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Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Filippini T, Malavolti M, Borrelli F, Izzo AA, Fairweather-Tait SJ, Horneber M, Vinceti M

Filippini T, Malavolti M, Borrelli F, Izzo AA, Fairweather-Tait SJ, Horneber M, Vinceti M.
Green tea (*Camellia sinensis*) for the prevention of cancer.
Cochrane Database of Systematic Reviews 2020, Issue 3. Art. No.: CD005004.
DOI: [10.1002/14651858.CD005004.pub3](https://doi.org/10.1002/14651858.CD005004.pub3).

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[Intervention Review]

Green tea (*Camellia sinensis*) for the prevention of cancer

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Editorial group: Cochrane Gynaecological, Neuro-oncology and Orphan Cancer Group

Publication status and date: New search for studies and content updated (no change to conclusions), published in Issue 3, 2020.

Citation: Filippini T, Malavolti M, Borrelli F, Izzo AA, Fairweather-Tait SJ, Horneber M, Vinceti M. Green tea (*Camellia sinensis*) for the prevention of cancer. *Cochrane Database of Systematic Reviews* 2020, Issue 3. Art. No.: CD005004. DOI: [10.1002/14651858.CD005004.pub3](https://doi.org/10.1002/14651858.CD005004.pub3).

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ABSTRACT

Background

This review is an update of a previously published review in the Cochrane Database of Systematic Reviews (2009, Issue 3). Tea is one of the most commonly consumed beverages worldwide. Teas from the plant *Camellia sinensis* can be grouped into green, black and oolong tea, and drinking habits vary cross-culturally. *C. sinensis* contains polyphenols, one subgroup being catechins. Catechins are powerful antioxidants, and laboratory studies have suggested that these compounds may inhibit cancer cell proliferation. Some experimental and nonexperimental epidemiological studies have suggested that green tea may have cancer-preventative effects.

Objectives

To assess possible associations between green tea consumption and the risk of cancer incidence and mortality as primary outcomes, and safety data and quality of life as secondary outcomes.

Search methods

We searched eligible studies up to January 2019 in CENTRAL, MEDLINE, Embase, ClinicalTrials.gov, and reference lists of previous reviews and included studies.

Selection criteria

We included all epidemiological studies, experimental (i.e. randomised controlled trials (RCTs)) and nonexperimental (non-randomised studies, i.e. observational studies with both cohort and case-control design) that investigated the association of green tea consumption with cancer risk or quality of life, or both.

Data collection and analysis

Two or more review authors independently applied the study criteria, extracted data and assessed methodological quality of studies. We summarised the results according to diagnosis of cancer type.

Main results

In this review update, we included in total 142 completed studies (11 experimental and 131 nonexperimental) and two ongoing studies. This is an additional 10 experimental and 85 nonexperimental studies from those included in the previous version of the review.

Eleven experimental studies allocated a total of 1795 participants to either green tea extract or placebo, all demonstrating an overall high methodological quality based on 'Risk of bias' assessment. For incident prostate cancer, the summary risk ratio (RR) in the green tea-supplemented participants was 0.50 (95% confidence interval (CI) 0.18 to 1.36), based on three studies and involving 201 participants (low-certainty evidence). The summary RR for gynaecological cancer was 1.50 (95% CI 0.41 to 5.48; 2 studies, 1157 participants; low-certainty evidence). No evidence of effect of non-melanoma skin cancer emerged (summary RR 1.00, 95% CI 0.06 to 15.92; 1 study, 1075 participants; low-certainty evidence). In addition, adverse effects of green tea extract intake were reported, including gastrointestinal disorders, elevation of liver enzymes, and, more rarely, insomnia, raised blood pressure and skin/subcutaneous reactions. Consumption of green tea extracts induced a slight improvement in quality of life, compared with placebo, based on three experimental studies.

In nonexperimental studies, we included over 1,100,000 participants from 46 cohort studies and 85 case-control studies, which were on average of intermediate to high methodological quality based on Newcastle-Ottawa Scale 'Risk of bias' assessment. When comparing the highest intake of green tea with the lowest, we found a lower overall cancer incidence (summary RR 0.83, 95% CI 0.65 to 1.07), based on three studies, involving 52,479 participants (low-certainty evidence). Conversely, we found no association between green tea consumption and cancer-related mortality (summary RR 0.99, 95% CI 0.91 to 1.07), based on eight studies and 504,366 participants (low-certainty evidence).

For most of the site-specific cancers we observed a decreased RR in the highest category of green tea consumption compared with the lowest one. After stratifying the analysis according to study design, we found strongly conflicting results for some cancer sites: oesophageal, prostate and urinary tract cancer, and leukaemia showed an increased RR in cohort studies and a decreased RR or no difference in case-control studies.

Authors' conclusions

Overall, findings from experimental and nonexperimental epidemiological studies yielded inconsistent results, thus providing limited evidence for the beneficial effect of green tea consumption on the overall risk of cancer or on specific cancer sites.

Some evidence of a beneficial effect of green tea at some cancer sites emerged from the RCTs and from case-control studies, but their methodological limitations, such as the low number and size of the studies, and the inconsistencies with the results of cohort studies, limit the interpretability of the RR estimates. The studies also indicated the occurrence of several side effects associated with high intakes of green tea. In addition, the majority of included studies were carried out in Asian populations characterised by a high intake of green tea, thus limiting the generalisability of the findings to other populations. Well conducted and adequately powered RCTs would be needed to draw conclusions on the possible beneficial effects of green tea consumption on cancer risk.

PLAIN LANGUAGE SUMMARY

Green tea for the prevention of cancer

Background

There is a high consumption worldwide of green tea (*Camellia sinensis*), that contains polyphenols which have a powerful antioxidant activity that can prevent the formation of free radicals that may cause damage and cell death. Therefore it has been suggested that green tea might reduce cancer risk, a theory that has been tested through a number of studies on human populations, which examined the link between green tea consumption and cancer.

The aim of the review

We assessed the association between green tea consumption and the risk of developing cancer in epidemiologic studies.

Main findings

In this review we included 142 studies with more than 1.1 million participants looking for an association between green tea consumption and cancers of the digestive tract and the female reproductive system, breast, prostate, kidney and urinary tract, nasopharynx, lung, blood, skin, thyroid and brain. The majority of the studies were of medium to high quality in terms of how they were conducted. Overall, the evidence from the studies showed that the consumption of green tea consumption to reduce the risk of cancer was inconsistent.

Some studies suggested a beneficial effect on cancer risk, while others indicated no effect, and even suggested a slightly increased cancer risk. In particular, results from experimental studies suggested that green tea extract supplementation yielded a decreased risk for prostate cancer, but increased risk for gynaecological cancers. For non-melanoma skin cancer no difference in cancer cases emerged. Green tea supplementation seemed to slightly improve quality of life compared with placebo, although it was associated with some adverse effects including gastrointestinal disorders, higher levels of liver enzymes, and, more rarely, insomnia, raised blood pressure and skin reactions.

In nonexperimental studies, comparing people consuming the highest amount of green tea to those in the lowest category of consumption, we found an indication of a lower occurrence of new cases of overall types of cancer, while no difference emerged for lethal cases. However, results according to the type of cancer and study design were inconsistent.

What are the conclusions?

A beneficial effect of green tea consumption on cancer prevention remains unproven so far. Caution is advised regarding supplementation with high-dose green tea extracts due to the possible adverse effects.

SUMMARY OF FINDINGS

Summary of findings for the main comparison. Green tea extract supplementation compared with placebo for preventing cancer: experimental studies

Green tea extract supplementation compared with placebo for cancer prevention: experimental studies

Patient or population: adults (aged at least 18 years)

Settings: outpatients

Intervention: green tea extract supplementation

Comparison: placebo

Outcomes	Relative effect (95% CI)	Anticipated absolute effects* (95% CI) (studies)			No of participants (studies)	Certainty of the evidence (GRADE)	Comments/explanations
		Placebo	Green tea extract supplementation	Difference			
Prostate cancer incidence	RR 0.50 (0.18 to 1.36)	22.0%	11.7% (4.4 to 28.7)	10.3% fewer (17.6 fewer to 6.7 more)	201 (3 RCTs)	⊕⊕⊕⊖ Low	Very large effects, but all participants were at high risk of prostate cancer at the time of recruitment, with high-grade prostatic intraepithelial neoplasia and/or atypical small acinar proliferation less than 3 months before, thus the indirectness in transferring the results to the general population, high imprecision of the summary estimates based on only 201 participants and 32 cases, and high inconsistency between study results
Gynaecological cancer incidence	RR 1.50 (0.41 to 5.48)	0.9%	1.3% (0.4 to 4.6)	0.4% more (0.5 fewer to 3.7 more)	1157 (2 RCTs)	⊕⊕⊕⊖ Low	Large effects, but high imprecision of the summary RR and high inconsistency of results due to contradictory findings from two available studies.
Non-melanoma skin cancer incidence	RR 1.00 (0.06 to 15.92)	0.2%	0.2% (0.0 to 2.9)	0.0% fewer (0.0 fewer to 2.7 more)	1075 (1 RCT)	⊕⊕⊕⊖ Low	Very high imprecision based on only one study and no large effect detected.
Quality of life	Not estimable	-	-	-	-	Not assessed	Due to the large number of different scales used it was not possible to the overall certainty of evidence.

The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).
CI: confidence interval; **RCT:** randomised controlled trial; **RR:** risk ratio

GRADE Working Group grades of evidence

High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.

Moderate certainty: we are moderately confident in the effect estimate; the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low certainty: our confidence in the effect estimate is limited; the true effect may be substantially different from the estimate of the effect.

Very low certainty: we have very little confidence in the effect estimate; the true effect is likely to be substantially different from the estimate of effect.

Summary of findings 2. Highest compared with lowest green tea exposure for preventing cancer: primary outcomes in nonexperimental studies

Highest compared with lowest green tea exposure for preventing cancer in nonexperimental studies

Patient or population: adults (aged at least 18 years)

Setting: outpatient

Intervention: highest green tea exposure

Comparison: lowest green tea exposure

Outcomes (number of studies)	Relative effect (95% CI)	Number of participants (number of cases)	Certainty of the evidence (GRADE)	Comments
Any cancer incidence (3 studies)	RR 0.83 (0.65 to 1.07)	52,479 (4962 cases)	⊕⊕○○ Low	Large ^a but imprecise effect. Similar but imprecise effect from the 2 cohort studies (RR 0.81, 95% CI 0.50 to 1.32)
Any cancer mortality (8 studies)	RR 0.99 (0.91 to 1.07)	504,366 (21,439 cases)	⊕⊕○○ Low	Not a large effect. All cohort studies

The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).
CI: confidence interval; **RR:** risk ratio

GRADE Working Group grades of evidence

High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.

Moderate certainty: we are moderately confident in the effect estimate; the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low certainty: our confidence in the effect estimate is limited; the true effect may be substantially different from the estimate of the effect.

Very low certainty: we have very little confidence in the effect estimate; the true effect is likely to be substantially different from the estimate of effect.

^aUpgrading criteria for nonexperimental studies considered are: large effect estimates.

Summary of findings 3. Highest compared with lowest green tea exposure for preventing cancer: individual cancer types in nonexperimental studies

Highest compared with lowest green tea exposure for preventing cancer in nonexperimental studies

Patient or population: adults (aged at least 18 years)

Setting: outpatient

Intervention: highest green tea exposure

Comparison: lowest green tea exposure

Outcomes (Number of studies)	Relative effect (95% CI)	Number of participants (number of cases)	Certainty of the evidence (GRADE)	Comments
Oral cancer risk (5 studies)	RR 0.71 (0.62 to 0.82)	55,977 (2343 cases)	⊕⊕⊕⊖ Low	Large effect ^a , but possible serious risk of bias due to case-control studies. Smaller but more imprecise effect from the single cohort study (RR 0.44, 95% CI 0.19 to 1.04)
Any gut cancer risk (7 studies)	RR 0.78 (0.59 to 1.02)	70,299 (3191 cases)	⊕⊕⊕⊖ Low	Large effect ^a , but possible serious risk of bias due to case-control studies. Smaller but more imprecise decreased risk for cohort studies alone (RR 0.86, 95% CI 0.27 to 2.79; 2 studies)
Oesophageal cancer risk (13 studies)	RR 0.81 (0.64 to 1.04)	74,895 (4595 cases)	⊕⊕⊕⊖ Very low	Large effect ^a , but possible serious risk of bias due to case-control studies. Possible publication bias. Increased though highly imprecise risk from the single cohort study (RR 1.67, 95% CI 0.88 to 3.16)
Stomach cancer risk (18 studies)	RR 0.86 (0.74 to 1.01)	438,595 (10,183 cases)	⊕⊕⊕⊖ Very low	Large effect ^a , but possible serious risk of bias due to case-control studies. Null risk from cohort studies alone (RR 0.99, 95% CI 0.85 to 1.14; 7 studies)
Liver cancer risk (6 studies)	RR 0.88 (0.68 to 1.14)	198,885 (1284 cases)	⊕⊕⊕⊖ Low	Small but imprecise effect. Mostly cohort studies showing similar but smallest risk (RR 0.93, 0.71 to 1.20; 5 studies)
Pancreatic cancer risk (9 studies)	RR 0.88 (0.70 to 1.10)	326,564 (2386 cases)	⊕⊕⊕⊖ Low	Small but imprecise effect. Possible serious risk of bias due to case-control studies. Null risk for only cohort studies (RR 1.04, 95% CI 0.84 to 1.30; 6 studies)

Colorectal cancer risk (16 studies)	RR 0.84 (0.74 to 0.96)	610,295 (8601 cases)	⊕⊕⊕⊕ Low	Large effect ^a , but possible serious risk of bias due to case-control studies. Null risk for cohort studies alone (RR 1.00, 95% CI 0.92 to 1.08; 9 studies)
Colon cancer risk (10 studies)	RR 0.89 (0.80 to 0.98)	389,974 (4118 cases)	⊕⊕⊕⊕ Low	Large effect ^a , but possible serious risk of bias due to case-control studies. Smaller but more imprecise decreased risk for cohort studies alone (RR 0.93, 95% CI 0.82 to 1.05; 6 studies)
Rectal cancer risk (9 studies)	RR 0.89 (0.75 to 1.05)	356,851 (2679 cases)	⊕⊕⊕⊕ Low	Small effect. Smaller but more imprecise effect from only cohort studies (RR 0.92, 95% CI 0.77 to 1.09, 5 studies)
Lung cancer risk (17 studies)	RR 0.88 (0.76 to 1.02)	269,565 (9180 cases)	⊕⊕⊕⊕ Very low	Small effect, but possible serious risk of bias due to case-control studies. Null risk for cohort studies alone (RR 1.02, 95% CI 0.79 to 1.31; 6 studies)
Breast cancer risk (14 studies)	RR 0.88 (0.75 to 1.02)	250,822 (9378 cases)	⊕⊕⊕⊕ Very low	Small effect, but possible serious risk of bias due to case-control studies. Null risk for cohort studies alone (RR 1.01, 95% CI 0.86 to 1.19; 5 studies)
Gynaecological cancer risk (10 studies)	RR 0.69 (0.57 to 0.83)	66,738 (5506 cases)	⊕⊕⊕⊕ Low	Large effect ^a , but possible serious risk of bias due to case-control studies. Similar but more imprecise effect from the single cohort study (RR 0.75, 95% CI 0.43 to 1.30)
Endometrial cancer risk (5 studies)	RR 0.77 (0.65 to 0.91)	60,416 (2835 cases)	⊕⊕⊕⊕ Low	Large effect, but possible serious risk of bias due to case-control studies. Smaller but imprecise effect from the single cohort study (RR 0.75, 95% CI 0.43 to 1.30)
Ovarian cancer risk (5 studies)	RR 0.64 (0.45 to 0.90)	6,322 (2671 cases)	⊕⊕⊕⊕ Low	Large effect ^a , but possible serious risk of bias due to all case-control studies
Prostate cancer risk (13 studies)	RR 0.73 (0.56 to 0.94)	127,239 (2926 cases)	⊕⊕⊕⊕ Very low	Large effect ^a , but possible serious risk of bias due to case-control studies. Increased though imprecise risk for cohort studies alone (RR 1.09, 95% CI 0.89 to 1.32; 5 studies). Possible publication bias
Urinary tract cancer risk (7 studies)	RR 1.04 (0.79 to 1.37)	156,039 (2235 cases)	⊕⊕⊕⊕ Very low	Small and imprecise effect. Increased but imprecise effect from cohort studies alone (RR 1.24, 95% CI 0.87 to 1.76; 3 studies)

The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

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

GRADE Working Group grades of evidence

High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.

Moderate certainty: we are moderately confident in the effect estimate; the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low certainty: our confidence in the effect estimate is limited; the true effect may be substantially different from the estimate of the effect.

Very low certainty: we have very little confidence in the effect estimate; the true effect is likely to be substantially different from the estimate of effect.

^aUpgrading criteria for nonexperimental studies considered are: large effect estimates.

BACKGROUND

This review is an update of a previously published Cochrane review (Boehm 2009).

Description of the intervention

Tea (*Camellia sinensis*) is the most highly consumed manufactured drink in the world (FAO 2018). Between 2007 and 2016, world tea production grew by an average annual rate of 4.4%. Global tea consumption was 5.53 million tonnes in 2016 with an annual growth rate of 4.5% between 2007 and 2016. Three-quarters of global production is consumed locally, driven particularly by China, India and other emerging economies (FAO 2018). In high-income countries, consumption is much lower, being generally one-fifth of that found in low- and middle-income countries. Tea consumption has stabilised in recent years, with a few exceptions (FAO 2015), for example between 1990 and 2014, total tea consumption increased in the USA by about 38% (USDA 2018).

Brewed tea is obtained from the infusion of leaves and buds of *Camellia sinensis*. The most commonly consumed types of tea are green and black tea. Approximately 20% of the world's *Camellia sinensis* consumption is in the form of green tea; the other 80% is black (FAO 2015). Tea is characterised by the manufacturing process that the leaves undergo after harvesting. Green tea is made by processing fresh leaves using heat or hot steam immediately after collection, thus minimising any oxidation processes. Conversely, in black tea, the leaves undergo several treatments, including withering by blowing air, preconditioning, 'cut-tear-curl', fermentation and final drying, which result in an oxidised tea (Preedy 2014). Depending on these processes, the degree of oxidation may vary greatly, thus influencing the content of antioxidant compounds (Preedy 2014).

Due to the high content of antioxidant compounds, a great deal of attention has been given to green tea with regard to the possible prevention of chronic diseases and cancer (Eisenstein 2019; Yang 2019), as well as possible beneficial effects on cardiovascular disease, insulin sensitivity and lipid profiles (Liu 2013b; Yang 2019; Yu 2017).

How the intervention might work

Pharmacology of *Camellia sinensis*

The active ingredients of green tea include polyphenols most of which are flavonols, commonly known as catechins. These account for 30% to 40% of the extractable solids of dried green tea leaves. Other active ingredients are alkaloids, such as caffeine and theobromine, carbohydrates, and minerals and other trace elements, such as fluoride and aluminium (Coppock 2016; Filippini 2019; Milani 2019; Yang 2019). Green tea contains higher amounts of catechins than black tea (Peluso 2017), and green tea processing prevents oxidation (Chen 2007). After fermentation from green to black tea, about 15% of catechins remain unchanged while the rest of the catechins are converted to theaflavins, which are polyphenol pigments and thearubigins (Blumenthal 2003). Brewing conditions, including water temperature and infusion time, influence the antioxidant capacity of green tea (Sharpe 2016).

The catechins found in green tea include epigallocatechin-3-gallate (EGCG), epigallocatechin, epicatechin-3-gallate and epicatechin, gallic catechins and gallic catechin gallate. EGCG is the predominant

and most studied catechin in green tea (Peluso 2017; Yang 2019), as it is a powerful antioxidant believed to be an important determinant of the therapeutic qualities of green tea (Chen 2019; Gao 2016; Peluso 2017). It is suggested that EGCG works by suppressing the formation of new blood vessels (angiogenesis) and regulating their permeability, thereby cutting off the blood supply to cancerous cells (Demeule 2002; Diniz 2017; Maiti 2003; Rashidi 2017; Yang 2019). In vitro studies and in vivo animal models have shown EGCG to be a potent chemo-preventative agent (Liao 2001; Shirakami 2018; Xu 2019).

Green tea catechins have also been shown to decrease plasma lipid peroxide and malondialdehyde concentrations, to increase plasma ascorbate concentrations, to decrease non-haem iron absorption, and increase the resistance of low-density lipoproteins to oxidation (Williamson 2005). It is recognised that most classes of catechins are sufficiently well absorbed to have the potential to induce biological effects, since they cross the intestinal barrier and reach concentrations in the blood stream that have been shown in vitro to exert effects (Liao 2001; Manach 2005; Scalbert 2000). They are reported to be rapidly absorbed and eliminated in humans. Peak plasma concentrations were observed between one to three hours after oral administration and reached total catechin concentrations in the sub- or low- μ M range, and with a half-life of two to four hours. Parent flavonoids are deglycosylated during digestion, are absorbed in the small intestine, and appear in the blood as phase II metabolites (Williamson 2018). Pharmacokinetic studies show that the flavonoid epicatechin is absorbed in the small intestine with a number of structural-related epicatechin metabolites (SREM) attaining sub- μ mol/L peak plasma concentrations (Cmax) approximately one hour after ingestion (Borges 2018). The SREMs are excreted in urine over a 24-hour period in amounts corresponding to 20% of epicatechin intake. If unabsorbed along the small intestine epicatechin undergoes microbiota-mediated conversions in the colon, which, being absorbed, appear in plasma as phase II metabolites with a Cmax of 5.8 hours after consumption, and they are excreted in quantities equivalent to 42% of the ingested epicatechin (Borges 2018).

Possible mechanisms of action of *Camellia sinensis* polyphenols

Green tea polyphenols inhibit cell proliferation and viability, and have been shown (primarily in in vitro and ex vivo studies) to exert a powerful antioxidant activity (Ahmad 1999; Romano 2013; Schröder 2019; Yang 1993; Yang 1997). Several mechanisms have been proposed for the potential anticancer activity of green tea catechins (Yang 2019). Their polyphenolic structure allows electron delocalisation, conferring the ability to quench free radicals. EGCG, has been shown to reduce reactive oxygen species, such as superoxide radical, singlet oxygen, hydroxyl radical, peroxy radical, nitric oxide, nitrogen dioxide and peroxynitrite (Sang 2011). Tea polyphenols are also strong chelators of metal ions, thus hampering the formation of reactive oxygen species. Several hypotheses have been put forward to explain a possible cancer-preventive activity of catechins (Fujiki 1999; Yang 2019), including counteraction of tumour growth, invasion, metastasis and cell transformation, as well as inhibiting the interaction of tumour promoters, hormones and various growth factors with their receptors (Beltz 2006; Peluso 2017; Rahmani 2015; Rashidi 2017; Yang 2019). However, although in vitro and animal mechanistic studies indicate that flavonoids have anticancer properties, much of the evidence is derived from culture studies using unmetabolised

flavonoids, and the simple antioxidant hypothesis is no longer an acceptable explanation (Kerimi 2018). In animal models, where high doses of green tea extracts and constituents have been used, strong evidence for the cancer-preventive activity of tea constituents has been noted (Yang 2009; Yang 2011b). However, because of differences in endogenous metabolism and gut microflora, animal studies produce data that may not be necessarily be extrapolated to humans (Borges 2016).

Why it is important to do this review

Many reviews have been undertaken in recent years to examine the association between green tea consumption and cancer risk. Examples include a meta-analysis that concluded that there is a dose-response relationship between green tea consumption and prevention of prostate cancer when more than seven cups of tea are consumed per day (Guo 2017). Another recent dose-response meta-analysis reported a relationship between green tea drinking and prevention of liver cancer, with the downward trend being most obvious when the consumption was increased to four cups per day (Ni 2017). Similarly, dose-response analysis of green tea consumption and biliary tract cancer suggested that the risk decreased by 4% with each additional cup of tea per day, especially in women (Xiong 2017). A systematic review examining the effect of green tea on risk of breast cancer suggested a protective effect (Gianfredi 2018), whereas another was inconclusive (Najaf 2018). With regard to gastric cancer, the effect of green tea may be temperature-dependent, with high-dose, long-term consumption reducing the risk, whereas very high-temperature green tea may possibly increase the risk of gastric cancer (Huang 2017).

Since several additional experimental and nonexperimental epidemiological studies have become available since the previous version of this Cochrane Review, we undertook an update to assess the relationship between peoples' green tea or EGCG consumption and cancer risk.

OBJECTIVES

To assess possible associations between green tea consumption and the risk of cancer incidence and mortality as primary outcomes, and safety data and quality of life as secondary outcomes.

METHODS

Criteria for considering studies for this review

Types of studies

We included studies in which participants consumed green tea orally, either as drinkable tea or as extracts. Studies used one of the following designs.

- Experimental studies: randomised controlled trials (RCTs)
- Nonexperimental studies: both cohort and case-control observational studies

We did not consider case-series, case reports and other studies without a comparator, editorials, reviews, animal studies and in vitro studies for this review.

Types of participants

Adult participants (18 years of age and older).

Types of interventions

We were interested in studies that focused on the consumption of green tea, either as part of an intervention (experimental) study or measured in a nonexperimental study. The exposure variable was the consumption of green tea or green tea extract (only monotherapy preparations for oral consumption in liquid, powder or tablet form). We excluded studies that used green tea extract supplementation as part of a multi-component preparation if they did not include a study arm using green tea extracts in monotherapy.

We defined green tea as non-fermented tea leaves, and studies had to mention that green tea, non-fermented tea or 'matsu-cha', as it is called in Asia, had been consumed. We considered any method of quantifying this variable (e.g. direct recording, recall questionnaire) as potentially valid. We excluded studies that did not distinguish the type of tea (e.g. black tea versus green tea) or did not report quantitative data of at least two different amounts or frequencies of green tea consumption.

We excluded pharmacokinetic-type studies because they were unlikely to contribute useful data on long-term effects of green tea.

Only studies reporting the duration of green tea consumption in their summary were included.

Types of outcome measures

Primary outcomes

The primary outcome measures were:

- the number of participants developing cancer (incidence);
- the number of participants dying from cancer (mortality).

Results from nonexperimental epidemiological studies had to include an estimate of the risk ratio (RR), or sufficient data for us to calculate it.

We used the following categories to combine and analyse different types of cancer.

- Gastrointestinal cancers: including oral cancer, pharyngeal cancer, laryngeal cancer, oesophageal cancer, stomach cancer, liver cancer, pancreatic cancer, biliary tract cancer, and colorectal cancer
- Respiratory tract cancer: including nasopharyngeal cancer, lung cancer, and mesothelioma
- Breast cancer
- Urogenital tract cancers: including prostate cancer, endometrial cancer, ovarian cancer, renal cancer, and urinary tract cancer
- Haematological cancers: including haematopoietic cancer, leukaemia, lymphoma, and multiple myeloma
- All other types of cancer

Secondary outcomes

Safety data and data on quality of life

Search methods for identification of studies

Electronic searches

For the original review we searched the following electronic databases from inception to January 2009 to retrieve studies for potential inclusion: the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE (Ovid), Embase (Ovid), Amed, CancerLit, PsychInfo and Phytobase.

For this update we searched the following electronic databases up to January 2019:

- the Cochrane Central Register of Controlled Trials (CENTRAL; 2019, Issue 1) in the Cochrane Library ([Appendix 1](#));
- MEDLINE via Ovid (January 2009 to January week 1, 2019) ([Appendix 2](#));
- Embase via Ovid (January 2009 to 2019 Week 1) ([Appendix 3](#)).

Searching other resources

We systematically checked references from published studies for further studies. We specifically screened the reference list from studies retrieved in full text, and also from previous systematic reviews and meta-analysis on the topic, including non-English papers, though we assumed that some of the articles from Asian countries would not be retrievable via Western medical databases. We obtained all relevant non-English articles and a Japanese/Chinese Cochrane collaborator acted as a filter for study selection. Publications in languages other than English were translated in-house or by using relevant services. Finally, we also checked for other relevant studies in the clinical trials registry [ClinicalTrials.gov](#) up to January 2019.

Data collection and analysis

Selection of studies

To be included, studies had to report on the consumption of green tea, non-fermented tea or 'matsu-cha'. Two review authors checked studies identified by the searches and included articles on initial screen only if they could determine from the abstract that the article was a report of either an experimental intervention or a nonexperimental study. When we could not reject with certainty a title or abstract, we assessed the full text.

Two review authors independently analysed the full text of all potentially relevant eligible studies. Reasons for excluding any study are stated in [Criteria for considering studies for this review](#). All disagreements were resolved by discussion between the two review authors. If any data were missing from the study reports, we attempted to obtain the data by contacting the study authors.

Data extraction and management

Two review authors independently performed data extraction using pre-defined and pre-tested data extraction forms. We resolved discrepancies by discussion. We categorised studies into experimental (RCTs) and nonexperimental studies (i.e. cohort studies, including cohort-nested studies, and case-control studies). We also grouped data according to study design and cancer type. We entered the extracted data into Review Manager 5 ([Review Manager 2014](#)), and two review authors double-checked the entries.

Assessment of risk of bias in included studies

Four review authors independently assessed the risk of bias of the included studies.

Experimental studies

We used the Cochrane 'Risk of bias' tool to assess risk of bias in the included RCTs ([Higgins 2017](#)). The criteria relate to the following domains:

- Selection bias: random sequence generation and allocation concealment
- Performance bias: blinding of participants and personnel (i.e. treatment providers)
- Detection bias: blinding of outcome assessment
- Attrition bias: incomplete outcome data
- Reporting bias: selective reporting of outcomes
- other possible sources of bias (please specify)

We considered studies that we assessed as 'adequate' in all main domains to be at low risk of bias. Studies in which there was no clear judgement concerning the procedures in one or more key domains we considered to be at least of medium risk of bias. Studies with clearly inadequate procedures in one or more of the key domains we considered to be at high risk of bias.

Nonexperimental studies

We used the Newcastle-Ottawa Scale (NOS) to assess the methodological quality of epidemiologic studies ([Wells 2001](#)). The NOS is based on a 'star' system in which a study is assessed on three broad perspectives:

- selection of study groups;
- comparability of the groups;
- ascertainment of outcome or exposure of interest for cohort or case-control studies, respectively.

High-quality answers to each NOS question are identified with a star/asterisk. Details used during the evaluation are reported in two templates, one for cohort ([Appendix 4](#)), and one for case-control studies ([Appendix 5](#)). Both cohort and case-control studies can receive a maximum of nine stars or points. We considered studies with six or fewer points as low quality, with seven to eight points as medium quality, and with nine points as high quality.

Measures of treatment effect

We used the following measures of the effect of treatment or exposure.

- For dichotomous outcomes (i.e. cancer risk), we used the risk ratio (RR) for both experimental and nonexperimental studies.
- For continuous outcomes (evaluation of scores for quality of life), we used the mean difference between treatment arms in experimental studies.

Unit of analysis issues

We did not note any unit of analysis issues.

Dealing with missing data

When a study had missing data in the level of exposure assessment, risk estimates or confidence intervals, we attempted to obtain the data by contacting the study authors. Nevertheless, we reported the available data in [Characteristics of included studies](#). We did not impute missing data for any of the outcomes for data analysis.

Assessment of heterogeneity

We used the Chi² test for heterogeneity and the I² statistic ([Higgins 2003](#)), to quantify heterogeneity of study results. We interpreted the I² statistic as per guidance provided in the *Cochrane Handbook for Systematic Reviews of Interventions* ([Deeks 2017](#)): 0% to 40% might not be important; 30% to 60% represented moderate heterogeneity; 50% to 90% represented substantial heterogeneity; and 75% to 100% represented considerable heterogeneity.

Assessment of reporting biases

We followed the recommendations for testing for funnel plot asymmetry as described in the *Cochrane Handbook for Systematic Reviews of Interventions* ([Sterne 2017](#)). Funnel plot asymmetry may be due to reporting bias. We produced funnel plots to assess the potential for small-study effects when at least five studies reported results for the same type of cancer ([Egger 1997](#)).

Data synthesis

We carried out a meta-analysis of the included studies when the study results reported estimate for cancer risk or we could compute it from raw data. When studies reported more than one estimated risk, we used the results generated by the most adjusted model. We used a random-effects model for all analyses. We carried out and reported overall analyses and analyses stratified by study design.

Subgroup analysis and investigation of heterogeneity

We performed subgroup analysis for any cancer incidence and mortality and, whenever possible, for all different types of cancer site according to categories identified in [Primary outcomes](#). In order to investigate possible sources of heterogeneity, we also performed stratified analyses according to study design of nonexperimental studies (hospital-based case-control design, population-based case-control design, cohort design).

Sensitivity analysis

We performed the following sensitivity analyses:

- study design of nonexperimental studies (hospital-based case-control design, population-based case-control design, cohort design).

Summary of findings and assessment of the certainty of the evidence

We presented the overall certainty of evidence of all outcomes investigated in the experimental studies, namely prostate cancer, gynaecological cancer and non-melanoma skin cancer. We also presented the certainty of evidence for the primary outcomes of nonexperimental studies and for which it was possible to evaluate publication bias, that is, when at least five studies reported results for the same type of cancer ([Egger 1997](#)).

We evaluated the overall certainty of evidence according to the GRADE approach ([Atkins 2004](#)), which takes into account issues related not only to internal validity (risk of bias, inconsistency, imprecision, publication bias) but also to external validity, such as directness of results ([Langendam 2013](#)). We created three 'Summary of findings' tables ([Summary of findings for the main comparison](#); [Summary of findings 2](#); [Summary of findings 3](#)), adhering to the methods described in the *Cochrane Handbook for Systematic Reviews of Interventions* ([Schünemann 2017](#)), and using [GRADEpro GDT](#). We used the GRADE checklist and GRADE Working Group certainty of evidence definitions ([Meader 2014](#)), as follows.

- High-certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
- Moderate-certainty: we are moderately confident in the effect estimate. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
- Low-certainty: our confidence in the effect estimate is limited, and the true effect may be substantially different from the estimate of the effect.
- Very low-certainty: we have very little confidence in the effect estimate, and the true effect is likely to be substantially different from the estimate of effect.

RESULTS

Description of studies

Results of the search

For the initial version of this review ([Boehm 2009](#)), we identified a total of 675 hits from the literature searches from database inception to January 2009. However, 586 clearly did not match inclusion criteria and were excluded by title and abstract screening. The main reasons for exclusion were that the paper did not investigate people or cancer. Of the remaining 89 papers, we retrieved the full-text articles and assessed them according to the inclusion criteria provided in the protocol. Thirty-eight of them did not fulfil the inclusion criteria. The main reasons for exclusion were as follows: no distinction between green and black tea, endpoints other than cancer, frequency of green tea consumption was not specified, or they were duplicate publications. Of the remaining records we identified 51 studies for inclusion (1 RCT, 23 prospective cohort studies and 27 retrospective case-control studies).

In this update of the original review, we conducted the literature search from January 2009 to January 2019, and we retrieved an additional 2399 hits from database searching. We included a further 21 articles of potential relevance from trials registries and citation chasing ([Booth 2008](#); [EUnetHTA 2017](#)). After de-duplication, we screened a total of 1932 references. Of these, we excluded 1742 references as clearly irrelevant on the basis of the title and abstract review. We then retrieved the full-text articles for the remaining 190 publications and assessed them for possible relevance. We considered 130 of these publication as eligible for inclusion. For the 60 studies that we excluded, 30 studies reported exposure not including green tea separately, 13 had an ineligible study design (e.g. cross-sectional studies or pharmacokinetic studies), 11 did not include cancer among the outcomes, four were undertaken in non-healthy individuals all with cancer, and two studies were from paediatric populations ([Figure 1](#)).

