Supplementary Information (SI) for Food & Function.
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Umbrella Review of Dietary Associations with Hepatocellular Carcinoma Risk

Content

Supplement Figure 1. Methodological quality of the included papers using AMSTAR-2

Study	1	**2**	3	**4**	5	6	**7**	8	**9**	10	**11**	12	**13**	14	**15**	16	Quality
Bravi 2017	Yes	Partial Yes	Yes	Yes	NO	NO	NO	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	Low
Cai 2019	Yes	Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	NO	Yes	Yes	Yes	Yes	Moderate
Di Maso 2021	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	NO	NO	Yes	NO	Yes	Yes	Yes	Yes	Low
Farvid 2021	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	NO	NO	Yes	NO	Yes	NO	Yes	Yes	Low
Huang 2016	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	NO	NO	Yes	NO	Yes	Yes	Yes	Yes	Low
Morze 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO	Yes	NO	Yes	Yes	Yes	Yes	Moderate
Ni 2017	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	Moderate
Turati 2014	Yes	Partial Yes	Yes	Yes	Yes	Yes	NO	Yes	NO	NO	Yes	NO	Yes	Yes	Yes	Yes	Critically low
Vinceti 2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	High
Wongtrakul 2021	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	Moderate
Yang 2014	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	Moderate
Yu 2022	Yes	Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	High
Zhao L 2021	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO	Yes	NO	Yes	Yes	Yes	Yes	Moderate
Zhu 2021	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	NO	NO	Yes	Yes	Yes	Yes	Yes	Yes	Low
Kennedy 2017	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	Moderate
Ren 2023	Yes	Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	High
Meine 2024	Yes	Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	High
Liu 2023	Yes	Partial Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO	Yes	NO	Yes	Yes	Yes	Yes	Moderate
Dai 2024	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	NO	Yes	Yes	Yes	Yes	Moderate
Yu 2014	Yes	Partial Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	NO	Yes	NO	Yes	Yes	Yes	Yes	Moderate
Watling 2024	Yes	Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	Yes	NO	Yes	Yes	Yes	Yes	Yes	Yes	High
Zhao Q 2021	Yes	Partial Yes	Yes	Yes	Yes	Yes	Partial Yes	Yes	NO	NO	Yes	NO	Yes	Yes	Yes	Yes	Low

Yes Partial Yes NO

AMSTAR-2 Items

**1. Did the research questions and inclusion criteria for the review include the components of PICO?*

****2. Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?***

**3. Did the review authors explain their selection of the study designs for inclusion in the* *review?*

4. Did the review authors use a comprehensive literature search strategy?

**5. Did the review authors perform study selection in duplicate?*

**6. Did the review authors perform data extraction in duplicate?*

7. Did the review authors provide a list of excluded studies and justify the exclusions?

**8. Did the review authors describe the included studies in adequate detail?*

9. Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review?

**10. Did the review authors report on the sources of funding for the studies included in the review?*

11. If meta-analysis was performed, did the review authors use appropriate methods for statistical combination of results?

**12. If meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?*

13. Did the review authors account for RoB in primary studies when interpreting/discussing the results of the review?

**14. Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?*

15. If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?

**16. Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?*

Rating overall confidence in the results of the review (Quality):

High: No or one non-critical weakness: the systematic review provides an accurate and comprehensive summary of the results of the available studies that address the question of interest.

Moderate: More than one non-critical weakness: the systematic review has more than one weakness but no critical flaws. It may provide an accurate summary of the results of the available studies that were included in the review.

Low: One critical flaw with or without non-critical weaknesses: the review has a critical flaw and may not provide an accurate and comprehensive summary of the available studies that address the question of interest.

Critically low: More than one critical flaw with or without non-critical weaknesses: the review has more than one critical flaw and should not be relied on to provide an accurate and comprehensive summary of the available studies.

Notes:

1) The bold items are AMSTAR-2 critical domains.

2) In the reliability classification of quality evaluation, ' Partial Yes ' is not considered as weakness.

Supplement Table 1. Search strategy

PubMed		
	Search term	Search results
#1	"Diet" [Mesh]	342,247
#2	"Drinking" [Mesh]	14,896
#3	"Eating" [Mesh]	82,269
#4	"diet*"[Title/Abstract] OR "drink*"[Title/Abstract] OR "eating"[Title/Abstract] OR "food*"[Title/Abstract] OR "nutrition*"[Title/Abstract] OR "consumption*"[Title/Abstract] OR "intake*"[Title/Abstract]	2,014,855
#5	#1 OR #2 OR #3 OR #4	2,107,432
#6	"Carcinoma, Hepatocellular"[Mesh]	110,589
#7	"liver" OR "hepatocellular" [Title/Abstract]	1,363,170
#8	"adenocarcinoma*"[Title/Abstract] OR "cancer*"[Title/Abstract] OR "carcino*"[Title/Abstract] OR "malign*"[Title/Abstract] OR "neoplas*"[Title/Abstract] OR "tumo*"[Title/Abstract]	4,329,627
#9	#7 AND #8	360,627
#10	#6 OR #9	375,740
#11	"meta-analysis" [Publication Type] OR "Meta-Analysis as Topic" [MeSH Terms] OR "meta-analys*" [Title/Abstract] OR "systematic review*" [Title/Abstract] OR "systematic overview*" [Title/Abstract]	509,317
#12	#5 AND #10 AND #11	482
EMBASE		
	Search term	Search results
#1	'diet'/exp	453,494
#2	'drinking'/exp	29,909

#3	'eating'/exp	44,462
#4	'diet*':ab,ti OR 'drink*':ab,ti OR 'eating':ab,ti OR 'food*':ab,ti OR 'nutrition*':ab,ti OR 'consumption*':ab,ti OR 'intake*':ab,ti	2,515,859
#5	#1 OR #2 OR #3 OR #4	2,595,581
#6	'liver cell carcinoma'/exp	224,991
#7	'liver':ab,ti OR 'hepatocellular':ab,ti	1,437,549
#8	'adenocarcinoma*':ti,ab OR 'cancer*':ti,ab OR 'carcino*':ti,ab OR 'malign*':ti,ab OR 'neoplas*':ti,ab OR 'tumo*':ti,ab	5,863,153
#9	#7 AND #8	457,790
#10	#6 OR #9	508,850
#11	'meta analysis'/exp	324,593
#12	'meta-analys*':ab,ti OR 'systematic review*':ab,ti OR 'systematic overview*':ab,ti	587,259
#13	#11 OR #12	635,397
#14	#5 AND #10 AND #13	609
Cochrane		
#1	((“Diet”):ti,ab,kw OR (“drink*”):ti,ab,kw OR (“eating”):ti,ab,kw OR (“food*”):ti,ab,kw OR (“nutrition*”):ti,ab,kw)	155571
#2	(“consumption*”):ti,ab,kw OR (“intake*”):ti,ab,kw	127216
#3	#1 OR #2	228198
#4	(“liver”):ti,ab,kw OR (“hepatocellular”):ti,ab,kw	68348
#5	(“adenocarcinoma*”):ti,ab,kw OR (“cancer*”):ti,ab,kw OR (“carcino*”):ti,ab,kw OR (“malign*”):ti,ab,kw OR (“neoplas*”):ti,ab,kw (Word variations have been searched) OR (“tumor”):ti,ab,kw	243406
#6	MeSH descriptor: [Carcinoma, Hepatocellular] explode all trees	2740
#7	#4 AND #5	17349

