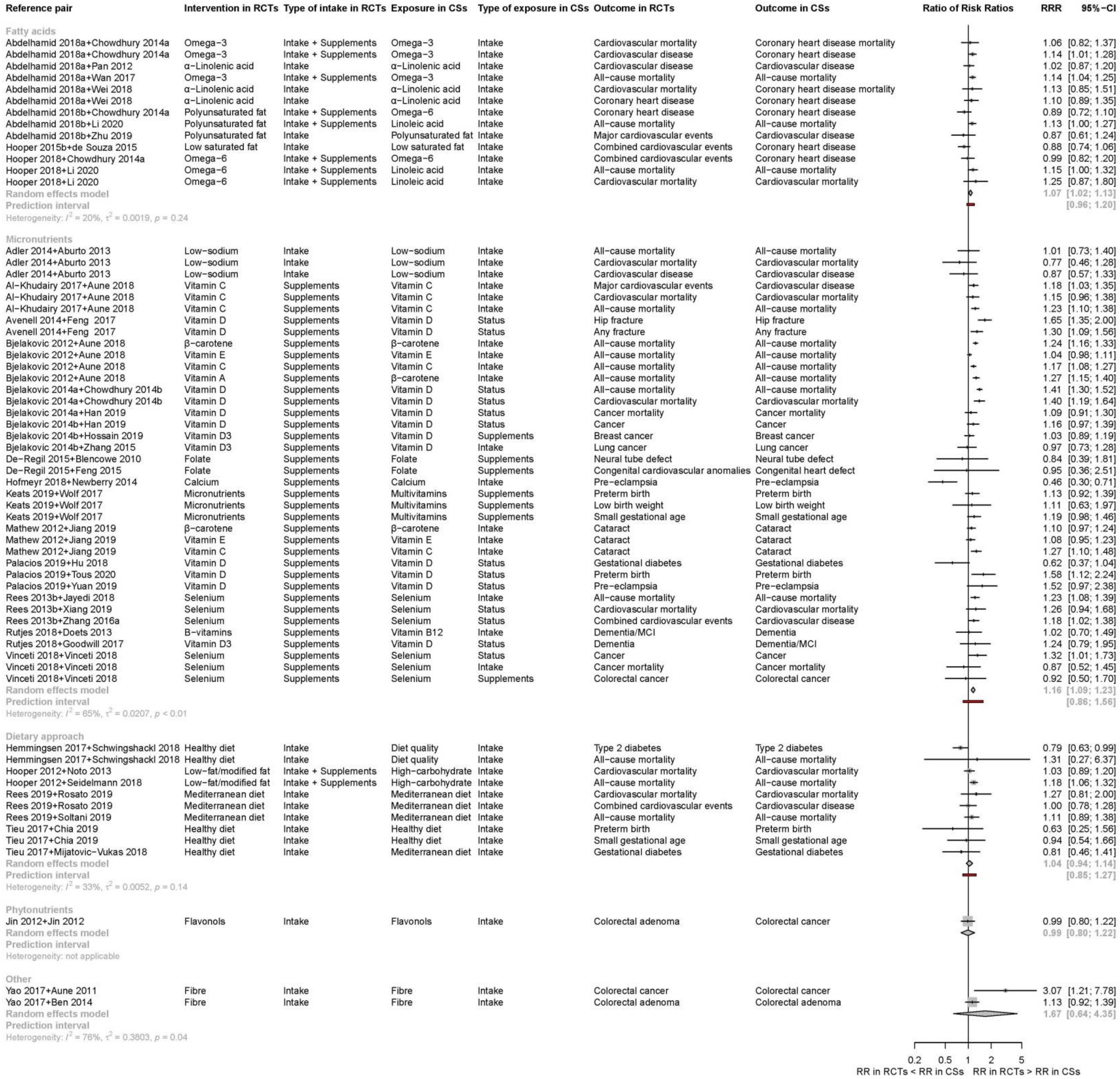
CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%-CI
More or less identical								
Abdelhamid 2018b+Zhu 2019	Polyunsaturated fat	Intake	Polyunsaturated fat	Intake	Major cardiovascular events	Cardiovascular disease	0.87	[0.61; 1.24]
Bjelakovic 2014b+Hossain 2019	Vitamin D3	Supplements	Vitamin D	Supplements	Breast cancer	Breast cancer	1.03	[0.89; 1.19]
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect	0.95	[0.36; 2.51]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes	0.79	[0.63; 0.99]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality	1.31	[0.27; 6.37]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Combined cardiovascular events	Coronary heart disease	0.88	[0.74; 1.06]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality	1.27	[0.81; 2.00]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Combined cardiovascular events	Cardiovascular disease	1.00	[0.78; 1.28]
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality	1.11	[0.89; 1.38]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Preterm birth	Preterm birth	0.63	[0.25; 1.56]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age	0.94	[0.54; 1.66]
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes	0.81	[0.46; 1.41]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Supplements	Colorectal cancer	Colorectal cancer	0.92	[0.50; 1.70]
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]
Yao 2017+Ben 2014	Fibre	Intake	Fibre	Intake	Colorectal adenoma	Colorectal adenoma	1.13	[0.92; 1.39]
Random effects model							0.99	[0.91; 1.07]
Prediction interval								[0.83; 1.17]
Heterogeneity: $I^2 = 15\%$, $\tau^2 = 0.0041$, $p = 0.29$								
Similar but not identical								
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular disease	Coronary heart disease	1.14	[1.01; 1.28]
Abdelhamid 2018a+Pan 2012	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular disease	Cardiovascular disease	1.02	[0.87; 1.20]
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.13	[0.85; 1.51]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Coronary heart disease	Coronary heart disease	1.10	[0.89; 1.35]
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality	1.01	[0.73; 1.40]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality	0.77	[0.46; 1.28]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular disease	Cardiovascular disease	0.87	[0.57; 1.33]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Cardiovascular mortality	Cardiovascular mortality	1.15	[0.96; 1.38]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.24	[1.16; 1.33]
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]
Bjelakovic 2014b+Zhang 2015	Vitamin D3	Supplements	Vitamin D	Intake	Lung cancer	Lung cancer	0.97	[0.73; 1.28]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia	0.46	[0.30; 0.71]
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality	1.03	[0.89; 1.20]
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality	1.18	[1.06; 1.32]
Hooper 2018+Chowdhury 2014a	Omega−6	Intake + Supplements	Omega−6	Intake	Combined cardiovascular events	Coronary heart disease	0.99	[0.82; 1.20]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer	0.99	[0.80; 1.22]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Low birth weight	Low birth weight	1.11	[0.63; 1.97]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Small gestational age	Small gestational age	1.19	[0.98; 1.46]
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Intake	Cancer mortality	Cancer mortality	0.87	[0.52; 1.45]
Random effects model							1.11	[1.06; 1.15]
Prediction interval								[0.94; 1.30]
Heterogeneity: $I^2 = 43\%$, $\tau^2 = 0.0060$, $p < 0.01$								
Broadly similar								
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Any fracture	Any fracture	1.30	[1.09; 1.56]
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.27	[1.15; 1.40]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality	1.41	[1.30; 1.52]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality	1.40	[1.19; 1.64]
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality	1.09	[0.91; 1.30]
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.04]
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth	1.58	[1.12; 2.24]
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia	1.52	[0.97; 2.38]
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality	1.26	[0.94; 1.68]
Rees 2013b+Zhang 2016a	Selenium	Supplements	Selenium	Status	Combined cardiovascular events	Cardiovascular disease	1.18	[1.02; 1.38]
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.01; 1.73]
Random effects model							1.29	[1.18; 1.41]
Prediction interval								[0.97; 1.71]
Heterogeneity: $I^2 = 52\%$, $\tau^2 = 0.0148$, $p = 0.01$								