Figure 1. PRISMA flow-chart

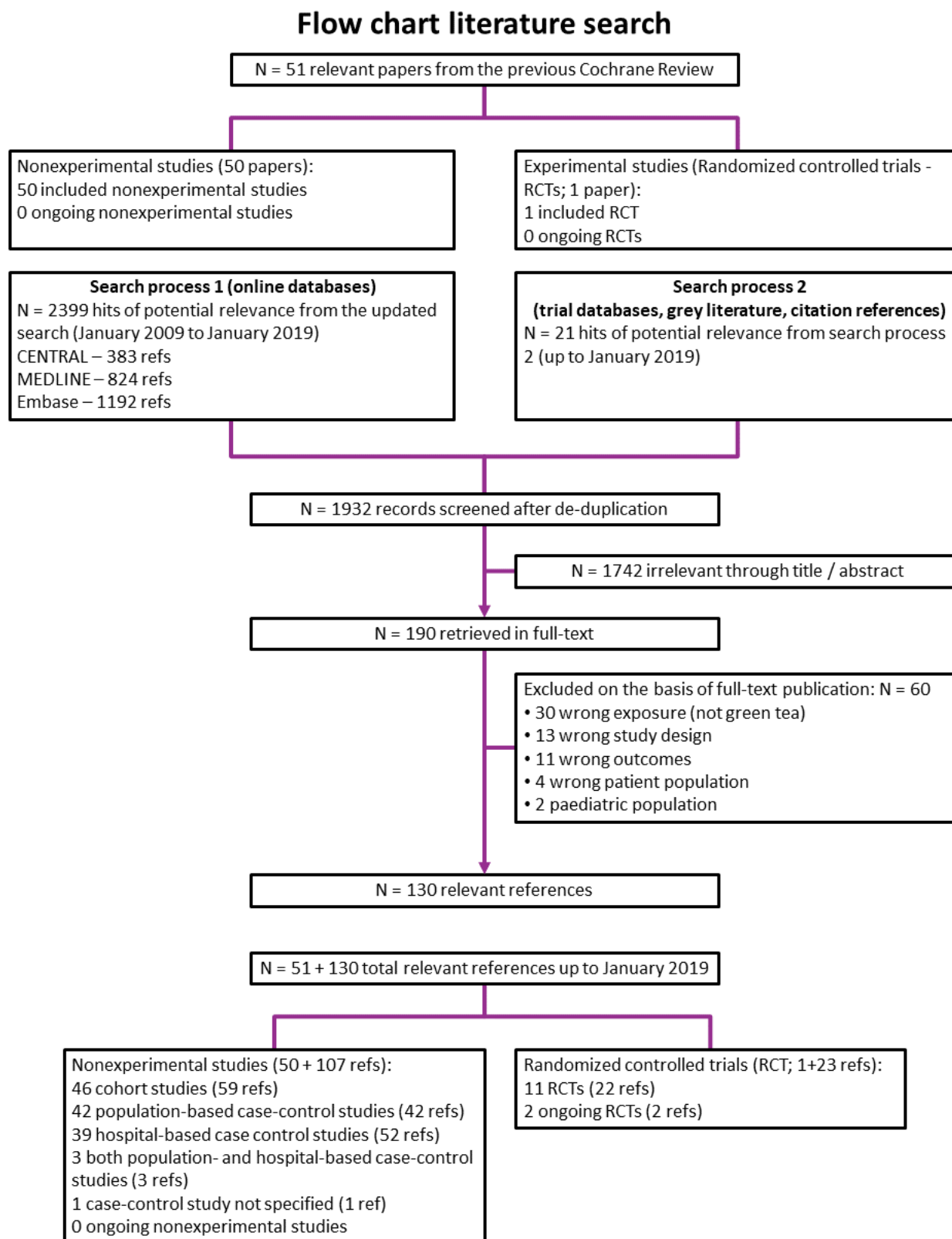


Figure 1. (Continued)

In total we identified 181 references (51 from the original review and 130 from the update searches) referring to 144 studies (22 references for 11 experimental studies, 157 references for 131 nonexperimental studies and two ongoing studies) for inclusion in this review ([Figure 1](#); [Characteristics of included studies](#); [Characteristics of ongoing studies](#)). Only the number of studies, not the number of references, was subsequently mentioned in the review.

Included studies

Overall, the 142 epidemiological studies of experimental and nonexperimental design considered in this review included over 1,100,000 participants. A total number of 1795 participants were included in experimental studies ([Table 1](#)), over 957,000 participants in cohort studies ([Table 2](#)), and 47,973 cases and 130,306 referents in case-control studies ([Table 3](#)). Studies were carried out in 10 different countries.

In the experimental group, six studies were carried out in the USA, two in Italy, and one each in the UK, Egypt, and Japan. The ongoing experimental studies are being carried out in the USA and China.

In the nonexperimental group, 63 studies (9 cohort and 54 case-control) were carried out in China, 50 (34 cohort and 16 case-control) in Japan, 11 (3 cohort and 8 case-control) in the USA, two (case-control) each in Algeria and Australia, and one (case-control) each in Czech Republic, Iran and Romania. The studies were published between 1985 and 2018. The majority of references (N = 165) were published in English, while 15 were published in Chinese and one in Japanese ([Characteristics of included studies](#)).

Outcomes

Of the 46 cohort studies, 37 measured cancer incidence and 9 measured cancer mortality ([Iwai 2002](#); [Khan 2004](#); [Kuriyama 2006](#); [Lin 2008](#); [Liu 2016](#); [Naganuma 2009](#); [Odegaard 2015](#); [Saito 2015](#); [Suzuki 2009](#)). All of the 85 case-control studies assessed any association between green tea consumption and cancer risk. Details of individual study results are reported in [Table 4](#); [Table 5](#). The 11 included RCTs ([Bettuzzi 2006](#); [Dostal 2015](#); [Dryden 2013](#); [Garcia 2014](#); [Garland 2006](#); [Kumar 2015](#); [Lane 2018](#); [Micali 2017](#); [Roshdy 2013](#); [Sinicrope 2017](#); [Tsao 2009](#)), and two ongoing studies ([Shannon 2010](#); [NCT01496521](#)), investigated, amongst other outcomes, cancer incidence (namely prostate cancer, gynaecological cancers and non-melanoma skin cancer), quality of life ([Bettuzzi 2006](#); [Dryden 2013](#); [Micali 2017](#); [Roshdy 2013](#)), and safety data ([Bettuzzi 2006](#); [Dostal 2015](#); [Dryden 2013](#); [Garcia 2014](#); [Garland 2006](#); [Kumar 2015](#); [Lane 2018](#); [Micali 2017](#); [Roshdy 2013](#); [Sinicrope 2017](#); [Tsao 2009](#)). Details of individual study results are reported in [Table 6](#).

Diagnoses

Any cancer type

Two cohort studies ([Nagano 2001](#); [Nakachi 2000](#)), and one case-control study ([Li 2011a](#)), reported incidence of any cancer. Eight cohort studies ([Iwai 2002](#); [Khan 2004](#); [Kuriyama 2006](#); [Liu 2016](#);

[Odegaard 2015](#); [Saito 2015](#); [Suzuki 2009](#); [Zhao 2017](#)) reported any cancer mortality.

Gastrointestinal tract cancer

Two experimental studies reported data on gastrointestinal cancer: one study assessed the clinical and histologic response of high-risk oral lesions after green tea as ministration ([Tsao 2009](#)), and one study assessed the histological presence of rectal aberrant crypt foci of colon cancer ([Sinicrope 2017](#)). One experimental study assessing incidence of oesophageal cancer is ongoing ([NCT01496521](#)).

Seventy-one nonexperimental studies reported data on the risk of cancer of the gastrointestinal tract and provided data on nine different types of cancer.

- Oral cancer: one cohort study ([Ide 2007](#)), four case-control studies ([Chen 2017a](#); [Fu 2013](#); [Yan 2016](#); [Zheng 1993](#))
- Overall oral, pharyngeal and laryngeal cancer: one cohort study ([Oze 2014](#))
- Pharyngeal cancer: one case-control study ([Takezaki 2000](#))
- Oesophageal cancer: three cohort studies ([Ishikawa 2006](#), [Nagano 2001](#); [Nechuta 2012](#)), 12 case-control studies ([Chen 2011](#); [Gao 1994](#); [Inoue 1998](#); [Islami 2009](#); [Mu 2003](#); [Oze 2014](#); [Peng 2015](#); [Takezaki 2000](#); [Wang 1999](#); [Wang 2006](#); [Wang 2007](#); [Wu 2009b](#))
- Stomach cancer: seven cohort studies ([Galanis 1998](#); [Inoue 2009a](#); [Khan 2004](#); [Kuriyama 2006](#); [Nagano 2001](#); [Nechuta 2012](#); [Suzuki 2009](#)), 13 case-control studies ([Hoshiyama 1992](#); [Huang 1999](#); [Ji 1996](#); [Kono 1988](#); [Liu 2010](#); [Mao 2011](#); [Mu 2003](#); [Setiawan 2001](#); [Tajima 1985](#); [Wang 1999](#); [Wang 2015](#); [Ye 1998](#); [Yu 1995](#)).
- Liver cancer: five cohort studies ([Inoue 2009b](#); [Nagano 2001](#); [Nechuta 2012](#); [Tamura 2018](#); [Ui 2009](#)), one case-control study ([Mu 2003](#))
- Pancreatic cancer: six cohort studies ([Khan 2004](#); [Lin 2008](#); [Luo 2007](#); [Nagano 2001](#); [Nakamura 2011](#); [Nechuta 2012](#)), four case-control studies ([Goto 1990](#); [Ji 1997](#); [Mizuno 1992](#); [Wang 2012c](#))
- Biliary tract cancer: three cohort studies ([Makiuchi 2016](#); [Nagano 2001](#); [Nechuta 2012](#))
- Colorectal cancer: nine cohort studies ([Khan 2004](#); [Kuriyama 2006](#); [Lee 2007](#); [Nagano 2001](#); [Nechuta 2012](#); [Sun 2007](#); [Suzuki 2005](#); [Suzuki 2009](#); [Yang 2011a](#)), eight case-control studies ([Gavrilas 2018](#); [Green 2014](#); [Inoue 1998](#); [Ji 1997](#); [Kato 1990](#); [Li 2011a](#); [Peng 2013](#); [Tajima 1985](#))
- Colon cancer only: six cohort studies ([Lee 2007](#); [Nagano 2001](#); [Nechuta 2012](#); [Oba 2006](#); [Suzuki 2005](#); [Yang 2011a](#)), four case-control studies ([Green 2014](#); [Inoue 1998](#); [Ji 1997](#); [Kato 1990](#))
- Rectal cancer only: six cohort studies ([Lee 2007](#); [Nagano 2001](#); [Nechuta 2012](#); [Oba 2006](#); [Suzuki 2005](#); [Yang 2011a](#)), four case-control studies ([Green 2014](#); [Inoue 1998](#); [Ji 1997](#); [Kato 1990](#)).

Respiratory tract cancer

One experimental study assessing lung cancer risk reported data on quality of life only ([Garland 2006](#)).

Twenty-one nonexperimental studies reported data on the risk of cancer of the respiratory tract and provided data on three different types of cancer.

- Nasopharyngeal cancer: two case-control studies (Hsu 2012; Ruan 2010)
- Lung cancer: six cohort studies (Khan 2004; Kuriyama 2006; Li 2008; Li 2018; Nagano 2001; Suzuki 2009), and 11 case-control studies (Bonner 2005; Han 2008; Jin 2013; Kubik 2008; Lei 1994; Le Marchand 2000; Lin 2012; Takezaki 2001; Tewes 1990; Xu 2013; Zhong 2001)
- Lung cancer and mesothelioma: one case-control study (Jia 2016).

Breast cancer

One experimental study carried out for prevention of breast cancer (Dostal 2015) did not report results on this primary outcome, but data on secondary outcomes (other types of cancer, quality of life) are available.

Fifteen nonexperimental studies reported data on the risk of breast cancer: five cohort studies (Dai 2010; Iwasaki 2010a; Key 1999; Nagano 2001; Suzuki 2004), and nine case-control studies (Inoue 2008; Iwasaki 2014; Li 2011a; Li 2016; Mizoo 2013; Shrubsole 2009; Wang 2013a; Wu 2003; Zhang 2007)

Urogenital tract cancer

Eight experimental studies reported data on cancer of the urogenital tract and provided data on three different types of cancer.

- Cervical cancer: one study reported data on cervical cancer incidence (Garcia 2014)
- Endometrial cancer: one study reported data on endometrial cancer incidence (Dostal 2015) and one study carried out in women with uterine fibroids reported data on quality of life only (Roshdy 2013)
- Prostate cancer: three studies reported data on incidence of prostate cancer (Bettuzzi 2006; Kumar 2015; Micali 2017), one study assessing prostate cancer incidence is ongoing (Shannon 2010), and one study assessing prostate cancer incidence reported data on PSA levels and clinical outcomes only (Lane 2018)

Thirty-one nonexperimental studies reported data on the risk of cancer of the urogenital tract and provided data on five different types of cancer.

- Prostate cancer: five cohort studies (Allen 2004; Kikuchi 2006; Kurahashi 2007; Montague 2012; Severson 1989), eight case-control studies (Berroukche 2012; Jian 2004; Lassed 2016; Lee 2017; Li 2014; Sonoda 2004; Tse 2017; Wu 2009a)
- Endometrial cancer: one cohort study (Shimazu 2008), and four case-control studies (Bandera 2010; Gao 2005; Kakuta 2009; Xu 2007)
- Ovarian cancer: five case-control studies (Goodman 2003; Leung 2016; Nagle 2010; Song 2008; Zhang 2002)
- Renal cancer: one case-control study (Wang 2012a)
- Urinary tract cancer: three cohort studies (Chyou 1993; Kurahashi 2009; Nagano 2001), four case-control studies (Hemelt 2010; Wakai 2004; Wang 2013b; Wilkens 1996)

Haematopoietic cancer

Nine nonexperimental studies reported data on the risk of cancer of the haematopoietic system and reported data on four different types of cancer.

- Hematopoietic cancer: two cohort studies (Nagano 2001; Naganuma 2009).
- Leukaemia: one cohort study (Ugai 2018) assessed acute myeloid leukaemia, and four case-control studies (Kuo 2009; Li 2011a; Liu 2017; Zhang 2008) assessed overall leukaemia.
- Lymphoma: one cohort study (Ugai 2017).
- Multiple myeloma: one cohort study (Ugai 2017) and one case-control study (Wang 2012b).

Other types of cancer

One experimental study reported also data on incidence of non-melanoma skin cancer (Dostal 2015). One case-control study assessed the association between green tea consumption and non-melanoma skin cancer (Hakim 2000), while two cohort studies investigated the risk of thyroid cancer (Michikawa 2011) and brain cancer (Ogawa 2016).

Exposure

In experimental studies, amount of supplemented green tea extracts or total green tea polyphenols ranged from 400 mg/day up to 1315 mg/day, corresponding to EGCG intakes ranging from 200 up to 843 mg/day (Table 1).

Nonexperimental studies assessed green tea exposure through administration of either food-frequency questionnaires, structured interviews by trained personnel, or self-administrated surveys in which participants had to declare the frequency and amount of certain food and beverage intakes.

Amounts of green tea consumption were rated either per day, per week, per month or per year and ranged from 0 cups to 10 cups or more per day or week. Some studies specified the amount in grams of green tea leaves consumed over a defined period of time (e.g. month or year). Drinking green tea has often been defined as consumption of one or more cups per week for at least six months. Finally, some studies estimated lifetime consumption of green tea in grams per month per year of drinking.

Sponsorship

All but two experimental studies reported funding sources, mainly grants of National Institutes of Health or National Cancer Institute for studies in the USA, and a Cancer Research UK grant in one Italian study. Three studies reported funding from pharmaceutical companies, two in Italy (Bettuzzi 2006; Micali 2017), and one in Japan (Tsao 2009), while one ongoing trial carried out in the USA mentioned that no significant financial relationships to disclose were present (Shannon 2010), and conversely, the other ongoing RCT did not report any financial source (NCT01496521). Of the 131 nonexperimental studies, only 27 did not declare any type of sponsorship or founding source. For the remaining studies, National Institutes of Health or National Cancer Institute generally sponsored the USA studies. In Japan, mainly the Ministry of Health, Labour and Welfare or the Ministry of Education, Science and Culture sponsored the investigations. In China, the Natural Science Foundation sponsored some of the studies. Finally, the 'Ministry of Health' and 'National Health and Medical Research

Council' supported with grants the studies from Czech Republic and Australia, respectively.

Risk of bias in included studies

Experimental studies

We used the Cochrane tool for assessing risk of bias for the experimental studies (Deeks 2017). Detailed 'Risk of bias' assessments of included experimental studies are reported in study-specific tables ([Characteristics of included studies](#)) and are summarised in [Table 7](#).

Allocation

All studies were randomised. Four studies did not clearly specify their method of allocation concealment (Bettuzzi 2006; Garland 2006; Micali 2017; Sinicrope 2017) so we judged them to be at unclear risk of bias for this domain. We judged the remaining studies at a low risk of bias.

Blinding

All studies were double-blinded and, specifically, we judged all studies at low risk of bias regarding blinding of participants and personnel involved in the recruitment. Conversely, we judged blinding during outcome assessment at unclear risk for some but not all outcomes in three studies (Bettuzzi 2006; Sinicrope 2017; Tsao 2009).

Incomplete outcome data

All but two studies (Garland 2006; Lane 2018), reported summary results for all outcomes. However, in three studies incomplete reporting for some outcomes can be noted. In particular, two studies reported results for lower urinary tract symptoms (Bettuzzi 2006; Kumar 2015), and one study assessed uterine leiomyoma burden (Roshdy 2013) but none of these studies stated the number of participants included in the analysis.

Selective reporting

The study protocol was not available for four studies so we judged them at unclear (Bettuzzi 2006; Micali 2017; Tsao 2009), or high (Lane 2018), risk of selective reporting bias.

Other potential sources of bias

Four RCTs reported a high number of withdrawals (Dostal 2015; Kumar 2015; Micali 2017; Roshdy 2013). In two RCTs other concomitant interventions were reported. In particular, some participants were taken lycopene capsules during the study (Lane 2018), while the other RCTs some participants in the treatment group, but not in the placebo arm, took immunomodulatory drugs, possibly affecting response rates (Dryden 2013).

Nonexperimental studies

We assessed the methodological quality of the nonexperimental studies by using the Newcastle Ottawa Scale (NOS), for both cohort ([Appendix 4](#)) and case-control studies ([Appendix 5](#)).

Cohort studies

All but one of the cohort studies were of high methodological quality and reached 8 or 9 stars on the NOS (Wells 2001), while one study was of medium methodological quality reaching 7 stars (Key 1999). The median score was 9 (out of 9) for the 46 cohort studies with a range of 7 to 9 stars ([Table 5](#); [Figure 2](#)). Detailed results of single NOS items are shown in [Table 8](#). Regarding 'selection' items, we judged study participants as being truly representative of the average general population in almost all studies, while two studies restricted participants to those of Japanese ancestry (Chyou 1993; Galanis 1998), some participants in three studies were survivors from the atomic bomb in Hiroshima and Nagasaki (Allen 2004; Key 1999; Nagano 2001), and one study was carried out in working people (Li 2018). All studies described the modality of exposure assessment of green tea consumption, generally relying on the use of structured interviews or food-frequency questionnaires, and all studies excluded participants with previous history of cancer. For 'comparability' items, all studies controlled the analysis for age, and all but six adjusted for smoking habit in the multivariate model (Allen 2004; Galanis 1998; Inoue 2008; Iwai 2002; Key 1999; Severson 1989). Concerning 'outcome' items, all studies used a record linkage based on a cancer registry for outcome assessment, with a follow-up at least of five years in all but two studies (Dai 2010; Galanis 1998). Finally, while we considered the follow-up rate inadequate (i.e. less than 90% of participants and no description of those lost) in three studies (Hoshiyama 2002 and Hoshiyama 2004 in: Inoue 2009a; Ishikawa 2006).

Figure 2. Newcastle-Ottawa scale for nonexperimental studies

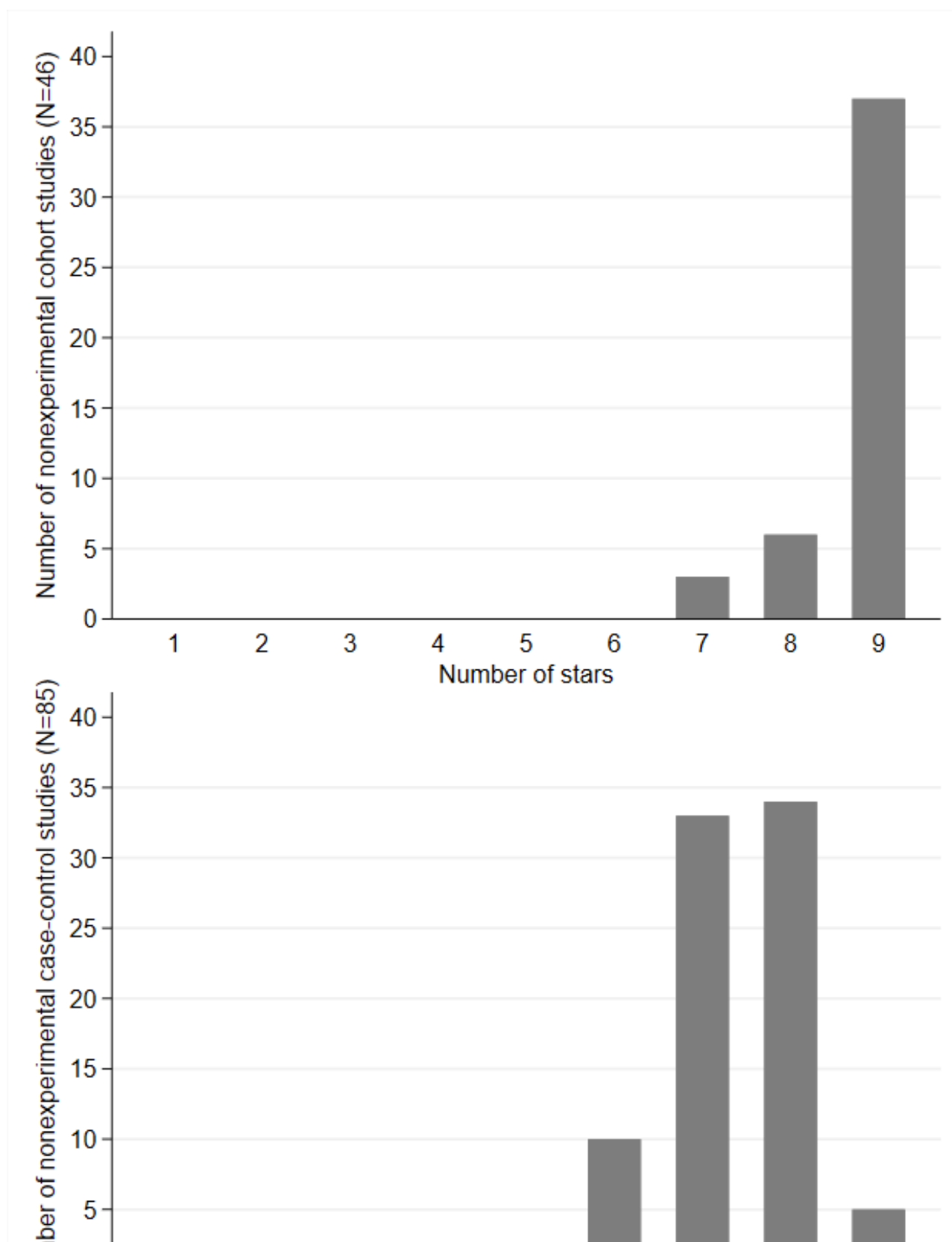
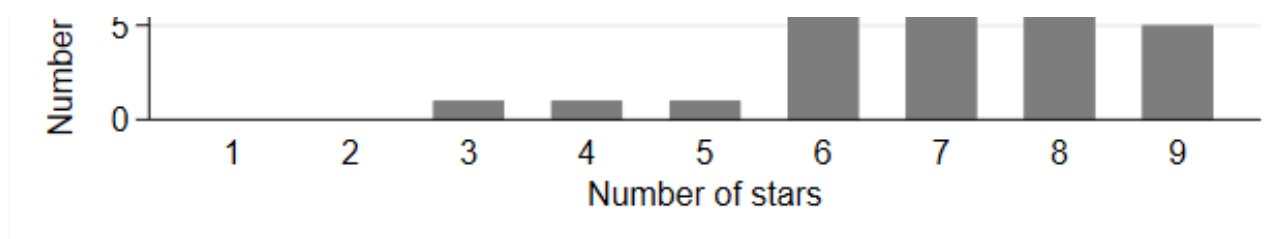


Figure 2. (Continued)



Case-control studies

The median score was 7 (out of 9) for the 85 case-control studies with an overall range from 3 to 9 stars (Table 6; Figure 2). Detailed results of single NOS items (see Table 9) showed that, regarding 'selection' items almost all studies adequately identified cases by accessing medical records in hospitals or cancer registries, or both. Two studies (Lei 1994; Xu 2013), did not describe the source of cases, and only one study (Tewes 1990), was based on self-reports. All but six studies (Kato 1990; Lei 1994; Mu 2003; Wu 2009a; Wu 2009b; Xu 2013), selected consecutive or obviously representative series of cases during a clear, identified period. Regarding selection of controls, they were recruited from the same community of the corresponding paired case in 42 studies, while they were recruited from hospital attenders in 39 studies. Three studies recruited and presented results using two sets of controls in the analyses: population or hospital controls (Kono 1988; Li 2011a; Zhang 2002). Two studies (Gavrilas 2018; Xu 2013) did not provide a clear description of selection of controls. Regarding 'comparability' items, all but three studies (Kuo 2009; Lassed 2016; Wang 2006), controlled for age and approximately one-third (N = 28) of the studies did not include smoking habits in the statistical model. Regarding exposure-related items, four studies implemented a food-frequency questionnaire or a structured interview to assess green tea exposure (Bonner 2005; Inoue 1998; Jia 2016; Kato 1990), while two studies did not provide a description (Lei 1994; Wang

1999). The same method of exposure assessment for both cases and controls was clearly used in all but one study (Kono 1988). Finally, in relation to the response rate, it was largely comparable for both cases and controls in 30 studies or, if rates were different, non-respondents were described in 24 studies, while 31 studies did not provide a description of non-respondents.

Publication bias

There were too few studies to yield reliable funnel plots for experimental studies, but we were able to assess the reporting bias for most outcomes from the nonexperimental studies. For the latter studies, the funnel plot for any cancer mortality (Figure 3), showed a symmetrical distribution, as did the funnel plots for oral cancer (Figure 4) and any gut cancer (Figure 5). Conversely, analysis for oesophageal cancer showed an asymmetrical distribution (Figure 6), mainly from results of case-control studies. In other gastrointestinal cancers we did not detect evidence of publication bias (Figure 7; Figure 8; Figure 9; Figure 10; Figure 11; Figure 12), as was the case for lung cancer (Figure 13), breast cancer (Figure 14), and other gynaecological cancer (Figure 15; Figure 16; Figure 17). For prostate cancer, an indication of publication bias toward a decreased risk of cancer emerged (Figure 18), while we found symmetry from the studies assessing urinary tract cancer (Figure 19).

Figure 3. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.2, any cancer mortality

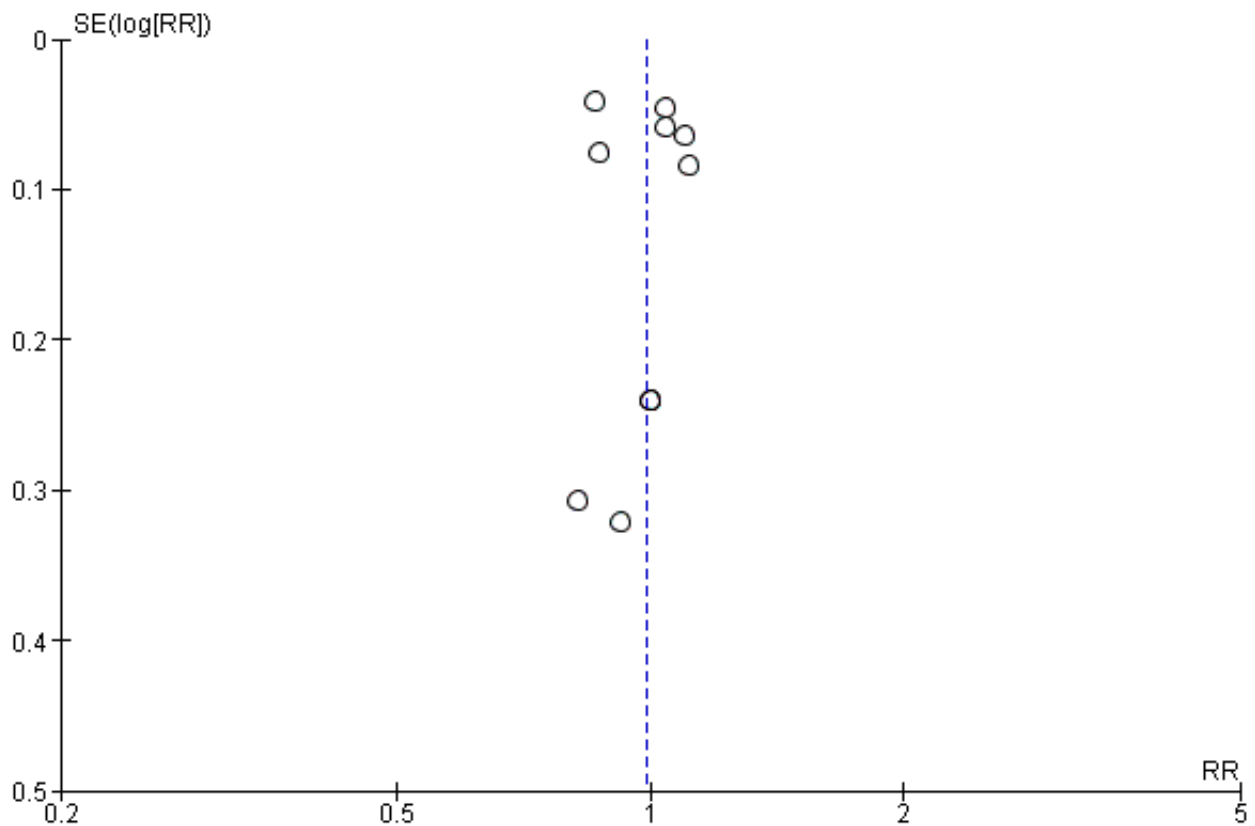


Figure 4. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.3, oral cancer

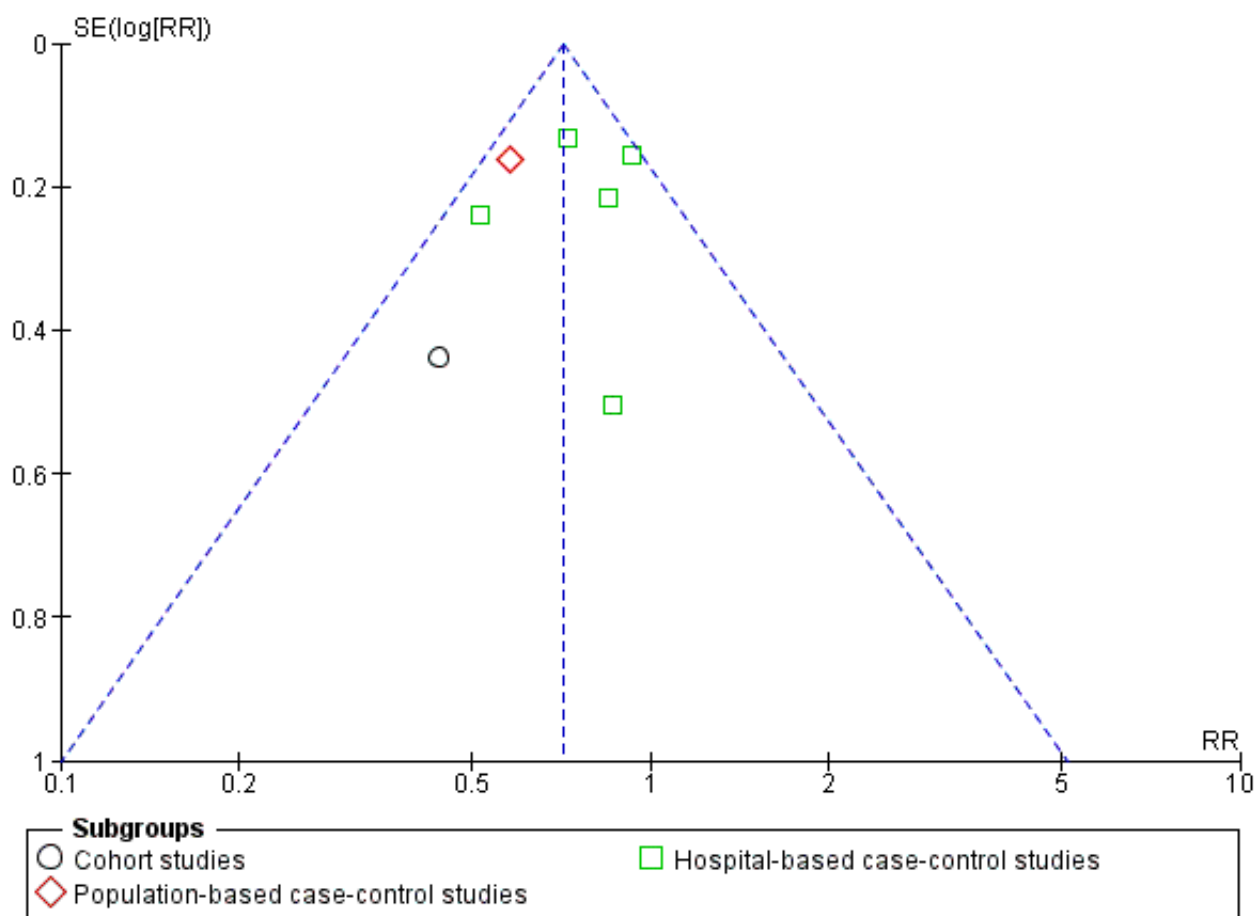


Figure 5. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.6, any gut cancer

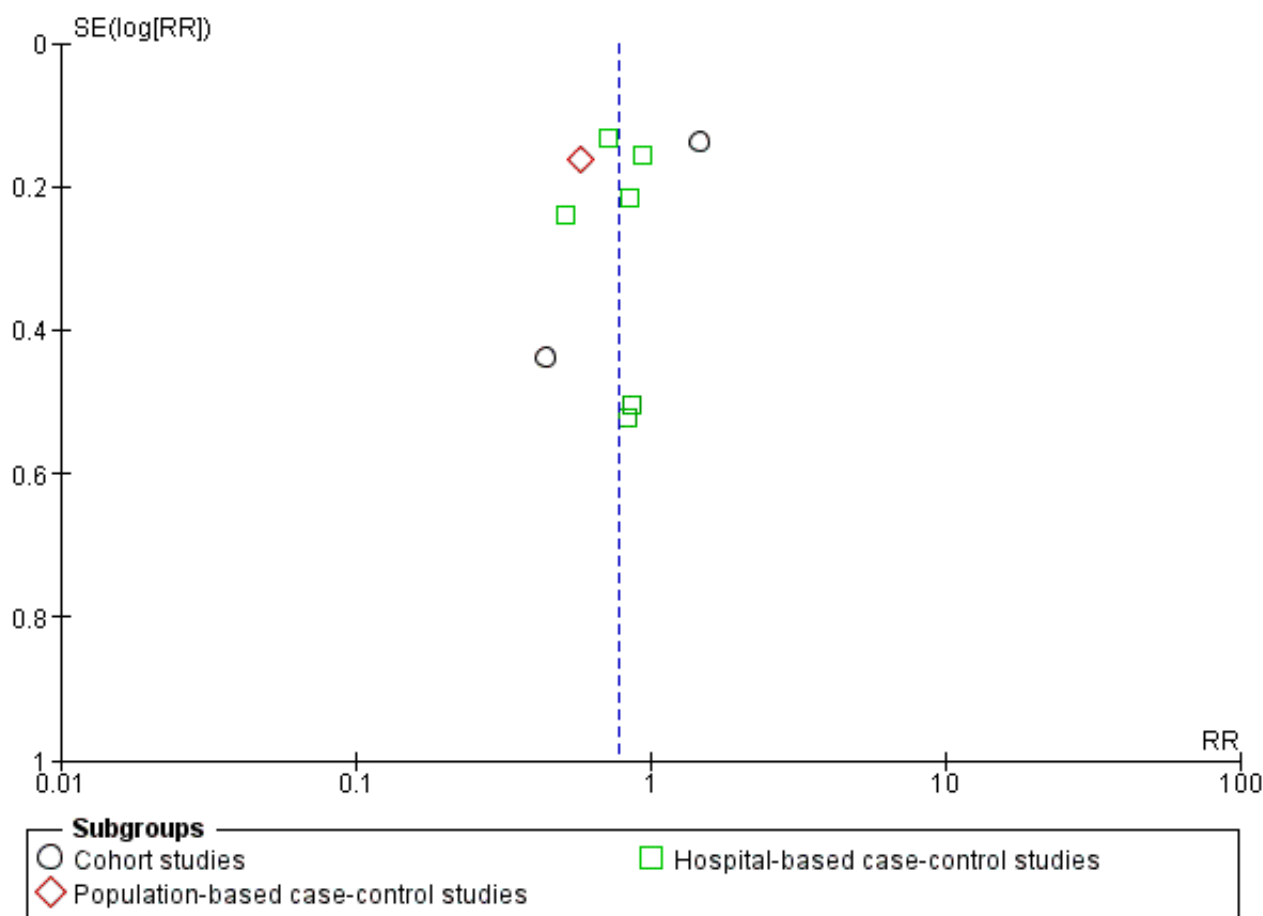


Figure 6. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.7, oesophageal cancer