#8	#6 OR #7	18288
#9	(“meta-analys*”):ti,ab,kw OR (“systematic review*”):ti,ab,kw OR (“systematic overview*”):ti,ab,kw	9456
#10	MeSH descriptor: [Meta-Analysis as Topic] explode all trees	1624
#11	#9 OR #10	10885
#12	#3 AND #8 AND #11	28

Supplement Table 2. The criteria for the quality of evidence classification

Category	Criteria
Convincing, class I	• No. of cases >1000 • P-value < 1×10^{-6} • $I^2 < 50\%$ • 95% prediction interval excluding the null • No small-study effects • No excess significance bias
Highly suggestive, class II	• No. of cases >1,000 • P-value < 1×10^{-6} • Largest study with a statistically significant effect
Suggestive, class III	• No. of cases >1,000 • P-value < 1×10^{-3}
Weak, class IV	• P-value < 0.05
Nonsignificant	• P-value > 0.05

Supplement Table 3. Excluded studies by full-text reviewing.

Reason	Reference
Not meta-analysis (n=45)	[1-45]
Number of cohorts < 2 (n=15)	[46-60]
Not outcome of interest (n=25)	[61-85]
Not the largest data study (n=49)	[86-134]
Full-text not available (n=1)	[135]
Not in English (n=1)	[136]

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evidence. Oncogene 2006;25:3756-3770.

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Supplement Table 4. Important confounders considered of each primary study included in the meta-analyses

Study	Dietary factor	Comparison	Cohort study, n	Study	Study year	Confounders
Bravi 2017	Coffee	Highest vs. lowest	11	Hu	2008	Age, sex, study period, alcohol drinking, tobacco smoking, education, history of diabetes mellitus and CLD, BMI
				Lai	2013	Age, intervention arm, alcohol drinking, BMI, education, marital status, diabetes mellitus, tobacco smoking, tea drinking, serum cholesterol
				Bamia	2015	Stratified by age and study center; adjusted for sex, diabetes mellitus, education, BMI, tobacco smoking, alcohol drinking, physical activity, energy intake
				Setiawan	2015	Age, sex, ethnicity, education, BMI, alcohol drinking, tobacco smoking, diabetes mellitus
				Petrick	2015	Age, sex, alcohol drinking, tobacco smoking, race, education, BMI
				lnoue	2005	Age, sex, study center, tobacco smoking, alcohol drinking, BMI, diabetes mellitus, tea drinking, serum ALT level, HCV infection, HBV infection

				Kurozawa	2005	Age, sex, education, diabetes mellitus and liver disease, tobacco smoking, alcohol drinking
				Shimazu	(2005) cohort1	Age, sex, history of liver disease, tobacco smoking, alcohol drinking
				Shimazu	(2005) cohort2	Age, sex, history of liver disease, tobacco smoking, alcohol drinking
				lnoue	2009	Age, sex, study center, tobacco smoking, alcohol drinking, BMI, diabetes mellitus, tea drinking, serum ALT level, HCV infection, HBV infection
				Johnson	2011	Age, sex, dialect group, study period, BMI, education, alcohol drinking, tobacco smoking, tea drinking, diabetes mellitus
Di Maso 2021	Caffeinated Coffee	Yes vs. no	2	Petrick	2015	Age, sex, race, study of origin, BMI, smoking, and alcohol
				Setiawan	2015	Age, sex, race, education, BMI, smoking, alcohol, and personal history of diabetes
Farvid 2021	Processed meat	Highest vs. lowest	6	Freedman	2010	Age, sex, education, marital status, race, BMI, smoking, diabetes, physical activity, energy intake, alcohol intake, fruit

						and vegetable intake, white meat intake
				Fedirko	2013	Age, sex, non-alcohol energy, alcohol intake, intake of other types of meat, smoking, physical activity, diabetes status, BMI, fiber intake, coffee intake
				Ma	2019	Age, sex, race, physical activity, BMI, smoking, type 2 diabetes, aspirin use, alcohol intake, energy intake
				Ma	2019	Age, sex, race, physical activity, BMI, smoking, type 2 diabetes, aspirin use, alcohol intake, energy intake
				Knuppel	2020	Age, region, ethnicity, deprivation, qualification, employment, living with spouse/partner, height, smoking, physical activity, alcohol intake, fruit and vegetable intake, cereal fiber intake, cheese intake, milk added to tea/coffee/cereal, oily fish intake, non-oily fish intake, menopausal status, parity, HRT, OC use
				Luu	2021	Age, sex, dialect, year of enrollment, education, smoking, alcohol intake, energy intake, diabetes status, sleep hours, physical activity
	Red and processed	Highest vs.	6	Fedirko	2013	Age, sex, non-alcohol energy, alcohol intake, intake of other

	meat	lowest				types of meat, smoking, physical activity, diabetes status, BMI, fiber intake, coffee intake
				Li	2014	Age, sex, race, smoking, alcohol intake, education, BMI, diabetes, physical activity, energy intake, modified aMED excluding total red and processed meat
				Luo	2019	Age, sex, race, physical activity, BMI, smoking, aspirin use, alcohol intake, energy intake
				Luo	2019	Age, sex, race, physical activity, BMI, smoking, aspirin use, alcohol intake, energy intake
				Knuppel	2020	Age, region, ethnicity, deprivation, qualification, employment, living with spouse/partner, height, smoking, physical activity, alcohol intake, fruit and vegetable intake, cereal fiber intake, cheese intake, milk added to tea/coffee/cereal, oily fish intake, non-oily fish intake, menopausal status, parity, HRT, OC use
				Luu	2021	Age, sex, dialect, year of enrollment, education, smoking, alcohol intake, energy intake, diabetes status, sleep hours, physical activity
Huang 2016	Green tea	Highest vs.	7	Nechuta et	2012	Age, marital status, education, occupation, BMI, exercise,

		lowest		al		fruit and vegetable intake, meat intake, diabetes, and family history of digestive system cancer
				Johnson et al	2011	Dairy products consumption, fruit consumption, fish consumption, soybean consumption
				Ui et al	2009	Age, sex, alcohol consumption, smoking status, coffee consumption, vegetable consumption, dairy product consumption, fruit consumption, fish consumption, soybean consumption
				lnoue et al	2009	Sex, age, area, smoking status, alcohol intake, BMI, history of diabetes mellitus, coffee consumption, serum ALT level, HCV infection status, and HBV infection status
				Shimazu et al	2005	Age, sex, history of liver cancer, alcohol consumption, and smoking status
				Nagano et al	2001	City, age, sex, radiation exposure, smoking status, alcohol drinking, BMI, education level, and calendar time
				Nakachiet al	2000	Age, cigarette smoking, alcohol consumption
Ni 2017	Green tea[1]	Highest vs.	2	lnoue et al	2009	Sex, age, area, smoking status, alcohol intake, BMI, history