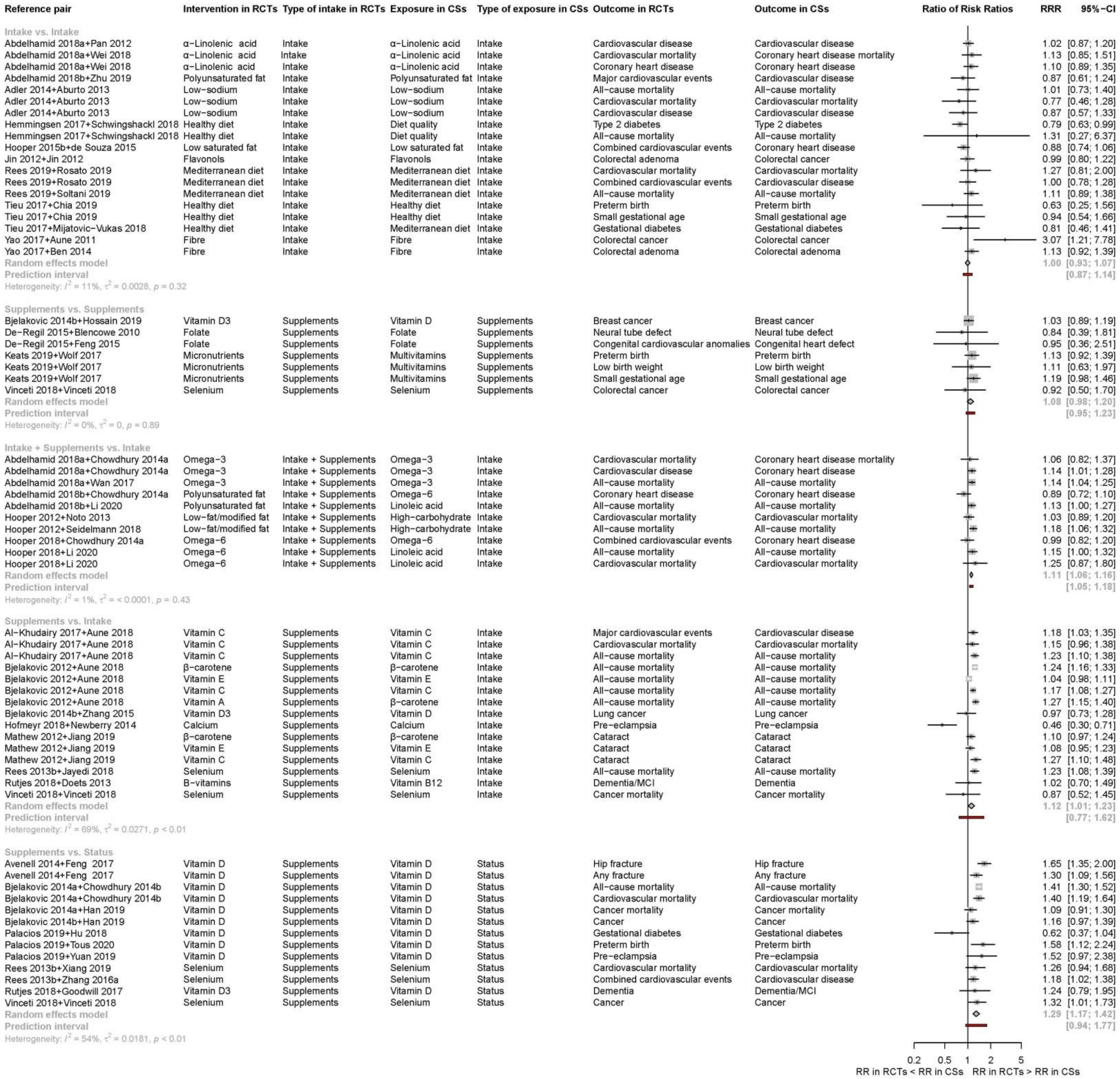
Supplementary Figure 19: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR <1 stratified by intervention/exposure similarity degree.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