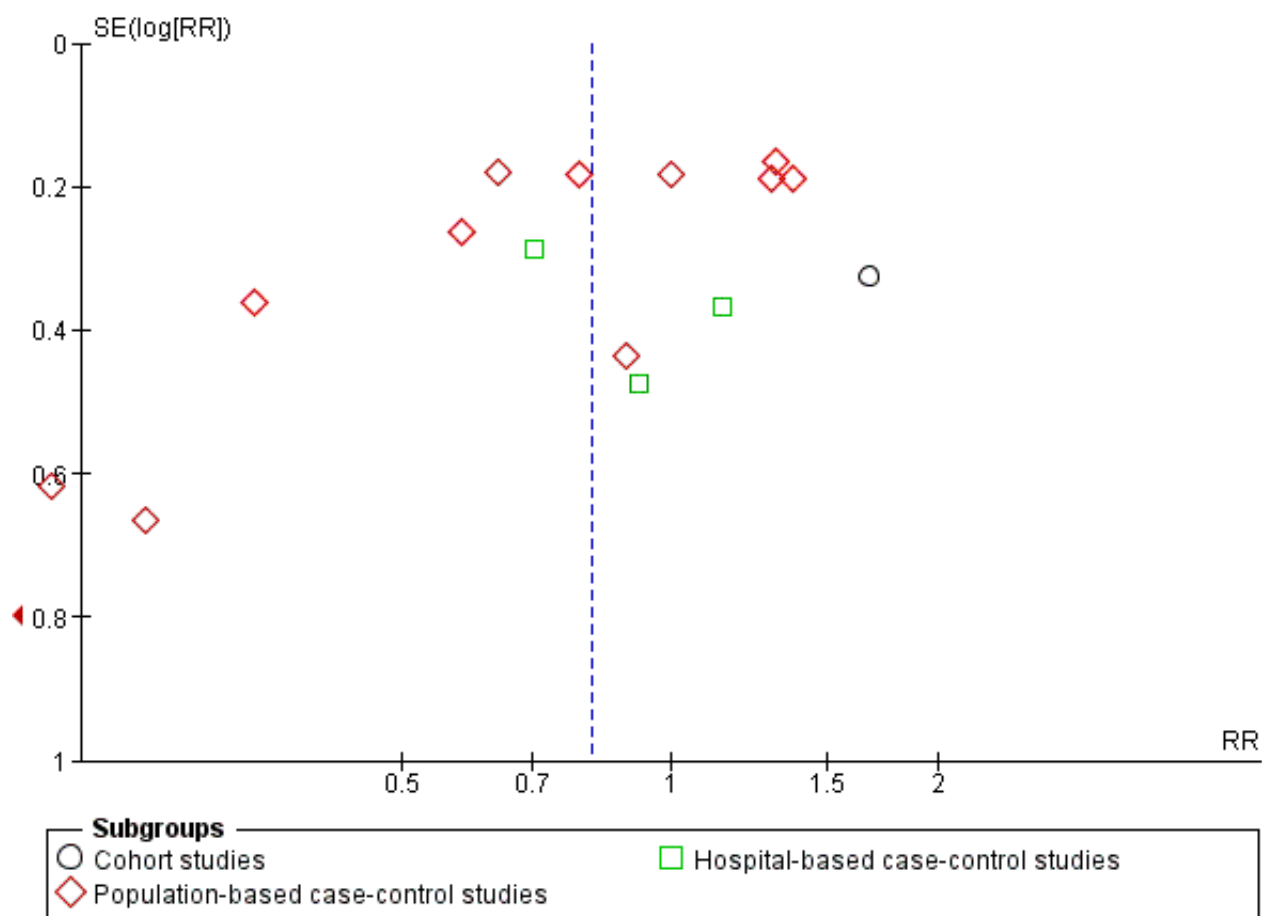


Figure 7. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.21, prostate cancer

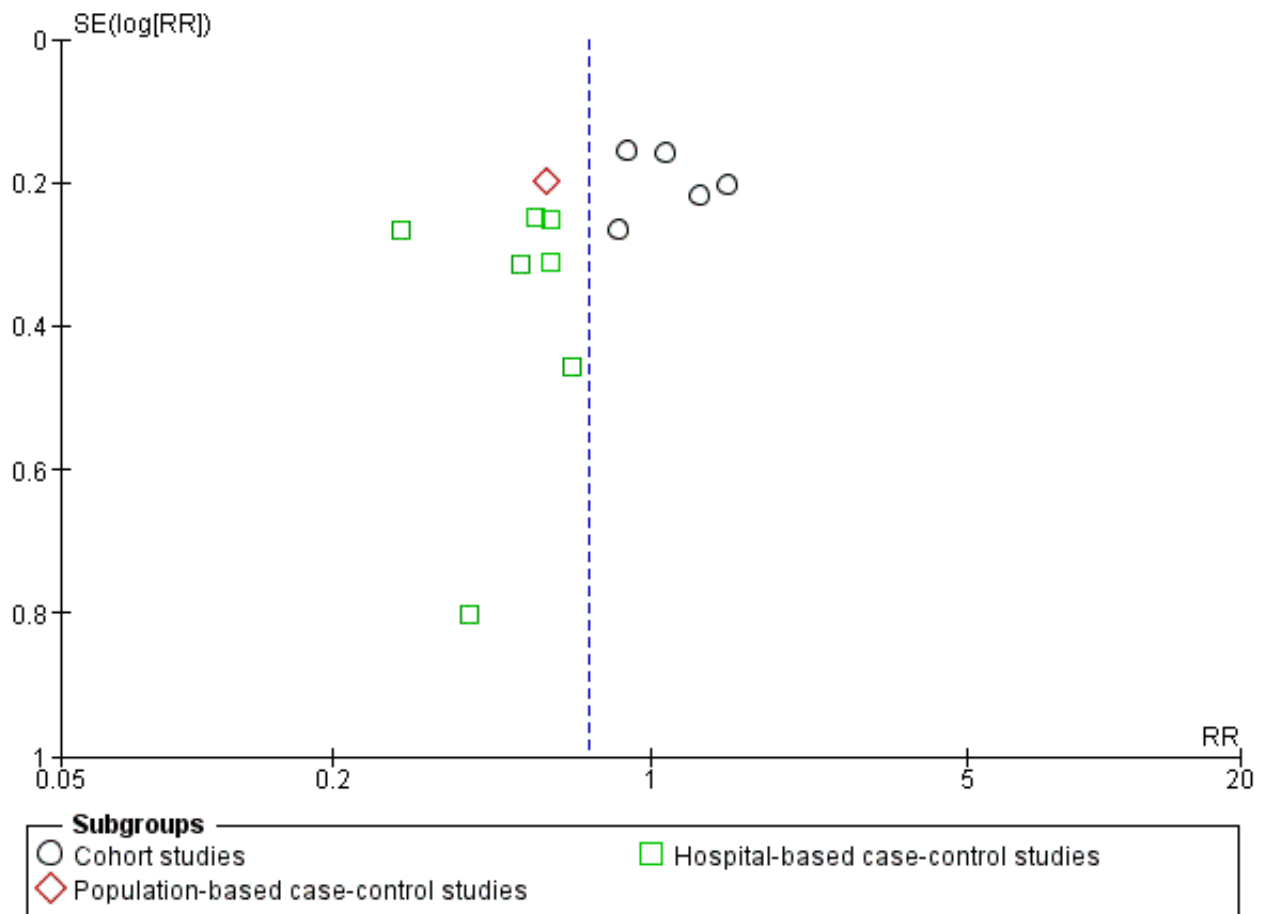


Figure 8. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.23, urinary tract cancer

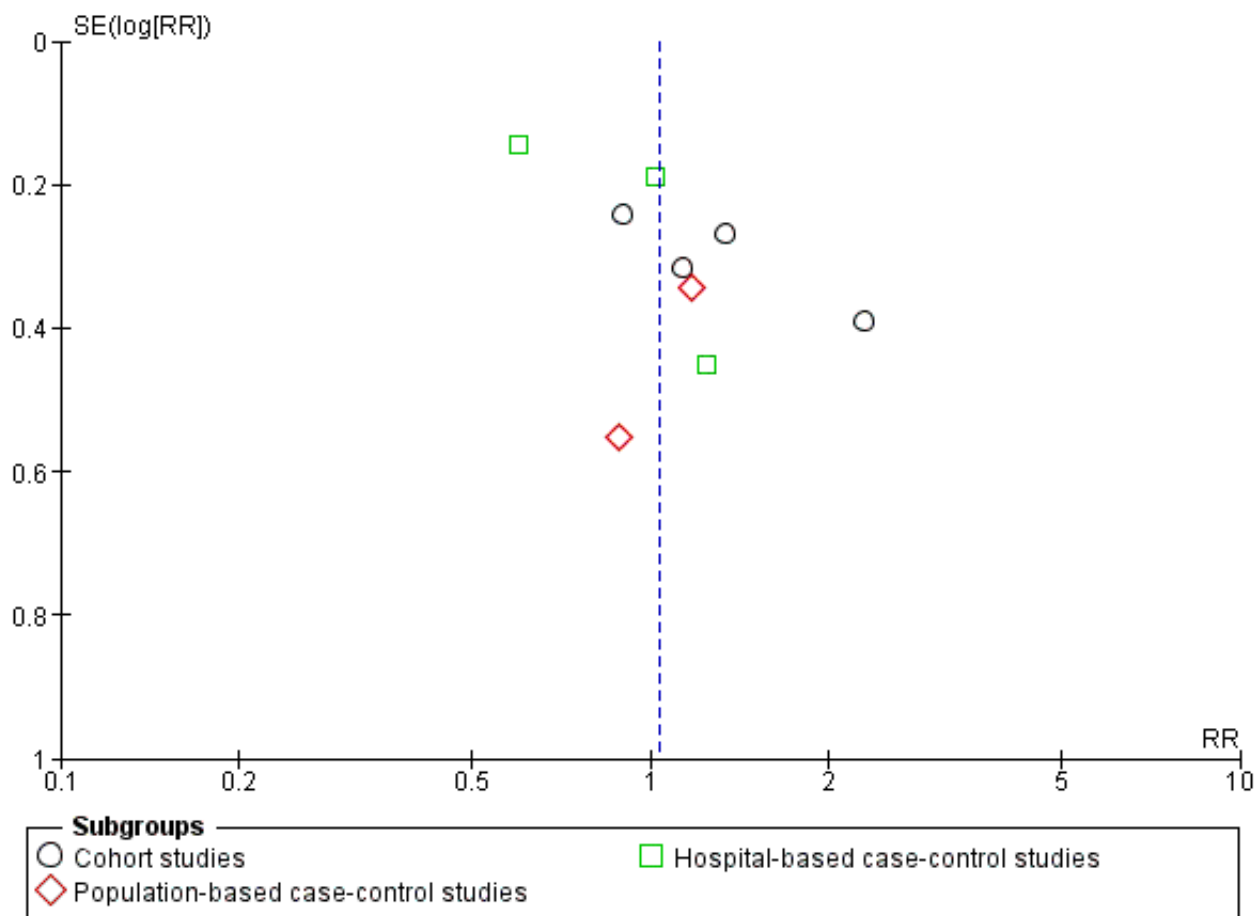


Figure 9. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.8, stomach cancer

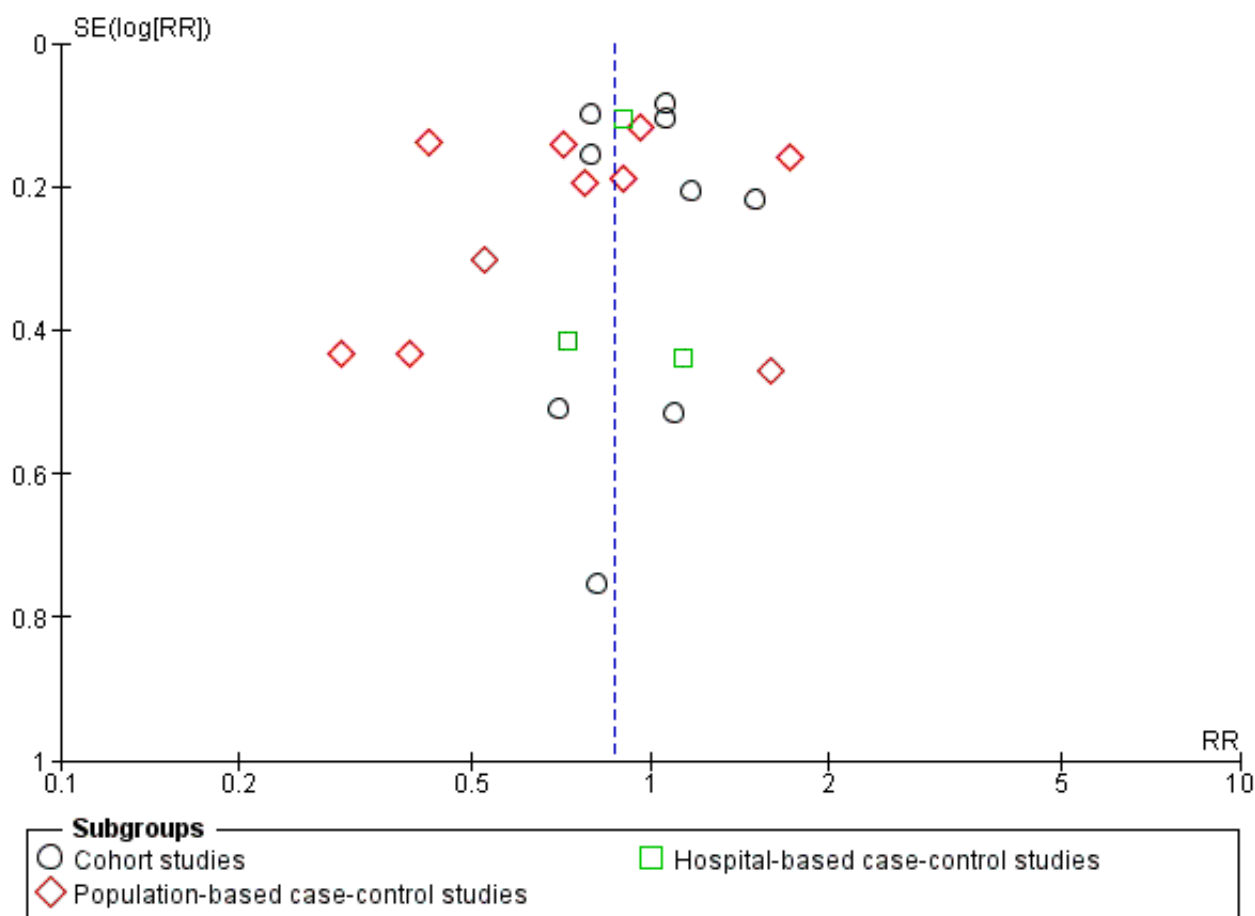


Figure 10. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.9, liver cancer

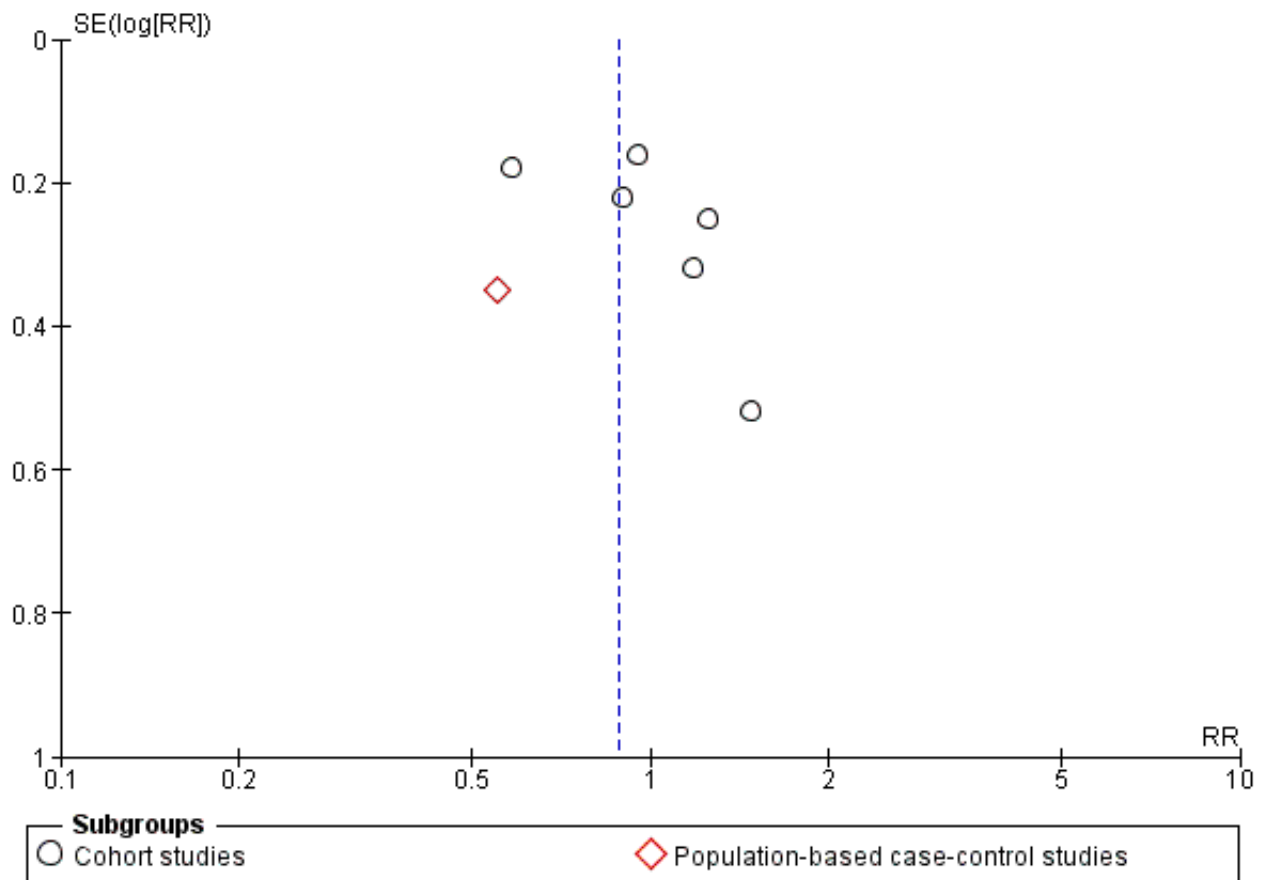


Figure 11. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.10, pancreatic cancer

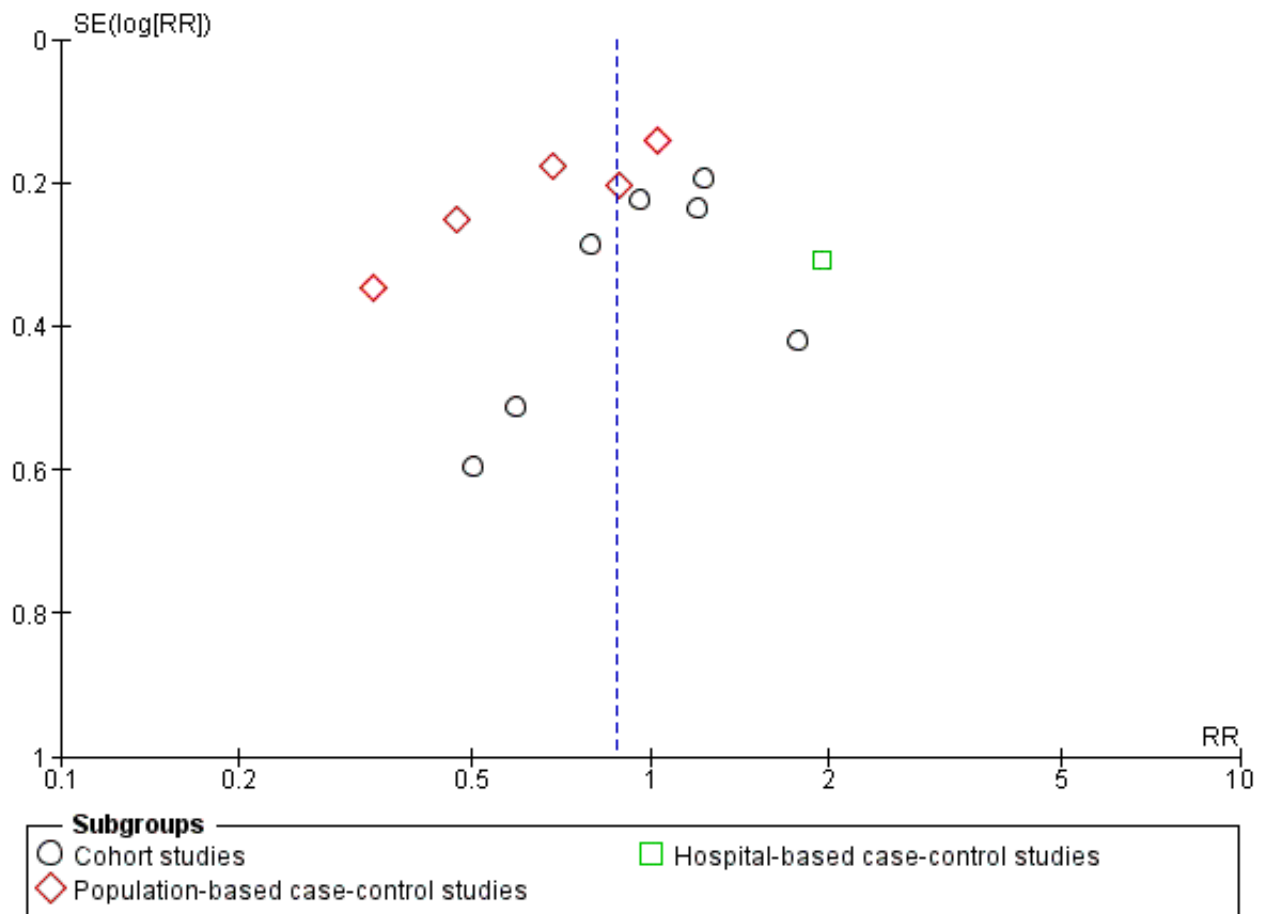


Figure 12. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.12, colorectal cancer

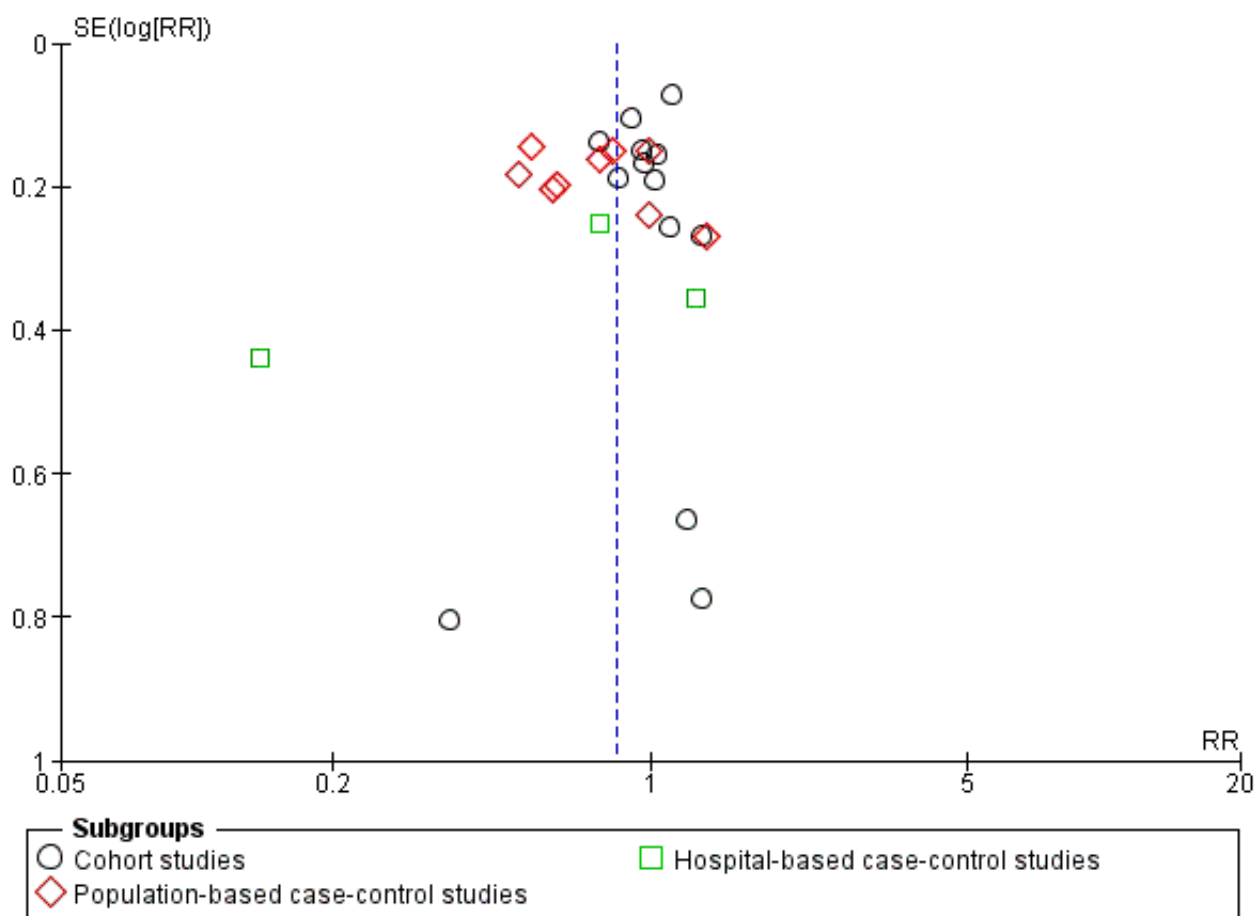


Figure 13. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.13, colon cancer

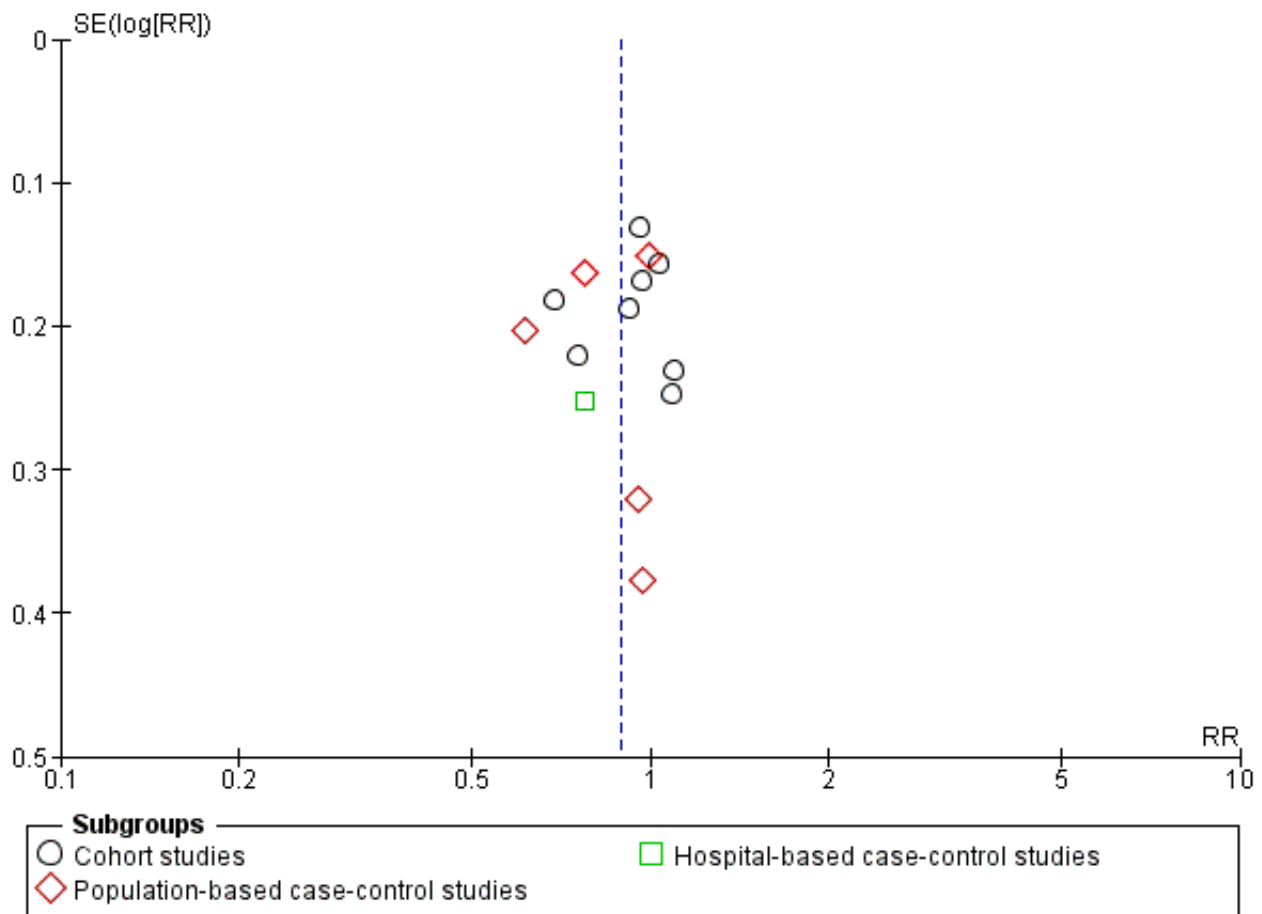


Figure 14. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.14, rectal cancer

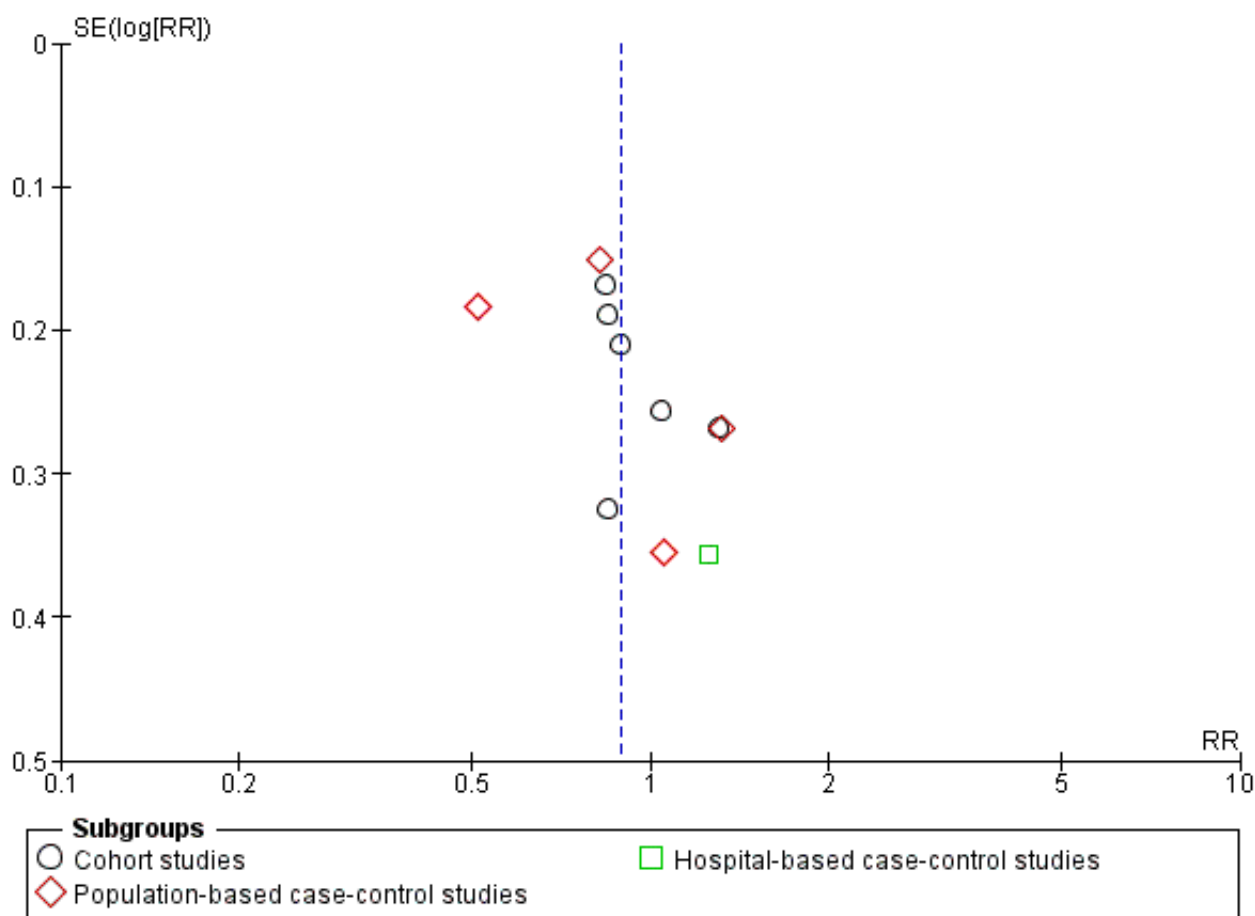


Figure 15. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.16, lung cancer

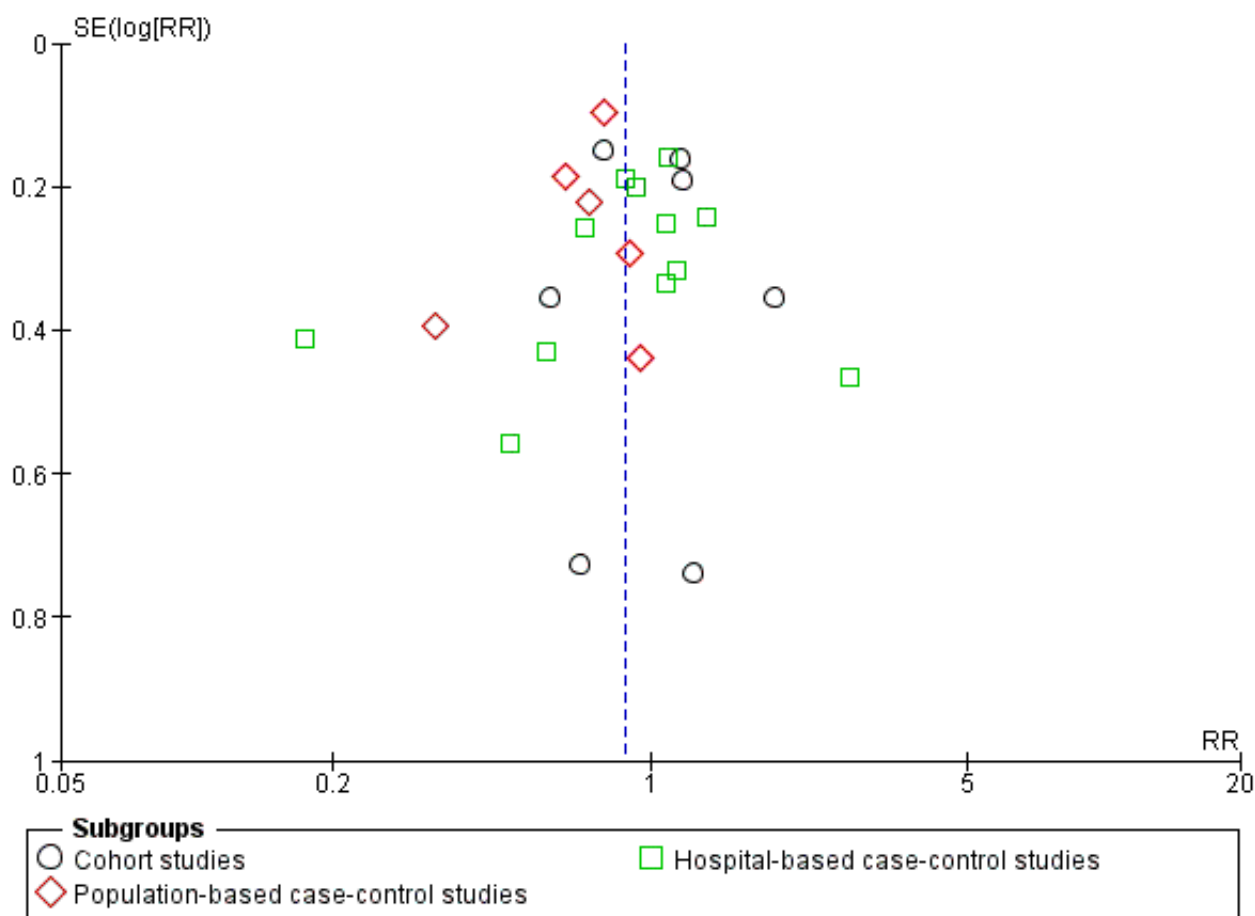


Figure 16. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.17, breast cancer