		modest				of diabetes mellitus, coffee consumption, serum ALT level, HCV infection status, and HBV infection status
				Nagano et al	2001	City, age, sex, radiation exposure, smoking status, alcohol drinking, BMI, education level, and calendar time
Turati 2014	Alcohol	Highest vs. lowest	3	Kim	2010M	Age, residence, smoking, exercise, BMI, systolic and diastolic blood pressure, fasting blood sugar, total cholesterol (only women); stratified by sex
				Shimazu	2011M	Age, area, diabetes, smoking, coffee. Stratified by sex
				Person	2013M/F	Age, sex, race, education, smoking, BMI, diabetes
Wongtrakul 2021	Alcohol[2]	Modest vs. lowest	2	Ascha	2010	NA
				Kimura	2018	NA
Yang 2014	Fruits	Highest vs. lowest	6	Sauvaget C	2003	Sex, age, radiation dose, city, BMI, smoking status, alcohol habits, and education level
				Kurozawa	2004	Gender, age, history of liver diseases
				Kurahashi	2009	Vegetables Fruits Vegetables and fruits

				SM George	2009	Age, smoking, energy intake, BMI, alcohol, physical activity, education race, marital status, family history, menopausal hormone therapy.
				Li WQ	2010	Age, sex, job status, education, exercise, smoking, alcohol drinking, hypertension, diabetes mellitus and gastric ulcer, family history of cancer, daily total energy intake, consumption of other food
				W Zhang	2013	Sex, age, body mass index, total energy intake, family income level, education level, family history of liver cancer in first-degree relatives, chronic viral hepatitis, diabetes, vitamin C and E and multivitamin supplement use,
	Vegetables	Highest vs. lowest	9	Chen CJ	1993	HbsAg carrier status, Cigarette smoking, Alcohol intake
				Yu MW	1995	Age, HBsAg carrier status, habitual alcohol drinking, and past history of liver diseases
				Sauvaget C	2003	Sex, age, radiation dose, city, BMI, smoking status, alcohol habits, and education level
				Kurozawa	2004	Gender, age, history of liver diseases

				TM Pham	2006	Age; body mass index; smoking habit; alcohol consumption; coffee drinking; history of transfusion; history of hepatitis; history of cirrhosis; history of diabetes; study area
				Yun	2008	Age, dietary preference, LPA, smoking status, alcohol drinking, body mass index, employment and fasting blood sugar
				N Kurahashi	2009	Age, area, sex, HCV, HBsAg, smoking status, alcohol consumption, body mass index, history of diabetes mellitus and intake of coffee, genistein
				SM George	2009	Age, smoking, energy intake, BMI, alcohol, physical activity, education race, marital status, family history, menopausal hormone therapy
				W Zhang	2013	Sex, age, body mass index, total energy intake, family income level, education level, family history of liver cancer in first-degree relatives, chronic viral hepatitis, diabetes, vitamin C and E and multivitamin supplement use
Yu 2022	Red Meat	Highest vs. lowest	6	Fedirko	2013	Age, sex, HBV/HCV status, smoking status, physical activity, diabetes, alcohol intake, BMI, and baseline

				Freedman	2010	Age, sex, ethnicity, education, alcohol, BMI, smoking, diabetes, fruit intake, vegetable intake, total energy, physical activity, marital status, energy, physical activity
				Knuppel	2020	Sex, smoking
				Kurozawa	2004	Age, sex, liver diseases
				Luu	2021	Age, sex, dialect, year of enrollment, education level, smoking status, coffee drinking status, alcohol drinking status, total energy intake, BMI, diabetes status
				Ma	2019	Gender, age, race, physical-activity level, body mass index (BMI), smoking, type 2 diabetes, regular aspirin use, alcohol intake, and total calorie intake
	White Meat	Highest vs. lowest	6	Daniel	2011	Age, sex, race, education, marital status, family history of cancer, BMI, smoking status, physical activity, alcohol intake, fruit intake, vegetables intake, total energy
				Fedirko	2013	Age, sex, HBV/HCV status, smoking status, physical activity, diabetes, alcohol intake, BMI, and baseline
				Freedman	2010	Age, sex, ethnicity, education, alcohol, BMI, smoking, diabetes, fruit intake, vegetable intake, total energy, physical

						activity, marital status, energy, physical activity
				Knuppel	2020	Sex, smoking
				Kurozawa	2004	Age, sex, liver diseases
				Ma	2019	Gender, age, race, physical-activity level, body mass index (BMI), smoking, type 2 diabetes, regular aspirin use, alcohol intake, and total calorie intake
	Fish	Highest vs. lowest	5	Daniel	2011	Age, sex, race, education, marital status, family history of cancer, BMI, smoking status, physical activity, alcohol intake, fruit intake, vegetables intake, total energy
				Fedirko	2013	Age, sex, HBV/HCV status, smoking status, physical activity, diabetes, alcohol intake, BMI, and baseline
				Kurozawa	2004	Age, sex, liver diseases
				Ma	2019	Gender, age, race, physical-activity level, body mass index (BMI), smoking, type 2 diabetes, regular aspirin use, alcohol intake, and total calorie intake
				Sawada	2012	Adjusted for age, area, sex, HCV, HbsAg, ALT level, smoking status, alcohol frequency, BMI, past history of

						diabetes mellitus, and intake of other foods
	Total meat	Highest vs. lowest	3	Fedirko	2013	Age, sex, HBV/HCV status, smoking status, physical activity, diabetes, alcohol intake, BMI, and baseline
				Knuppel	2020	Sex, smoking
				Ma	2019	Gender, age, race, physical-activity level, body mass index (BMI), smoking, type 2 diabetes, regular aspirin use, alcohol intake, and total calorie intake
Zhao 2021	Milk	Highest vs. lowest	5	Yang	2019	NA
				Duarte	2014	NA
				Hirayama	1989	NA
				Kurozawa	2004	NA
				Mat	2007	NA
Zhu 2021	Ginseng	Yes vs. no	4	Yun	1995	NA
				Yun	1998	NA