Supplementary Figure 20: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR <1 stratified by type of dietary intervention/exposure.

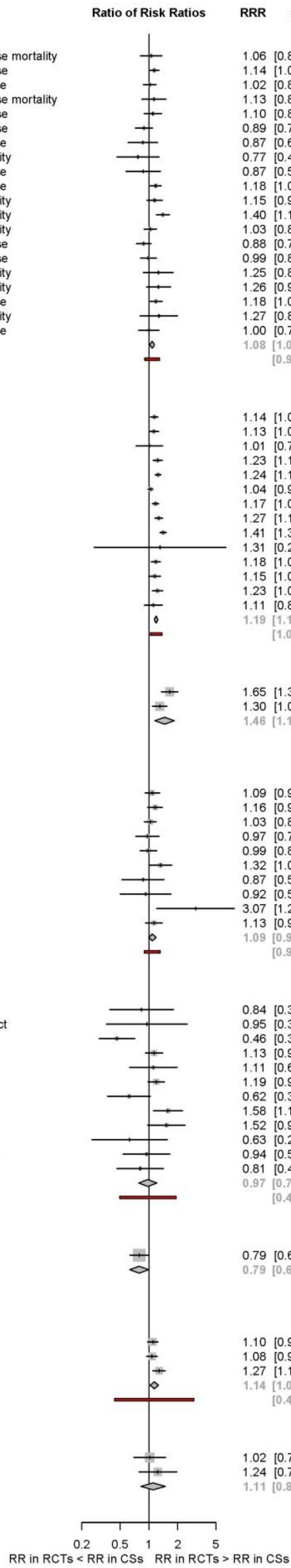
CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



Supplementary Figure 21: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR <1 stratified by type of intake/exposure.