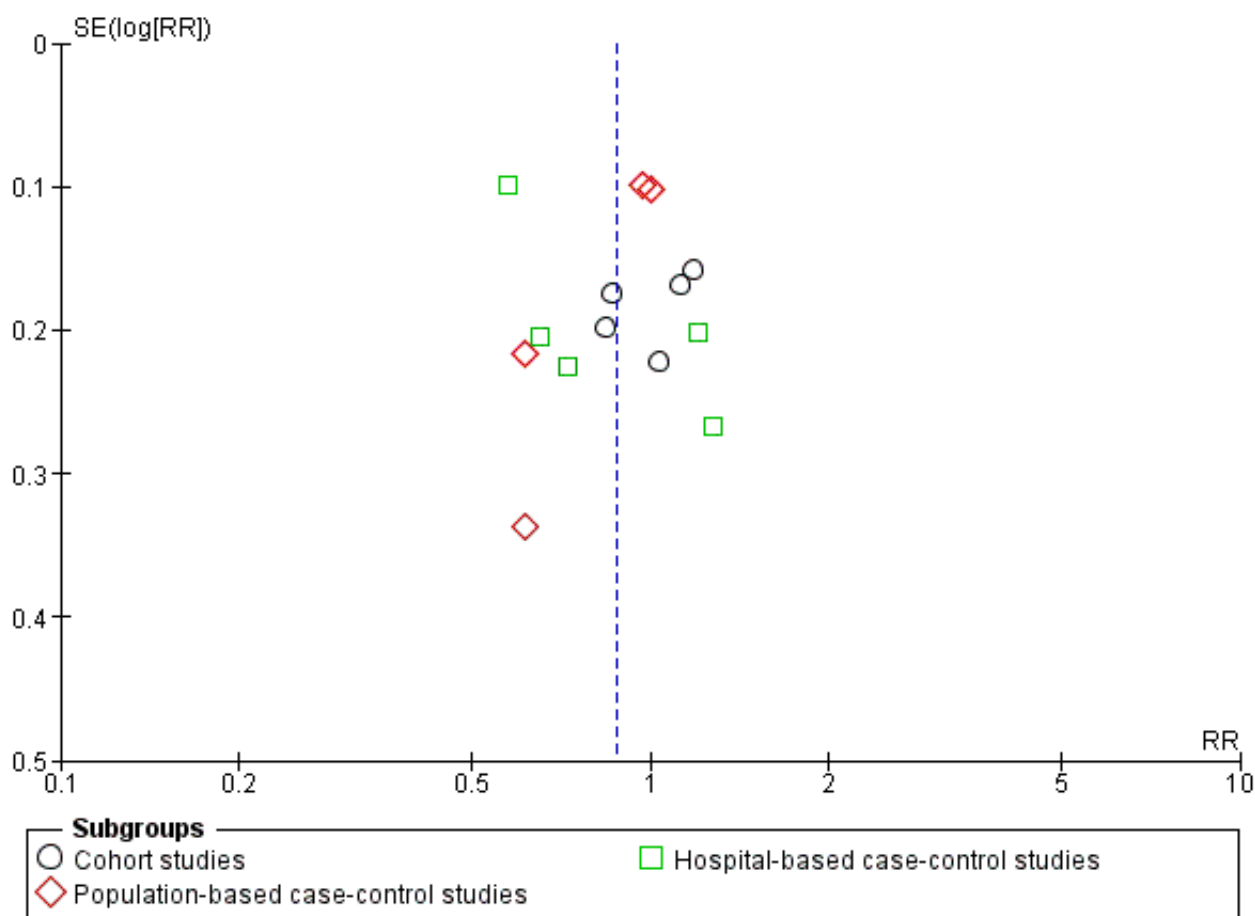


Figure 17. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.18, gynaecological cancer

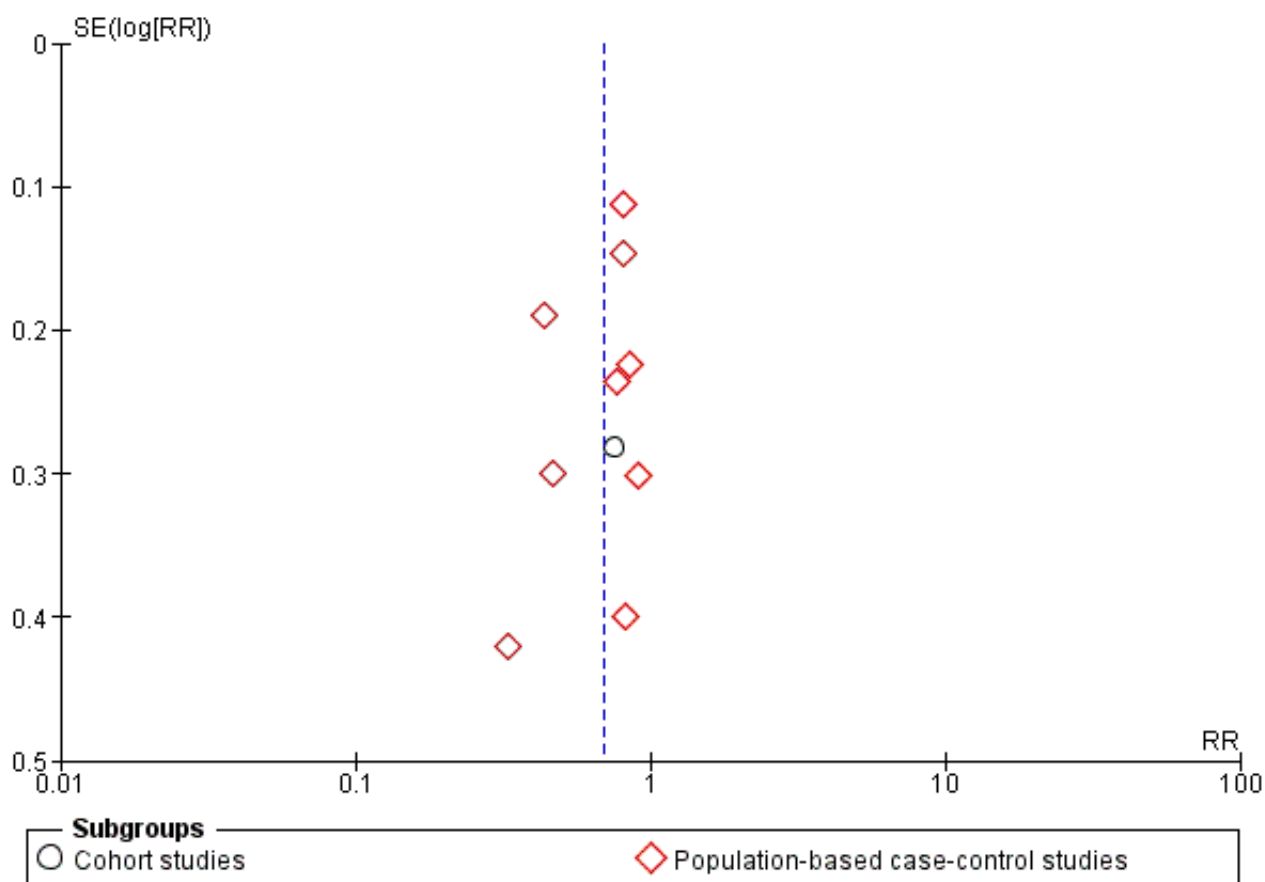


Figure 18. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.19, endometrial cancer

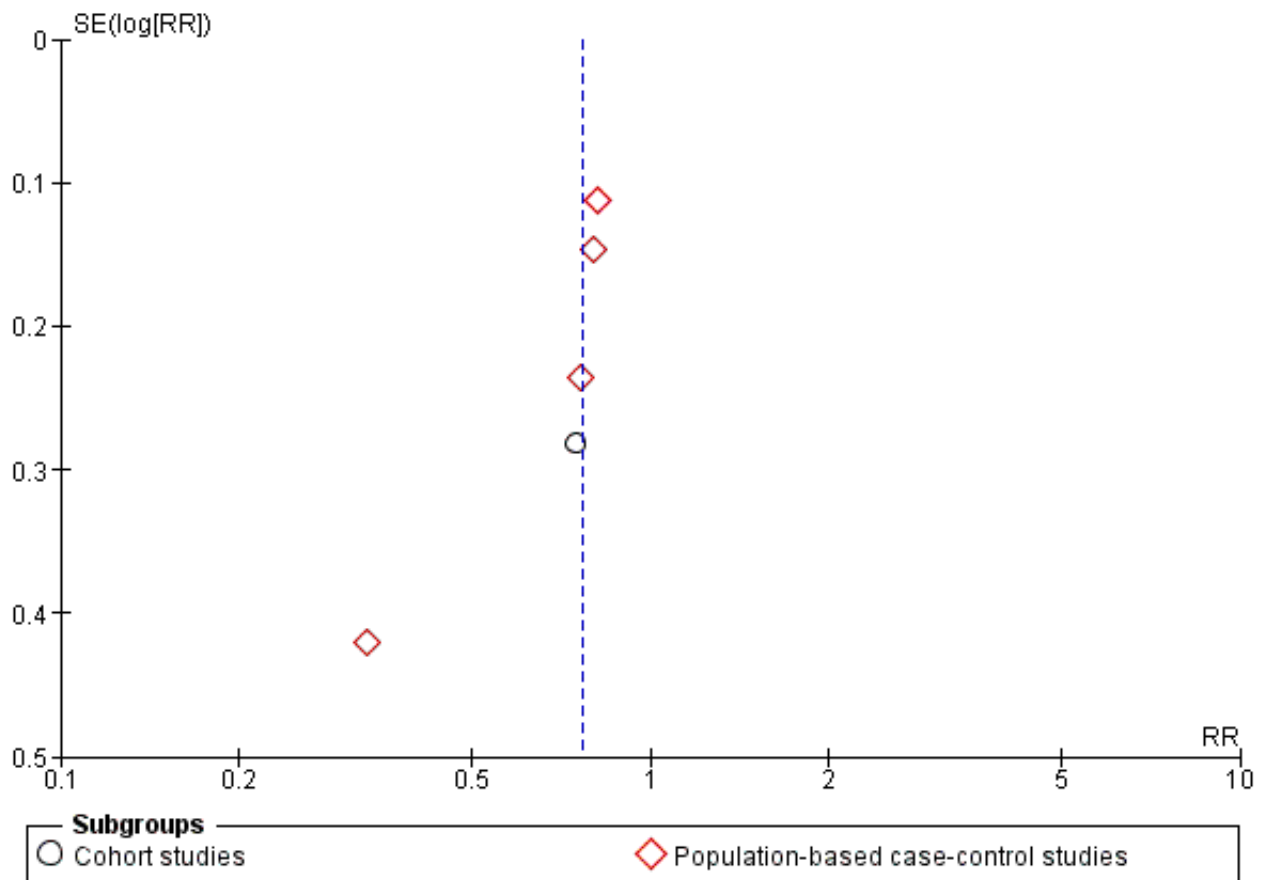
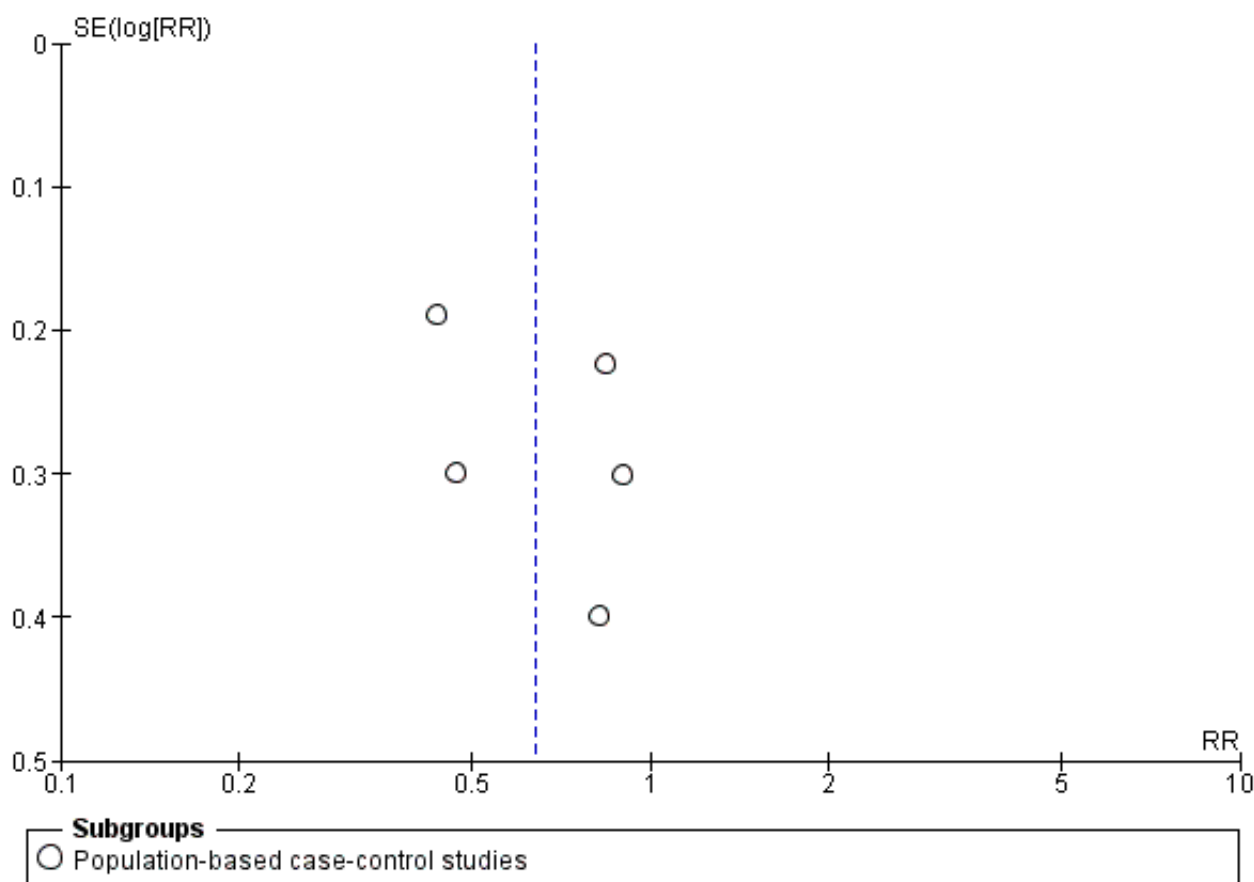


Figure 19. Funnel plot of comparison 2. Nonexperimental studies: highest versus lowest green tea exposure, outcome 2.20, ovarian cancer



Effects of interventions

See: [Summary of findings for the main comparison](#) Green tea extract supplementation compared with placebo for preventing cancer: experimental studies; [Summary of findings 2](#) Highest compared with lowest green tea exposure for preventing cancer: primary outcomes in nonexperimental studies; [Summary of findings 3](#) Highest compared with lowest green tea exposure for preventing cancer: individual cancer types in nonexperimental studies

Experimental studies

Primary outcome

We included 11 RCTs with administration of green tea extracts ([Table 1](#); [Summary of findings for the main comparison](#)).

Prostate cancer

Low-certainty evidence from three studies reporting data on prostate cancer incidence in 201 men (101 in the intervention group and 100 in the control group) with high-grade prostatic intraepithelial neoplasia, thus at high risk of prostate cancer, yielded a summary RR of 0.50 (95% CI 0.18 to 1.36; [Analysis 1.1](#); [Bettuzzi 2006](#); [Kumar 2015](#); [Micali 2017](#)) in the intervention arms.

Gynaecological cancer

Low-certainty evidence from two studies reporting data on gynaecological cancer, showed that green tea moderately increased the incidence of gynaecological cancer (summary RR 1.50, 95% CI 0.41 to 5.48), but findings for the two studies individually yielded contradictory results ([Analysis 1.2](#)). One study favoured experimental group and reported a decreased risk of endometrial cancer (RR 0.33, 95% CI 0.01 to 8.15) ([Dostal 2015](#)). Conversely, the other study favoured control group and reported increased risk of cervical cancer (RR 2.00, 95% CI 0.54 to 7.46) ([Garcia 2014](#)). Overall, all the RRs generated by these RCTs were statistically imprecise.

Non-melanoma skin cancer

Low-certainty evidence from one study assessing non-melanoma skin cancer showed no difference in effect due to green tea extract supplementation (RR 1.00, 95% CI 0.06 to 15.92; [Analysis 1.3](#); [Dostal 2015](#)).

Secondary outcomes

Quality of life

Three studies assessed quality of life in relation to administration of green tea extracts, where quality of life was slightly improved in the intervention group compared to the placebo group ([Bettuzzi 2006](#); [Micali 2017](#); [Roshdy 2013](#)). [Bettuzzi 2006](#) assessed quality of

life (Grumann 2001), in relation to lower urinary tract symptoms after three months of treatment and found that it decreased in the intervention group (from 2.06 to 1.76), while it slightly increased in the placebo group (from 1.30 to 1.47). Similarly, Micali 2017 reported lower urinary tract symptoms (Denis 1994), and quality-of-life scores (Grumann 2001), to be improved after one year but did not present detailed results. Roshdy 2013 used two different questionnaires to evaluate severity of fibroid-specific symptoms and health-related quality of life (Spies 2002; Wyatt 2001), and reported that green tea extract administration improved quality of life. The first scale showed a decrease in symptom severity with a mean change in the intervention group of -25.28 (SD ± 17.38) compared to a mean change of $+7.1$ (SD ± 15.5) in the placebo group (Spies 2002). Similarly, in the percentile scores for health-related quality of life there was an overall increase of 20.7 (SD ± 21.0) in the treatment group and 2.19 (SD ± 17.4) in the placebo group (Wyatt 2001).

Conversely, Kumar 2015 observed no significant differences between the treatment and placebo arms in lower urinary tract symptoms (Marberger 2013), and quality-of-life scores (McHorney 1993), from baseline to the end of the study.

Finally, two studies reported only baseline evaluation of quality of life: Dostal 2015 used the Menopause-Specific Quality of Life questionnaire (Lewis 2005), and Dryden 2013 used the Inflammatory Bowel Disease Questionnaire (Guyatt 1989).

Safety data

All the experimental studies assessed the safety of green tea supplementation (see [Characteristics of included studies](#)), and only two studies reported no difference in adverse effects between groups (Bettuzzi 2006; Roshdy 2013). Conversely, the most common adverse effects related to green tea extracts were gastrointestinal disorders, including generally mild-to-moderate or grade 1 to 2 disorders, particularly nausea, but also diarrhoea and other mild gastrointestinal disorders, for example, indigestion, constipation or gastroesophageal reflux (green tea versus placebo: 28.6% versus 24.6% (Dostal 2015); 32.0% versus 18.8% (Garcia 2014); 6.35% versus 5.48% (Garland 2006); 35% versus 25% (Kumar 2015); percentage not reported in Micali 2017; 30.0% versus 18.2% (Tsao 2009)). Three studies reported the elevation of liver enzymes (ALT and/or AST), generally of grade 2+ or 3, more frequently in the treatment group compared with placebo (green tea versus placebo: 6.7% versus 0.7% (Dostal 2015); 10% versus 2.1% (Garcia 2014); 5.26% versus 0% (Sinicrope 2017)). Similarly, three studies reported insomnia more frequently in the treatment group (green tea versus placebo: 21% versus 8% (Lane 2018); percentage not reported in Micali 2017; 36.7% versus 18.2% (Tsao 2009)), although it was generally of low grade, except for Tsao 2009. Two studies reported hypertension to be slightly more frequent in the treatment arm (green tea versus placebo: 21.8% versus 19.7% (Dostal 2015); 21% versus 15% (Lane 2018)). Also, two studies reported slightly higher frequencies of skin and subcutaneous tissue disorders (mainly rash or allergic skin reactions) in the treatment group (green tea versus placebo: 3.4% versus 1.5% (Dostal 2015); 14% versus 6% (Kumar 2015)), and two studies reported higher incidence of dizziness (green tea versus placebo: 14.0% versus 6.3% (Garcia 2014); 6.7% versus 0% (Tsao 2009)). Finally, Dryden 2013 reported higher incidence of heartburn and increased thirst (27% versus 0%).

Nonexperimental studies

We compared the risk of cancer in the highest category of green tea intake with the bottom category of exposure, by computing a summary risk ratio (RR) along with its 95% CI (Table 2; Table 3; Summary of findings 2).

Any cancer

We meta-analysed results of two cohort studies on any cancer incidence (Nagano 2001; Nakachi 2000), and one population-based case-control study (Li 2011a), along with data from eight cohort studies evaluating any cancer mortality (Iwai 2002; Khan 2004; Kuriyama 2006; Liu 2016; Odegaard 2015; Saito 2015; Suzuki 2009; Zhao 2017), and a total of over 530,000 participants. For participants in the highest category of green tea intake compared with those in the lowest exposure category, the summary RR for any cancer incidence was 0.83 (95% CI 0.65 to 1.07; 3 studies, 52,479 participants; low-certainty evidence; (Analysis 2.1; Summary of findings 2), and for any cancer mortality 0.99 (95% CI 0.91 to 1.07; low-certainty evidence; Analysis 2.2). We observed moderate heterogeneity for both incidence ($I^2 = 66\%$) and mortality ($I^2 = 58\%$) studies.

Gastrointestinal cancers

Oral, laryngeal and pharyngeal cancer

One cohort study (Ide 2007), found that increased green tea consumption was associated with a lower risk of oral cancer (RR 0.44, 95% CI 0.19 to 1.04). Results from case-control studies generally showed a decreased RR of oral cancer associated with the highest green tea consumption in either the one population-based study (RR 0.58, 95% CI 0.42 to 0.79; Yan 2016), and the three hospital-based studies with summary RR of 0.77 (95% CI 0.65 to 0.90; Analysis 2.3; Chen 2017a; Fu 2013; Zheng 1993). Conversely, one cohort study evaluating risk of oral, pharyngeal and laryngeal cancer found an increased risk in the highest category of green tea intake, with RR of 1.47 (95% CI 1.12 to 1.93; Analysis 2.4; Oze 2014). The one hospital-based case-control study showed a decreased but statistically imprecise risk of pharyngeal cancer (OR 0.83, 95% CI 0.30 to 2.30; Analysis 2.5; Takezaki 2000). The analysis of any gut cancer by combining all these nonexperimental studies showed a decreased risk in the highest category of green tea exposure, with a summary RR of 0.78 (95% CI 0.59 to 1.02), high heterogeneity ($I^2 = 73\%$) and low-certainty evidence between study results (Analysis 2.6).

Oesophageal cancer

Overall results showed that the highest green tea intake category was associated with lower oesophageal cancer risk (summary RR 0.81, 95% CI 0.64 to 1.04), with high heterogeneity ($I^2 = 69\%$) and very low-certainty evidence between study results (Analysis 2.7; Summary of findings 3). Two cohort studies reported only the total number of cases, thus we could not include them in the meta-analysis (Nagano 2001; Nechuta 2012), while Ishikawa 2006 found an increased risk of oesophageal cancer in participants consuming the highest amounts of green tea (summary RR 1.67, 95% CI 0.88 to 3.16; Analysis 2.7). Conversely, overall risk estimate of the 12 case-control studies found a decreased risk of oesophageal cancer in participants in the highest category of green tea intake, with summary RR of 0.74 (95% CI 0.55 to 1.00) for the nine population-based case-control studies, and 0.86 (95% CI 0.57 to 1.27) for the three hospital-based case-control studies (Analysis 2.7; Summary

of findings 3; Chen 2011; Gao 1994; Inoue 1998; Islami 2009; Mu 2003; Oze 2014; Peng 2015; Takezaki 2000; Wang 1999; Wang 2006; Wang 2007; Wu 2009b).

Stomach cancer

Of the 20 nonexperimental studies assessing stomach cancer risk, two did not report confidence intervals of risk estimates, thus we could not include them in the meta-analysis (Tajima 1985; Wang 1999). Overall results from available studies suggest an association between green tea intake and decreased stomach cancer risk, with summary RR of 0.86 (95% CI 0.74 to 1.01) and high heterogeneity ($I^2 = 75\%$) and very-low certainty evidence between study results (Analysis 2.8; Summary of findings 3). In the overall estimate from seven cohort studies (Galanis 1998; Inoue 2009a; Khan 2004; Kuriyama 2006; Nagano 2001; Nechuta 2012; Suzuki 2009), there was no association between green tea consumption and decreased risk of stomach cancer (summary RR 0.99, 95% CI 0.85 to 1.14; Analysis 2.8). Conversely, summary findings from case-control studies showed a lower stomach cancer risk in participants in the highest category of green tea intake with summary RR of 0.74 (95% CI 0.53 to 1.02) from eight population-based case-control studies (Hoshiyama 1992; Ji 1996; Kono 1988; Liu 2010; Mu 2003; Setiawan 2001; Ye 1998; Yu 1995), and summary RR of 0.90 (95% CI 0.74 to 1.09) from the three hospital-based case-control studies (Huang 1999; Mao 2011; Wang 2015) see Analysis 2.8 and Summary of findings 3. We observed moderate heterogeneity ($I^2 = 39\%$) between results of cohort studies, and high ($I^2 = 85\%$) and no heterogeneity ($I^2 = 0\%$) between population-based and hospital-based case-control studies, respectively.

Liver cancer

Overall study results showed a slightly but imprecise decreased risk with a higher intake of green tea (summary RR 0.88, 95% CI 0.68 to 1.14), with moderate heterogeneity ($I^2 = 46\%$) and low-certainty evidence (Analysis 2.9; Summary of findings 3). Summary findings from five cohort studies found a slightly lower liver cancer risk in association with the highest green tea intake (summary RR 0.93, 95% CI 0.71 to 1.20; Analysis 2.9; Summary of findings 3; Inoue 2009b; Nagano 2001; Nechuta 2012; Tamura 2018; Ui 2009). In the only population-based case-control study, an indication of decreased liver cancer risk with increasing green tea intake emerged (RR 0.55, 95% CI 0.28 to 1.09; Analysis 2.9; Mu 2003).

Pancreatic cancer

Overall, an inverse but imprecise association emerged for pancreatic cancer (summary RR of 0.88, 95% CI 0.70 to 1.10) in subjects with the highest green tea intake, high heterogeneity ($I^2 = 63\%$) and low-certainty evidence (Analysis 2.10; Summary of findings 3). Null association was found from six cohort studies (Khan 2004; Lin 2008; Luo 2007; Nagano 2001; Nakamura 2011; Nechuta 2012), assessing pancreatic cancer risk (summary RR 1.04, 95% CI 0.84 to 1.30; Analysis 2.10). Conversely, overall findings from three population-based case-control studies (Goto 1990; Ji 1997; Wang 2012c), and one hospital-based case-control study (Mizuno 1992), showed contradictory findings with summary RR of 0.67 (95% CI 0.48 to 0.96) and 1.94 (95% CI 1.06 to 3.55), respectively (Analysis 2.10). We observed low heterogeneity in cohort studies ($I^2 = 8\%$), whereas there was high heterogeneity in population-based case-control studies ($I^2 = 73\%$).

Biliary tract cancer

Summary results from the three cohort studies (Makiuchi 2016; Nagano 2001; Nechuta 2012), assessing biliary tract cancer risk and consumption of green tea showed an indication of lower risk with higher green tea intake (summary RR 0.79, 95% CI 0.57 to 1.11; Analysis 2.11), with low heterogeneity ($I^2 = 25\%$).

Colorectal cancer

One study did not report confidence intervals of risk estimates, thus we could not include it in the meta-analysis (Tajima 1985). Findings of 16 nonexperimental studies investigating the association between green tea intake and risk of colorectal cancer are contrasting. Overall results suggested a decreased risk of colorectal cancer in subjects with the highest green tea intake, with a summary RR of 0.84 (95% CI 0.74 to 0.96), with high heterogeneity ($I^2 = 65\%$) and low-certainty evidence (Analysis 2.12; Summary of findings 3). However, nine cohort studies (Khan 2004; Kuriyama 2006; Lee 2007; Nagano 2001; Nechuta 2012; Sun 2007; Suzuki 2005; Suzuki 2009; Yang 2011a), found no association, with a summary RR of 1.00 (95% CI 0.92 to 1.08) and no heterogeneity. Conversely, case control studies reported an inverse association: in population-based case-control studies we found a summary RR of 0.74 (95% CI 0.61 to 0.90; Green 2014; Ji 1997; Kato 1990; Li 2011a; Peng 2013), and in hospital-based case-control studies a summary RR of 0.53 (95% CI 0.17 to 1.60; Gavrilas 2018; Inoue 1998), with high heterogeneity ($I^2 = 62\%$ and $I^2 = 88\%$, respectively; Analysis 2.12). Stratified analysis by dividing colon and rectal cancer showed comparable results (Analysis 2.13; Analysis 2.14; Summary of findings 3).

Respiratory tract cancers

Nasopharyngeal cancer

The two case-control studies on nasopharyngeal cancer, one population-based (Hsu 2012), and one hospital-based (Ruan 2010), reported a negative association between green tea intake and risk, with a summary RR of 0.49 (95% CI 0.36 to 0.67; Analysis 2.15). We observed moderate heterogeneity ($I^2 = 51\%$) between studies.

Lung cancer

Overall, a negative association was found between green tea consumption and lung cancer risk, with a summary RR of 0.88 (95% CI 0.76 to 1.02) and moderate heterogeneity ($I^2 = 55\%$), with very low-certainty evidence (Analysis 2.16; Summary of findings 3). However, the five cohort studies found no association between green tea intake and lung cancer risk (summary RR 1.02, 95% CI 0.79 to 1.31), with low-to-moderate heterogeneity ($I^2 = 38\%$) (Analysis 2.16; Summary of findings 3 Khan 2004; Kuriyama 2006; Li 2008; Li 2018; Nagano 2001; Suzuki 2009). Conversely, results from the five population-based case-control studies (Han 2008; Jin 2013; Le Marchand 2000; Xu 2013; Zhong 2001), and the six hospital-based case-control studies (Bonner 2005; Kubik 2008; Lei 1994; Lin 2012; Takezaki 2001; Tewes 1990), suggested a lower risk in association with higher green tea intake, with summary RR of 0.73 (95% CI 0.61 to 0.87) and 0.90 (95% CI 0.69 to 1.17), respectively. Heterogeneity for these study categories was low ($I^2 = 13\%$) and high ($I^2 = 63\%$), respectively (Analysis 2.16).

Breast cancer

Summary findings from nonexperimental studies on breast cancer risk suggested a lower risk following higher green tea intake, with summary RR of 0.88 (95% CI 0.75 to 1.02), with high heterogeneity ($I^2 = 67\%$) and very low-certainty evidence ([Analysis 2.17](#); [Summary of findings 3](#)). The five cohort studies investigating the association between green tea intake and risk of breast cancer in women found no association (summary RR 1.01, 95% CI 0.86 to 1.19; [Analysis 2.17](#); [Dai 2010](#); [Iwasaki 2010a](#); [Key 1999](#); [Nagano 2001](#); [Suzuki 2004](#)). However, four population-based ([Inoue 2008](#); [Li 2011a](#); [Shrubsole 2009](#); [Wu 2003](#)), and five hospital-based ([Iwasaki 2014](#); [Li 2016](#); [Mizuo 2013](#); [Wang 2013a](#); [Zhang 2007](#)), case-control studies, showed a slight inverse association (summary RR 0.87, 95% CI 0.70 to 1.08, and 0.81, 95% CI 0.58 to 1.13, respectively). We observed no heterogeneity in the cohort studies, while it was moderate ($I^2 = 51\%$) and high ($I^2 = 76\%$) in the population-based and hospital-based control studies, respectively ([Analysis 2.17](#)).

Gynaecological cancer

In general, the nonexperimental studies evaluating the association between green tea intake and gynaecological cancer showed a negative association for both endometrial and ovarian cancer risk, with a summary RR of 0.69 (95% CI 0.57 to 0.83), with moderate heterogeneity ($I^2 = 42\%$) and low-certainty evidence ([Analysis 2.18](#); [Summary of findings 3](#)). In particular, studies assessing endometrial cancer risk showed a summary RR of 0.77 (95% CI 0.65 to 0.91), based on RR of 0.75 (95% CI 0.43 to 1.30) of one cohort study ([Shimazu 2008](#)), and on summary RR of 0.75 (95% CI 0.61 to 0.94) from the four population-based case-control studies ([Analysis 2.19](#); [Bandera 2010](#); [Gao 2005](#); [Kakuta 2009](#); [Xu 2007](#)), with low heterogeneity between study results. Regarding ovarian cancer, the RR from the five population-based case-control studies suggested an inverse association for participants in the highest category of green tea intake with a summary RR of 0.64 (95% CI 0.45 to 0.90) and moderate ($I^2 = 52\%$) heterogeneity ([Analysis 2.20](#); [Goodman 2003](#); [Leung 2016](#); [Nagle 2010](#); [Song 2008](#); [Zhang 2002](#)).

Urogenital tract cancer

Prostate cancer

Results from nonexperimental studies comparing highest versus lowest intake of green tea and prostate cancer risk showed a lower risk in overall analysis (summary RR 0.73, 95% CI 0.56 to 0.94; $I^2 = 72\%$; very low-certainty evidence; [Analysis 2.21](#); [Summary of findings 3](#)), but there were conflicting results in stratified analysis according to the study design. Indeed, a slightly increased risk was found overall in five cohort studies with a summary RR of 1.09 (95% CI 0.89 to 1.32), with low heterogeneity ($I^2 = 25\%$; [Analysis 2.21](#); [Allen 2004](#); [Kikuchi 2006](#); [Kurahashi 2007](#); [Montague 2012](#); [Severson 1989](#)), and a decreased for case-control studies. In the latter eight studies, a negative association for participants in the highest category of green intake emerged for population-based studies (summary RR 0.59, 95% CI 0.40 to 0.87) and for hospital-based studies (summary RR 0.50, 95% CI 0.39 to 0.63; [Analysis 2.21](#); [Berroukche 2012](#); [Jian 2004](#); [Lassed 2016](#); [Lee 2017](#); [Li 2014](#); [Sonoda 2004](#); [Tse 2017](#); [Wu 2009a](#)).

Renal cancer

The one hospital-based case-control study investigating kidney cancer found a strong negative association between green tea

consumption and risk (OR 0.34, 95% CI 0.21 to 0.55; [Analysis 2.22](#); [Wang 2012a](#)).

Urinary tract cancer

Nonexperimental studies investigating green tea consumption and risk of urinary tract (mainly urinary bladder) cancer showed no association (summary RR 1.04, 95% CI 0.79 to 1.37), with moderate heterogeneity ($I^2 = 56\%$) and very low-certainty evidence ([Analysis 2.23](#); [Summary of findings 3](#)). However, the summary estimate from the three cohort studies showed a positive association with a summary RR of 1.24 (95% CI 0.87 to 1.76) and low heterogeneity ($I^2 = 31\%$; [Analysis 2.23](#); [Chyou 1993](#); [Kurahashi 2009](#); [Nagano 2001](#)). Conversely, one population-based case-control study ([Wilkins 1996](#)), and three hospital-based case-control studies ([Hemelt 2010](#); [Wakai 2004](#); [Wang 2013b](#)), found little to no association between green tea consumption and urinary tract cancer risk, with summary RR of 1.08 (95% CI 0.61 to 1.92) and 0.84 (95% CI 0.53 to 1.32), respectively.

Haematological cancer

Findings from overall haematological cancers showed a lower, though imprecise risk in the highest category of green tea consumption (summary RR 0.75, 95% CI 0.45 to 1.27), with moderate heterogeneity ($I^2 = 60\%$; [Analysis 2.24](#)). Indeed, results of studies assessing leukaemia risk were highly variable ([Analysis 2.25](#)), with high risk in one cohort study ([Ugai 2018](#)), assessing acute myeloid leukaemia risk (RR 1.20, 95% CI 0.62 to 2.32), null risk from the two population-based case-control studies assessing all leukaemia (summary RR 1.03, 95% CI 0.50 to 2.14; [Kuo 2009](#); [Li 2011a](#)), and lower risk from the two hospital-based case-control studies assessing all leukaemias (summary RR 0.64, 95% CI 0.45 to 0.91; [Analysis 2.25](#); [Liu 2017](#); [Zhang 2008](#)). Similarly, a slightly lower risk (RR 0.89, 95% CI 0.61 to 1.30) was reported in one cohort study evaluating risk of lymphoma ([Analysis 2.26](#); [Ugai 2017](#)), as well as from studies assessing risk of multiple myeloma (summary RR 0.50, 95% CI 0.26 to 0.95; [Analysis 2.27](#)).

Other types of cancers

The one case-control study assessing non-melanoma skin cancer risk showed an indication of lower risk in the highest category of green tea consumption (OR 0.82, 95% CI 0.35 to 1.90; [Analysis 2.28](#); [Hakim 2000](#)). Similarly, a lower risk was reported for thyroid cancer (RR 0.88, 95% CI 0.56 to 1.37) by one cohort study ([Analysis 2.29](#); [Michikawa 2011](#)). Conversely, slightly increased and highly imprecise risk was reported by one cohort study (RR 1.07, 95% CI 0.71 to 1.62) assessing brain cancer risk ([Analysis 2.30](#); [Ogawa 2016](#)).

DISCUSSION

Summary of main results

The aims of this review were to examine the possible association between green tea consumption and the risk of cancer incidence and mortality, as well as quality of life. This updated review includes data from 11 experimental studies (all RCTs), 10 more than in the previous version of this review ([Boehm 2009](#)), and 160 (106 additional) nonexperimental studies, which were cohort and case-control studies.

Experimental studies have reported contrasting results. For instance, a decreased risk was suggested for prostate cancer

incidence, in men at high risk of prostate cancer, but with RRs ranging from highly beneficial effect to no effect in the three RCTs for this outcome, whilst an increased risk in the green tea-supplemented participants was reported for gynaecological cancer incidence, and no effect emerged for non-melanoma skin cancer. Conversely, results from most nonexperimental studies showed a decreased risk for any cancer incidence, but not for mortality. Also, either decreased or increased results were reported for site-specific cancers. Though a general decreased risk emerged when we considered all studies, stratified analyses according to study design, that is, case-control versus cohort studies, showed a null or even increased risk estimates in the upper category of green tea consumption for the latter, while results for the case-control studies were generally contradictory. This was true for any gut cancer, stomach, liver, colorectal, lung cancer, and even more for prostate, pancreatic, urinary tract cancer, and leukaemia.