				Shin	2000	NA
				Yun	2010	NA
Ren 2023	Cruciferous Vegetables	Highest vs. lowest	3	Bosetti	2012	Sex, age, study center, year of interview, education, BMI, alcohol drinking, tobacco smoking, and total energy intake.
				Kanazir	2010	No
				Zhang	2013	Age, sex, BMI, total energy intake, family income level, education level, family history of liver cancer, history of diabetes, history of cholelithiasis or age, sex and energy intake. cholecystectomy, vitamin C and E and multivitamin supplement use.
Meine 2024	Ultra-Processed Food	Highest vs. lowest	2	Chang	2023	NA
				Kliemann	2023	NA
Liu 2023	Legumes	Highest vs. lowest	3	Sharp GB	2005	Sex, city, liver irradiation level, attained age, year of death, HBV and HCV
				kurahashi N	2009	Age, area, HCV, HBsAg, smoking status, alcohol consumption, and intake of coffee and vegetables,

						menopausal status in women
				Zhang W	2013	Age, sex, body mass index, total energy intake, family income level, education level, family history of liver cancer, history of diabetes, history of cholelithiasis or cholecystectomy, vitamin C and E and multivitamin supplement use, and mutual adjustment for these dietary patterns
Dai 2024	Yogurt	Highest vs. lowest	2	Yang	2019	Age, sex, ethnicity, physical activity, BMI, smoking, alcohol, total coffee intake, total calorie intake, aspirin use, type 2 diabetes
				Duarte	2014	Age, sex, physical activity, BMI, smoking, self-reported diabetes status, alcohol, energy
	Cheese	Highest vs. lowest	3	Yang	2019	Age, sex, ethnicity, physical activity, BMI, smoking, alcohol, total coffee intake, total calorie intake, aspirin use, type 2 diabetes
				Duarte	2014	Age, sex, physical activity, BMI, smoking, self-reported diabetes status, alcohol, energy
				Guo	2022	Age, sex, ethnicity, education level, Townsend Deprivation

						Index (quartiles), drinking status, smoking status, exercise, BMl, diabetes
Cai 2019	Carbohydrate	Highest vs. lowest	7	Sieri	2017	sex, education, smoking status, BMI, alcohol intake, fibre intake, saturated fat intake, non-alcohol energy intake and physical activity.
				Vogtmann	2013(1)	age, education, income, smoking status, alcohol consumption, family history of liver cancer, BMI, physical activity, total energy intake, and history of diabetes and hepatitis/ chronic liver disease
				Vogtmann	2013(2)	age, education, income, smoking status, alcohol consumption, family history of liver cancer, BMI, physical activity, total energy intake, and history of diabetes and hepatitis/ chronic liver disease
				Fedirko	2013(1)	age, education, income, smoking status, alcohol consumption, family history of liver cancer, BMI, physical activity, total energy intake, and history of diabetes and hepatitis/ chronic liver disease
				Fedirko	2013(2)	age, education, income, smoking status, alcohol consumption, family history of liver cancer, BMI, physical

						activity, total energy intake, and history of diabetes and hepatitis/ chronic liver disease
				George	2009(1)	Age, race, education, marital status, BMI, family history of cancer, physical activity, smoking, alcohol consumption, total energy intake
				George	2009(2)	Age, race, education, marital status, BMI, family history of cancer, physical activity, smoking, alcohol consumption, total energy intake
Vinceti 2018	Selenium	Highest vs. lowest	4	Yu	1991	NA
				Yu	1997	NA
				Li	2000	NA
				Karp	2013	NA
Zhao 2021	N-3 polyunsaturated fatty acid	Highest vs. lowest	3	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Koh	2016	Age, sex, dialect, year of interview, educational level, BMI,

						smoking status, alcohol use, coffee drinking status, baseline history of self-reported diabetes, total energy and dietary protein. Fat subtype intakes are mutually adjusted.
				Sawada	2012	Age, area, sex, smoking status, alcohol frequency, BMI, past history of diabetes mellitus, intake of coffee, soy foods, vegetables, vegetable oil, protein, and iron
	Cholesterol	Highest vs. lowest	2	Yang	2020	Age, sex, race, physical activity, BMI, smoking status, aspirin use, type 2 diabetes, alcohol intake, total coffee intake, and total energy intake.
				loannou	2009	Energy from other macronutrients, daily alcohol consumption, coffee or tea, gender, race, age, education, region, diabetes, BMI, and subscapular-totriceps skinfold ratio.
	Monounsaturated fatty acid	Highest vs. lowest	4	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Koh	2016	Age, sex, dialect, year of interview, educational level, BMI,

						smoking status, alcohol use, coffee drinking status, baseline history of self-reported diabetes, total energy and dietary protein. Fat subtype intakes are mutually adjusted.
				Duarte-Salles	2015	Baseline alcohol intake and non-alcohol total energy intake, sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber. Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
	Polyunsaturated fatty acid	Highest vs. lowest	3	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Duarte-	2015	Baseline alcohol intake and non-alcohol total energy intake,

				Salles		sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber. Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
	Saturated fat	Highest vs. lowest	5	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Koh	2016	Age, sex, dialect, year of interview, educational level, BMI, smoking status, alcohol use, coffee drinking status, baseline history of self-reported diabetes, total energy and dietary protein. Fat subtype intakes are mutually adjusted.
				Duarte-	2015	Baseline alcohol intake and non-alcohol total energy intake,

				Salles		sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber. Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
				loannou	2009	Energy from other macronutrients, daily alcohol consumption, coffee or tea, gender, race, age, education, region, diabetes, BMI, and subscapular-totriceps skinfold ratio.
	Total fat	Highest vs. lowest	5	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Koh	2016	Age, sex, dialect, year of interview, educational level, BMI, smoking status, alcohol use, coffee drinking status, baseline

						history of self-reported diabetes, total energy and dietary protein. Fat subtype intakes are mutually adjusted.
				Duarte-Salles	2015	Baseline alcohol intake and non-alcohol total energy intake, sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber. Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
				loannou	2009	Energy from other macronutrients, daily alcohol consumption, coffee or tea, gender, race, age, education, region, diabetes, BMI, and subscapular-totriceps skinfold ratio.
	Total dairy	Highest vs. lowest	5	Yang	2019	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of

						vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Duarte	2014	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
				Park	2010	NA
				Park	2010	NA
				Li	2014	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
Morze 2021	Mediterranean diet	Highest vs. lowest	3	Bogumil	2019	Age, sex, race/ethnicity, BMI, history of diabetes, smoking status, energy intake
				Li	2014	NA
				Ma	2019	Age, race, cohort, physical activity level, BMI, smoking, regular aspirin use, total calorie intake, type 2 diabetes

Watling 2024	Fiber	Highest vs. lowest	7	Watling	(2024), cohort1	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts
				Watling	(2024), cohort2	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts
				Fedirko	2013	Energy adjustment by residual method, exercise, education, BMI, smoking status, diabetes, alcohol consumption, alcohol use; stratified by age, sex, center
				Yang	(2019), cohort1	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes
				Yang	(2019), cohort2	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes

				Liu	2021	Age at baseline, education, race, BMI, alcohol consumption, tobacco use, physical activity, diabetes, total energy intake; stratified by sex
				Guo	2022	Age, sex, race, education, Townsend Deprivation Index, smoking status, drinking status, exercise, BMI, diabetes
	Whole grain	Highest vs. lowest	5	Watling	(2024), cohort1	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts
				Watling	(2024), cohort2	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts
				Yang	(2019), cohort1	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes