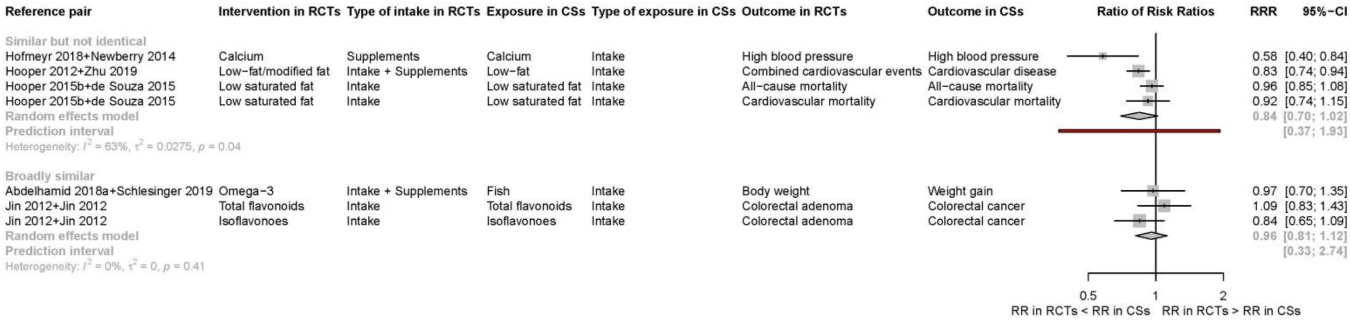
CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