Overall completeness and applicability of evidence

We aimed to extend the previous assessment of the relationship between green tea exposure and cancer risk by including all experimental and nonexperimental studies in adult populations published up until January 2019, without any limitation of time and language. During the past few decades, a large number of epidemiological studies have examined the association between green tea consumption and risk of various cancers. We included 16 non-English papers (15 in Chinese and 1 in Japanese).

We included all publications assessing the association between green tea intake and cancer risk independently from the source of exposure, that is, including supplementation with green extracts in experimental studies, and any green tea consumption in nonexperimental studies, in liquid and solid form. We excluded all studies in which green tea exposure could not be precisely or independently identified, including those assessing intake of tea without allowing the selective measurement of consumption of green tea. Besides the database search, we screened previous reviews on this topic published up to May 2019 (Booth 2008; EUnetHTA 2017). This allowed us to assess the most up-to-date evidence compared with several previous systematic reviews carried out on single specific outcomes (Borrelli 2004; Butler 2011; Chang 2014; Chen 2014; Chen 2017b; Fang 2015; Gao 2013; Gianfredi 2018; Guo 2017; Jacob 2017; Huang 2016; Huang 2017; Hou 2013; Lin 2014; Najaf 2018; Ni 2017; Qin 2012; Sang 2013; Tang 2015; Vieira 2017; Wang 2014b; Weng 2017; Wu 2013b; Xiong 2017; Yang 2019; Yiannakopoulou 2014; Yu 2014; Zeng 2014; Zhang 2015b; Zheng 2011; Zheng 2012; Zheng 2013; Zhong 2014; Zhou 2016).

In contrast to the previous version of this review (Boehm 2009), we included a quantitative assessment of cancer risk related to green tea intake, adding a meta-analysis of all cancer outcomes whenever there were sufficient data available to perform the analysis.

The inconsistency and high heterogeneity of results from epidemiological studies might have various possible explanations. One is exposure misclassification, since exposure to green tea polyphenols may vary greatly across study population in terms of either quantity (e.g. cups per day) of green tea consumption and amount and type of catechins, depending on the type of green tea, brewing time and temperature (Astill 2001; Sharpe 2016).

In addition, exposure to green tea catechins between experimental studies and nonexperimental studies may be very different. One

capsule containing 200 mg of EGCG corresponds to two or three cups of brewed tea, therefore the tested doses up to 800 mg of EGCG or more per day in experimental studies are equivalent to the consumption of at least eight cups of green tea per day (Coppock 2016; Crew 2015), a high level of exposure. Such a high quantity is difficult to reach when consuming only brewed tea. Moreover some experimental studies have shown that green tea supplementation is not free from adverse effects, such as gastrointestinal adverse effects, elevation of liver enzymes, and insomnia, probably due to the caffeine residues during extraction of catechins or polyphenols (Coppock 2016), hypertension, and skin or subcutaneous tissue reactions.

Also, in nonexperimental studies, we cannot rule out residual, unmeasured confounding effects, due to smoking and alcohol consumption (Chen 2017a), but also to other possible beneficial and adverse factors of dietary and non-dietary origin, possibly a major source of heterogeneity (Bhagwat 2014; Khan 2017; Malir 2014; Manach 2005; Podwika 2018; Rothwell 2017).

Quality of the evidence

Overall, both the experimental and nonexperimental studies that we included in this review were generally of high quality, based on the assessment of risk of bias. In the latter, a higher quality was seen in the cohort studies, with all NOS scores above 7 stars (Figure 1), thus indicating a medium and high methodological quality. Conversely, case-control studies, particularly those with a hospital-based design, showed lower scores, and those with an NOS score equal to or below 6 stars should be considered at high risk of bias (Figure 1). We found little evidence of publication bias for all outcomes except for oesophageal cancer and prostate cancer, thus for these latter outcomes the risk of low reporting/publication for studies with unfavourable or no cancer risk cannot be ruled out.

The certainty of the evidence presented in the Summary of findings for the main comparison, Summary of findings 2 and Summary of findings 3 showed low- or very low-certainty evidence from both experimental and nonexperimental studies, independently from the detection of either decreased or increased cancer risk. In experimental studies, we downgraded the certainty mainly due to the high imprecision of the estimates, based on small sample sizes and few observed cases with the outcome of interest. Also, moderate to high inconsistency was generally detected across study results, such as the results being reversed for risk of gynaecological cancers. Similarly in non-experimental studies, despite some generally decreased RR in the most exposed categories, we could not exclude a serious risk of bias due to the case-control design of most studies, since null or increased risk was reported in cohort studies for several outcomes such as stomach, pancreatic, colorectal, lung, breast and prostate cancer.

Potential biases in the review process

We attempted to minimise bias at every step of the review process. We performed a comprehensive search of the literature by accessing leading electronic databases (e.g. CENTRAL, MEDLINE, Embase), indexing relevant research and by implementing citation-chasing methods for identification of all other additional relevant research. Regarding experimental studies in particular, it is unlikely that we have not identified any RCTs. However, unpublished trials or ongoing trials not registered in clinical trials registries could have been missed. Should such trials be identified, we will include them

in future updates of the review. For study selection and assessment, at least two review authors independently assessed studies, performed data extraction, assessed risk of bias and GRADE, with the additional contribution of a third review author in order to solve conflicts. Regarding publication bias, in experimental studies, we were unable to assess its presence due to the few studies available to generate reliable funnel plots. In nonexperimental studies, we found symmetrical distribution for most of the outcomes considered, except oesophageal and prostate cancer, mainly due to results from case-control studies. However, we systematically performed stratified analysis according to study design.

Agreements and disagreements with other studies or reviews

A previous meta-analysis showed that black tea but not green tea consumption was related to a lower risk of cancer mortality (Zhang 2015a), in line with the results of this review. Other reviews that stratified analyses according to study design, also reported results consistent with our findings; they generally showed inverse associations in case-control studies and much weaker or no difference in cohort studies. For example, for prostate cancer, a recent meta-analysis concluded that there is a dose-response relationship between green tea consumption and prevention of prostate cancer (Guo 2017). However, when only cohort studies were considered, no difference in risk was found. Similarly, nonexperimental (observational) studies also reported an inverse association between green tea and risk of both endometrial and ovarian cancer when only case-control studies were considered (Butler 2011). Conversely, in cohort studies no difference in risk emerged. Consistent with this finding, contradictory results according to study design were found for risk of lung cancer (Guo 2019). In addition, the preventive role of green tea on gastrointestinal cancer was not confirmed when tea temperature was also evaluated. For instance, with reference to oesophageal and gastric cancer, high-doses and long-term consumption seemed to reduce the risk, whereas very high-temperature green tea appeared to increase the risk of cancer (Huang 2017; Yi 2019).

AUTHORS' CONCLUSIONS

Implications for practice

Overall, findings from epidemiological studies yielded inconsistent results for the effect of green tea consumption on cancer risk, despite some indications of a beneficial effect of green tea on a few site-specific cancers. In addition, the majority of included studies were carried out in Asian populations characterised by

high intakes of green tea, thus limiting the generalisability of the findings to other populations. Therefore, the epidemiological evidence appears to be still inadequate to support a beneficial effect of green tea on cancer risk. In addition, the possibility that high consumption of green tea extracts may have adverse effects should be taken into careful consideration.

Implications for research

Recommendations for future research arise from the observation that evidence for green tea preventing cancer risk is still highly inconsistent. Some evidence of a beneficial effect of green tea on prostate cancer risk emerged from the randomised controlled trials (RCTs), but their methodological limitations, such as the low number and size of the studies, and the inconsistencies of the results limit the interpretability of their results. The other cancer outcomes investigated in RCTs, gynaecological cancer and non-melanoma skin cancer, were not clearly associated with either beneficial or adverse effects, and also suggested the possible occurrence of side effects associated with high intake of green tea extracts. Well conducted and adequately powered RCTs, together with nonexperimental cohort design studies, are therefore clearly needed to elucidate the possible effects of green tea consumption on cancer risk in humans. RCTs should be carried out using low to moderate doses of green tea to avoid side effects and to reflect more closely the exposure patterns in most populations. They should also have an adequate sample size and allow a long period of follow-up in order to detect long-term and even small decreases in cancer risk.

ACKNOWLEDGEMENTS

We would like to thank all members of Cochrane Gynaecological, Neuro-oncology and Orphan Cancers for their valuable support.

This project was supported by the National Institute for Health Research, via Cochrane Infrastructure funding to Cochrane Gynaecological, Neuro-oncology and Orphan Cancer. The views and opinions expressed therein are those of the review authors and do not necessarily reflect those of the Systematic Reviews Programme, NIHR, NHS or the Department of Health.

The review authors and Cochrane Gynaecological, Neuro-oncology and Orphan Cancers team, are grateful to the following peer reviewers for their time and comments: Catherine Crespi, Kathie Godfrey and Duarte Torres, and also to one who wished to remain anonymous.

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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies [ordered by study ID]

Allen 2004

Methods	Cohort study in Japan
Participants	<p>Participants: more than 119,500 men from Hiroshima and Nagasaki. 18,115 men included in the present study</p> <p>Inclusion criteria: resident in Hiroshima and Nagasaki included in the Adult Health Study (a subcohort of the Life Span study cohort) carried out among atomic-bomb survivors and in residents in the cities in either city in the period between 1950 and 1953 and who completed the questionnaire surveys (in 1963, 1965 and 1979 to 1981), free from prostate cancer before the survey</p> <p>Parent cohort: Adult Health Study, a subcohort of the Life Span Study</p> <p>Recruitment: from 1963-1996</p>
Interventions	N/A
Outcomes	Number of cases prostate cancer: 193 cases (out of total 196 identified)
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: < 1 time/d</p> <p>Intermediate exposure: 2-4 times/d</p> <p>Highest exposure: > 5 times/d</p>

Allen 2004 (Continued)

Notes	<p>Funding: RERF Research Protocols (RP) no. 26-63 and 14-78</p> <p>Statistical methods: Poisson regression</p> <p>Variables controlled in analysis: age, calendar period, city of residence, radiation dose and education level</p> <p>Variables controlled by matching: -</p>
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Bandera 2010

Methods	PCC in USA
Participants	<p>Participants: 397 cases and 373 controls (all women)</p> <p>Inclusion criteria: women aged ≥ 21 years, newly diagnosed and histologically confirmed from the Estrogen, Diet, Genetic and Endometrial Cancer study, from 6 counties, New Jersey, USA</p> <p>Recruitment: from 1 July 2001-30 June 2005</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Endometrial cancer: 397 cases from the 469 eligible (all women)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: 0 cup/week</p> <p>Intermediate exposure: < 1 cup/week</p> <p>Highest exposure: ≥ 1 cups/week</p>
Notes	<p>Funding: NIH-K07 CA095666 and R01CA83918</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, education, race, age at menarche, menopausal status and age at menopause for postmenopausal women, parity, oral contraceptive use, HRT use, BMI, smoking (pack-years), smoking status, added sugar/honey, milk, cream, or nondairy creamer in tea</p> <p>Variables controlled by matching: -</p>

Berroukche 2012

Methods	HCC in Algeria
Participants	<p>Participants: 160 cases and 160 controls (all men)</p> <p>Inclusion criteria: free from other prostatic diseases or malignant tumours, not being under dietary restrictions or patients in critical conditions from Department of Urology of Sidibel-Abbes UHC and of Saida Hospital, Algeria</p> <p>Recruitment: from January 2007-March 2011</p>
Interventions	N/A
Outcomes	Number of cases

Berroukche 2012 (Continued)

	Prostate cancer: 160 cases (all men)
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: ≤ 1 cup/d Intermediate exposure 1: 2-3 cups/d Intermediate exposure 2: 4-5 cups/d Highest exposure: > 6 cups/d
Notes	Funding: not declared Statistical methods: conditional logistic regression Variables controlled in analysis: tobacco smoking, total energy intake and family history of prostate cancer Variables controlled by matching: age (± 5 years)

Bettuzzi 2006

Methods	RCT, parallel, double-blind in Italy
Participants	Participants: 60 men with HG-PIN, 30 in each group Inclusion criteria: age 45-75 years, with HG-PIN diagnosed needle biopsies collection, not consuming green tea or taking antioxidants, not vegetarians and not under antiandrogenic therapy Recruitment: NR
Interventions	Treatment group: 3 capsules of GTEs, containing green tea catechins (200 mg each) capsules/d = total 600 mg/d, corresponding to approximately 300 mg/d of EGCG Control group: placebo Duration: 1 year
Outcomes	Primary outcome Prostate cancer incidence Secondary outcomes LUTS using IPSS PSA levels QoL data Safety data
Green tea in exposure categories	N/A
Notes	Grant support: PRIN 2004 (MIUR, Italy). Dr. Rizzi was supported by Genprofler Srl (Bolzano, Italy).

Risk of bias

Bias	Authors' judgement	Support for judgement
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Bettuzzi 2006 (Continued)

Random sequence generation (selection bias)	Low risk	Quote: "Volunteers were randomly assessed to a placebo- or GTCs [green tea catechins]-arm by simple randomisation" Comment: it is unclear how sequence was generated, however the baseline characteristics reported in Table 1 are mainly equally distributed.
Allocation concealment (selection bias)	Unclear risk	Quote: "That same day [when they signed the informed consent, NDR], they were alternatively assigned to the placebo- or GTCs [green tea catechins]-arm and given the appropriate treatment. To all subjects, capsules were given by the urologist according to the double blind method" Comment: insufficient information to answer
Blinding of participants and personnel (performance bias) Prostate cancer incidence	Low risk	Quote: "capsules were given by the urologist according to the double blind method" Comment: probably done
Blinding of participants and personnel (performance bias) Lower urinary tract symptoms	Low risk	Quote: "In the second arm, men received placebo (three identical capsules per day). To all subjects, capsules were given by the urologist according to the double blind method". Comment: probably done
Blinding of participants and personnel (performance bias) PSA levels	Low risk	Review authors do not believe this will introduce bias since this measurement is independent from individual evaluation
Blinding of outcome assessment (detection bias) Prostate cancer incidence	Unclear risk	No explicit statement on blinded outcome assessment
Blinding of outcome assessment (detection bias) Lower urinary tract symptoms	Unclear risk	No explicit statement on blinded outcome assessment
Blinding of outcome assessment (detection bias) PSA levels	Low risk	Review authors do not believe this will introduce bias since this measurement is independent from individual evaluation
Incomplete outcome data (attrition bias) Prostate cancer incidence	Low risk	All randomised participants were included in the analysis
Incomplete outcome data (attrition bias) Lower urinary tract symptoms	Unclear risk	Quote: "patients, diagnosed with prostate cancer at the 6 months biopsy check, left the study" Comment: number of participants included in analysis not stated
Incomplete outcome data (attrition bias) PSA levels	Low risk	All randomised participants were included in the analysis
Selective reporting (reporting bias)	Unclear risk	The study protocol is not available and it is not clear if the published reports include all expected outcomes. Insufficient information to answer

Bettuzzi 2006 (Continued)

Other bias	Low risk	Study controlled for total serum PSA at the time of enrolment, prostate volume at the time of enrolment, prostate volume at the end of study, total number of HG-PIN scores vs total scores taken at the time of enrolment, total number of HG-PIN scores taken at the end of study; total number of mono-focal or plurifocal HG-PIN lesions by means of a multivariate analysis
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Bonner 2005

Methods	PCC in China
Participants	Participants: 122 (male/female: 79/43) cases and 121 (male/female: 78/43) controls Inclusion criteria: newly diagnosed lung cancer, mean age 54.71 (SD 11.45) in cases and 54.44 (SD 11.97) in controls from residents of Xuan Weu, China Recruitment: from March 1995-March 1996
Interventions	N/A
Outcomes	Number of cases Lung cancer: 122 (male/female: 79/43) cases
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: never Intermediate exposure: 2-3 times/week Highest exposure: ≥ 1 time/d
Notes	Funding: not declared Statistical methods: unconditional logistic regression Variables controlled in analysis: smoking (pack-years) Variables controlled by matching: age, sex, village of residence, type of heating and cooking fuel

Chen 2011

Methods	HCC in China
Participants	Participants: 150 (male/female: 102/48) cases and 300 (male/female: 204/96) controls Inclusion criteria: histologically confirmed squamous cell oesophageal carcinoma, mean age 54.5 (SD 6) in cases and 54.0 (SD 7) in control from First Affiliated Hospital of Ji'nan University, China Recruitment: from June 2004-May 2010
Interventions	N/A
Outcomes	Number of cases Oesophageal cancer: 150 (male/female: 102/48) cases
Green tea in exposure categories	Exposure assessment: green tea intake

Chen 2011 (Continued)

Lowest exposure: never

Intermediate exposure 1: < 100 g/month

Intermediate exposure 2: 100-250 g/month

Highest exposure: > 250 g/month

Notes	<p>Funding: Medical Science fund of Guangong Province (B2008094)</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age, sex, education level, annual income, cancer family history, smoking status and alcohol drinking status</p> <p>Variables controlled by matching: age (\pm 3 years) and sex</p>
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Chen 2017a

Methods	HCC in China
Participants	<p>Chen 2015</p> <p>Participants: 203 (male/female: 153/50) cases and 572 (male/female: 416/156) controls</p> <p>Inclusion criteria: newly diagnosed cases of oral cancer, living in Fujian, China for > 10 years, with no pathological diagnosis of oral inflammation, benign lesions, or secondary tumours and without critical illness</p> <p>Recruitment: from September 2010-January 2015</p> <p>Chen 2016</p> <p>Participants: 207 cases and 480 controls (all women)</p> <p>Inclusion criteria: newly diagnosed cases of oral cancer, consecutively recruited from the First Affiliated Hospital of Fujian Medical University, China</p> <p>Recruitment: from September 2010-January 2015</p> <p>Chen 2017a and Chen 2017c with duplicate results)</p> <p>Participants: 586 (male/female: 379/207) cases and 1024 (male/female: 630/394) controls</p> <p>Inclusion criteria: newly diagnosed cases of oral cancer, consecutively recruited from the First Affiliated Hospital of Fujian Medical University, China</p> <p>Recruitment: from September 2010-January 2015</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>In Chen 2015</p> <p>Oral cancer: 188 cases out of 203 recruited (15 cases excluded because drinkers of other types of tea)</p> <p>In Chen 2016</p> <p>Oral cancer: 196 cases out of 207 recruited (11 cases excluded because drinkers of other types of tea)</p> <p>In Chen 2017a</p>

Chen 2017a (Continued)

	Oral cancer: 586 (male/female: 379/207) cases, including squamous cell carcinoma (N = 507), adenocarcinoma (N = 59), others (N = 20)
Green tea in exposure categories	<p>Exposure assessment: green tea drinking habit (same for Chen 2015, Chen 2016 and Chen 2017a)</p> <p>Lowest exposure: not drinking tea</p> <p>Highest exposure: drinking green tea (≥ 1 cup/week for ≥ 6 months)</p>
Notes	<p>Chen 2015</p> <p>Article in Chinese</p> <p>Funding: Research Project of Science and Technology Department of Fujian Province (2015J01304); Research Project of Fujian Provincial Department of Education (JA13141); Research and Application of New Technology of Key Laboratory of Environment and Health, School of Public Health, Fujian Medical University (201201).</p> <p>Statistical methods: unconditional logistic regression Variables controlled in analysis: sex, age, occupation, ethnicity, marital status, education level, BMI and place of residence Variables controlled by matching: -</p> <p>Chen 2016</p> <p>Funding: grants from the Natural Science Foundation of China (Nos. 30771845 and 81172766), Natural Science Foundation of Fujian Province (No. 2015J01304) and the Scientific Research Program of Education Department of Fujian Province (No. JA13141)</p> <p>Statistical methods: unconditional logistic regression Variables controlled in analysis: age, family history of cancer, occupation, education, BMI, residence, marital status, tobacco smoking, alcohol drinking, cooking oil fumes and passive smoking Variables controlled by matching: -</p> <p>Chen 2017a</p> <p>Funding: grants from Natural Science Foundation of Fujian Province (N. 2015J01304) and from University Development Foundation of National Financial Support (N. 1003-03900130)</p> <p>Statistical methods: unconditional logistic regression Variables controlled in analysis: age, sex, occupation, education, BMI, marital status, residence, family cancer history, vegetables and fruits, alcohol drinking and tobacco smoking Variables controlled by matching: -</p> <p>Data also available stratified according to milk consumption in non-smoking and non-drinking participants. Previous report on the same population also reported in Chen 2015 and Chen 2016 in: Chen 2017a.</p>

Chyou 1993

Methods	Cohort study in USA
Participants	<p>Participants: 7991 male participants out of 8006 recruited</p> <p>Inclusion criteria: American men of Japanese ancestry, born from 1990-1919 and residing on the Hawaiian island of Oahu, Hawaii, USA</p> <p>Parent cohort: Honolulu Heart Program</p> <p>Recruitment: from 1965-1968</p>

Chyou 1993 (Continued)

Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: May 1991</p> <p>Urinary tract cancer: 96 cases, including urinary bladder (N = 83), pelvis (N = 8) and ureter (N = 5)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: almost never</p> <p>Highest exposure: not specified, probably merging 4 categories: < 2 times/week, 2-4 times/week, almost daily, ≥ 1 time/d</p>
Notes	<p>Funding: grants provided by National Cancer Institute (R01 CA33644)</p> <p>Statistical methods: proportional hazard regression</p> <p>Variables controlled in analysis: age and smoking</p> <p>Variables controlled by matching: -</p>

Dai 2010

Methods	Cohort study in China
Participants	<p>Participants: 72,861 Chinese women</p> <p>Inclusion criteria: women aged 40-70 years, no history of cancer at baseline. 381 women regularly drinking only black or oolong tea excluded</p> <p>Parent cohort: Shanghai Women's Health Study</p> <p>Recruitment: from March 1997-May 2000</p> <p>Data on the same cohort also reported in Nechuta 2012</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2005</p> <p>Breast cancer: 614 cases (all female)</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: no</p> <p>Highest exposure: yes</p> <p>Exposure assessment: dosage of green tea</p> <p>Lowest exposure: no drinking</p> <p>Intermediate exposure 1: 0-1.67 g/d</p> <p>Intermediate exposure 2: 1.68-3.33 g/d</p> <p>Intermediate exposure 3: 3.34-5.00 g/d</p>

Dai 2010 (Continued)

Highest exposure: > 5.00 g/d

Notes	<p>Funding: grants provided by National Institutes of Health (R01CA70867, R01CA106591, N02 CP1101066)</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, educational achievement, income, family history of breast cancer, history of fibroadenoma, BMI, waist-to-hip ratio, physically active, smoking status, alcohol consumption status, passive smoking status, ginseng intake, age at menarche, age at first live birth, menopausal status, age at menopause, use of HRT and dietary intake of total energy, fruits, vegetables, red meat, fish and isoflavones</p> <p>Variables controlled by matching: -</p>
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Dostal 2015

Methods	RCT, parallel, double-blind in USA - Minnesota Green Tea Trial (MGTT)
Participants	<p>Participants: 1075 post-menopausal women (538 in the treatment group and 537 in the control group)</p> <p>Inclusion criteria: age 50-70 years, classified as having high mammography density attending annual screening mammogram at 8 clinical centres in the Minneapolis-St. Paul metropolitan area (Minnesota Green Tea Trial (MGTT), planning to reside in or near Minnesota for study duration.</p> <p>Exclusion criteria: tested positive for serological status of hepatitis B surface antigen or antibodies to hepatitis C virus; baseline ALT > 1.5 times the upper limit of 60 U/L; any history of cancer; any history of proliferative breast disease; history of breast augmentation; BMI < 18.5 or > 40 kg/m²; weight change > 4.6 kg during the previous 12 months; current or recent (within 6 months) use of HRT; current use of anti-inflammatory agents including methotrexate or etanercept; current smoker; regular consumption of ≥ 7 alcoholic beverages/week; and regular consumption of ≥ 1 cups of green tea/week. Full details reported in Samavat et al. 2015.</p> <p>Recruitment: from August 2009-April 2013</p>
Interventions	<p>Treatment group: 4 oral GTE capsules, i.e. 1315 (± 116) mg of total catechins/d, including 843 (± 44) mg of EGCG</p> <p>Control group: placebo</p> <p>Duration: 1 year</p>
Outcomes	<p>Primary outcome</p> <p>Effects on biomarkers of breast cancer risk: mammographic density, circulating reproductive hormones and circulating insulin-like growth factor axis proteins</p> <p>Secondary outcome</p> <p>Circulating F2-isoprostanes, urinary oestrogen metabolites, anthropometric variables and obesity-associated hormone concentrations</p> <p>QoL</p> <p>Safety data</p>
Green tea in exposure categories	N/A
Notes	<p>Funding: from National Institutes of Health/National Cancer Institute grant R01 CA127236, Award Number T32CA132670 from the National Cancer Institute, the Department of Defense/US Army Medical Research and Materiel Command Award Number W81XWH-11-1-0013, the University of Minnesota Agricul-</p>

Dostal 2015 (Continued)

tural Experiment Station Project Number MIN-18-103 and the National Center for Advancing Translational Sciences of the National Institutes of Health Award Number UL1TR000114

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	<p>Quote: "A detailed description of the Minnesota Green Tea Trial (MGTT) design, eligibility criteria, study conduct and patient flow through the trial will be published separately (Samavat et al., Cancer Causes and Control)." reporting that "Investigational Drug Services (IDS) pharmacy utilized a computer generated randomisation scheme using the permuted block method"</p> <p>Comment: probably low risk</p>
Allocation concealment (selection bias)	Low risk	<p>Quote: "A detailed description of the Minnesota Green Tea Trial (MGTT) design, eligibility criteria, study conduct and patient flow through the trial will be published separately (Samavat et al., Cancer Causes and Control)." reporting that "Randomization was performed by the Investigational Drug Services (IDS) pharmacy at University of Minnesota Medical Center - Fairview". Central allocation.</p> <p>Comment: probably done</p>
Blinding of participants and personnel (performance bias) All outcomes	Low risk	<p>Quote: from Samavat 2015 "In this double-blinded study, study staff, participants, laboratory personnel and all parties involved with assessment of the study endpoints were blinded to treatment assignment. The treatment codes were only available to the IDS [Investigational Drug Services] pharmacy staff in charge of randomisation and a study biostatistician." From Dostal 2015 : "Participants, investigators, laboratory staff and those monitoring clinical outcomes and adverse events were blinded to treatment assignment" and "Placebo capsules were identical in appearance to GTE". Study investigators were kept blinded to the assigned treatment of all participants experiencing an adverse effects</p> <p>Comment: probably done</p>
Blinding of participants and personnel (performance bias) Non-melanoma skin cancer incidence	Low risk	<p>Quote: from Samavat 2015 "In this double-blinded study, study staff, participants, laboratory personnel and all parties involved with assessment of the study endpoints were blinded to treatment assignment. The treatment codes were only available to the IDS [Investigational Drug Services] pharmacy staff in charge of randomisation and a study biostatistician." From Dostal 2015 : "Participants, investigators, laboratory staff and those monitoring clinical outcomes and adverse events were blinded to treatment assignment" and "Placebo capsules were identical in appearance to GTE". Study investigators were kept blinded to the assigned treatment of all participants experiencing an adverse effects</p> <p>Comment: probably done</p>
Blinding of participants and personnel (performance bias) Gynaecological cancer incidence	Low risk	<p>Quote: from Samavat 2015 "In this double-blinded study, study staff, participants, laboratory personnel and all parties involved with assessment of the study endpoints were blinded to treatment assignment. The treatment codes were only available to the IDS pharmacy staff in charge of randomisation and a study biostatistician." From Dostal 2015 : "Participants, investigators, laboratory staff and those monitoring clinical outcomes and adverse events were blinded to treatment assignment" and "Placebo capsules were identical in appearance to GTE". Study investigators were kept blinded to the assigned treatment of all participants experiencing an adverse effects</p>

Dostal 2015 (Continued)

		Comment: probably done
Blinding of outcome assessment (detection bias) All outcomes	Low risk	From Dostal 2015 "Participants, investigators, laboratory staff and those monitoring clinical outcomes and adverse events were blinded to treatment assignment" and "Placebo capsules were identical in appearance to GTE". Study investigators were kept blinded to the assigned treatment of all participants experiencing an adverse effects Comment: probably done
Blinding of outcome assessment (detection bias) Non-melanoma skin cancer incidence	Low risk	From Dostal 2015 "Participants, investigators, laboratory staff and those monitoring clinical outcomes and adverse events were blinded to treatment assignment" and "Placebo capsules were identical in appearance to GTE". Study investigators were kept blinded to the assigned treatment of all participants experiencing an adverse effects Comment: probably done
Blinding of outcome assessment (detection bias) Gynaecological cancer incidence	Low risk	From Dostal 2015 "Participants, investigators, laboratory staff and those monitoring clinical outcomes and adverse events were blinded to treatment assignment" and "Placebo capsules were identical in appearance to GTE". Study investigators were kept blinded to the assigned treatment of all participants experiencing an adverse effects Comment: probably done
Incomplete outcome data (attrition bias) All outcomes	Low risk	Number and reason of participants' withdrawal from the study reported. Study authors performed an ITT analysis.
Incomplete outcome data (attrition bias) Non-melanoma skin cancer incidence	Low risk	Number and reason of participants' withdrawal from the study reported. Study authors performed an ITT analysis.
Incomplete outcome data (attrition bias) Gynaecological cancer incidence	Low risk	Number and reason of participants withdrawal from the study reported. Authors performed an ITT analysis.
Selective reporting (reporting bias)	Low risk	Results to the Minnesota Green Tea Trial RCT (ClinicalTrials.gov identifier (NCT number): NCT00917735) reported in several publications all included in this review.
Other bias	Unclear risk	Elevated number of withdrawals

Dryden 2013

Methods	RCT, parallel, double-blind in USA
Participants	Participants: 20 people with ulcerative colitis. Ratio 4:1 randomisation treatment/placebo Inclusion criteria: age ≥ 18 years, with mildly to moderately active disease Recruitment: NR
Interventions	Treatment groups: green tea catechins (using Polyphenon E, Mitsu-Norin, Fujieda) in low dose of catechins containing 200 mg of EGCG and high dose of catechins containing 400 mg of EGCG

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Dryden 2013 (Continued)

	Control group: placebo
	Duration: 56 d
Outcomes	Primary outcome Safety data Secondary outcome: QoL
Green tea in exposure categories	N/A
Notes	Funding: National Institutes of Health grant (5K23DK073750), University of Louisville Research Foundation Project Initiation Grant, Polyphenon E supplied by Mitsui-Norin (Fujieda, Japan) through the Chemoprevention Agent Development Group of the National Cancer Institute. Baseline characteristics were not equally distributed: both men and women included in the treatment groups, while only women were included in the placebo group. Treated participants were also slightly older and with higher mean weight and all used azathioprine. Tobacco use prevalence was 7% and 50% in treatment and control group, respectively.

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Patients...were randomized in a double-blinded fashion according to a random number generator compiled by a statistician not involved in the study" Comment: probably done
Allocation concealment (selection bias)	Low risk	Quote: "Patients...were randomized in a double-blinded fashion according to a random number generator compiled by a statistician not involved in the study" Comment: probably done
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Quote: "Patients were randomized in a double-blinded fashion": Also UC-DAI was assessed at day 0 and 56, while for other laboratory analyses at day 1, 14, 28, 56 and 70. Response: review authors do not believe this will introduce bias
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote: "Patients were randomized in a double-blinded fashion": Also UC-DAI was assessed at day 0 and 56, while for other laboratory analyses at day 1, 14, 28, 56 and 70. Response: review authors do not believe this will introduce bias
Incomplete outcome data (attrition bias) All outcomes	Low risk	Number of participants included in analysis stated and reported
Selective reporting (reporting bias)	Low risk	The study protocol is available (ClinicalTrials.gov identifier (NCT number): NCT00718094) and the published reports include all expected outcomes
Other bias	High risk	Results from Inflammatory Bowel Disease Questionnaire, a validated, IBD-specific indicator of QoL, was significantly different between groups at baseline.

Dryden 2013 (Continued)

Some participants in the treatment group, but not in the placebo arm, took immunomodulatory drugs

Fu 2013

Methods	HCC in China
Participants	<p>Participants: 723 (male/female: 485/238) cases and 857 (male/female: 576/281) controls</p> <p>Inclusion criteria: aged 30-80 years, with incident and histologically confirmed oral squamous cell cancer from 8 cities in different parts of China</p> <p>Recruitment: from 2007-2010</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Oral cancer: 723 (male/female: 485/238) cases of squamous cell cancer</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: < 4 g/d</p> <p>Intermediate exposure: 4-7 g/d</p> <p>Highest exposure: ≥ 8 g/d</p>
Notes	<p>Funding: Grant (N. 06dz22026) from the Science and Technology Commission of Shanghai Municipality.</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, sex, long-term residency area, years of education, tobacco smoking and alcohol drinking</p> <p>Variables controlled by matching: sex, age (± 5 years) and long-term residency area.</p>

Galanis 1998

Methods	Cohort study of Japanese population living in Hawaii, USA
Participants	<p>Participants: 40,575 eligible participants (of whom 12,789 were Japanese). Final population 11,907 (male/female: 5610/6297), 882 excluded for missing information on covariates</p> <p>Inclusion criteria: Japanese participants, complete information on covariates</p> <p>Parent cohort: Hawaii Health Surveillance Program Cohort (HHSPC)</p> <p>Recruitment: from 1975-1980</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1994</p> <p>Stomach cancer: 108 (male/female: 64/44) cases</p>

Galanis 1998 (Continued)

Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: none</p> <p>Intermediate exposure: 1 cup/d</p> <p>Highest exposure: ≥ 2 cups/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, years of education, Japanese place of birth and sex (in combined analyses). Analyses among men were also adjusted for cigarette smoking and alcohol intake status.</p> <p>Variables controlled by matching: -</p> <p>Galanis 1997 is a letter reporting preliminary findings subsequently published in Galanis 1998.</p>

Gao 1994

Methods	PCC in China
Participants	<p>Participants: 902 (66% male) cases and 1552 (55% male) controls. 1312 (male/female: 654/658) controls considered in the present analysis</p> <p>Inclusion criteria: aged 30-74 years, permanent residents in Shanghai, China</p> <p>Recruitment: from 1 October 1990-31 January 1993</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Oesophageal cancer: 659 (male/female: 417/242) out of 902 eligible cases excluding participants drinking other types of tea, including squamous cell carcinoma (N = 605), adenocarcinoma (N = 51), other specified types (N = 25) and unspecified types (N = 53)</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: nondrinker</p> <p>Highest exposure: drinkers (≥ 1 cup/week for ≥ 6 months)</p> <p>Exposure assessment: consumption of green tea</p> <p>Lowest exposure: nondrinker</p> <p>Intermediate exposure: 1-199 g/month in men and 1-149 g/month in women</p> <p>Highest exposure: ≥ 200 g/month in men and ≥ 150 g/month in women</p>
Notes	<p>Funding: Dr J Schneider funded by "Consejería de Sanidad del Gobierno Vasco" and by "Fondo de Investigación Sanitaria"; Dr MP Rubio funded by "Gobierno de Navarra".</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, education, birthplace, cigarette smoking and alcohol intake (only men)</p> <p>Variables controlled by matching: age (± 5 years) and sex</p>

Gao 2005

Methods	PCC in China
Participants	<p>Participants: 995 cases and 1087 controls (all women)</p> <p>Inclusion criteria: aged 30-69 years, living in Shanghai, China</p> <p>Recruitment: from January 1997-December 2002</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Endometrial cancer: 965 cases (out of total 995 identified)</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: non drinkers</p> <p>Highest exposure: drinker (2 cups/week for ≥ 3 months)</p>
Notes	<p>Article in Chinese</p> <p>Funding: National Cancer Institute funded project (R01CA92585)</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, education level, age at menarche, number of pregnancies, whether to take oral contraceptives, first-degree relatives, malignant tumours, history of the genus and BMI</p> <p>Variables controlled by matching: age</p>

Garcia 2014

Methods	RCT, parallel, double-blind in USA
Participants	<p>Participants: 98 women with persistent high-risk HPV infection and low-grade CIN (grade 1), 50 in the intervention group and 48 in the control group</p> <p>Inclusion criteria: aged ≥ 18 years, normal liver and kidney function and good performance status.</p> <p>Exclusion criteria: pregnant or breast feeding, consumed tea regularly within 1 month of enrolment, had a history of allergic reaction to tea or related dietary products, had been treated for genital condyloma within 30 days of enrolment, were receiving other investigational agents, had prior pelvic irradiation, were HIV-positive, had uncontrolled inter-current illness, had invasive or high-grade intraepithelial neoplasia, or had a history of cancer except nonmelanoma skin cancer</p> <p>Recruitment: at the University of Arizona (Tucson, Arizona), with additional accrual at Maricopa Integrated Health System (Phoenix, Arizona) and Southern Pines Women's Health Center (Southern Pines, North Carolina), period NR.</p>
Interventions	<p>Treatment group: green tea catechins (using Polyphenon E capsules), corresponding to 800 mg of EGCG/d</p> <p>Control group: placebo</p> <p>Duration: 4 months</p>
Outcomes	Primary outcome

Garcia 2014 (Continued)

Oncogenic HPV clearance and clearance of CIN1

Secondary outcome:

Safety data

Green tea in exposure categories	N/A
Notes	Funding: Contract (N01-CN35158) from the National Cancer Institute and the Arizona Cancer Center Support Grant (P30CA023074). The paper was partially written using funding provided by the National Cancer Institute of the National Institutes of Health under Award Number R25CA078447.