				Yang	(2019), cohort2	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes
				Liu	2021	Age at baseline, education, race, BMI, alcohol consumption, tobacco use, physical activity, diabetes, total energy intake; stratified by sex
Kennedy 2017	Coffee (dose)	Extra two cups of coffee per day	10	Setiawan	2015	Age, gender, alcohol, smoking, T2DM, education, BMI, race
				Kurozawa	2007	Age, gender, alcohol, smoking, T2DM, liver disease, education
				Johnson	2011	Age, gender, alcohol, smoking, T2DM, education, BMI, dialect group, year of recruitment, black and green tea
				Bamia	2015	Stratified for age and centre; adjusted for gender, alcohol, smoking, T2DM, education, BMI, physical activity, energy intake, tea
				Inoue	2005	Stratified for age and centre; adjusted for gender, alcohol, smoking, T2DM, education, BMI, physical activity, energy intake, tea
				Hu	2008	Age, gender, alcohol, smoking, T2DM, liver disease,

						education, BMI, study year
				Petrick	2015	Age, gender, alcohol, smoking, BMI, race, cohort
				Shimazu (cohort 1)	2005	Age, gender, alcohol, smoking, liver disease
				Shimazu (cohort 2)	2005	Age, gender, alcohol, smoking, liver disease
				Lai	2013	Age, alcohol, smoking, T2DM, education, BMI, tea, cholesterol, marital status, ATBC intervention arm
Yu 2014	Tea (dose)	per 3 cups increment/day	4	Nechuta	2012	Age, marital status, education, occupation, BMI, exercise, fruit and vegetable intake, meat intake, diabetes, and family history of digestive system cancer
				Ui	2009	Age, sex, alcohol consumption, smoking status, coffee consumption, vegetable consumption, dairy products consumption, fruit consumption, fish consumption, soybean consumption
				Inoue	2009	Sex, age, area, smoking status, weekly ethanol intake, body mass index, history of diabetes mellitus, coffee consumption, green tea consumption, serum ALT level, HCV infection

						status, and HBV infection status
				Nagano	2001	City, age, gender, radiation exposure, smoking status, alcohol drinking, body mass index, education level, calendar time
Zhao 2021	Cholesterol (dose)	per 100 mg increment/day	2	loannou	2009	Energy from other macronutrients, daily alcohol consumption, coffee or tea, gender, race, age, education, region, diabetes, BMI, and subscapular-totriceps skinfold ratio.
				Yang	2020	Age, sex, race, physical activity, BMI, smoking status, aspirin use, type 2 diabetes, alcohol intake, total coffee intake, and total energy intake.
	Monounsaturated fatty acid (dose)	per 1% energy increment/day	4	Koh	2016	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Yang	2020	Age, sex, dialect, year of interview, educational level, BMI, smoking status, alcohol use, coffee drinking status, baseline history of self-reported diabetes, total energy and dietary protein.

						Fat subtype intakes are mutually adjusted.
				Duarte-Salles	2015	Baseline alcohol intake and non-alcohol total energy intake, sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber. Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
	Polyunsaturated fatty acid (dose)	per 1% energy increment/day	3	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Duarte-Salles	2015	Baseline alcohol intake and non-alcohol total energy intake, sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber.

						Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
	Saturated fat (dose)	per 1% energy increment/day	5	Koh	2016	Age, sex, dialect, year of interview, educational level, BMI, smoking status, alcohol use, coffee drinking status, baseline history of self-reported diabetes, total energy and dietary protein. Fat subtype intakes are mutually adjusted.
				loannou	2009	Energy from other macronutrients, daily alcohol consumption, coffee or tea, gender, race, age, education, region, diabetes, BMI, and subscapular-totriceps skinfold ratio.
				Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure

				Duarte-Salles	2015	Baseline alcohol intake and non-alcohol total energy intake, sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber. Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
	Total fat (dose)	per 5% energy increment/day	5	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Koh	2016	Age, sex, dialect, year of interview, educational level, BMI, smoking status, alcohol use, coffee drinking status, baseline history of self-reported diabetes, total energy and dietary protein. Fat subtype intakes are mutually adjusted.

				Duarte-Salles	2015	Baseline alcohol intake and non-alcohol total energy intake, sex-specific physical activity level, BMI, smoking status, lifetime alcohol intake pattern, coffee intake, and intake of dietary fiber. Fat subtype intakes are mutually adjusted
				Freedman	2010	Age, sex, alcohol, BMI, cigarette smoking, diabetes, education, fruit intake, vegetable intake, marital status, race and/or ethnicity, total energy from nonalcohol sources, usual physical activity throughout the day, and vigorous physical activity.
				loannou	2009	Energy from other macronutrients, daily alcohol consumption, coffee or tea, gender, race, age, education, region, diabetes, BMI, and subscapular-totriceps skinfold ratio.
	N-3 polyunsaturated fatty acid (dose)	per 1% energy increment/day	3	Yang	2020	Age, sex, BMI, family history of cancer, smoking, drinking, education status, physical activity, consumption of vegetables and fruit, insulin therapy, lipid-lowering medication, and systolic blood pressure
				Koh	2016	Age, sex, dialect, year of interview, educational level, BMI,

						smoking status, alcohol use, coffee drinking status, baseline history of self-reported diabetes, total energy and dietary protein. Fat subtype intakes are mutually adjusted.
				Sawada	2012	Age, area, sex, smoking status, alcohol frequency, BMI, past history of diabetes mellitus, intake of coffee, soy foods, vegetables, vegetable oil, protein, and iron
Watling 2024	Fiber (dose)	per 10 g increment/day	7	Watling	(2024), cohort1	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts
				Watling	(2024), cohort2	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts

				Fedirko	2013	Energy adjustment by residual method, exercise, education, BMI, smoking status, diabetes, alcohol consumption, alcohol use; stratified by age, sex, center
				Yang	(2019), cohort1	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes
				Yang	(2019), cohort2	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes
				Liu	2021	Age at baseline, education, race, BMI, alcohol consumption, tobacco use, physical activity, diabetes, total energy intake; stratified by sex
				Guo	2022	Age, sex, race, education, Townsend Deprivation Index, smoking status, drinking status, exercise, BMI, diabetes
	Whole grain (dose)	per 16 g increment/day	5	Watling	(2024), cohort1	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts

				Watling	(2024), cohort2	Sex, age at dietary questionnaire completion, and energy whereas in ATBC, minimally adjusted models adjusted for age at recruitment and energy intake, smoking status, ethnicity, education, alcohol intake, diabetes status, body mass index (BMI), regular use of aspirin, red meat intakes, and coffee consumption in both cohorts
				Yang	(2019), cohort1	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes
				Yang	(2019), cohort2	Age, race, physical activity level, BMI, smoking, aspirin use, alcohol consumption, type 2 diabetes
				Liu	2021	Age at baseline, education, race, BMI, alcohol consumption, tobacco use, physical activity, diabetes, total energy intake; stratified by sex

Supplement Table 5. Statistical analyses of quality evaluating criteria for all associations.