Reference pair	Intervention in RCTs	Type of intake in RCTs	Exposure in CSs	Type of exposure in CSs	Outcome in RCTs	Outcome in CSs	RRR	95%-CI
Cardiovascular disease								
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.06	[0.82; 1.37]
Abdelhamid 2018a+Chowdhury 2014a	Omega−3	Intake + Supplements	Omega−3	Intake	Cardiovascular disease	Coronary heart disease	1.14	[1.01; 1.28]
Abdelhamid 2018a+Pan 2012	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular disease	Cardiovascular disease	1.02	[0.87; 1.20]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Cardiovascular mortality	Coronary heart disease mortality	1.13	[0.85; 1.51]
Abdelhamid 2018a+Wei 2018	α−Linolenic acid	Intake	α−Linolenic acid	Intake	Coronary heart disease	Coronary heart disease	1.10	[0.89; 1.35]
Abdelhamid 2018b+Chowdhury 2014a	Polyunsaturated fat	Intake + Supplements	Omega−6	Intake	Coronary heart disease	Coronary heart disease	0.89	[0.72; 1.10]
Abdelhamid 2018b+Zhu 2019	Polyunsaturated fat	Intake	Polyunsaturated fat	Intake	Major cardiovascular events	Cardiovascular disease	0.87	[0.61; 1.24]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular mortality	Cardiovascular mortality	0.77	[0.46; 1.28]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	Cardiovascular disease	Cardiovascular disease	0.87	[0.57; 1.33]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Major cardiovascular events	Cardiovascular disease	1.18	[1.03; 1.35]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	Cardiovascular mortality	Cardiovascular mortality	1.15	[0.96; 1.38]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	Cardiovascular mortality	Cardiovascular mortality	1.40	[1.19; 1.64]
Hooper 2012+Noto 2013	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	Cardiovascular mortality	Cardiovascular mortality	1.03	[0.89; 1.20]
Hooper 2015b+de Souza 2015	Low saturated fat	Intake	Low saturated fat	Intake	Combined cardiovascular events	Coronary heart disease	0.88	[0.74; 1.06]
Hooper 2018+Chowdhury 2014a	Omega−6	Intake + Supplements	Omega−6	Intake	Combined cardiovascular events	Coronary heart disease	0.99	[0.82; 1.20]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	Cardiovascular mortality	Cardiovascular mortality	1.25	[0.87; 1.80]
Rees 2013b+Xiang 2019	Selenium	Supplements	Selenium	Status	Cardiovascular mortality	Cardiovascular mortality	1.26	[0.94; 1.68]
Rees 2013b+Zhang 2016a	Selenium	Supplements	Selenium	Status	Combined cardiovascular events	Cardiovascular disease	1.18	[1.02; 1.38]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Cardiovascular mortality	Cardiovascular mortality	1.27	[0.81; 2.00]
Rees 2019+Rosato 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	Combined cardiovascular events	Cardiovascular disease	1.00	[0.78; 1.28]
Random effects model							1.08	[1.02; 1.15]
Prediction interval								[0.91; 1.29]
Heterogeneity: I^2 = 38%, τ^2 = 0.0061, p = 0.04								
Overall mortality								
Abdelhamid 2018a+Wan 2017	Omega−3	Intake + Supplements	Omega−3	Intake	All−cause mortality	All−cause mortality	1.14	[1.04; 1.25]
Abdelhamid 2018b+Li 2020	Polyunsaturated fat	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.13	[1.00; 1.27]
Adler 2014+Aburto 2013	Low−sodium	Intake	Low−sodium	Intake	All−cause mortality	All−cause mortality	1.01	[0.73; 1.40]
Al−Khudairy 2017+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.23	[1.10; 1.38]
Bjelakovic 2012+Aune 2018	β−carotene	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.24	[1.16; 1.33]
Bjelakovic 2012+Aune 2018	Vitamin E	Supplements	Vitamin E	Intake	All−cause mortality	All−cause mortality	1.04	[0.98; 1.11]
Bjelakovic 2012+Aune 2018	Vitamin C	Supplements	Vitamin C	Intake	All−cause mortality	All−cause mortality	1.17	[1.08; 1.27]
Bjelakovic 2012+Aune 2018	Vitamin A	Supplements	β−carotene	Intake	All−cause mortality	All−cause mortality	1.27	[1.15; 1.40]
Bjelakovic 2014a+Chowdhury 2014b	Vitamin D	Supplements	Vitamin D	Status	All−cause mortality	All−cause mortality	1.41	[1.30; 1.52]
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	All−cause mortality	All−cause mortality	1.31	[0.27; 6.37]
Hooper 2012+Seidelmann 2018	Low−fat/modified fat	Intake + Supplements	High−carbohydrate	Intake	All−cause mortality	All−cause mortality	1.18	[1.06; 1.32]
Hooper 2018+Li 2020	Omega−6	Intake + Supplements	Linoleic acid	Intake	All−cause mortality	All−cause mortality	1.15	[1.00; 1.32]
Rees 2013b+Jayedi 2018	Selenium	Supplements	Selenium	Intake	All−cause mortality	All−cause mortality	1.23	[1.08; 1.39]
Rees 2019+Soltani 2019	Mediterranean diet	Intake	Mediterranean diet	Intake	All−cause mortality	All−cause mortality	1.11	[0.89; 1.38]
Random effects model							1.19	[1.14; 1.24]
Prediction interval								[1.04; 1.37]
Heterogeneity: I^2 = 70%, τ^2 = 0.0035, p < 0.01								
Bone health								
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Hip fracture	Hip fracture	1.65	[1.35; 2.00]
Avenell 2014+Feng 2017	Vitamin D	Supplements	Vitamin D	Status	Any fracture	Any fracture	1.30	[1.09; 1.56]
Random effects model							1.46	[1.16; 1.84]
Prediction interval								
Heterogeneity: I^2 = 67%, τ^2 = 0.0188, p = 0.08								
Cancer								
Bjelakovic 2014a+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer mortality	Cancer mortality	1.09	[0.91; 1.30]
Bjelakovic 2014b+Han 2019	Vitamin D	Supplements	Vitamin D	Status	Cancer	Cancer	1.16	[0.97; 1.39]
Bjelakovic 2014b+Hossain 2019	Vitamin D3	Supplements	Vitamin D	Supplements	Breast cancer	Breast cancer	1.03	[0.89; 1.19]
Bjelakovic 2014b+Zhang 2015	Vitamin D3	Supplements	Vitamin D	Intake	Lung cancer	Lung cancer	0.97	[0.73; 1.28]
Jin 2012+Jin 2012	Flavonols	Intake	Flavonols	Intake	Colorectal adenoma	Colorectal cancer	0.99	[0.80; 1.22]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Status	Cancer	Cancer	1.32	[1.01; 1.73]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Intake	Cancer mortality	Cancer mortality	0.87	[0.52; 1.45]
Vinceti 2018+Vinceti 2018	Selenium	Supplements	Selenium	Supplements	Colorectal cancer	Colorectal cancer	0.92	[0.50; 1.70]
Yao 2017+Aune 2011	Fibre	Intake	Fibre	Intake	Colorectal cancer	Colorectal cancer	3.07	[1.21; 7.78]
Yao 2017+Ben 2014	Fibre	Intake	Fibre	Intake	Colorectal adenoma	Colorectal adenoma	1.13	[0.92; 1.39]
Random effects model							1.09	[0.99; 1.19]
Prediction interval								[0.90; 1.31]
Heterogeneity: I^2 = 13%, τ^2 = 0.0048, p = 0.32								
Pregnancy outcomes								
De−Regil 2015+Blencowe 2010	Folate	Supplements	Folate	Supplements	Neural tube defect	Neural tube defect	0.84	[0.39; 1.81]
De−Regil 2015+Feng 2015	Folate	Supplements	Folate	Supplements	Congenital cardiovascular anomalies	Congenital heart defect	0.95	[0.36; 2.51]
Hofmeyr 2018+Newberry 2014	Calcium	Supplements	Calcium	Intake	Pre−eclampsia	Pre−eclampsia	0.46	[0.30; 0.71]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Preterm birth	Preterm birth	1.13	[0.92; 1.39]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Low birth weight	Low birth weight	1.11	[0.63; 1.97]
Keats 2019+Wolf 2017	Micronutrients	Supplements	Multivitamins	Supplements	Small gestational age	Small gestational age	1.19	[0.98; 1.46]
Palacios 2019+Hu 2018	Vitamin D	Supplements	Vitamin D	Status	Gestational diabetes	Gestational diabetes	0.62	[0.37; 1.04]
Palacios 2019+Tous 2020	Vitamin D	Supplements	Vitamin D	Status	Preterm birth	Preterm birth	1.58	[1.12; 2.24]
Palacios 2019+Yuan 2019	Vitamin D	Supplements	Vitamin D	Status	Pre−eclampsia	Pre−eclampsia	1.52	[0.97; 2.38]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Preterm birth	Preterm birth	0.63	[0.25; 1.56]
Tieu 2017+Chia 2019	Healthy diet	Intake	Healthy diet	Intake	Small gestational age	Small gestational age	0.94	[0.54; 1.66]
Tieu 2017+Mijatovic−Vukas 2018	Healthy diet	Intake	Mediterranean diet	Intake	Gestational diabetes	Gestational diabetes	0.81	[0.46; 1.41]
Random effects model							0.97	[0.79; 1.21]
Prediction interval								[0.49; 1.92]
Heterogeneity: I^2 = 64%, τ^2 = 0.0806, p < 0.01								
Diabetes								
Hemmingsen 2017+Schwingshackl 2018	Healthy diet	Intake	Diet quality	Intake	Type 2 diabetes	Type 2 diabetes	0.79	[0.63; 0.99]
Random effects model							0.79	[0.63; 0.99]
Prediction interval								
Heterogeneity: not applicable								
Eye disease								
Mathew 2012+Jiang 2019	β−carotene	Supplements	β−carotene	Intake	Cataract	Cataract	1.10	[0.97; 1.24]
Mathew 2012+Jiang 2019	Vitamin E	Supplements	Vitamin E	Intake	Cataract	Cataract	1.08	[0.95; 1.23]
Mathew 2012+Jiang 2019	Vitamin C	Supplements	Vitamin C	Intake	Cataract	Cataract	1.27	[1.10; 1.48]
Random effects model							1.14	[1.03; 1.26]
Prediction interval								[0.44; 2.96]
Heterogeneity: I^2 = 36%, τ^2 = 0.0031, p = 0.21								
Neurodegenerative disease								
Rutjes 2018+Doets 2013	B−vitamins	Supplements	Vitamin B12	Intake	Dementia/MCI	Dementia	1.02	[0.70; 1.49]
Rutjes 2018+Goodwill 2017	Vitamin D3	Supplements	Vitamin D	Status	Dementia	Dementia/MCI	1.24	[0.79; 1.95]
Random effects model							1.11	[0.83; 1.48]
Prediction interval								
Heterogeneity: I^2 = 0%, τ^2 = 0, p = 0.52								