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "participants were randomized to receive Polyphenon E or placebo. An adaptive allocation randomization procedure was implemented to balance the two groups on the basis of age." Comment: probably done
Allocation concealment (selection bias)	Low risk	Quote: "participants were randomized to receive Polyphenon E or placebo. An adaptive allocation randomization procedure was implemented to balance the two groups on the basis of age." Comment: probably done
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Quote: "All histopathology specimens were reviewed in a blinded fashion by an experienced gynaecologic pathologist and were subjected to a second quality control review." Comment: done
Blinding of participants and personnel (performance bias) Gynaecological cancer incidence	Low risk	Quote: "All histopathology specimens were reviewed in a blinded fashion by an experienced gynaecologic pathologist and were subjected to a second quality control review." Comment: done
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Quote: "All histopathology specimens were reviewed in a blinded fashion by an experienced gynaecologic pathologist and were subjected to a second quality control review." Comment: done
Blinding of outcome assessment (detection bias) Gynaecological cancer incidence	Low risk	Quote: "All histopathology specimens were reviewed in a blinded fashion by an experienced gynaecologic pathologist and were subjected to a second quality control review." Comment: done
Incomplete outcome data (attrition bias) All outcomes	Low risk	Number of participants included in analysis stated. ITT analysis implemented
Incomplete outcome data (attrition bias)	Low risk	Number of participants included in analysis stated. ITT analysis implemented

Garcia 2014 (Continued)

Gynaecological cancer incidence

Selective reporting (reporting bias)	Low risk	The study protocol is available (ClinicalTrials.gov identifier (NCT number): NCT00303823) and the published report includes all expected outcomes
Other bias	Low risk	No reported withdrawals

Garland 2006

Methods	RCT, quadruple-blind in USA
Participants	178 (male/female: 89/89) participants: 42 (male/female: 21/21) in group A, 63 (male/female: 31/32) in group B and 73 (male/female: 37/36) in group C, 89 men
Interventions	Group A: green tea beverage and placebo capsules Group B: placebo beverage and Polyphenon E capsules (Mitsui-Norin Co, Ltd, Shizuoka, Japan), corresponding to 800 mg/d of ECGC Group C: placebo beverage and placebo capsules Duration: 6 months
Outcomes	Primary outcome Change in levels of biomarkers of oxidative stress Secondary outcome Safety data
Green tea in exposure categories	N/A
Notes	No results on lung cancer prevention published or reported on ClinicalTrials.gov (NCT00363805)

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "We are conducting a 6-month randomized, controlled, double-blind trial..." Comment: probably done
Allocation concealment (selection bias)	Unclear risk	No statement
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Review authors do not believe this would introduce bias since all biological analyses were performed
Blinding of outcome assessment (detection bias) All outcomes	Low risk	Review authors do not believe this would introduce bias since all biological analyses were performed

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

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Garland 2006 (Continued)

Incomplete outcome data (attrition bias) All outcomes	High risk	Data on lung cancer NR, only on biomarkers
Selective reporting (reporting bias)	Low risk	All outcomes reported on ClinicalTrials.gov (NCT00363805)
Other bias	Unclear risk	The number of withdrawals is low, however since no full publication is available, only an abstract and report on ClinicalTrials.gov, it is difficult to judge if other biases are present.

Gavrilas 2018

Methods	HCC in Romania
Participants	Participants: 151 (male/female: 92/59) cases and 151 (male/female: 90/61) controls Inclusion criteria: recently diagnosed cases undergoing conventional treatment recruited from MEDISPROF Oncology Hospital, Cluj-Napoca, Romania Recruitment: from April 2015-October 2017
Interventions	N/A
Outcomes	Colorectal cancer: 151 (male/female: 92/59) cases
Green tea in exposure categories	Exposure assessment: drinking of green tea Lowest exposure: < 1 serving/week Intermediate exposure 1: 1-2 servings/week Intermediate exposure 2: 3-5 servings/week Highest exposure: > 5 servings/week
Notes	Funding: not declared Statistical methods: crude analysis with raw data Variables controlled in analysis: crude analysis Variables controlled by matching: age (\pm 5 years) Gavrilas 2018 (Bulletin UASVM Food Science and Technology) reports same results subsequently published in Gavrilas 2018

Goodman 2003

Methods	PCC in USA
Participants	Participants: 164 cases and 194 controls (all women) Inclusion criteria: aged 18-84 years, diagnosed with epithelial ovarian cancer. Controls Oahu residents from Hawaii Health Survey Program and from women aged \geq 65 years, in the Health Care Financing Administration on Oahu, Hawaii, USA Recruitment: from 1 July 1993-30 June 1999

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Goodman 2003 (Continued)

Interventions	N/A
Outcomes	Number of cases Ovarian cancer: 164 cases of epithelial ovarian cancer
Green tea in exposure categories	Exposure assessment: drinking of green tea (yes/no) Lowest exposure: no drinking Highest exposure: drinking green tea further divided in: Highest exposure 1: < 1 cup/week Highest exposure 2: ≥ 1 cups/week
Notes	Funding: by the Anneliese Lermann Fund for Cancer Research, US Public Health Service grants R01-CA-58598 and P30-CA-71789 and contracts N01-CN-55424 and N01-PC-67001 from the National Cancer Institute. Statistical methods: unconditional logistic regression Variables controlled in analysis: age, ethnicity, oral contraceptive pill use and tubal ligation. Variables controlled by matching: -

Goto 1990

Methods	PCC in Japan
Participants	Participants: 71 (male/female: NR) cases and 142 (male/female: NR) controls Inclusion criteria: permanent residents in Hokkaido Prefecture, Japan Recruitment: NR
Interventions	N/A
Outcomes	Number of cases Pancreatic cancer: 71 (male/female: NR) cases
Green tea in exposure categories	Exposure assessment: drinking of green tea Lowest exposure: no drinking Highest exposure: drinking green tea almost every day
Notes	Article in Japanese Funding: not declared Statistical methods: unconditional logistic regression Variables controlled in analysis: sex, age and area of residence Variables controlled by matching: sex and age (± 3 years)

Green 2014

Methods	PCC in Australia
Participants	<p>Participants: 854 (male/female: 525/329) and 948 (male/female: 556/392) controls</p> <p>Inclusion criteria: histologically confirmed incident cases aged 40-79 years, from the Western Australian Bowel Health Study (WABOHS)</p> <p>Recruitment: 1 June 2005-31 August 2007</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Colorectal cancer: 854 (male/female: 525/329) cases</p> <p>Proximal colon cancer: 281 cases</p> <p>Distal colon cancer: 260 cases</p> <p>Rectal cancer: 323 cases</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: no drinking</p> <p>Intermediate exposure 1: < 1 cup/month</p> <p>Intermediate exposure 2: < 1 cup/week</p> <p>Highest exposure: ≥ 1 cup/week</p>
Notes	<p>Funding: Australian National Health and Medical Research Council (Project Grant #353568 and Fellowship #37614900) and Dutch Cancer Society</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age group, sex, energy intake from food, alcohol intake, smoking status, use of multivitamins, diabetes, physical activity during the age period 19-34 years, BMI at age 40 years, socioeconomic status and country of birth</p> <p>Variables controlled by matching: sex and age</p>

Hakim 2000

Methods	PCC in USA
Participants	<p>Participants: 234 (male/female: 138/96) cases and 216 (male/female: 125/91) controls</p> <p>Inclusion criteria: aged ≥ 30 years, histopathologically confirmed squamous cell carcinoma of the skin diagnosed within 4 months before the 1st interview and had no prior history of a skin cancer, non-Hispanic and Hispanic white cases' ethnicity from Southeastern Arizona Skin Cancer Study, Arizona, USA.</p> <p>Recruitment: from January 1993-December 1996</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Skin cancer: 234 (138/96) cases of squamous cell carcinoma</p>
Green tea in exposure categories	Exposure assessment: intake of hot green tea

Hakim 2000 (Continued)

	Lowest exposure: nondrinker
	Highest exposure: drinker, merging all categories (1–3 cups/month, 1–6 cups/week and ≥ 1 cup/d)
Notes	<p>Funding: grant from Unilever Health Institute Vlaardingen, the Netherlands and by Public Health Service Grant P01 CA27502</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, sex, energy intake, inability to tan after prolonged sun exposure and history of diagnosed and treated actinic keratosis</p> <p>Variables controlled by matching: sex and age (± 10 years)</p>

Han 2008

Methods	PCC in China
Participants	<p>Participants: 523 cases (male/female: 365/158) and 1924 (male/female: 1367/557) controls</p> <p>Inclusion criteria: newly diagnosed cases 35–79 years of age; residence in Dafeng City, China</p> <p>Recruitment: from January 2003 from Dafeng City Center for Disease Control and Prevention</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 523 (male/female: 365/158) cases</p>
Green tea in exposure categories	<p>Exposure assessment 1: green tea intake</p> <p>Lowest exposure: never drinking</p> <p>Highest exposure: drinking</p> <p>Exposure assessment 2: green tea consumption</p> <p>Lowest exposure: 0 g/month</p> <p>Intermediate exposure 1: 0–49 g/month</p> <p>Intermediate exposure 2: 50–99 g/month</p> <p>Highest exposure: ≥ 100 g/month</p>
Notes	<p>Article in Chinese</p> <p>Funding: Jiangsu Provincial Medical Engineering Key Talent Research Fund (RC2003090)</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: sex, age, education, income per capita, frequent exposure to cooking fumes, smoking habits, alcohol intake, family history of lung cancer, daily fruit and vegetable intake</p> <p>Variables controlled by matching: sex, age (± 2 years) and living in the same area.</p>

Hemelt 2010

Methods	HCC in China
Participants	Participants: 432 (male/female: 358/74) and 392 (male/female: 299/93) controls

Hemelt 2010 (Continued)

Inclusion criteria: all incident bladder cancer cases (ICD-10 C67), aged ≥ 40 years, admitted to 4 hospitals (First Affiliated Hospital in Hangzhou, First Municipal Hospital in Guangzhou, Tongji Hospital in Wuhan and Second Xiangya Hospital in Changsha), China

Recruitment: from October 2005-June 2008

Interventions	N/A
Outcomes	Number of cases Bladder cancer: 419 out of 432 eligible cases, mainly urothelial carcinoma (N = 323), followed by adenocarcinoma (N = 11) and squamous cell carcinoma (N = 7)
Green tea in exposure categories	Exposure assessment 1: green tea drinking Lowest exposure: no Highest exposure: yes Exposure assessment 2: green tea drinking Lowest exposure: no Intermediate exposure: < daily Highest exposure: daily, further divided in < 4 cups/d and ≥ 4 cups/d
Notes	Funding: not declared Statistical methods: unconditional logistic regression Variables controlled in analysis: age, sex, smoking status, smoking frequency and smoking duration. Hospital was modelled as a random effect Variables controlled by matching: sex and age (± 5 years)

Hoshiyama 1992

Methods	PCC in Japan
Participants	Participants: 251 cases and 483 controls (all men) Inclusion criteria: histologically confirmed single and multiple stomach cancer cases admitted to the Saitama Cancer Center Hospital, living in the Saitama Prefecture for at least 10 years, Japan Recruitment: from August 1984-July 1990
Interventions	N/A
Outcomes	Number of cases Stomach cancer: 419 out of 432 eligible cases: 216 single stomach cancer and 35 multiple stomach cancer (all men)
Green tea in exposure categories	Exposure assessment: green tea drinking Lowest exposure: ≤ 4 cups/d Intermediate exposure: 5-7 cups/d Highest exposure: ≥ 8 cups/d
Notes	Funding: not declared

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Hoshiyama 1992 (Continued)

Statistical methods: unconditional logistic regression
Variables controlled in analysis: age and smoking status
Variables controlled by matching: -

Hsu 2012

Methods	PCC in China
Participants	<p>Participants: 371 (69.5% male) cases and 321 (69.2% male) controls. Only 317 of the 321 eligible controls) included in the analysis</p> <p>Inclusion criteria: aged ≤ 75 years, no previous diagnosis for nasopharyngeal carcinoma and residence in Taipei city/county, Taiwan (China) for > 6 months</p> <p>Recruitment: from 15 July 1991-31 December 1994</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Nasopharyngeal carcinoma: 368 cases out of 371 eligible cases</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: 0 times/week</p> <p>Intermediate exposure: < 1 time/week</p> <p>Highest exposure: ≥ 1 time/week</p>
Notes	<p>Funding: National Institutes of Health, USAA</p> <p>Statistical methods: unconditional logistic regression Variables controlled in analysis: age, sex, ethnicity, educational level, nasopharyngeal carcinoma family history, total calories intake, years of cigarette smoking and exposure to formaldehyde and wood dust Variables controlled by matching: -</p>

Huang 1999

Methods	HCCs in Japan
Participants	<p>Huang 1999:</p> <p>Participants: 887 (male/female: 595/292) cases and 28,619 (male/female: 7892/20,727) controls</p> <p>Inclusion criteria: aged 20-79 years, from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan</p> <p>Recruitment: from 1988-1995</p> <p>Inoue 1994</p> <p>Participants: 127,477 inhabitants of 45 areas of Japan, data retrieved from 26,426 participants: 668 (male/female: 420/248) cases and 668 (male/female: 420/248) controls</p> <p>Inclusion criteria: aged 20-79 years, from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan</p>

Huang 1999 (Continued)

Recruitment: from January 1988-June 1991

[Kato 1990a](#)

Participants: 427 (male/female: 289/138) cases and 3014 (male/female: 1247/1767) controls

Inclusion criteria: aged ≥ 18 years, who underwent endoscopic examination and with no other types of cancer attending at Aichi Cancer Center Hospital, Japan. Controls considered in the present analysis are those with normal gastric mucosa

Recruitment: from April 1985-March 1989

Interventions	N/A
Outcomes	Huang 1999 Number of cases Stomach cancer: 887 (male/female: 595/292) cases Inoue 1994: Number of cases Stomach cancer: 668 cases, 123 of cardia, 218 of middle stomach and 256 of antrum Kato 1990a Number of cases Stomach cancer: 427 (male/female: 289/138) cases
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: never Intermediate exposure 1: 1-2 cups/d Intermediate exposure 2: 3-5 cups/d Highest exposure: > 6 cups/d Inoue 1994 Exposure assessment: green tea drinking Lowest exposure: < every day Highest exposure: every day Kato 1990a Exposure assessment: consumption of green tea Lowest exposure: nondrinker Intermediate exposure: 1-4 cups/d Highest exposure: ≥ 5 cups/d
Notes	Huang 1999 Funding: National Institutes of Health, USAA Statistical methods: unconditional logistic regression Variables controlled in analysis: sex and age

Huang 1999 (Continued)

Variables controlled by matching: -

Inoue 1994

Funding: Grant-in-Aid for Cancer Research (4-2) and for a comprehensive 10-year Strategy for Cancer Control from the Ministry of Health and Welfare, Japan

Statistical methods: conditional logistic regression

Variables controlled in analysis: age and intake of fresh vegetables

Variables controlled by matching: sex, age (± 2 years) and first time of hospital visit (± 2 months)

Kato 1990a

Funding: Grant-in-Aid for a Comprehensive 10-year Strategy for Cancer Control. Japan, from the Ministry of Health and Welfare

Statistical methods: Walker-Duncan logistic regression

Variables controlled in analysis: age and residence

Variables controlled by matching: -

Ide 2007

Methods	Cohort study in Japan
Participants	<p>Participants: 127,477 inhabitants of 45 areas of Japan, data retrieved from 20,550 men and 29,671 women</p> <p>Inclusion criteria: aged 40-79 (≥ 18 years in 1949). Details reported in Ohno 2001.</p> <p>Parent cohort: Japan Collaborative Cohort Study of Evaluation of Cancer Risk (JACC Study)</p> <p>Recruitment: from 1988-1990</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 2001</p> <p>Oral cancer: 37 (male/female: 20/17) cases, including cancers of the tongue (N = 22, male/female: 13/9) and other oral cavity (N = 15, male/female: 7/8)</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: Grants-in-Aid for Scientific Research from the Ministry of Education, Science, Sports and Culture of Japan (Monbusho) (N. 61010076, 62010074, 63010074, 1010068, 2151065, 3151064, 4151063, 5151069, 6279102, 11181101 and 12218237)</p> <p>Statistical methods: Cox hazard proportional regression</p> <p>Variables controlled in analysis: sex, age, smoking status, alcohol consumption, consumption of coffee, consumption of green/yellow vegetables, salty foods and fruits</p> <p>Variables controlled by matching: -</p>

Inoue 1998

Methods	HCC in Japan
Participants	<p>Participants: 127,477 inhabitants of 45 areas of Japan, data retrieved from 21,128 participants</p> <p>Inclusion criteria: aged 40-79 years, from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan</p> <p>Recruitment: from January 1988-June 1991</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Oesophageal cancer: 185 (male/female: 161/24) cases</p> <p>Stomach cancer: 893 (male/female: 613/280) cases</p> <p>Colon cancer: 362 (male/female: 213/149) cases</p> <p>Rectal cancer: 266 (male/female: 173/93) cases</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: rarely</p> <p>Intermediate exposure 1: occasional</p> <p>Intermediate exposure 2: 1-2 cups/d</p> <p>Intermediate exposure 3: 4-6 cups/d</p> <p>Highest exposure: ≥ 7 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Cancer Research (9-4) from the Ministry of Health and Welfare, Japan and a grant from the Foundation of All Japan Coffee Association</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: coffee intake, black tea intake, sex, age, year and season at 1st hospital visit, habitual smoking, habitual alcohol drinking, regular physical exercise, fruit intake, rice intake and beef intake</p> <p>Variables controlled by matching: -</p> <p>Data on Aichi also reported in Inoue 2009a for stomach cancer</p>

Inoue 2008

Methods	PCC in China
Participants	<p>Participants: 63,257 (male/female: 27,959/35,298) participants, 380 cases and 662 controls (all female)</p> <p>Inclusion criteria: aged 40-74 years, belonging to the Hokkien or Cantonese dialect group in Singapore, China</p> <p>Parent cohort: Singapore Chinese Health Study (SCHS)</p> <p>Recruitment: from April 1993-December 1998</p>
Interventions	N/A

Inoue 2008 (Continued)

Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 July 2007</p> <p>Breast cancer: 380 female breast cancer out of 736 eligible cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: none or < weekly</p> <p>Intermediate exposure: weekly to < daily</p> <p>Highest exposure: daily</p>
Notes	<p>Funding: National Cancer Institute, Bethesda, MD (R01-CA55069, R35-CA53890 and R01-CA80205)</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, year of enrolment, education, dialect, BMI, age when period became regular, number of live births and black tea intake</p> <p>Variables controlled by matching: -</p>

Inoue 2009a

Methods	Cohort studies in Japan
Participants	<p>Participants: 219,080 (male/female: 100,479/118,601) participants</p> <p>Inclusion criteria: all studies were carried out on Japanese populations starting from mid-1980s to mid-1990s with information on diet (including green tea)</p> <p>Parent cohorts</p> <p>Japan Public Health Center-based Prospective Study (JPHC)-I</p> <p>Japan Public Health Center-based Prospective Study (JPHC)-II</p> <p>Japan Collaborative Cohort Study (JACC) (only from 24 of the 45 investigated areas)</p> <p>Miyagi Cohort Study (MIYAGI)</p> <p>Three Prefecture Study - Miyagi portion (3-pref MIYAGI)</p> <p>Three Prefecture Study - Aichi portion (3-pref AICHI)</p> <p>Recruitment</p> <p>JPHC-I: 1990</p> <p>JPHC-II: from 1993-1994</p> <p>JACC: from 1988-1990</p> <p>MIYAGI: 1990</p> <p>3-pref MIYAGI: 1984</p> <p>3-pref AICHI: 1985</p> <p>Previous reports</p> <p>Fujino 2002</p>

Inoue 2009a (Continued)

Participants: 127,477 inhabitants of 45 areas of Japan, data retrieved from 18,746 men and 26,184 women

Inclusion criteria: aged 40-79 (≥ 18 years in 1949). Details reported in Ohno 2001

Parent cohort: Japan Collaborative Cohort Study of Evaluation of Cancer Risk (JACC Study)

Recruitment: from 1988-1990

Hoshiyama 2002

Participants: 127,477 inhabitants of 45 areas of Japan, data retrieved from 18,746 men and 26,184 women

Inclusion criteria: aged 40-79 (≥ 18 years in 1949). Details reported in Ohno 2001

Parent cohort: Japan Collaborative Cohort Study of Evaluation of Cancer Risk (JACC Study)

Recruitment: from 1988-1990

Hoshiyama 2004: (nested case-cohort study due to availability of serum samples)

Participants: 127,477 inhabitants of 45 areas of Japan, data retrieved from 30,370 men and 42,281 women including 151 cases and 265 controls

Inclusion criteria: aged 40-79 (≥ 18 years in 1949). Details reported in Ohno 2001

Parent cohort: Japan Collaborative Cohort Study of Evaluation of Cancer Risk (JACC Study)

Recruitment: from 1988-1990

Koizumi 2003

Participants: 31,345 (male/female: 13,992/17,353) from cohort 1 and 47,605 (male/female: 22,836/24,769). Final included subjects 26,311 (male/female: 11,902/14,409) from cohort 1 and 39,604 (male/female: NR) from cohort 2

Inclusion criteria: aged ≥ 40 years, residents in three municipalities of the Miyagi Prefecture, Northern Japan (cohort 1); aged 40-64 years (cohort 2) in residents of Miyagi Prefecture, Japan

Parent cohorts

Cohort 1: Three Prefecture Study - Miyagi portion (3-pref MIYAGI)

Cohort 2: Miyagi Cohort Study (MIYAGI)

Recruitment: from 1984 for cohort 2 and from 1990 for cohort 2

Tsubono 2001

Participants: 31,345 (male/female: 13,992/17,353) with final included participants 26,311 (male/female: 11,902/14,409)

Inclusion criteria: aged ≥ 40 years, residents in 3 municipalities of the Miyagi Prefecture, Northern Japan

Parent cohort: Three Prefecture Study - Miyagi portion (3-pref MIYAGI)

Recruitment: from 1984

Sasazuki 2004

Participants: 140,420 (male/female: 68,722/71,698), with 61,595 from cohort 1 and 78,825 from cohort 2 and 72,943 (male/female: 34,832/38,111) participants with complete data

Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1 and aged 40-69 years for cohort 2, from 6 public health centre areas (Ibaraki, Ni-

Inoue 2009a (Continued)

igata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up. Katsushika Public Health Center was excluded due to missing cancer data.

Parent cohorts

Cohort 1: Japan Public Health Center-based Prospective Study (JPHC)-I

Cohort 2: Japan Public Health Center-based Prospective Study (JPHC)-II

Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2

Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Inoue 2009b</p> <p>Outcome assessment</p> <p>JPHC-I: 2001</p> <p>JPHC-II: 2003-2004</p> <p>JACC: 2001</p> <p>MIYAGI: 2001</p> <p>3-pref MIYAGI: 1992</p> <p>3-pref AICHI: 2000</p> <p>Stomach cancer: 3577 (male/female: 2495/1082) cases</p> <p>Previous reports</p> <p>Fujino 2002</p> <p>Outcome assessment: 31 December 1997</p> <p>Stomach cancer mortality: 379 (male/female: 261/118) cases</p> <p>Hoshiyama 2002</p> <p>Outcome assessment: 31 December 1997</p> <p>Stomach cancer mortality: 359 (male/female: 240/119) cases</p> <p>Hoshiyama 2004</p> <p>Outcome assessment: 31 December 1997</p> <p>Stomach cancer: 151 cases of the 804 eligible cases due to availability of serum samples</p> <p>Koizumi 2003</p> <p>Outcome assessment: December 1992 for 3-pref MIYAGI, NR for MIYAGI (probably 1997)</p> <p>Stomach cancer: 733 (male/female: NR) cases; 419 (male/female: 296/123) cases in 3-pref-MIYAGI I and 314 (male/female: NR) cases in MIYAGI-</p> <p>Tsubono 2001</p> <p>Outcome assessment: 31 December 1992 for 3-pref MIYAGI only</p> <p>Stomach cancer: 419 (male/female: 296/123) cases from 3-pref MIYAGI only</p> <p>Sasazuki 2004</p>

Inoue 2009a (Continued)

Outcome assessment: 31 December 2001

Stomach cancer: 892 (male/female: 665/227) cases, including 109 (male/female: 88/21) including upper-third gastric cancers and 631 (male/female: 461/170) distal cancers and as histological categorisation, 471 (male/female: 386/85) cases of differentiated type and 312 (male/female: 197/115) cases of undifferentiated type

Green tea in exposure categories

Exposure assessment: green tea intake (same for [Inoue 2009a](#), Koizumi 2003, Tsubono 2001 and Sasazuki 2004)

Lowest exposure: < 1 cup/d

Intermediate exposure 1: 1-2 cups/d

Intermediate exposure 2: 3-4 cups/d

Highest exposure: ≥ 5 cups/d

Exposure assessment: intake of green tea (in Fujino 2002)

Lowest exposure: ≤ 3 times/week

Intermediate exposure: > 3 times/week

Highest exposure: every day

Exposure assessment: intake of green tea (In Hoshiyama 2002 and Hoshiyama 2004)

Intermediate exposure 1: 1-2 cups/d

Intermediate exposure 2: 3-4 cups/d

Intermediate exposure 3: 5-9 cups/d

Highest exposure: ≥ 10 cups/d

Notes

Funding: in Tsubono: grants from the Japanese Ministry of Health and Welfare and the Japanese Ministry of Education, Science and Culture. In Koizumi 2003 not declared and this study was supported by a Grant for the Third Term Comprehensive Control Research for Cancer from the Ministry of Health, Labour and Welfare of Japan.

Statistical methods: Cox proportional hazard regression

[Inoue 2009b](#)

Variables controlled in analysis: age, area (JPHC-I, JPHC-II and JACC only), smoking, ethanol intake, rice intake, soy bean paste soup, coffee intake, pickled vegetable intake and green-yellow vegetable intake

Fujino 2002

Funding: Grants-in-Aid for Scientific Research from the Ministry of Education, Science, Sports and Culture of Japan (Monbusho) (N. 61010076, 63010074, 1010068, 2151065, 3151064, 4151063, 5151069, 6279102, 11181101, 12218237 and 12218216).

Statistical methods: Cox proportional hazard regression

Variables controlled in analysis: age

Hoshiyama 2002

Funding: Ministry of Education, Science, Sports and Culture of Japan grants: 61010076, 62010074, 63010074, 1010068, 2151065, 3151064, 4151063, 5151069, 6279102, 11181101, 12218237

Statistical methods: Cox hazard proportional regression

Variables controlled in analysis: age, smoking status, history of peptic ulcer, family history of stomach cancer, consumption of rice, miso soup, green-yellow vegetables, white vegetables, fruits and preference for salty foods

Hoshiyama 2004

Inoue 2009a (Continued)

Funding: Ministry of Education, Science, Sports and Culture of Japan grants: 61010076, 62010074, 63010074, 1010068, 2151065, 3151064, 4151063, 5151069, 6279102, 11181101, 12218237

Statistical methods: Cox hazard proportional regression

Variables controlled in analysis: age, smoking status, HP infection, history of peptic ulcer, family history of stomach cancer, educational level, consumption of rice, miso soup, green-yellow vegetables, white vegetables, fruits and preference for salty foods

Koizumi 2003

Variables controlled in analysis: sex, age, type of health insurance, parental history of gastric cancer, history of peptic ulcer, cigarette smoking, alcohol consumption, consumption of rice, black tea, coffee, pickled vegetables, bean-paste soup. Plus consumption of meat, green or yellow vegetables, other vegetables and fruits for cohort 1 and consumption of pork, ham, spinach, carrot, cabbage, Chinese cabbage, orange and other fruits for cohort 2

Tsubono 2001

Variables controlled in analysis: sex, age, type of health insurance, history of peptic ulcer, smoking status, alcohol consumption, daily consumption of rice, consumption of black tea and consumption of coffee, and consumption of meat, green or yellow vegetables, pickled vegetables, other vegetables, fruits and bean-paste soup.

Sasazuki 2004

Funding: Grant-in-Aid for Cancer Research and for the Second Term Comprehensive 10-year Strategy for Cancer Control from the Ministry of Health, Labour and Welfare of Japan

Statistical methods: Cox proportional hazard regression

Variables controlled in analysis: age, area and cigarette smoking (stratified by sex)

Variables controlled by matching: -

Note: Ohno 2001 study report rationale for initiating the Japan Collaborative Cohort (JACC) Study

Inoue 2009b

Methods	Cohort study in Japan
Participants	<p>Participants: 68,975 participants, results of 18,815 (male/female: 6414/12,401) participants</p> <p>Inclusion criteria: aged 40-69 years, from 6 Public Health Centre areas across Japan</p> <p>Parent cohort: Japan Public Health Center-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1993-1994</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Liver cancer: 110 (male/female: 73/37) cases</p> <p>Outcome assessment: 31 December 2006</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: < 3 cups/d</p> <p>Intermediate exposure: 3-4 cups/d</p>

Inoue 2009b (Continued)

Highest exposure: ≥ 5 cups/d

Notes	<p>Funding: Grant-in-Aid for Cancer Research, for Research on Hepatitis and for the Third-Term Comprehensive Control Research for Cancer from the Ministry of Health, Labour and Welfare of Japan</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: sex, age, area, smoking status, weekly ethanol intake, BMI, history of diabetes mellitus, coffee consumption, serum ALT level, hepatitis C infection status and hepatitis B infection status</p> <p>Variables controlled by matching: -</p>
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Ishikawa 2006

Methods	Cohort study in Japan
Participants	<p>Participants: 31,345 (male/female: 13,991/17,354) participants in cohort 1 and 47,605 (male/female: 22,836/24,769) participants in cohort 2. Final participants are 26,723 (male/female: 9008/17,715) participants with covariate information</p> <p>Inclusion criteria: aged ≥ 40 years, in 3 municipalities of Miyagi Prefecture in cohort 1 and aged 40-64 years, in the 14 municipalities of Miyagi Prefecture, Japan</p> <p>Parent cohorts</p> <p>Cohort 1: Three Prefecture Study - Miyagi portion (3-pref MIYAGI)</p> <p>Cohort 2: Miyagi Cohort Study (MIYAGI)</p> <p>Recruitment: from January 1994 (cohort 1) and from June-August 1990 (cohort 2)</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1992 (cohort 1) and 31 December 1997 (cohort 2)</p> <p>Oesophageal cancer: 38 + 40 in cohort 1 and cohort 2 respectively</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: never or occasionally</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, cigarette smoking, alcohol drinking and coffee consumption</p> <p>Variables controlled by matching: -</p>

Islami 2009

Methods	PCC in Iran
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Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Islami 2009 (Continued)

Participants	<p>Participants: 300 cases (male/female: 150/150) and 571 (male/female: 278/293) controls</p> <p>Inclusion criteria: newly diagnosed histologically confirmed oesophageal cancer in residents in the eastern part of Golestan Province, Iran, attending the Atrak Clinic.</p> <p>Recruitment: from December 2003 to March 2007</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Oesophageal cancer: 266/300 eligible cases</p>
Green tea in exposure categories	<p>Exposure assessment: frequency of green tea consumption</p> <p>Lowest exposure: never, < weekly</p> <p>Highest exposure: daily, weekly</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: ethnicity, daily vegetable intake, alcohol consumption, tobacco or opium ever used, duration of residence in rural areas, education level, car ownership, tea temperature and black tea intake</p> <p>Variables controlled by matching: place of residence, age (\pm 2 years) and sex</p>

Iwai 2002

Methods	Cohort study in Japan
Participants	<p>Participants: 4411 participants from the Tottori Prefecture, Japan. Data from 2855 (male/female: 1404/1451) participants, only men for cancer mortality</p> <p>Inclusion criteria: aged 40-79 years</p> <p>Parent cohort: Japan Collaborative Cohort Study of Evaluation of Cancer Risk (JACC Study)</p> <p>Recruitment: from April-May 1989</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1999</p> <p>Total cancer mortality: 31 cases (all men)</p>
Green tea in exposure categories	<p>Exposure assessment: frequency of green tea consumption</p> <p>Lowest exposure: < 0.5 cups/d</p> <p>Intermediate exposure: 0.5-3 cups/d</p> <p>Highest exposure: \geq 4 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Scientific Research from Monbusho, the Japanese Ministry of Education, Science and Culture (N.11181101)</p> <p>Statistical methods: Cox proportional hazard regression</p>

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Iwai 2002 (Continued)

Variables controlled in analysis: coffee consumption, age, history of cancer and apoplexy, educational status and smoking status
Variables controlled by matching: -

Iwasaki 2010a

Methods	Cohort studies in Japan (Iwasaki 2010a) and case-cohort nested study (Iwasaki 2010b)
Participants	<p>Participants: 140,420 (male/female: 68,722/71,698) from cohort 1 and cohort 2. From the available 67,422 women</p> <p>Inclusion criteria: incident breast cancer cases in women at baseline aged 40-59 years in cohort 1 and 40-69 years in cohort 2, with no history of breast cancer, respondent to baseline questionnaire, not moved out of study area</p> <p>In Iwasaki 2010b: included data with available plasma tea polyphenol levels. Final population of 144 cases and 288 controls</p> <p>Parent cohorts</p> <p>Japan Public Health Center-based Prospective Study (JPHC)-I</p> <p>Japan Public Health Center-based Prospective Study (JPHC)-II</p> <p>Recruitment</p> <p>JPHC-I: 1990</p> <p>JPHC-II: from 1993-1994</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2006 in Iwasaki 2010a and 31 December 2002 in Iwasaki 2010b</p> <p>Breast cancer: 581 cases, based on baseline questionnaire data</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake at baseline</p> <p>Iwasaki 2010a</p> <p>Lowest exposure: < 1 cup/week</p> <p>Intermediate exposure 1: 1-2 cups/week</p> <p>Intermediate exposure 2: 3-4 cups/week</p> <p>Intermediate exposure 3: 1-2 cups/d</p> <p>Intermediate exposure 4: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p> <p>Iwasaki 2010b</p> <p>Lowest exposure: < 1 cup/week</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	Iwasaki 2010a

Iwasaki 2010a (Continued)

Funding: Grant-in-Aid for Scientific Research from Monbusho, the Japanese Ministry of Education, Science and Culture (N.11181101)

Statistical methods: Cox proportional hazard regression

Variables controlled in analysis: age, area (10 Public Health Centres), age at menarche, menopausal status at baseline, number of births, age at first birth, height, BMI, alcohol intake, smoking status, leisure time physical activity, exogenous hormone use, family history of breast cancer, oolong tea intake, black tea intake and coffee intake

Variables controlled by matching: -

Iwasaki 2010b

Funding: Grants-in-Aid for Cancer Research and for the Third Term Comprehensive Ten-Year Strategy for Cancer Control from the Ministry of Health, Labour and Welfare of Japan and Grants-in-Aid for Scientific Research on Priority Areas (17015049) from the Ministry of Education, Culture, Sports, Science and Technology of Japan.

Statistical methods: crude data analysis

Variables controlled in analysis: crude data

Variables controlled by matching: -

Data of parent study [Iwasaki 2010a](#) were used for breast cancer analysis including a larger population.