Dietary factor	Research classification	Comparison	No. of studies	Cohort study, n	Participants, n	Effect size	Criteria						Evidence class	GRADE
							Cases, n	P	95% PI	P (small study test)	I^2, %	P (excess significant test)		
Coffe	Non-dose-response	Highest vs. lowest	10	11	2266671	0.497	3015	6.83e-16	[0.332, 0.744]	7.92e-01	19.225	7.31e-01	I	Very low
Fish	Non-dose-response	Highest vs. lowest	5	5	1292076	0.811	1659	1.39e-04	[0.681, 0.966]	5.36e-01	0	7.07e-01	III	Very low
Fiber	Non-dose-response	Highest vs. lowest	5	7	2858360	0.713	2078	3.54e-05	[0.511, 0.995]	4.42e-01	17.011	3.84e-01	III	Low

Mediterranean diet	Non-dose-response	Highest vs. lowest	3	3	803436	0.666	1274	9.31e-06	[0.207, 2.138]	3.80e-01	0	5.43e-01	III	Very low
Alcohol*	Non-dose-response	Highest vs. lowest	2	2	489	3.774	< 489	7.21e-04	< 3 studies	< 3 studies	0		IV	Very low
Saturated fat	Non-dose-response	Highest vs. lowest	5	5	1180214	1.334	1300	1.81e-02	[0.767, 2.32]	2.79e-01	16.841	6.17e-01	IV	Low
Whole grains	Non-dose-response	Highest vs. lowest	4	5	1471226	0.794	1218	5.60e-03	[0.61, 1.035]	1.02e-01	0	8.91e-01	IV	Low
Cruciferous vegetables	Non-dose-response	Highest vs. lowest	3	3	141465	0.756	2702	4.12e-02	[0.133, 4.301]	1.53e-01	0	8.18e-01	IV	Low
Vegetable	Non-dose-response	Highest vs. lowest	9	9	1474399	0.659	2070	1.90e-03	[0.288, 1.50	1.62e-03	75.127	4.63e-04	IV	Very low

									4]					
Selenium	Non-dose-response	Highest vs. lowest	4	4	6326	0.519	135	2.09e-04	[0.243, 1.111]	4.17e-01	11.823	6.96e-01	IV	Very low
Ginseng	Non-dose-response	Yes vs. no	4	4	13493	0.463	831	2.16e-02	[0.026, 8.309]	9.08e-01	93.378	7.27e-01	IV	Very low
Cholesterol	Non-dose-response	Highest vs. lowest	2	2	147704	1.652	283	1.62e-01	< 3 studies	< 3 studies	67.964		V	Very low
Milk	Non-dose-response	Highest vs. lowest	5	5	9188172	1.267	4040	7.54e-02	[0.534, 3.011]	8.40e-01	67.899	4.50e-01	V	Very low
Total dairy	Non-dose-response	Highest vs. lowest	5	4	1684162	1.212	1261	1.15e-01	[0.472, 3.113]	1.30e-01	59.643	3.91e-01	V	Low

Red meat	Non-dose-response	Highest vs. lowest	6	6	1770363	1.177	1878	1.55e-01	[0.636, 2.177]	8.11e-02	54.31	3.12e-01	V	Very low
Processed meat	Non-dose-response	Highest vs. lowest	5	5	1694610	1.16	1552	8.84e-02	[0.879, 1.53]	8.55e-01	31.004	2.76e-01	V	Very low
Green tea**	Non-dose-response	Highest vs. lowest	2	2	57355	1.102	1394	6.26e-01	< 3 studies	< 3 studies	42.182		V	Very low
Total red and processed meat	Non-dose-response	Highest vs. lowest	5	6	1638829	1.085	1720	2.45e-01	[0.867, 1.358]	5.23e-01	22.502	7.35e-01	V	Very low
Total meat	Non-dose-response	Highest vs. lowest	3	3	1101412	1.07	578	6.34e-01	[0.066, 17.217]	2.48e-01	39.432	7.30e-01	V	Very low
Cheese	Non-dose-response	Highest vs. lowest	3	3	994543	1.069	1027	6.84e-01	[0.034, 33.8	6.29e-01	56.992	1.15e-01	V	Very low

									63]					
Total fat	Non-dose-response	Highest vs. lowest	5	5	1180214	1.068	1300	6.23e-01	[0.495, 2.306]	2.08e-01	45.204	8.09e-01	V	Low
Ultra-processed Food	Non-dose-response	Highest vs. lowest	2	2	217566	1.056	289	7.88e-01	< 3 studies	< 3 studies	0		V	Very low
Fruit	Non-dose-response	Highest vs. lowest	6	6	1043684	1.042	1972	5.65e-01	[0.855, 1.269]	3.63e-02	0	6.95e-01	V	Very low
Alcohol	Non-dose-response	Highest vs. lowest	3	3	1588661	1.021	2546	8.64e-01	[0.079, 13.213]	6.61e-01	62.299	2.98e-01	V	Very low
Carbohydrate	Non-dose-response	Highest vs. lowest	4	7	1101704	0.979	984	8.51e-01	[0.733, 1.307]	1.52e-01	44.51	2.78e-05	V	Very low

Legumes	Non-dose-response	Highest vs. lowest	3	3	153072	0.931	470	6.91e-01	[0.057, 15.16]	7.73e-01	12.431	6.69e-01	V	Very low
Caffeinated Coffee	Non-dose-response	Yes vs. no	2	2	707226	0.93	220	3.50e-01	< 3 studies	< 3 studies	0		V	Very low
PUFA	Non-dose-response	Highest vs. lowest	3	3	1110695	0.887	689	3.36e-01	[0.151, 5.22]	3.95e-01	0.314	7.09e-01	V	Low
Green tea	Non-dose-response	Highest vs. lowest	7	7	275975	0.886	1289	2.44e-01	[0.531, 1.478]	7.82e-01	41.381	5.03e-01	V	Very low
MUFA	Non-dose-response	Highest vs. lowest	3	4	1170993	0.88	1177	4.76e-01	[0.228, 3.395]	1.90e-01	52.206	7.85e-01	V	Very low
Yogurt	Non-dose-response	Highest vs. lowest	2	2	622051	0.809	358	1.26e-01	< 3 studies	< 3 studies	0		V	Very low

White meat	Non-dose-response	Highest vs. lowest	6	6	2199292	0.794	1899	6.82e-02	[0.372, 1.698]	2.18e-01	71.961	3.47e-03	V	Very low
N-3 PUFA	Non-dose-response	Highest vs. lowest	3	3	289077	0.761	1046	1.04e-01	[0.03, 19.231]	4.05e-01	40.648	3.91e-01	V	Low
Coffee	Dose-response	Extra two cups of coffee per day	9	10	2272642	0.713	2905	1.27e-17	[0.597, 0.851]	1.71e-02	36.379	6.79e-02	I	Moderate
Fiber	Dose-response	per 3 cups increment/day	5	7	2858360	0.831	2078	3.41e-05	[0.683, 1.012]	8.17e-01	36.225	1.75e-01	III	Moderate
Saturated fat	Dose-response	per 100 mg increment/day	4	5	1055579	1.334	1300	1.81e-02	[0.767, 2.32]	2.79e-01	16.841	6.17e-01	IV	Moderate
Total cholesterol	Dose-response	per 1% energy increment/day	2	2	147704	1.158	283	2.94e-	< 3 studi	< 3 stud	0		IV	Low