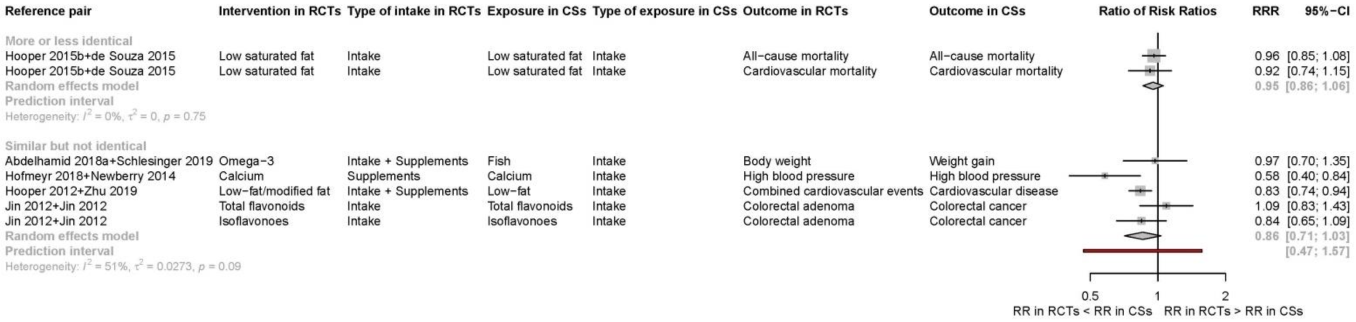
Supplementary Figure 22: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR <1 stratified by outcome.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