Iwasaki 2014

Methods	HCC in Japan
Participants	<p>Participants: 405 cases and 405 controls (all women)</p> <p>Inclusion criteria: female, newly diagnosed and histologically confirmed breast cancer cases at 4 hospitals of Nagano prefecture, Japan</p> <p>Recruitment: from May 2001-September 2005</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Breast cancer: 369/405 eligible cases due to missing information on green tea, SNP genotype information, or DNA sample. Major histologic types were invasive ductal carcinoma (85.6%), invasive lobular carcinoma (4.1%) and mucinous carcinoma (3.8%).</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: 1-119 mL/d</p> <p>Intermediate exposure: 120-599 mL/d</p> <p>Highest exposure: ≥ 600 mL/d</p>
Notes	<p>Funding: Grants-in-Aid for Research on Risk of Chemical Substances and the Third-Term Comprehensive Ten-Year Strategy for Cancer Control from the Ministry of Health, Labour and Welfare of Japan and Grants-in-Aid for Scientific Research on Innovative Areas (221S0001) and for Young Scientists (B) (22700934) from the Ministry of Education, Culture, Sports, Science and Technology of Japan and the Japan Society for the Promotion of Science and Foundation for Promotion of Cancer Research in Japan.</p> <p>Statistical methods: conditional logistic regression</p>

Iwasaki 2014 (Continued)

Variables controlled in analysis: menopausal status, number of births, family history of breast cancer, smoking status, moderate physical activity in the past 5 years, vitamin supplement use, oolong tea consumption, black tea consumption, coffee consumption and canned coffee consumption
Variables controlled by matching: sex, age (\pm 3 years) and residential area

Ji 1996

Methods	PCC in China
Participants	<p>Participants: 1124 (male/female: 770/354) cases and 1451 (male/female: 819/632) controls. 1347 (male/female: 753/594) of the eligible controls included in the analysis.</p> <p>Inclusion criteria: aged 20-69 years, permanent resident of the 10 urban districts of Shanghai, China</p> <p>Recruitment: from 1 December 1988-30 November 1989</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Stomach cancer: 1029 (male/female: 684/345) of the eligible cases, including cancers of cardia (N = 145, 18.8% in men and N = 40, 11.3% in women), distal stomach (N = 530, 68.9% in men and N = 257, 72.6% in women) and unclassified (N = 95, 12.3% in men N = 57, 16.1% in women)</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea drinking status</p> <p>Lowest exposure: nondrinker</p> <p>Highest exposure: regular drinker</p> <p>Exposure assessment B: consumption of green tea leaves</p> <p>Lowest exposure: nondrinker</p> <p>Men</p> <p>Intermediate exposure 1: \leq 1200 g/year</p> <p>Intermediate exposure 2: 1200-\leq 2000 g/year</p> <p>Intermediate exposure 3: 2000-\leq 3000 g/year</p> <p>Highest exposure: $>$ 3000 g/year</p> <p>Women</p> <p>Intermediate exposure: \leq 1200 g/year</p> <p>Highest exposure: $>$ 1200 g/year</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: logistic regression</p> <p>Variables controlled in analysis: age, income and educational level among women; further adjusted for smoking and alcohol drinking among men</p> <p>Variables controlled by matching: sex and age (\pm 5 years)</p>

Ji 1997

Methods	PCC in China
Participants	<p>Participants: 2266 (male/female: NR) cases and 1552 (male/female: NR) controls</p> <p>Inclusion criteria: aged 30/74 years, permanent resident of the 10 urban districts of Shanghai, China</p> <p>Recruitment: from October 1990-June 1993</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Colon cancer: 885 (male/female: 426/459) out of the 931 eligible cases</p> <p>Rectal cancer: 843 (male/female: 441/402) out of the 884 eligible cases</p> <p>Pancreatic cancer: 428 (male/female: 246/182) out of the 451 eligible cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea drinking habit</p> <p>Lowest exposure: nondrinker</p> <p>Highest exposure: regular drinker</p> <p>Exposure assessment B: green tea consumption</p> <p>Men</p> <p>Lowest exposure: nondrinker</p> <p>Intermediate exposure 1: 1-199 g/month</p> <p>Intermediate exposure 2: 200-299 g/month</p> <p>Highest exposure: ≥ 300 g/month</p> <p>Women</p> <p>Lowest exposure: nondrinker</p> <p>Intermediate exposure: 1-199 g/month</p> <p>Highest exposure: ≥ 200 g/month</p> <p>Exposure assessment C: lifetime green tea consumption</p> <p>Men</p> <p>Lowest exposure: nondrinker</p> <p>Intermediate exposure 1: 1-3499 g/month per years of drinking</p> <p>Intermediate exposure 2: 3500-8499 g/month per years of drinking</p> <p>Highest exposure: ≥ 8500 g/month per years of drinking</p> <p>Women</p> <p>Lowest exposure: nondrinker</p> <p>Intermediate exposure: 1-3499 g/month per years of drinking</p> <p>Highest exposure: ≥ 3500 g/month per years of drinking</p>
Notes	Funding: not declared

Ji 1997 (Continued)

Statistical methods: logistic regression
Variables controlled in analysis: age, income, education and cigarette smoking
Variables controlled by matching: sex and age (± 5 years)

Jia 2016

Methods	Case-control study in China
Participants	<p>Participants: 53 (male/female: 19/34) cases and 106 (male/female: 48/58) controls</p> <p>Inclusion criteria: participants of the cohort of Dayao in Yunnan, a rural area with naturally occurring asbestos, China</p> <p>Recruitment: NR</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 23 cases</p> <p>Pleural mesothelioma: 26 cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: never</p> <p>Intermediate exposure 1: 1-3 times/week</p> <p>Intermediate exposure 2: 4-6 times/week</p> <p>Highest exposure: ≥ 7 times/week</p>
Notes	<p>Article in Chinese</p> <p>Funding: National Natural Research Foundation of China (no. 41071064)</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: sex, age, ethnicity, cultural level, BMI, alcohol consumption, history of lung cancer, family history of cancer</p> <p>Variables controlled by matching: sex and age (± 3 years)</p>

Jian 2004

Methods	HCC in China
Participants	<p>Participants: 130 cases and 274 controls (all men)</p> <p>Inclusion criteria: aged ≥ 45 years, incident and histopathologically confirmed cases of adenocarcinoma of the prostate from 8 hospitals of Hangzhou, southeast China, residents in the Zhejiang Province, China for at least 10 years</p> <p>Recruitment: from July 2001-June 2002</p>
Interventions	N/A
Outcomes	Number of cases

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Jian 2004 (Continued)

	Prostate cancer: 130 cases (all men) of prostatic adenocarcinoma
Green tea in exposure categories	<p>Exposure assessment A: green tea drinking habits</p> <p>Lowest exposure: no</p> <p>Highest exposure: yes</p> <p>Exposure assessment B: intake of green tea</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure: 1-3 cups/d</p> <p>Highest exposure: > 3 cups/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age at interview, locality, education, family income, BMI, physical activity, alcohol consumption, tobacco smoking, total fat intake, marital status, age at marriage, number of children, vasectomy, family history of prostate cancer</p> <p>Variables controlled by matching: age and geographical area</p> <p>Jian 2007</p> <p>Subsequent report on the exact same population, controlling for lycopene intake</p>

Jin 2013

Methods	PCC in China
Participants	<p>Participants: 799 (male/female: 553/246) cases and 2010 (male/female: 1600/410) controls</p> <p>Inclusion criteria: aged 20-90 years, residents in the Ganyu county, Jiangsu Province, China</p> <p>Recruitment: 2010</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 799 (male/female: 553/246) cases</p>
Green tea in exposure categories	<p>Exposure assessment A: intake of green tea</p> <p>Lowest exposure: nondrinker</p> <p>Highest exposure: drinker</p> <p>Exposure assessment B: consumption of green tea</p> <p>Lowest exposure: 0 cup/d</p> <p>Intermediate exposure 1: 1 cup/d</p> <p>Intermediate exposure 2: 2 cups/d</p> <p>Highest exposure: > 2 cups/d</p>
Notes	Article in Chinese

Jin 2013 (Continued)

Funding: grant from Jiangsu Provincial Health Department (RC 2003090)

Statistical methods: unconditional logistic regression

Variables controlled in analysis: sex, age, education, income, BMI, family history of cancer, cigarette smoking, alcohol intake and garlic consumption

Variables controlled by matching: sex and age (± 5 years)

Kakuta 2009

Methods	PCC in Japan
Participants	<p>Participants: 152 cases and 285 controls (all women)</p> <p>Inclusion criteria: aged < 80 years, having endometrial cancer and underwent total hysterectomy at either Tohoku University Hospital (centre 1) or at the Miyagi Cancer Center (centre 2), histologically confirmed and with no history of cancer at any other organ or site, Miyagi prefecture, Japan</p> <p>Recruitment: from November 2002-March 2007 (centre 1) or from June 2005-June 2006 (centre 2)</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Endometrial cancer: 152 cases of endometrioid adenocarcinoma</p>
Green tea in exposure categories	<p>Exposure assessment: consumption of green tea</p> <p>Lowest exposure: < 4 cups/week</p> <p>Intermediate exposure 1: 5-6 cups/week-1 cup/d</p> <p>Intermediate exposure 2: 2-3 cups/d</p> <p>Highest exposure: > 4 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Scientific Research on Priority Areas, a Grant-in-Aid for Scientific Research, a Grant-in-Aid for Young Scientists, a Grant-in-Aid for Exploratory Research, from the Ministry of Education, Science, Sports and Culture, Japan; Grant-in-Aid from the Ministry of Health, Labour and Welfare, Japan; the 21st Century COE Program Special Research Grant (Tohoku University) from the Ministry of Education Science, Sports and Culture, Japan; Grant-in-aid from the Kurokawa Cancer Research Foundation, the Uehara Memorial Foundation, All Japan Coffee Association and the Third Term Comprehensive 10-year Strategy for Cancer Control from the Ministry of Health, Labour and Welfare, Japan</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: BMI, education, number of pregnancies, menopausal status, smoking status, diabetes mellitus, total calorie intake, miso soup consumption, tofu consumption and coffee consumption</p> <p>Variables controlled by matching: age (± 5 years) and area of residence</p>

Kato 1990

Methods	PCC in Japan
Participants	<p>Participants: 221 (male/female: 138/83) cases and 578 (male/female: 377/201) controls</p> <p>Inclusion criteria: aged ≥ 18 years, receiving a coloscopic examination at Aichi Cancer Center Hospital, Japan</p>

Kato 1990 (Continued)

	Recruitment: from June 1986-March 1990
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Colorectal cancer: 221 (male/female: 138/83) cases (2 cases have both colon and rectal cancer)</p> <p>Colon cancer: 132 (male/female: 79/53) cases</p> <p>Rectal cancer: 91 (male/female: 60/31) cases</p>
Green tea in exposure categories	<p>Exposure assessment: hot green tea</p> <p>Lowest exposure: < daily drinker</p> <p>Highest exposure: daily drinker</p>
Notes	<p>Funding: Grants-in-Aid for Cancer Research from the Ministry of Health and Welfare of Japan (61-6 and 1-6)</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, sex and residence</p> <p>Variables controlled by matching: age (\pm 5 years), sex and municipality</p>

Key 1999

Methods	Cohort study in Japan
Participants	<p>Participants: 34,759 women from Hiroshima and Nagasaki</p> <p>Inclusion criteria: women (93,741) present in Hiroshima and Nagasaki at the time of the bombings and city residents on 1 October 1950 and residents (23,580) not present at the time of the bombings but present between 1950 and 1953. Data of women recruited in the 1st and 2nd mail surveys, alive on 1 September 1969 (survey 1) and alive in September 1979 (Hiroshima) and July 1979 (Nagasaki)</p> <p>Parental cohort: Radiation Effects Research Foundation's Life Span Study: final population of 34,765 women</p> <p>Recruitment: 1969-1970 (survey 1) and 1979 (survey 2)</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1993</p> <p>Breast cancer: 405/427 eligible cases (22 cases excluded due to missing data on green tea intake)</p>
Green tea in exposure categories	<p>Exposure assessment: hot green tea intake</p> <p>Lowest exposure: \leq 1 time/d</p> <p>Intermediate exposure: 2-4 times/d</p> <p>Highest exposure: \geq 5 times/d</p>
Notes	<p>Funding: research performed at the Radiation Effects Research Foundation (RERF), Hiroshima and Nagasaki, Japan. RERF is funded equally by the Japanese Ministry of Health and Welfare and the USA Department of Energy (DOE) Department of Energy through the National Academy of Sciences, Japan</p>

Key 1999 (Continued)

Statistical methods: Poisson regression
Variables controlled in analysis: age, calendar period, city, age at the time of the bombing and radiation dose
Variables controlled by matching: -

Khan 2004

Methods	Cohort study in Japan
Participants	<p>Participants: 3158 (male/female: 1524/1634) participants</p> <p>Inclusion criteria: aged ≥ 40 years, attending the 45 Public Health Centres located in the Hokkaido Prefecture, Japan</p> <p>Recruitment: 2002</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1993</p> <p>Total cancer mortality: 243 (male/female: 154/89) cases</p> <p>Lung cancer mortality: 51 (male/female: 40/10) cases</p> <p>Stomach cancer mortality: 51 (male/female: 36/15) cases</p> <p>Colorectal cancer mortality: 29 (male/female: 15/14) cases</p> <p>Pancreatic cancer mortality: 25 (male/female: 12/13) cases</p> <p>Other cancers mortality: 88 (male/female: 51/37) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: never drink or drink several times per year or per month</p> <p>Highest exposure: drink several times/week or every day</p>
Notes	<p>Funding: Department of Health and Welfare of Hokkaido Government, Japan</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age and smoking</p> <p>Variables controlled by matching: -</p>

Kikuchi 2006

Methods	Cohort study in Japan
Participants	<p>Participants: 26,481 participants (all men). Data on green tea consumption available for 18,961 men</p> <p>Inclusion criteria: aged 40-79 years, living in 14 municipalities of Miyagi Prefecture in Japan</p> <p>Parent cohort: Ohsaki Cohort Study</p> <p>Recruitment: from 1994</p>

Kikuchi 2006 (Continued)

Interventions	N/A
Outcomes	Number of cases Outcome assessment: 2002 Prostate cancer: 110 cases
Green tea in exposure categories	Exposure assessment: green tea intake Lowest exposure: < 1 cup/d Intermediate exposure 1: 1-2 cups/d Intermediate exposure 2: 3-4 cups/d Highest exposure: ≥ 5 cups/d
Notes	Funding: Grant-in-aid of Third Term Comprehensive Control Research for Cancer from the Ministry of Health, Labour and Welfare, Japan (H16-3ji-gan-010) Statistical methods: Cox proportional hazard regression Variables controlled in analysis: age, BMI, alcohol consumption, smoking status, marital status, daily calorie intake, daily calcium intake, walking duration, consumption frequencies of black tea and coffee and consumption frequencies of meat and fish Variables controlled by matching: -

Kono 1988

Methods	PCC and HCC in Japan
Participants	Participants: 139 (male/female: 74/65) cases, 278 (male/female: 148/130) population controls and 2575 (male/female: 1171/1404) hospital controls Inclusion criteria: aged 20-75 years, newly diagnosed cases from Karatsu city and 9 neighbouring villages in Saga Prefecture, Japan. Hospital controls were aged 25-75 years, free from cancer at clinical/radiological examination. Population controls were residents of Saga Prefecture, Japan Recruitment: from 1979-1982
Interventions	N/A
Outcomes	Number of cases Stomach cancer: 139 (male/female: 74/65) cases
Green tea in exposure categories	Exposure assessment: green tea intake Lowest exposure: none or 1-4 cups/d Intermediate exposure: 5-9 cups/d Highest exposure: ≥ 10 cups/d
Notes	Funding: Grant-in-Aid, Ministry of Education, Science and Culture, Japan Statistical methods: unconditional logistic regression for hospital controls and conditional logistic regression for population controls Variables controlled in analysis: sex, age, class, smoking, consumption of mandarin oranges, fruits and others

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Kono 1988 (Continued)

Variables controlled by matching: sex, age, class

Kubik 2008

Methods	HCC in Czech Republic
Participants	<p>Kubik 2008</p> <p>Participants: 1096 (male/female: 509/587) cases and 2966 (male/female: 788/2178) controls</p> <p>Inclusion criteria: aged 25-89 years, with microscopically confirmed lung cancer attending Prague University Hospital Na Bulovce, Departments of pneumology, thoracic surgery and internal medicine</p> <p>Recruitment: from April 2002-August 2006 (men) and from April 1998-November 2006 (women)</p> <p>Kubik 2004</p> <p>Participants: 435 cases and 1710 controls (all women)</p> <p>Inclusion criteria: women aged 25-89 years, with microscopically confirmed lung cancer attending Prague University Hospital Na Bulovce, Departments of pneumology, thoracic surgery and internal medicine</p> <p>Recruitment: from April 1998-November 2002</p>
Interventions	N/A
Outcomes	<p>Kubik 2008</p> <p>Number of cases</p> <p>Lung cancer: 1096 (male/female: 509/587) cases: 308 (male/female: 101/207) cases of adenocarcinoma, 398 (male/female: 249/149) squamous cell cancers and 213 (male/female: 81/132) small-cell cancers</p> <p>Kubik 2004</p> <p>Number of cases</p> <p>Lung cancer: 435 cases (all women)</p>
Green tea in exposure categories	<p>Kubik 2008</p> <p>Exposure assessment: green tea intake</p> <p>Lowest exposure: never</p> <p>Highest exposure: monthly or less, weekly or less, daily or several times/week</p> <p>Kubik 2004</p> <p>Exposure assessment: green tea intake</p> <p>Lowest exposure: never</p> <p>Intermediate exposure: monthly (≤ 1 month) or weekly (≤ 1 week but > 1 monthly)</p> <p>Highest exposure: daily (daily or several times/week)</p>
Notes	Kubik 2008

Kubik 2008 (Continued)

Funding: grant (N. NR/8411-3) from the Internal Grant Agency of the Ministry of Health of the Czech Republic and by an institutional research project (N. MZO 00064211) from the Ministry of Health, Czech Republic

Statistical methods: unconditional logistic regression

Variables controlled in analysis: age, residence, education and pack-years of smoking

Variables controlled by matching: -

Kubik 2004

Funding: Internal Grant Agency of the Ministry of Health of the Czech Republic (NJ/6732-3)

Statistical methods: unconditional logistic regression

Variables controlled in analysis: age, residence, education and pack-years of smoking

Variables controlled by matching: -

Kumar 2015

Methods	RCT, parallel, double-blind in USA
Participants	<p>Participants: originally 97 men with HG-PIN and/or ASAP (49 in the intervention group and 48 in the control group)</p> <p>Inclusion criteria: age 30-80 years, with HG-PIN and/or ASAP biopsy diagnosed < 3 months before randomisation, with no history of cancer, hepatic or renal disease, restricted from taking steroid or other supplements, or > 6-12 cups of green tea/d</p> <p>Recruitment: from September 2008-March 2013 (> 95%) at the Moffitt Cancer Center, James A. Haley VA Hospital, Tampa and University of Florida, Jacksonville, Florida</p>
Interventions	<p>Treatment group: Polyphenon E (Poly E) by Mitsui Norin Co (containing 200 mg of catechins/capsule), two capsules/d = total 400 mg/d of EGCG</p> <p>Control group: placebo</p> <p>Duration: 1 year</p>
Outcomes	<p>Primary outcome</p> <p>Prostate cancer incidence</p> <p>Secondary outcome</p> <p>Prostate cancer incidence + ASAP in men with HG-PIN</p> <p>LUTS using the LUTS Symptoms Scale and QoL, using the Rand Short-form (SF)-36</p> <p>Adverse effects (safety data)</p>
Green tea in exposure categories	N/A
Notes	Funding: NIH-National Cancer Institute R01 CA12060-01A1

Risk of bias

Bias	Authors' judgement	Support for judgement
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Kumar 2015 (Continued)

Random sequence generation (selection bias)	Low risk	Quote: "participants were assigned to the intervention or placebo arm (1:1) using the SRAR system, a web-delivered subject registration application." Comment: probably done
Allocation concealment (selection bias)	Low risk	Quote: "a web-delivered subject registration application" Comment: central allocation, probably done
Blinding of participants and personnel (performance bias) Prostate cancer incidence	Low risk	Quote: "All study staff and participants, with the exception of the clinical pharmacist and biostatistician, were blinded to the assignments until the completion of the trial. Both PolyE and the matching placebo used in the trial were hard gelatin capsules with no difference in appearance, taste, or smell" Comment: probably done
Blinding of participants and personnel (performance bias) Lower urinary tract symptoms	Low risk	Quote: "All study staff and participants, with the exception of the clinical pharmacist and biostatistician, were blinded to the assignments until the completion of the trial. PolyE and matching placebo capsules were manufactured under contract to NCI" Comment: probably done
Blinding of participants and personnel (performance bias) PSA levels	Low risk	Review authors do not believe this would introduce bias
Blinding of outcome assessment (detection bias) Prostate cancer incidence	Low risk	Quote: "All study staff and participants, with the exception of the clinical pharmacist and biostatistician, were blinded to the assignments until the completion of the trial" Comment: probably done
Blinding of outcome assessment (detection bias) Lower urinary tract symptoms	Low risk	Quote: "All study staff and participants, with the exception of the clinical pharmacist and biostatistician, were blinded to the assignments until the completion of the trial. PolyE and matching placebo capsules were manufactured under contract to NCI" Comment: probably done
Blinding of outcome assessment (detection bias) PSA levels	Low risk	Review authors do not believe this would introduce bias
Incomplete outcome data (attrition bias) Prostate cancer incidence	Low risk	Comment: number of participants included in analysis stated
Incomplete outcome data (attrition bias) Lower urinary tract symptoms	Unclear risk	Comment: number of participants included in analysis NR
Incomplete outcome data (attrition bias) PSA levels	Low risk	Comment: number of participants included in analysis stated

Kumar 2015 (Continued)

Selective reporting (reporting bias)	Low risk	The study protocol is available (ClinicalTrials.gov identifier (NCT number): NCT00596011) and the published reports include all expected outcomes
Other bias	Unclear risk	Elevated number of withdrawal

Kuo 2009

Methods	PCC in China
Participants	<p>Participants: 252 (male/female: NR) cases and 637 (male/female: NR) controls</p> <p>Inclusion criteria: aged > 30 years, and residents in Kaohsiung metropolitan area (Kaohsiung City and its suburbs including 4 complexes of Tsoying, Tasheh, Jenwu and Linyuan are in south-western Taiwan) at the time of the diagnosis. Data on adults (16-29 years) are included</p> <p>Recruitment: from November 1997-December 2006</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Leukaemia: 93 (male/female: 42%/58%) adult cases and 223 (male/female: 39%/61%) controls</p>
Green tea in exposure categories	Exposure assessment: green tea intake with the questionnaire and with catechin urinary levels. Only crude data of intake used.
Notes	<p>Funding: National Institutes of Health (ES09723, ES00002)</p> <p>Statistical methods: crude analysis</p> <p>Variables controlled in analysis: crude analysis</p> <p>Variables controlled by matching: -</p>

Kurahashi 2007

Methods	Cohort studies in Japan
Participants	<p>Participants: 65,659 men, with final data on 49,920 men with complete data</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1 and aged 40-69 years for cohort 2, from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), Japan</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Center-based Prospective Study (JPHC)-I</p> <p>Cohort 2: Japan Public Health Center-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1990 for cohort 1 and 1993 for cohort 2</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2004</p>

Kurahashi 2007 (Continued)

	Prostate cancer: 404 cases, including 114 advanced, 271 localised and 19 of undetermined stage
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: Grants-in-Aid for cancer research from the Ministry of Health, Labour and Welfare of Japan for the Third Term Comprehensive 10-Year Strategy for Cancer Control and by Grants-in-Aid for scientific research on priority areas from the Ministry of Education, Culture, Sports, Science and Technology for research on the risk of chemical substances</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, area, smoking status, alcohol consumption, BMI, marital status and coffee, black tea, miso soup consumption, fruits, green or yellow vegetables, dairy food, soy food and genistein consumption</p> <p>Variables controlled by matching: -</p>

Kurahashi 2009

Methods	Cohort studies in Japan
Participants	<p>Participants: 133,084 (male/female: 65,660/67,424) and 104,440 (male/female: 49,566/54,874) people with complete data</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1 and aged 40-69 years for cohort 2, from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), Japan</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Center-based Prospective Study (JPHC)-I</p> <p>Cohort 2: Japan Public Health Center-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1990 for cohort 1 and 1993 for cohort 2</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2005</p> <p>Bladder cancer: 206 (male/female: 164/42) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Men</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>

Kurahashi 2009 (Continued)

Women

Lowest exposure: < 3 cups/d

Intermediate exposure 1: 3-4 cups/d

Highest exposure: ≥ 5 cups/d

Notes

Funding: Grant-in-Aid for Cancer Research (19shi-2)

Statistical methods: Cox proportional hazard regression

Variables controlled in analysis: age, area, smoking status, alcohol drinking and coffee

Variables controlled by matching: -

Kuriyama 2006

Methods

Cohort study in Japan

Participants

Participants: 52,029 participants. Final data on 40,530 participants included

Inclusion criteria: aged 40-79 years living in 14 municipalities of Miyagi Prefecture in the catchment area of the Ohsaki Public Health Centre, Miyagi, Japan.

Parent cohort: Ohsaki Cohort Study

Recruitment: from October-December 1994

Data on the same cohort also reported in [Naganuma 2009](#) and [Ui 2009](#)

Interventions

N/A

Outcomes

Number of cases

Total cancer mortality: 1134 (male/female: 734/395) cases

Stomach cancer mortality: 193 (male/female: 138/55) cases

Lung cancer mortality: 218 (male/female: 166/52) cases

Colorectal cancer mortality: 132 (male/female: 84/48) cases

Outcome assessment: 31 December 2001

Green tea in exposure categories

Exposure assessment: green tea consumption

Lowest exposure: < 1 cup/d

Intermediate exposure 1: 1-2 cups/d

Intermediate exposure 2: 3-4 cups/d

Highest exposure: ≥ 5 cups/d

Notes

Funding: Health Sciences Research Grant for Health Services (H18-Choju-Ippan-014, H16-Seisaku-Ippan-023, H18- Junkankitou [Seisyu]-Ippan-012), Ministry of Health, Labour and Welfare, Japan

Statistical methods: Cox proportional hazard regression

Variables controlled in analysis: age, sex, job status, years of education, BMI, engaging in sports or exercise, walking duration, history of hypertension, diabetes mellitus and gastric ulcer, smoking status, alcohol drinking, total energy intake/d, daily consumption of rice, daily consumption of miso (soybean

Kuriyama 2006 (Continued)

paste) soup, daily consumption of soybean products, total meat, total fish, dairy products, total fruits and total vegetables and consumption of oolong tea, black tea and coffee

Variables controlled by matching: -

For stomach cancer, data from [Inoue 2009a](#) were used

Lane 2018

Methods	RCT, parallel, double-blind in UK
Participants	<p>Participants: 133 men at high risk of prostate cancer randomised</p> <p>Inclusion criteria: participants previously enrolled in the Prostate testing for cancer and Treatment (ProtecT) trial. Men aged 50-69 years, with localised prostate cancer with no history of allergies to lycopene-containing foods or green tea, current or prior prostate cancer, major co-morbidities or 5-ARI medication</p> <p>Recruitment: from December 2009-May 2011</p>
Interventions	<p>3 lycopene (dietary advice, capsules, placebo) and 3 green tea (drink, capsules, placebo) interventions: 9 different interventions for 6 months, particularly regarding green tea:</p> <p>45 participants in the green tea drink: at least 3 cups/d, around 600 mL/d of tea made with green tea bag, PG Tips, Unilever Ltd</p> <p>45 participants in the green tea capsules: 2 capsules with 300 mg/d green tea leaf-derived extracted = 600 mg/d EGCG (Frutarom Ltd.)</p> <p>43 participants in the green tea placebo</p> <p>Duration: 6 months</p>
Outcomes	<p>Primary outcome</p> <p>Prostate cancer incidence</p> <p>Secondary outcomes</p> <p>PSA levels</p> <p>Safety data</p>
Green tea in exposure categories	N/A
Notes	Funding: Cancer Research UK (C11046/A10052)

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	<p>Quote: "randomly allocated to one of three lycopene interventions and to one of three green tea interventions using a blocked random allocation [1:1:1 ratio; generated by the trial statistician (C. Metcalfe) using the Stata uniform () "function"]"</p> <p>Comment: probably done</p>

Lane 2018 (Continued)

Allocation concealment (selection bias)	Low risk	Quote: "opaque envelopes for allocation. The allocation was concealed from the study nurse recruiting individuals" Comment: probably done
Blinding of participants and personnel (performance bias) PSA levels	Low risk	Review authors do not believe this would introduce bias
Blinding of outcome assessment (detection bias) PSA levels	Low risk	Review authors do not believe this would introduce bias
Incomplete outcome data (attrition bias) PSA levels	Unclear risk	Missing outcome data without explanation
Selective reporting (reporting bias)	High risk	In the study protocol other outcomes are reported (ClinicalTrials.gov identifier (NCT number): NCT01105338)
Other bias	Unclear risk	Some men also took lycopene capsules

Lassed 2016

Methods	HCC in Algeria
Participants	Participants: 90 cases and 190 controls (all men) Inclusion criteria: aged 50-88 years, histologically confirmed prostate cancer followed at the service of urology and at the emergency department in Clinic of Urology-Nephrology and Kidney Transplant Daski, Constantine, Algeria Recruitment: from 2011-2013
Interventions	N/A
Outcomes	Number of cases Prostate cancer: 90 cases (all men)
Green tea in exposure categories	Exposure assessment: green tea consumption Lowest exposure: < 1 cup/d Intermediate exposure: 1-3 cups/d Highest exposure: > 3 cups/d
Notes	Funding: Individual Project (F0092012009) and research unit programmatic funding (VARENBIMOL) at Constantine University, Algeria Statistical methods: Chi ² test (Woolf logit method) Variables controlled in analysis: - Variables controlled by matching: -

Le Marchand 2000

Methods	PCC in USA
Participants	<p>Participants: 582 (male/female: 375/207) cases and 582 (male/female: 375/207) controls</p> <p>Inclusion criteria: aged 26-79 years, histologically confirmed primary lung cancer, no history of lung cancer, appropriate ethnicity, Oahu residents, Hawaii State, USA</p> <p>Recruitment: from 1 January 1992-31 March 1997</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 582 (male/female: 375/27) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: lowest quartile < 0.0 g/d</p> <p>Intermediate exposure 1: between 0.0 to median value g/d</p> <p>Intermediate exposure 2: between median value to 171.1 g/d</p> <p>Highest exposure: highest quartile > 171.1 g/d</p>
Notes	<p>Funding: Public Health Service R01CA55874 and contract N01CP67001 from National Cancer Institute and EDT-78 grant from the American Cancer Society</p> <p>Statistical methods: Poisson regression</p> <p>Variables controlled in analysis: matching variables, smoking status, duration, duration², number of cigarettes smoked/d and beta-carotene and saturated fat intake</p> <p>Variables controlled by matching: age, sex and ethnicity</p>

Lee 2007

Methods	Cohort study in Japan
Participants	<p>Participants: 96,162 (male/female: 46,023/50,139) people with complete data.</p> <p>Inclusion criteria: aged 40-59 years, from 11 Prefectures, Japan (See also Kurahashi 2007)</p> <p>Parent cohort: Japan Public Health Centre-based Prospective Study (JPHC)</p> <p>Recruitment: from 1990-1994</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2002</p> <p>Colorectal cancer: 1158 (male/female: 724/434) cases out of 1163 eligible cases</p> <p>Colon cancer: 760 (male/female: 476/284) cases out of 763 eligible cases</p> <p>Rectal cancer: 398 (male/female: 248/150) cases out of 400 eligible cases</p>
Green tea in exposure categories	Exposure assessment: green tea consumption

Lee 2007 (Continued)

	Lowest exposure: almost never
	Intermediate exposure 1: < 1 cup/d
	Intermediate exposure 2: 1-2 cups/d
	Intermediate exposure 3: 3-4 cups/d
	Highest exposure: ≥ 5 cups/d
Notes	<p>Funding: Cancer Research, Third-Term Comprehensive Control Research for Cancer from the Ministry of Health, Labour and Welfare, Japan</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, study area, BMI, smoking status, alcohol drinking, family history of colorectal cancer, physical activity and intake of green vegetables, beef, pork, coffee, Chinese tea and black tea</p> <p>Variables controlled by matching: -</p>

Lee 2017

Methods	HCC in China
Participants	<p>Participants: 404 cases and 395 controls (all men)</p> <p>Inclusion criteria: aged < 85 years, newly diagnosed primary prostate cancer cases referring at hospital of New Territories East Cluster of Hong Kong, China</p> <p>Recruitment: from August 2011-June 2016</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Prostate cancer: 404 cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: nondrinkers</p> <p>Highest exposure: green tea drinker</p> <p>Exposure assessment B: green tea concentration in 250 mL of tea</p> <p>Lowest exposure: < 2.5 g</p> <p>Intermediate exposure 1: 2.5-5.0 g</p> <p>Intermediate exposure 2: 5.0-7.5 g</p> <p>Highest exposure: ≥ 7.5 g</p>
Notes	<p>Funding: Grant from the Health and Medical Research Fund of the Hong Kong Special Administrative Region, China; Project N. 11121091 and 12131081</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age at interview, deep fried food consumption, green vegetable consumption, alcohol consumption, coffee consumption, tobacco consumption, education attainment and family prostate cancer history</p> <p>Variables controlled by matching: age (± 5 years)</p>

Lei 1994

Methods	HCC in China
Participants	<p>Participants: 792 cases (male/female: NR) and 792 (male/female: NR) controls</p> <p>Inclusion criteria: people referred to hospitals of Guangzhou and residents in Guangzhou province, China</p> <p>Recruitment: 1986</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 792 (male/female: NR) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: nondrinkers</p> <p>Highest exposure: drinkers</p>
Notes	<p>Article in Chinese</p> <p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: NR</p> <p>Variables controlled by matching: sex and age</p>

Leung 2016

Methods	PCC in China
Participants	<p>Participants: 524 cases and 1587 controls (all women) from the Ovarian Cancer in Alberta and British Columbia (OVAL-BC) Study</p> <p>Inclusion criteria: aged 20-79 years, incident cases in residents in Alberta (AB) and aged 40-79 years, incident cases in residents in British Columbia (BC), Canada</p> <p>Recruitment: from 2002-2012</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Epithelial ovarian cancer: 104 cases out of 524 eligible cases with information on green tea and 471 out of 1587 eligible controls</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: nondrinkers</p> <p>Highest exposure: green tea drinker</p> <p>Exposure assessment B: green tea consumption</p> <p>Lowest exposure: nondrinkers</p>

Leung 2016 (Continued)

Intermediate exposure 1: ≤ 1 lifetime cups-years

Intermediate exposure 2: 1-5 lifetime cups-years

Highest exposure: > 5 lifetime cups-years

Notes	<p>Funding: grants from the Canadian Institutes for Health Research and by a grant from WorkSafe BC (formerly the Workers' Compensation Board of British Columbia)</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: study site, reference or diagnosis age, race, educational level, BMI, smoking, lifetime average alcohol drinking, first-degree female relative history of ovarian/breast cancer, years of oral contraceptive use, parity, menopausal status and hormone therapy use</p> <p>Variables controlled by matching: age (± 5 years)</p>
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Li 2008

Methods	Cohort study in Japan
Participants	<p>Participants: 52,029 participants. Final data on 41,440 participants included</p> <p>Inclusion criteria: aged 40-79 years, living in 14 municipalities of Miyagi Prefecture in the catchment area of the Ohsaki Public Health Centre, Miyagi, Japan</p> <p>Parent cohort: Ohsaki Cohort Study</p> <p>Recruitment: from October-December 1994</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2001</p> <p>Lung cancer: 302 (male/female: 227/75) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Cancer Research and for the Third Term Comprehensive Ten-Year Strategy for Cancer Control (H18-3jigan-ippa-001), Ministry of Health, Labour and Welfare, Japan</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, sex, education level, marital status, passive smoking, BMI, walking duration, family history of cancer, smoking status, number of cigarettes smoked/d, years of smoking, alcohol drinking, total energy intake/d and daily consumption of soybean products, total meat, total fish, dairy products, total fruits and total vegetables and consumption of coffee</p> <p>Variables controlled by matching: -</p>

Li 2011a

Methods	PCC and HCC in China
Participants	<p>Participants: 540 (male/female: NR) cases, 540 (male/female: NR) population controls and 540 (male/female: NR) hospital controls</p> <p>Inclusion criteria: aged 18-85 years, participants with histopathology and haematology cancer diagnosed at the First Hospital of China Medical University from permanent residents of urban Shenyang, China</p> <p>Recruitment: from August 2009-July 2010</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Total (any) cancer: 425 (male/female: NR) cases</p> <p>Breast cancer: 224 (male/female: NR) cases</p> <p>Colorectal cancer: 175 (male/female: NR) cases</p> <p>Leukaemia: 26 (male/female: NR) cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: never or seldom</p> <p>Highest exposure: ≥ 1 time/d</p> <p>Exposure assessment B: dried green tea leaves</p> <p>Lowest exposure: 0 g/year</p> <p>Intermediate exposure: 500-< 1000 g/year</p> <p>Highest exposure: ≥ 1000 g/year</p>
Notes	<p>Funding: National Health and Medical Research Council of Australia project grant (APP ID 572542)</p> <p>Statistical methods: (un)conditional logistic regression</p> <p>Variables controlled in analysis: education, BMI 5 years ago, smoking, passive smoking, alcohol consumption, physical activity, energy intake, cancer in first-degree relative</p> <p>Variables controlled by matching: sex and age (± 5 years)</p>

Li 2014

Methods	PCC in China
Participants	<p>Participants: 250 cases and 500 controls (all men)</p> <p>Inclusion criteria: newly diagnosed and histopathologically confirmed prostate cancer and with PSA value < 4.0 ng/mL from Changhai and Changzheng Hospitals of the Second Military Medical University and Zhongshan Hospital of the Fudan University located respectively in Yangpu, Huangpu and Xuhui District in Shanghai city, China</p> <p>Recruitment: from 1 January 2007-1 July 2013</p>
Interventions	N/A
Outcomes	Number of cases

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Li 2014 (Continued)

	Prostate cancer: 250 cases (all men)
Green tea in exposure categories	Exposure assessment: green tea consumption Lowest exposure: never Highest exposure: consumption
Notes	Funding: National Natural Science Foundation of China (N. 81072377) Statistical methods: conditional logistic regression Variables controlled in analysis: multivariate model but not clear all factors included in the model Variables controlled by matching: race and age (\pm 5 years)

Li 2016

Methods	HCC in China
Participants	Participants: 756 cases and 789 controls (all women) Inclusion criteria: aged 20-84 years, Chinese women, newly diagnosed primary breast cancer in Hong Kong, China Recruitment: November 2011-May 2014
Interventions	N/A
Outcomes	Number of cases Breast cancer: 756 cases (all women)
Green tea in exposure categories	Exposure assessment: green tea consumption Lowest exposure: non-tea drinkers Highest exposure: green tea drinker (any)
Notes	Funding: Research Grants Council of Hong Kong (N. 474811) Statistical methods: unconditional logistic regression Variables controlled in analysis: age at interview, age at menarche, age at first birth, parity, HRT, first-degree family history and BMI Variables controlled by matching: age (\pm 5 years)

Li 2018

Methods	Cohort study in China
Participants	Participants: 103,010 participants Inclusion criteria: aged \geq 18 years, men, including employed and retired workers of Kailuan group, with no previous diagnosis of cancer, China Parent cohort: Kailuan Cohort Recruitment: from May 2006-May 2014

Li 2018 (Continued)

Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment : 31 December 2015</p> <p>Lung cancer: 964 cases (all men)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: < 4 times/week</p> <p>Highest exposure: ≥ 4 times/week</p>
Notes	<p>Article in Chinese</p> <p>Funding: National Key R&D Plan (2016YFC0905400, 2016YFC1302500, 2017YFC0907900); Beijing Excellent Talent Cultivation Funding (2017000021223TD05), Central Health Special Fund (W2017BJ39), Concord Youth Fund (2017320013, 3332016131), National Natural Science Foundation of China (81673265).</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, education, economic income, smoking status, drinking status, dust exposure, BMI, drinking tea type and family history of cancer</p> <p>Variables controlled by matching: -</p>

Lin 2008

Methods	Cohort study in Japan
Participants	<p>Participants: 110,792 inhabitants of 45 areas of Japan. Data retrieved for 77,850 (male/female: 32,774/45,076)</p> <p>Inclusion criteria: aged 40-79 (≥ 18 years in 1949). Details reported in Ohno 2001</p> <p>Parent cohort: Japan Collaborative Cohort Study of Evaluation of Cancer Risk (JACC Study)</p> <p>Recruitment: from 1988-1990</p> <p>Same population of Fujino 2002 and Hoshiyama 2002</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2003</p> <p>Pancreatic cancer mortality: 292 (male/female: 140/152) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Intermediate exposure 3: 5-6 cups/d</p> <p>Highest exposure: ≥ 7 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Scientific Research on Priority Areas 2 (No. 13220019) from the Ministry of Education, Culture, Sports, Science and Technology of Japan. The JACC Study has also been supported</p>

Lin 2008 (Continued)

by Grants-in-Aid for Scientific Research from the same ministry (Nos. 61010076, 62010074, 63010074, 1010068, 2151065, 3151064, 4151063, 5151069, 6279102 and 11181101).