								03	es	ies				
Total fat	Dose-response	per 1% energy increment/day	5	5	1055579	1.013	1300	7.85e-01	[0.743, 1.382]	7.15e-01	64.493	3.49e-02	V	Moderate
MUFA	Dose-response	per 1% energy increment/day	3	4	616872	0.955	1177	2.84e-01	[0.668, 1.365]	9.35e-02	72.729	3.17e-01	V	Moderate
Whole grains	Dose-response	per 5% energy increment/day	3	5	1471226	0.947	1218	1.03e-01	[0.792, 1.132]	6.66e-01	34.614	4.80e-01	V	Moderate
PUFA	Dose-response	per 1% energy increment/day	3	3	986055	0.938	689	2.46e-01	[0.287, 3.064]	1.52e-01	65.175	2.12e-01	V	Low
Tea	Dose-response	per 10 g increment/day	4	4	168426	0.911	882	3.79e-01	[0.422, 1.967]	8.01e-01	52.59	4.52e-01	V	Low

N-3 PUFA	Dose-response	per 16 g increment/day	3	3	289077	0.78	1046	1.89e-01	[0.071, 8.606]	9.10e-01	0	7.32e-01	V	Moderate

*This association focused on the NAFLD-related population rather than the whole population.

**This association focused on the frequency of green tea rather than the weight.

Supplement Table 6. Quality Assessment Using the GRADE Framework of Each Pooled Analysis Assessing Associations Between diet and the risk of hepatocellular carcinoma.

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

Coffee. Highest vs. lowest

11	non-randomised studies	not serious	not serious	not serious	not serious	publication bias strongly suspected[a]	3015/2266671 (0.1%)	**RR 0.50** (0.42 to 0.59)	**1 fewer per 1,000** (from 1 fewer to 0 fewer)	⊕◯◯◯ Very low[a]	

Caffeinated Coffee. Yes vs. no

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		
2	non-randomised studies	serious[b]	not serious	not serious	serious[c]	none	220/707226 (0.0%)	**RR 0.93** (0.80 to 1.08)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[b,c]	
Processed meat. Highest vs lowest											
6	non-randomised studies	serious[b]	not serious	not serious	not serious	none	1552/1694610 (0.1%)	**RR 1.16** (0.98 to 1.38)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[b]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

Red and processed meat. Highest vs. lowest

6	non-randomised studies	serious[b]	not serious	not serious	not serious	none	1720/1638829 (0.1%)	**RR 1.08** (0.94 to 1.25)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[b]	

Green tea. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		
7	non-randomised studies	serious[b]	not serious	not serious	not serious	none	1289/275975 (0.5%)	**RR 0.89** (0.72 to 1.09)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[b]	

Alcohol (NAFLD patients). Modest vs. lowest

2	non-randomised studies	not serious	not serious	not serious	serious[d]	strong association	NA/489	**RR 1.10** (0.74 to 1.63)	**1 fewer per 1,000** (from 2 fewer to 1 fewer)	⊕⊕◯◯ Low[d]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

Fruits. Highest vs. lowest

6	non-randomised studies	not serious	not serious	not serious	not serious	none	1972/1043684 (0.2%)	**RR 1.04** (0.91 to 1.20)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low	

Vegetables. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
9	non-randomised studies	not serious	serious[e]	not serious	not serious	none	2070/1474399 (0.1%)	**RR 0.66** (0.51 to 0.86)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[e]	

Red Meat. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
6	non-randomised studies	not serious	not serious	not serious	not serious	publication bias strongly suspected[f]	1878/1770363 (0.1%)	**RR 1.18** (0.94 to 1.47)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[f]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

White Meat. Highest vs. lowest

6	non-randomised studies	not serious	very serious[g]	not serious	not serious	none	1833/2199262 (0.1%)	**RR 0.79** (0.62 to 1.02)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[g]	

Fish. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
5	non-randomised studies	not serious	not serious	not serious	not serious	none	1659/1292076 (0.1%)	**RR 0.81** (0.73 to 0.90)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low	
Total Meat. Highest vs. lowest											
3	non-randomised studies	not serious	not serious	not serious	serious[i]	none	578/1104402 (0.1%)	**RR 1.07** (0.81 to 1.41)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[i]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		

Milk. Highest vs. lowest

5	non-randomised studies	not serious	not serious	not serious	not serious	none	2020/4594086 (0.0%)	**RR 1.27** (0.98 to 1.65)	**1 fewer per 1,000** (from 2 fewer to 1 fewer)	⊕⊕◯◯ Low	

Ginseng. Yes vs. no

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
4	non-randomised studies	serious[b]	very serious[j]	not serious	serious[k]	none	831/13493 (6.2%)	**RR 0.46** (0.24 to 0.89)	**0 fewer per 1,000** (from 1 fewer to 0 fewer)	⊕◯◯◯ Very low[b,j,k]	

Cruciferous vegetables. Highest vs. lowest

3	non-randomised studies	not serious	not serious	not serious	not serious	none	2070/141465 (1.5%)	**RR 0.76** (0.58 to 0.99)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

Ultra-Processed Food. Highest vs. lowest

2	non-randomised studies	not serious	not serious	not serious	serious [1]	none	289/217566 (0.1%)	**RR 1.06** (0.71 to 1.57)	**1 fewer per 1,000** (from 2 fewer to 1 fewer)	⊕◯◯◯ Very low[1]	

Legumes. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		
3	non-randomised studies	not serious	not serious	not serious	serious[m]	none	470/153072 (0.3%)	**RR 0.93** (0.66 to 1.32)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[m]	
Yogurt. Highest vs. lowest											
2	non-randomised studies	not serious	not serious	not serious	serious[n]	none	358/622051 (0.1%)	**RR 0.81** (0.62 to 1.06)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[n]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

Cheese. Highest vs. lowest

3	non-randomised studies	not serious	serious[o]	not serious	not serious	none	1027/994543 (0.1%)	**RR 1.07** (0.78 to 1.48)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[o]	

Carbohydrate. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
7	non-randomised studies	not serious	serious[p]	not serious	serious[q]	none	984/1101704 (0.1%)	**RR 0.98** (0.78 to 1.22)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⨁◯◯◯ Very low[p,q]	