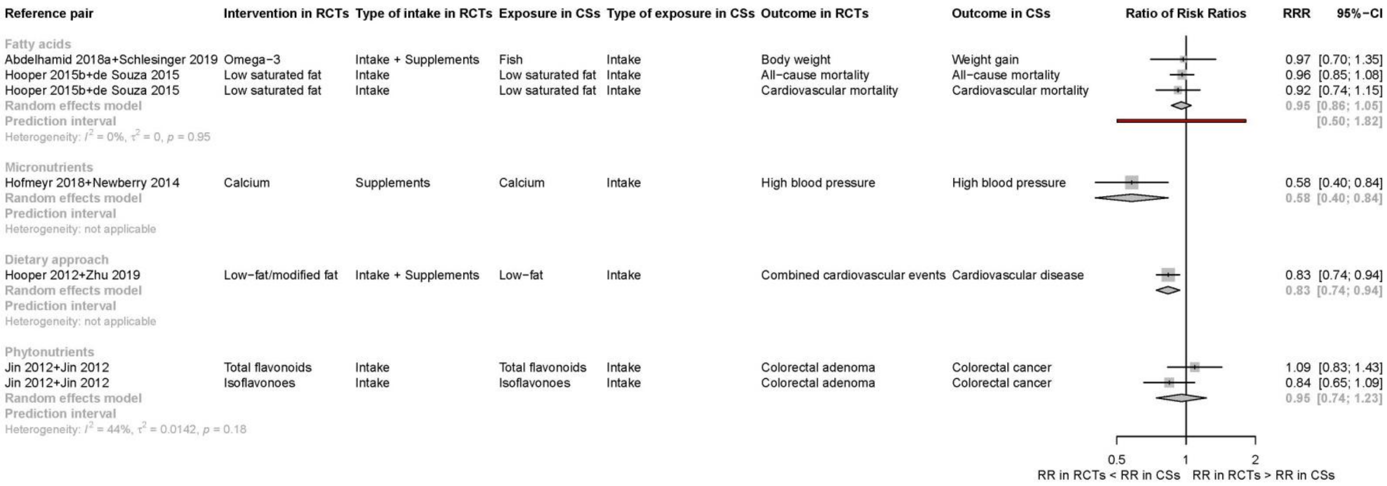
Supplementary Figure 23: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR ≥1 stratified by PI/ECO similarity degree.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



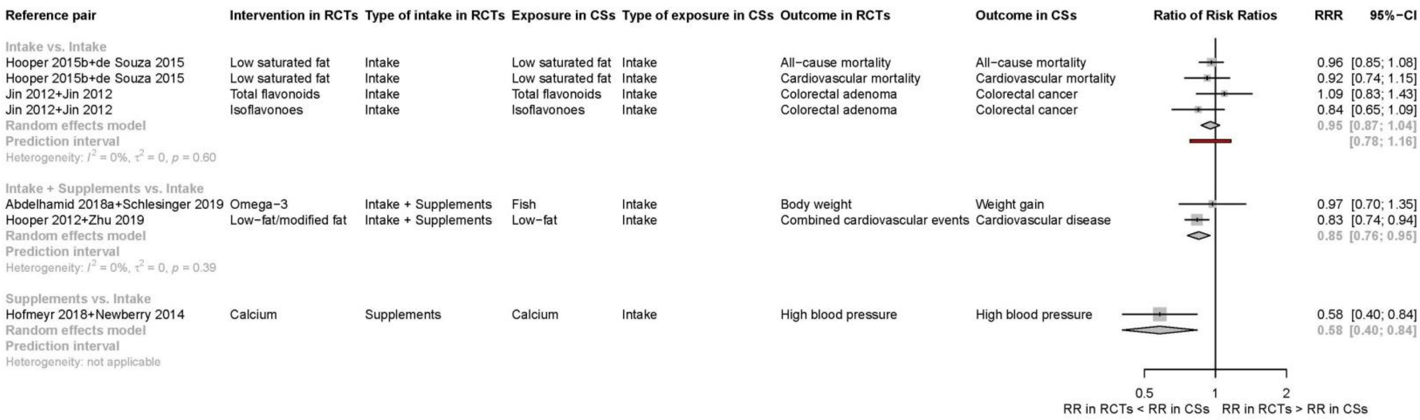
Supplementary Figure 24: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR ≥1 stratified by intervention/exposure similarity degree.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