Selenium. Highest vs. lowest

4	non-randomised studies	not serious	not serious	not serious	serious[r]	none	135/6326 (2.1%)	**RR 0.52** (0.37 to 0.73)	**1 fewer per 1,000** (from 1 fewer to 0 fewer)	⨁◯◯◯ Very low[r]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
N-3 polyunsaturated fatty acid. Highest vs. lowest											
3	non-randomised studies	not serious	not serious	not serious	not serious	none	1046/289077 (0.4%)	**RR 0.76** (0.55 to 1.06)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low	

Total cholesterol. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
2	non-randomised studies	not serious	not serious	not serious	serious[s]	none	283/147704 (0.2%)	**RR 1.65** (0.82 to 3.34)	**2 fewer per 1,000** (from 3 fewer to 1 fewer)	⊕◯◯◯ Very low[s]	
Monounsaturated fatty acid. Highest vs. lowest											
4	non-randomised studies	not serious	not serious	not serious	not serious	publication bias strongly suspected[t]	1177/1170993 (0.1%)	**RR 0.88** (0.62 to 1.25)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[t]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

Polyunsaturated fatty acid. Highest vs. lowest

3	non-randomised studies	not serious	not serious	not serious	serious[u]	none	689/1110695 (0.1%)	**RR 0.89** (0.69 to 1.13)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[u]	

Saturated fat. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
5	non-randomised studies	not serious	not serious	not serious	not serious	none	1300/1180214 (0.1%)	**RR 1.33** (1.05 to 1.69)	**1 fewer per 1,000** (from 2 fewer to 1 fewer)	⊕⊕◯◯ Low	

Total fat. Highest vs. lowest

5	non-randomised studies	not serious	not serious	not serious	not serious	none	1300/1180214 (0.1%)	**RR 1.07** (0.82 to 1.39)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		

Total dairy. Highest vs. lowest

5	non-randomised studies	not serious	not serious	not serious	not serious	none	1261/1684162 (0.1%)	**RR 1.21** (0.95 to 1.54)	**1 fewer per 1,000** (from 2 fewer to 1 fewer)	⊕⊕◯◯ Low	

Mediterranean diet. Highest vs. lowest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
3	non-randomised studies	serious[v]	not serious	not serious	not serious	none	1274/803436 (0.2%)	**RR 0.67** (0.56 to 0.80)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[v]	
Fiber. Highest vs lowest											
7	non-randomised studies	not serious	not serious	not serious	not serious	none	2078/2858360 (0.1%)	**RR 0.71** (0.61 to 0.84)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
Whole grain											
5	non-randomised studies	not serious	not serious	not serious	not serious	none	1218/1471226 (0.1%)	**RR 0.79** (0.68 to 0.94)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low	

Coffee. dose

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
10	non-randomised studies	not serious	not serious	not serious	not serious	dose response gradient	2905/2272642 (0.1%)	**RR 0.71** (0.66 to 0.77)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕⊕◯ Moderate	

Tea. dose

4	non-randomised studies	not serious	not serious	not serious	serious [w]	dose response gradient	882/168426 (0.5%)	**RR 0.91** (0.74 to 1.12)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low[w]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
Total cholesterol. dose											
2	non-randomised studies	not serious	not serious	not serious	serious[s]	dose response gradient	283/147 704 (0.2%)	**RR 1.16** (1.05 to 1.28)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low[s]	
Monounsaturated fatty acid. dose											

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
4	non-randomised studies	not serious	not serious	not serious	not serious	dose response gradient	1177/1170993 (0.1%)	**RR 0.95** (0.88 to 1.04)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕⊕◯ Moderate	

Polyunsaturated fatty acid. dose

3	non-randomised studies	not serious	not serious	not serious	serious[u]	dose response gradient	689/1110695 (0.1%)	**RR 0.94** (0.84 to 1.04)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕◯◯ Low[u]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		
Saturated fat. dose											
5	non-randomised studies	not serious	not serious	not serious	not serious	dose response gradient	1300/1180214 (0.1%)	**RR 1.33** (1.05 to 1.69)	**1 fewer per 1,000** (from 2 fewer to 1 fewer)	⊕⊕⊕◯ Moderate	
Total fat. dose											

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		
5	non-randomised studies	not serious	not serious	not serious	not serious	dose response gradient	1300/1180214 (0.1%)	**RR 1.01** (0.91 to 1.11)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕⊕◯ Moderate	

Fiber. dose

7	non-randomised studies	not serious	not serious	not serious	not serious	dose response gradient	2078/2858360 (0.1%)	**RR 0.83** (0.76 to 0.91)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕⊕◯ Moderate	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[intervention]	Relative (95% CI)	Absolute (95% CI)		

Whole grain. dose

5	non-randomised studies	not serious	not serious	not serious	not serious	dose response gradient	1218/1471226 (0.1%)	**RR 0.95** (0.89 to 1.01)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕⊕◯ Moderate	

Green tea (frequency). Highest vs. modest

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		
2	non-randomised studies	serious[x]	not serious	not serious	not serious	none	1394/57355 (2.4%)	**RR 3.77** (1.75 to 8.15)	**4 fewer per 1,000** (from 8 fewer to 2 fewer)	⊕◯◯◯ Very low[x]	

Alcohol. Highest vs. lowest

3	non-randomised studies	serious[b]	serious[y]	not serious	not serious	none	2546/1588661 (0.2%)	**RR 1.02** (0.80 to 1.29)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕◯◯◯ Very low[b,y]	

Certainty assessment							№ of patients	Effect		Certainty	Importance
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**[intervention]**	**Relative (95% CI)**	**Absolute (95% CI)**		
N-3 polyunsaturated fatty acid (dose)											
3	non-randomised studies	not serious	not serious	not serious	not serious	dose response gradient	1046/289007 (0.4%)	**RR 0.78** (0.54 to 1.13)	**1 fewer per 1,000** (from 1 fewer to 1 fewer)	⊕⊕⊕◯ Moderate	

CI: confidence interval; **RR:** risk ratio

Explanations

a. The p-value of Egger's test was 0.053, less than 0.10

b. No bias risk assessment was performed

c. The number of HCC patients was 220, less than 1000

d. The number of participants was 489, less than 1000.

e. The square of I was 82.73%, greater than 75%

f. The p-value of Egger's test was 0.032, less than 0.10

g. The square of I was 79.82%, greater than 75%

i. The number of HCC patients was 578, less than 1000

j. The square of I was 88.57%, greater than 75%

k. The number of HCC patients was 831, less than 1000

l. The number of HCC patients was 289, less than 1000

m. The number of HCC patients was 470, less than 1000

n. The number of HCC patients was 358, less than 1000

o. The square of I was 56.7%, greater than 50%

p. The square of I was 65.76%, greater than 50%

q. The number of HCC patients was 984, less than 1000

r. The number of HCC patients was 135, less than 1000

s. The number of HCC patients was 283, less than 1000

t. The p-value of Egger's test was 0.046, less than 0.10

u. The number of HCC patients was 689, less than 1000

v. Low certainty of evidence was found by the application of NutriGrade

w. The number of HCC patients was 882, less than 1000

x. Only 1 cohort had a NOS score of more than 7

y. The square of I was 67.56%, greater than 50%