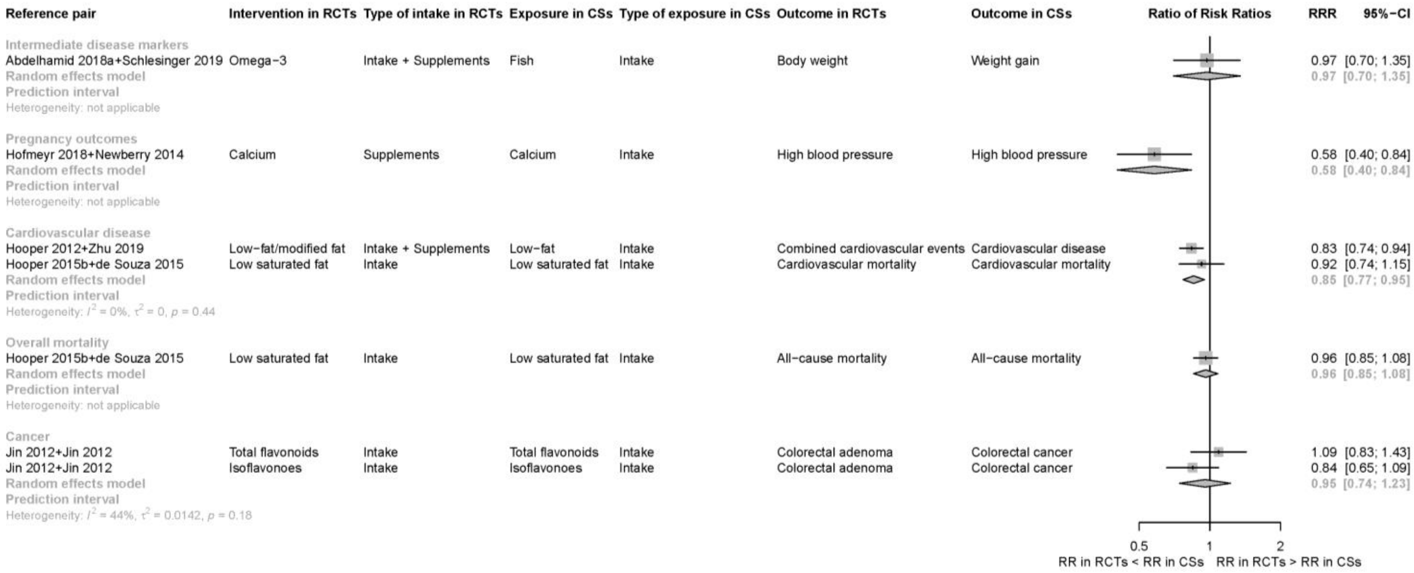
Supplementary Figure 25: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR ≥1 stratified by type of dietary intervention/exposure.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



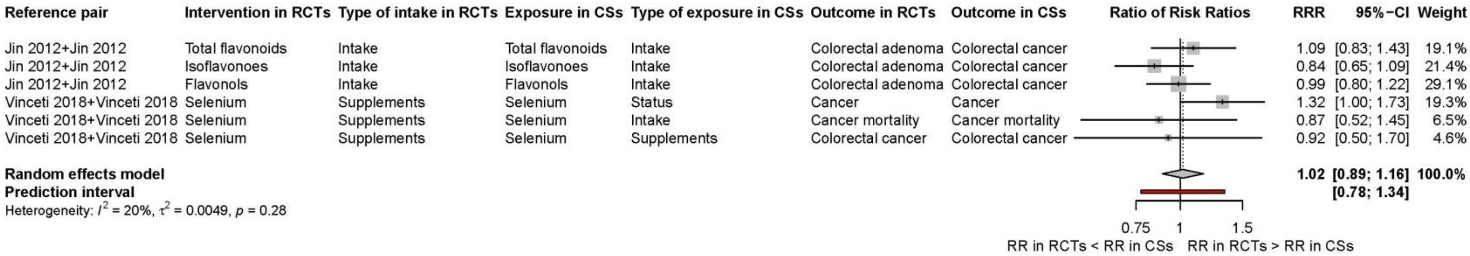
Supplementary Figure 26: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR ≥1 stratified by type of intake/exposure.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



Supplementary Figure 27: Forest plot of comparisons between bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR) including only CSs with a RR ≥1 stratified by outcome.

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;



Supplementary Figure 28: Forest plot of comparisons: Sensitivity analysis (including only Cochrane Reviews) for bodies of evidence from randomized controlled trials vs. cohort studies for dichotomous outcomes as pooled ratio of risk ratios (RRR).

CS: cohort studies; RCTs: randomized controlled trials; RR: risk ratio; RRR: ratio of risk ratios;

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