Statistical methods: Cox hazard proportional regression

Variables controlled in analysis: age, sex, BMI, cigarette smoking, alcohol drinking, history of diabetes and history of gallbladder diseases

Variables controlled by matching: -

Lin 2012

Methods	HCC in China
Participants	<p>Participants: 170 (male/female: 102/68) cases and 340 (male/female: 204/136) controls</p> <p>Inclusion criteria: incident cancer aged < 80 years, diagnosed in Changhua Christian Hospital (Changhua County, Taiwan, China)</p> <p>Recruitment: from August 2004-October 2008</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 170 (male/female: 102/68) cases, including adenocarcinoma (N = 93), squamous cell carcinoma (N = 46) and others (N = 31, including small-cell carcinoma, neuroendocrine carcinoma, mixed cell carcinoma and unspecific malignant cell)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: 0 cup/d</p> <p>Intermediate exposure: < 1 cup/d</p> <p>Highest exposure: ≥ 1 cup/d</p>
Notes	<p>Funding: National Science Council, Taiwan (NSC-98-2815-C-040-028-B; NSC 95-2815-C-040-019-B; NSC 93-2815-C-040-008-B)</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: sex and age</p> <p>Variables controlled by matching: sex and age (± 5 years)</p>

Liu 2010

Methods	PCC in China
Participants	<p>Participants: 641 (male/female: NR) cases and 1847 (male/female: NR) controls</p> <p>Inclusion criteria: mean age 63.5 years in both cases and controls, residents in Dafeng City, Jiangsu Province, China</p> <p>Recruitment: from January 2005-December 2007</p>
Interventions	N/A
Outcomes	Number of cases

Liu 2010 (Continued)

	Stomach cancer: 641 (male/female: NR) cases
Green tea in exposure categories	Exposure assessment: green tea drinking Lowest exposure: nondrinkers Highest exposure: > 21 cups/week
Notes	Article in Chinese Funding: not declared Statistical methods: unconditional logistic regression Variables controlled in analysis: age, sex, education level, income, smoking status, alcohol drinking and family history of stomach cancer Variables controlled by matching: -

Liu 2016

Methods	Cohort study in China
Participants	Participants: 222,279 men, including a total of 164,681 men who remained in the main analyses Inclusion criteria: aged > 40 years, men randomly selected from residential units within 45 nationally representative Disease Surveillance Points with no prior diagnosis of cancer, stroke, heart disease, chronic obstructive pulmonary disease, asthma, tuberculosis, peptic ulcer, diabetes, hypertension, kidney cirrhosis, chronic hepatitis Parent cohort: Chinese Prospective Smoking Study (CPSS) Recruitment: from 1990-1991
Interventions	N/A
Outcomes	Number of cases Outcome assessment: 31 December 2006 Total cancer mortality: 7002 cancer deaths (all men)
Green tea in exposure categories	Exposure assessment: green tea drinking Lowest exposure: nondrinkers Intermediate exposure 1: ≤ 5 g/month Intermediate exposure 2: 5-10 g/month Highest exposure: ≥ 10 g/month
Notes	Funding: Chinese Ministry of Health, the UK Medical Research Council, British Heart Foundation and Cancer Research UK, the World Bank loan to China and the Canadian International Development Research Centre. Statistical methods: Cox proportional hazard regression Variables controlled in analysis: age, BMI, marital status, urban locality, job status, smoking status, times of weekly fish consumption, times of weekly meat consumption, times of weekly poultry consumption, times of weekly egg consumption, times of weekly milk consumption, black tea drinker, jasmine tea drinker and other tea drinker Variables controlled by matching: -

Liu 2017

Methods	HCC in China
Participants	<p>Participants: 442 (male/female: 256/186) cases and 442 (male/female: 256/186) controls</p> <p>Inclusion criteria: aged ≥ 16 years, with incident first-time haematologically confirmed diagnosis of leukaemia residing in the respective provinces for at least 1 year and presenting as an inpatient to the participating hospitals, namely the First and the Second Affiliated Hospitals of Zhejiang University in Hangzhou, Zhejiang province and the First Hospital of China Medical University in Shenyang, Liaoning Province, China</p> <p>Recruitment: from August 2008-August 2013</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Leukaemia: 442 (male/female: 256/186) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: nondrinker (< 1 time/month)</p> <p>Highest exposure: drinker</p>
Notes	<p>Funding: National Health and Medical Research Council (Australia) Project Grant (N. 572542)</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: matching variable and resident locality, education, cigarette smoking and alcohol consumption</p> <p>Variables controlled by matching: sex, age (± 5 years) and study site</p>

Luo 2007

Methods	Cohort study in Japan
Participants	<p>Participants: 133,084 (male/female: 65,660/67,424) and 102,137 (male/female: 48,783/53,354) participants with complete data</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1, and aged 40-69 years cohort 2, from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka) for cohort 2, Japan</p> <p>Parent cohorts:</p> <p>Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I</p> <p>Cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2003</p> <p>Pancreatic cancer: 233 (male/female: 135/98) cases</p>

Luo 2007 (Continued)

Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: rarely</p> <p>Intermediate exposure 1: < 1 cup/d</p> <p>Intermediate exposure 2: 1-2 cups/d</p> <p>Intermediate exposure 3: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: Grant-in-Aid from the Cancer Research and Third-Term Comprehensive Control Research for Cancer from the Ministry of Labour, Health and Welfare of Japan.</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: sex, age, BMI, leisure-time physical activity in terms of frequency of sports, smoking status, alcohol intake, history of diabetes, history of cholelithiasis, study area and coffee intake</p> <p>Variables controlled by matching: -</p>

Makiuchi 2016

Methods	Cohort study in Japan
Participants	<p>Participants: 140,420 (male/female: 68,722/71,698), with 61,595 from cohort 1 and 78,825 from cohort 2 and 89,555 (male 51.6%) participants with complete data</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1 and aged 40-69 years for cohort 2, from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I</p> <p>Cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2009 in Osaka Public Health Centre and 31 December 2010 in all other areas</p> <p>Biliary tract cancer: 271 (male/female: 160/111) cases out of 284 eligible cases, including cancers of gallbladder cancer (N = 116) and of extrahepatic bile duct (N = 145)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: ≤ 120 mL/d</p> <p>Intermediate exposure 1: 120-360 mL/d</p> <p>Intermediate exposure 2: 360-720 mL/d</p> <p>Highest exposure: ≥ 720 mL/d</p>
Notes	<p>Funding: Grant-in-Aid from the Cancer Research and Third-Term Comprehensive Control Research for Cancer from the Ministry of Labour, Health and Welfare of Japan</p>

Makiuchi 2016 (Continued)

Statistical methods: Cox proportional hazard regression
Variables controlled in analysis: sex, age, BMI, leisure-time physical activity in terms of frequency of sports, smoking status, alcohol intake, history of diabetes, history of cholelithiasis, study area and coffee intake
Variables controlled by matching: -

Mao 2011

Methods	HCC in China
Participants	<p>Participants: 200 (male/female: 139/61) cases and 200 (male/female: 139/61) controls</p> <p>Inclusion criteria: mean age 51.5 (SD = 7) years, with histologically confirmed cancer, referring at the Kunming General Hospital of Chinese PLA and the First People's Hospital of Yunnan Province, China</p> <p>Recruitment: from May 2010-February 2011</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Stomach cancer: 200 (male/female: 139/61) cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green-tea drinking status</p> <p>Lowest exposure: nondrinkers</p> <p>Intermediate exposure: former drinkers</p> <p>Highest exposure: current drinkers</p> <p>Exposure assessment B: green tea consumption</p> <p>Lowest exposure: never</p> <p>Intermediate exposure 1: < 150 g/month</p> <p>Intermediate exposure 2: 150-250 g/month</p> <p>Highest exposure: > 250 g/month</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age, sex, education level, BMI, annual income, cancer family history, smoking and drinking status</p> <p>Variables controlled by matching: sex and age (± 5 years)</p>

Micali 2017

Methods	RCT, parallel, double-blind in Italy
Participants	<p>Participants: 60 men at high risk of prostate cancer (30 in the treatment group and 30 in the control group)</p> <p>Inclusion criteria: age 55-65 years, with HG-PIN assessed using prostate biopsy with no previous cancer, not anti-androgenic or chemoprevention therapies, non-obese, without diabetes or other endocrinological diseases</p>

Micali 2017 (Continued)

Recruitment: from May 2007-February 2011

Interventions	Treatment group: 2 oral GTE capsules total 300 mg of Categ Plus, Sofar SPA, Milan, Italy = total 600 mg/d Control group: placebo Duration: 1 year
Outcomes	Primary outcome Prostate cancer incidence Secondary outcomes Safety data: side effects PSA levels LUTS score QoL score
Green tea in exposure categories	N/A
Notes	Funding: no specific funding reported. Sofar SPA, Milan provided free samples of Categ Plus employed in the trial

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "The random allocation sequence was obtained by means of 'Easy Random Picker' software (TrustFm© 1998-2016)" Comment: probably done
Allocation concealment (selection bias)	Unclear risk	Comment: insufficient information
Blinding of participants and personnel (performance bias) Prostate cancer incidence	Low risk	Quote: "Both participants and care providers were blinded after assignment to interventions, in order to avoid any bias. Two capsules of Categ Plus® or placebo per day were given to all subjects by the clinical trial investigators, according to the double-blind method" Comment: probably done
Blinding of participants and personnel (performance bias) Lower urinary tract symptoms	Low risk	Quote: "Both participants and care providers were blinded after assignment to interventions, in order to avoid any bias. Two capsules of Categ Plus® or placebo per day were given to all subjects by the clinical trial investigators, according to the double-blind method." Comment: Probably done
Blinding of participants and personnel (performance bias) PSA levels	Low risk	Review authors do not believe this would introduce bias
Blinding of outcome assessment (detection bias)	Low risk	Quote: "Both participants and care providers were blinded after assignment to interventions, in order to avoid any bias"

Green tea (Camellia sinensis) for the prevention of cancer (Review)

Micali 2017 (Continued)

Prostate cancer incidence		Comment: probably done
Blinding of outcome assessment (detection bias) Lower urinary tract symptoms	Low risk	Quote: "Both participants and care providers were blinded after assignment to interventions, in order to avoid any bias" Comment: probably done
Blinding of outcome assessment (detection bias) PSA levels	Low risk	Review authors do not believe this would introduce bias
Incomplete outcome data (attrition bias) Prostate cancer incidence	Low risk	Comment: number of participants included in analysis stated
Incomplete outcome data (attrition bias) Lower urinary tract symptoms	Low risk	Comment: number of participants included in analysis not clearly stated but probably the same as prostate cancer risk
Incomplete outcome data (attrition bias) PSA levels	Low risk	Comment: number of participants included in analysis not clearly stated but probably the same as prostate cancer risk
Selective reporting (reporting bias)	Unclear risk	The study protocol is not available and it is not clear if the published reports include all expected outcomes
Other bias	High risk	High dropout in both groups (26.7%)

Michikawa 2011

Methods	Cohort study in Japan
Participants	<p>Participants: 140,420 (male/female: 68,722/71,698), with 61,595 from cohort 1 and 78,825 from cohort 2 and 100,507 (male/female: 48,802/51,705) participants with complete data.</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1, and aged 40-69 years for cohort 2 from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up. Katsushika Public Health Centre was excluded due to missing cancer data.</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I</p> <p>Cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2007</p> <p>Thyroid cancer: 159 (male/female: 26/133) cases, including 133 cases of papillary carcinoma, 7 cases of follicular carcinoma, 1 case of anaplastic carcinoma and 18 cases of other or unknown histologic types</p>

Michikawa 2011 (Continued)

Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Cancer Research from the Ministry of Health, Labour and Welfare, Japan (until 2009) and by Management Expenses Grants from the Government to the National Cancer Center (since 2010). It has also supported by a Grant-in-Aid for the Third-Term Comprehensive Control Research for Cancer from the Ministry of Health, Labour and Welfare, Japan and by a Grant-in-Aid from Keio Medical Association.</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, area, smoking history, passive smoking in the workplace, alcohol consumption, BMI, consumption of green vegetable and seaweed, health screening in the previous year and coffee consumption. For women, additionally adjusted for menopausal status and use of exogenous female hormones.</p> <p>Variables controlled by matching: -</p>

Mizoo 2013

Methods	HCC in Japan
Participants	<p>Participants: 472 cases and 464 controls (all women)</p> <p>Inclusion criteria: aged ≥ 20 years, consecutive patients treated at the Okayama University Hospital, Okayama Rousai Hospital and Mizushima Kyodo Hospital in Okayama and at Kagawa Prefecture Central Hospital in Kagawa, Japan. Controls from women under breast cancer screening.</p> <p>Recruitment: from December 2010-November 2011</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Breast cancer: 472 cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: < 1 time/week</p> <p>Intermediate exposure 1: 1 time/week</p> <p>Intermediate exposure 2: 2-3 times/week</p> <p>Highest exposure: ≥ 4 times/week</p>
Notes	<p>Funding: Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology of Japan</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age.</p> <p>Variables controlled by matching: -</p>

Mizuno 1992

Methods	HCC in Japan
Participants	<p>Participants: 124 (male/female: 68/56) cases, 124 (male/female: 68/56) controls</p> <p>Inclusion criteria: aged 40-79 years, pathologically, radiographically and/or serodiagnostically confirmed diagnosis at the 7 co-operating institutes, i.e. the National Cancer Center Hospital, Chiba University Hospital, Shinshu University Hospital, the Cancer Institute Hospital, Kobe University Hospital, Saitama Cancer Center Hospital and Nagasaki University Hospital, Japan</p> <p>Recruitment: from January 1989-December 1990</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Pancreatic cancer: 124 (male/female: 68/57) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: nondrinkers</p> <p>Intermediate exposure NR</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: Grant- in-Aid for Cancer Research from the Ministry of Health and Welfare of Japan.</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: sex and age</p> <p>Variables controlled by matching: sex and age</p>

Montague 2012

Methods	Cohort study in China
Participants	<p>Participants: 63,257 (male/female: 27,959/35,298) participants. Data on 27,293 men with no history of cancer</p> <p>Inclusion criteria: aged 45-74 years, belonging to the Hokkien or Cantonese dialect group in Singapore, China</p> <p>Parent cohort: Singapore Chinese Health Study (SCHS)</p> <p>Recruitment: from April 1993 to December 1998</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2007</p> <p>Prostate cancer: 298 cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: none</p> <p>Intermediate exposure 1: monthly</p>

Montague 2012 (Continued)

Intermediate exposure 2: weekly

Highest exposure: daily, further divided in 1 cup/d and ≥ 2 cups/d

Notes

Funding: National Institute of Health grant R01CA144034.

Statistical methods: Cox proportional hazard regression

Variables controlled in analysis: age, dialect group, interview year, education, BMI, smoking history and black tea intake.

Variables controlled by matching: -

Mu 2003

Methods

PCC in China

Participants

Participants: 628 (male/female: 438/190) cases, 415 (male/female 287/128) controls

Inclusion criteria: aged ≥ 20 years, newly diagnosed hospital-based case-control (HCC) cases included in the Taixing Tumor Registry and living for at least 10 years in Taixing, China

Recruitment: from 1 June-31 December 2000 for stomach cancer, from 1 January-30 June 2000 for liver cancer and 2000 for oesophageal cancer

In Mu 2005

Participants: 206 (male/female: 137/68) cases and 415 (male/female 287/128) controls

Inclusion criteria: aged ≥ 20 years, newly diagnosed HCC cases included in the Taixing Tumor Registry and living for at least 10 years in Taixing, China.

Recruitment: from 1 June-31 December 2000 for stomach cancer

In Li 2011b

Participants: 204 (male/female: 159/45) cases and 415 (male/female: 287/128) controls

Inclusion criteria: aged ≥ 20 years, newly diagnosed HCC cases included in the Taixing Tumor Registry and living for at least 10 years in Taixing, China.

Recruitment: from 1 January-30 June 2000

Data on liver cancer also reported in [Mu 2003](#)

Interventions

N/A

Outcomes

Number of cases

[Mu 2003](#)

Stomach cancer: 206 (male/female: 138/68) cases

Liver cancer: 204 (male/female: 159/45) cases, HCC

Oesophageal cancer: 218 (male/female: 141/77) cases

Mu 2005

Stomach cancer: 206 (male/female: 137/68) cases, the majority ($> 90\%$) with adenocarcinoma of the distal stomach

Li 2011b

Mu 2003 (Continued)

Liver cancer: 204 (male/female: 159/45) cases of HCC

Green tea in exposure categories

Exposure assessment: green tea consumption

Lowest exposure: never

Intermediate exposure 1: < 125 g/month

Intermediate exposure 2: 125-250 g/month

Highest exposure: ≥ 250 g/month

Exposure assessment B: green tea intake (only for stomach cancer - Mu 2005)

Lowest exposure: never

Highest exposure: ever

Notes

[Mu 2003:](#)

Article in Chinese

Funding: not declared

Statistical methods: unconditional logistic regression

Variables controlled in analysis: age, education, smoking, alcohol drinking (for oesophageal cancer, other outcome reported in subsequent reports)

Variables controlled by matching: -

Mu 2005

Funding: National Institute of Health, National Cancer Institute (ES06718, CA77954, CA09142, CA16042, CA42710, AT00151), UCLA Jonsson Comprehensive Cancer Center, UICC Technology Transfer Fellowship of the Foundation for the Author of National Excellent Doctoral Dissertation of P.R. China (200157)

Statistical methods: unconditional logistic regression

Variables controlled in analysis: age, sex, education, income, BMI, pack-years of smoking, alcohol drinking, very hot food eating habit, *H. pylori* infection, stomach disease history and family history of stomach cancer

Variables controlled by matching: -

Li 2011b

Funding: International Union against Cancer Technology Transfer fellowship awarded to Dr. Li-Na Mu and by the Foundation for the Author of National Excellent Doctoral Dissertation of PR China (N. 200157) awarded to Dr Lin Cai. The study was also partially supported by the NIH National Institute of Environmental Health Sciences, National Cancer Institute, Department of Health and Human Services, Grants CA09142, ES 011667 as well as the Alper Research Program for Environmental Genomics of the UCLA Jonsson Comprehensive Cancer Center.

Statistical methods: unconditional logistic regression

Variables controlled in analysis: age, sex, education, income, BMI, family history of cancer, smoking, alcohol drinking and HBSAg

Variables controlled by matching: -

[Mu 2003a](#), in reports same results as [Mu 2003](#)

Nagano 2001

Methods

Cohort study in Japan

Nagano 2001 (Continued)

Participants	<p>Participants: 38,540 (male/female: 14,873/23,667) participants</p> <p>Inclusion criteria: aged 45-74 years, carried out among atomic-bomb survivors alive as of 1 September 1979, mean age at beginning of follow-up of 52.8 years in men and 56.8 years in women</p> <p>Parent cohort: Life Span study cohort</p> <p>Recruitment: from 1979-1981</p> <p>Sauvaget 2005</p> <p>Participants: people from Hiroshima and Kahasaki</p> <p>Inclusion criteria: participants (93,741) present in Hiroshima and Nagasaki at the time of the bombings and city residents on 1 October 1950 and residents (23,580) not present at the time of the bombings but present between 1950 and 1953. Data of 38,576 (male/female: 14,885/23,691) participants included are carried out in participants aged 34-98 years, respondents to second mail surveys, alive on 1 September 1978.</p> <p>Parental cohort: Radiation Effects Research Foundation's Life Span Study</p> <p>Recruitment: 1979, completed on 1 January 1980 for men and 1 February 1981 for women</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1994</p> <p>Total cancer: 4049 (male/female: 1982/2087) cases</p> <p>Total solid cancer: 3881 (male/female: 1890/1991) cases</p> <p>Oesophageal cancer: 59 (male/female: 46/13) cases (risk not assessed)</p> <p>Stomach cancer: 901 (male/female: 518/383) cases</p> <p>Colon cancer: 432 (male/female: 221/211) cases</p> <p>Rectal cancer: 193 (male/female: 100/93) cases</p> <p>Liver cancer: 418 (male/female: 260/158) cases</p> <p>Gallbladder cancer: 122 (male/female: 40/82) cases</p> <p>Pancreatic cancer: 122 (male/female: 43/79) cases</p> <p>Lung cancer: 436 (male/female: 265/171) cases</p> <p>Skin cancer: 89 (male/female: 36/53) cases (risk not assessed)</p> <p>Breast cancer: 281 (male/female: 276/5) cases</p> <p>Cervical cancer: 100 female cases (risk not assessed)</p> <p>Corpus uteri: 53 female cases (risk not assessed)</p> <p>Ovarian cancer: 49 female cases (risk not assessed)</p> <p>Prostate cancer: 92 male cases (risk not assessed)</p> <p>Bladder cancer: 122 (male/female: 88/34) cases</p> <p>Kidney cancer: 76 (male/female: 39/37) cases (risk not assessed)</p> <p>Thyroid cancer: 99 (male/female: 18/81) cases (risk not assessed)</p>

Nagano 2001 (Continued)

Other solid cancers: 237 (male/female: 119/118) cases (risk not assessed)

Haematopoietic cancer: 188 (male/female: 92/96) cases

Lymphoma: 94 (male/female: 45/ 51) cases (risk not assessed)

Multiple myeloma: 40 (male/female: 20/20) cases (risk not assessed)

Leukaemia: 52 (male/female: 27/25) cases (risk not assessed)

In Sauvaget 2005

Outcome assessment: 31 December 1999

Stomach cancer: 1270 (male/female: 719/551) out of 1280 (male/female: NR) eligible cases, including 27% in the gastric body, 6% in the cardia, 5% in the lesser curve, 2% in the fundus and 27% were not specified. Regarding the histology type, 99% of the cases were classified as carcinoma and 1% as sarcoma (10 cases who were excluded from subsequent analyses)

Green tea in exposure categories

Nagano 2001

Exposure assessment: green tea intake

Lowest exposure: 0-1 times/d

Intermediate exposure: 2-4 times/d

Highest exposure: ≥ 5 times/d

Sauvaget 2005

Exposure assessment: hot green tea

Lowest exposure: < 2 times/d

Intermediate exposure: 2-4 times/d

Highest exposure: ≥ 5 times/d

Notes

Nagano 2001

Funding: RERF foundation, Hiroshima and Nagasaki, Japan equally funded by the Japanese Ministry of Health and Welfare and the US Department of Energy through the National Academy of Sciences

Statistical methods: Poisson regression

Variables controlled in analysis: city, age, sex, radiation dose, smoking status, alcohol drinking history, BMI, education level and calendar time

Variables controlled by matching: -

Sauvaget 2005

Funding: Research performed at the Radiation Effects Research Foundation (RERF), Hiroshima and Nagasaki, Japan. RERF is funded equally by the Japanese Ministry of Health and Welfare and the US Department of Energy (DOE). RERF Research Protocols RP # 18-61 and 14-78

Statistical methods: Poisson regression

Variables controlled in analysis: sex, sex-specific age, city, radiation dose, sex-specific smoking habits and education level

Naganuma 2009

Methods

Cohort study in Japan

Naganuma 2009 (Continued)

Participants	<p>Participants: 52,029 participants. Final data on 41,761 (male/female: 19,749/22,012) participants included</p> <p>Inclusion criteria: aged 40-79 years, living in 14 municipalities of Miyagi Prefecture in the catchment area of the Ohsaki Public Health Centre, Miyagi, Japan</p> <p>Parent cohort: Ohsaki Cohort Study</p> <p>Recruitment: from October-December 1994</p> <p>Data on the same cohort also reported in Kuriyama 2006 and Ui 2009.</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2003</p> <p>Haematopoietic cancer: 157 (male/female: 88/69) cases</p> <p>Lymphoid cancer: 119 (male/female: 66/53) cases</p> <p>Myeloid cancer: 36 (male/female: 20/16) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: Health Sciences Research Grant for Health Services, Ministry of Health, Labour and Welfare of Japan (H19-Seisaku-Ippan-026, H20-Junkankitou(Seisyu)-Ippan-013, H21-3jigan-Ippan-003).</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, sex, educational level, cigarette smoking, alcohol drinking, fish consumption and soybean products consumption</p> <p>Variables controlled by matching: -</p>

Nagle 2010

Methods	PCC in Australia
Participants	<p>Participants: 1459 cases and 1462 controls with complete data on diet, but 24 and 113 omitted due to > 10% of missing items and with implausible total energy intake respectively. Final population of 1368 cases and 1416 controls (all women).</p> <p>Inclusion criteria: women aged 18-79 years, from the Australian Ovarian Cancer Study diagnosed with epithelial ovarian cancer</p> <p>Recruitment: from January 2002-June 2005</p>
Interventions	N/A
Outcomes	Number of cases

Nagle 2010 (Continued)

Ovarian cancer: 1368 cases out of 1459 eligible cases of epithelial ovarian cancer

Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: never</p> <p>Intermediate exposure 1: < 1 time/week</p> <p>Intermediate exposure 2: < 1 time/d</p> <p>Intermediate exposure 3: 1 time/d</p> <p>Intermediate exposure 4: 2-3 times/d</p> <p>Highest exposure: ≥ 4 times/d</p>
Notes	<p>Funding: US Army Medical Research and Materiel Command under award DAMD17-01-1-0729, the Cancer Council Tasmania and Cancer Foundation of Western Australia; the Australian Cancer Study was funded by the National Health and Medical Research Council of Australia (199600).</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, education, parity, hormonal contraceptive use, smoking status, fruit consumption, vegetable consumption, coffee consumption and other types of tea</p> <p>Variables controlled by matching: age (± 5 years) and state of residence</p>

Nakachi 2000

Methods	Cohort study in Japan
Participants	<p>Participants: 8552 (male/female: NR) participants</p> <p>Inclusion criteria: aged > 40 years, residents in a town in Saitama Prefecture, Japan</p> <p>Recruitment: from 1986</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 1997</p> <p>Total cancer incidence: 488 (male/female: NR) cases, including stomach (N = 140), lung (N = 69), colorectal (N = 60) and liver (N = 35) cancer, not individually evaluated</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: ≤ 3 cups/d</p> <p>Intermediate exposure: 4-9 cups/d</p> <p>Highest exposure: ≥ 10 cups/d</p>
Notes	<p>Funding: Grants-in-Aid for Cancer Research from the Ministry of Education, Science, Sports and Culture of Japan, from the Ministry of Health and Welfare of Japan and from the Ministry of Health and Welfare for a 2nd-Term Comprehensive 10-Year Strategy for Cancer Control and by a grant from the Smoking Research Foundation of Japan</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, cigarette smoking, alcohol consumption, intake of green and yellow vegetables and intake of rice</p> <p>Variables controlled by matching: -</p>

Nakachi 2000 (Continued)

Imai 1997 reports same results as [Nakachi 2000](#)

Nakamura 2011

Methods	Cohort study in Japan
Participants	<p>Participants: 30,826 (male/female: 14,241/16,585) participants</p> <p>Inclusion criteria: aged ≥ 35 years, non-hospitalised inhabitants in Takayama, Gifu Prefecture, Japan</p> <p>Recruitment: from September 1992</p> <p>Data on the same cohort also reported in Oba 2006.</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1999</p> <p>Pancreatic cancer mortality: 52 (male/female: 33/19) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: never</p> <p>Intermediate exposure: ≤ 1 cup/month to $\leq 4-6$ cups/week</p> <p>Highest exposure: ≥ 1 cup/d</p>
Notes	<p>Funding: Grant from the Ministry of Education, Culture, Sports, Science and Technology, Japan. It was also funded by Grant-in-Aid for Cancer Research (21Shi-11-1) from the Ministry of Health, Labour and Welfare, Japan.</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, smoking, BMI and history of diabetes mellitus</p> <p>Variables controlled by matching: -</p>

Nechuta 2012

Methods	Cohort study in China
Participants	<p>Participants: 74,941 Chinese women. Final data on 67,230 women with complete and reliable data on dietary information and reporting consumption of green tea alone or in combination with other types of tea.</p> <p>In Yang 2007: final population of 69,710 participants</p> <p>Inclusion criteria: women aged 40-70 years, no history of cancer at baseline recruited in seven urban areas in Shanghai, China</p> <p>Parent cohort: Shanghai Women's Health Study</p> <p>Recruitment: from December 1996-May 2000</p> <p>Data on the same cohort also reported in Dai 2010</p>
Interventions	N/A

Nechuta 2012 (Continued)

Outcomes	<p>Number of cases</p> <p>Nechuta 2012</p> <p>Outcome assessment: 31 December 2005</p> <p>Digestive system cancer: 1239 cases</p> <p>Stomach cancer: 287 cases</p> <p>Stomach and oesophageal cancer: 314 cases</p> <p>Colorectal cancer: 579 cases</p> <p>Colon cancer: 355 cases</p> <p>Rectal cancer: 224 cases</p> <p>Liver cancer: 133 cases</p> <p>Pancreatic cancer: 131 cases</p> <p>Gallbladder and bile duct cancer: 82 cases</p> <p>Yang 2007</p> <p>Outcome assessment: 2004</p> <p>Colorectal cancer: 256 cases (all female)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: never drinking</p> <p>Highest exposure: ≥ 3 times/week for > 6 months</p> <p>In Yang 2007</p> <p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: nondrinker</p> <p>Highest exposure: drinker, further divided in amount of green tea consumption:</p> <p>Highest exposure A: 1-4 g/d</p> <p>Highest exposure B: ≥ 5 g/d</p>
Notes	<p>Nechuta 2012</p> <p>Funding: National Cancer Institute (R37 CA70867)</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, marital status, education, occupation, BMI, exercise, fruit and vegetable intake, meat intake, diabetes and family history of digestive system cancer</p> <p>Variables controlled by matching: -</p> <p>Yang 2007</p> <p>Funding: USPHS grant R01CA70867 and National Institute of Health intramural programme, Division of Cancer Epidemiology and Genetics (N02 CP1101066)</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, education, household income, cigarette smoking, alcohol drinking, physical activity, BMI, menopausal status, nonsteroidal anti-inflammatory drug use, vitamin sup-</p>

Nechuta 2012 (Continued)

plement use, prior histories of colorectal polyps and chronic ulcerative colitis, family history of colorectal cancer and intakes of total energy, vegetables, fruits and red meat
Variables controlled by matching: -

Oba 2006

Methods	Cohort study in Japan
Participants	Participants: 30,826 (male/female: 14,241/16,585) participants Inclusion criteria: aged ≥ 35 years, non-hospitalised inhabitants in Takayama, Gifu Prefecture, Japan Recruitment: from September 1992 Data on the same cohort also reported in Nakamura 2011
Interventions	N/A
Outcomes	Number of cases Outcome assessment: 31 December 2000 Colon cancer: 213 (male/female: 111/102) cases
Green tea in exposure categories	Exposure assessment: green tea drinking Lowest exposure: never to < 1 cup/month Intermediate exposure: from 1 cup/month to < 1 cup/d Highest exposure: ≥ 1 cup/d
Notes	Funding: grants from the Ministry of Education, Culture, Science and Technology, the Ministry of Health, Labour and Welfare and the Japan Coffee Association Statistical methods: Cox proportional hazard regression Variables controlled in analysis: age, height, BMI, total pack-years of cigarette smoking, alcohol intake, physical activity, black tea intake and coffee intake Variables controlled by matching: -

Odegaard 2015

Methods	Cohort study in China
Participants	Participants: 63,257 (male/female: 27,959/35,298) participants. Data on 52,584, free from diabetes, cardiovascular disease and cancer at baseline Inclusion criteria: aged 45-74 years, belonging to the Hokkien or Cantonese dialect group in Singapore, China Parent cohort: Singapore Chinese Health Study (SCHS) Recruitment: from April 1993-December 1998
Interventions	N/A
Outcomes	Number of cases

Odegaard 2015 (Continued)

Outcome assessment: 31 December 2011

Total cancer mortality: 4092 cases (deaths)

Green tea in exposure categories	Exposure assessment: green tea intake Lowest exposure: none Intermediate exposure 1: any to < 1 cup/d Intermediate exposure 2: 1 cup/d Highest exposure: ≥ 2 cups/d
Notes	Funding: NIH grants NCI RO1 CA055069, R35 CA053890, R01 CA080205, R01 CA098497, R01 CA144034 and R01 DK080720. Statistical methods: Cox proportional hazard regression Variables controlled in analysis: age, sex, dialect, education, year of interview, smoking, moderate and vigorous activity, sleep, BMI, nonbeverage vegetable-fruit-soy-rich dietary pattern score, energy intake, intake of coffee, black tea, alcohol, soft drinks and juice Variables controlled by matching: -

Ogawa 2016

Methods	Cohort study in Japan
Participants	Participants: 140,420 (male/female: 68,722/71,698), with 61,595 from cohort 1 and 78,825 from cohort 2 and 106,324 (male/female: 50,438/55,886) participants with complete data in the present study Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1, and aged 40-69 years for cohort 2 from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up Parent cohorts Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2
Interventions	N/A
Outcomes	Number of cases Outcome assessment: 31 December 2012 Brain cancer: 155 (male/female: 70/85) cases out of 157 eligible, including glioma (N = 60), meningioma (N = 51), lymphoma (N = 9), schwannoma (N = 3), pituitary adenoma (N = 2) and unspecified brain tumour (N = 32)
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: ≤ 4 d/week Intermediate exposure: 1-2 cups/d Highest exposure: ≥ 3 cups/d

Ogawa 2016 (Continued)

Notes	<p>Funding: National Cancer Center Research and Development Fund (23-A-31[toku] and 26-A-2) (since 2011) and a Grant-in-Aid for Cancer Research from the Ministry of Health, Labour and Welfare of Japan (from 1989-2010)</p> <p>Statistical methods: Cox proportional hazard regression Variables controlled in analysis: age, sex, BMI, pack years of cigarettes, alcohol intake, coffee, past history of allergy and past history of diabetes mellitus Variables controlled by matching: -</p>
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Oze 2014

Methods	PCC in Japan
Participants	<p>Participants: 961 (male/female: 775/186) cases and 2883 (male/female: 2325/558) controls</p> <p>Inclusion criteria: aged 20-79 years, from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan</p> <p>Recruitment: from January 2001-December 2005</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Upper aerodigestive tract cancer: 922 (male/female: NR) cases of the 961 (male/female: 775/186) eligible cases, including 420 (male/female: NR) cases of oesophageal cancer and 502 (male/female: NR) cases of oral, pharyngeal and laryngeal cancer</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: < daily</p> <p>Intermediate exposure 1: 1 cup/d</p> <p>Intermediate exposure 2: 2 cups/d</p> <p>Highest exposure: ≥ 3 cups/d</p>
Notes	<p>Funding: Ministry of Education, Science, Sports, Culture and Technology of Japan (Grants-in-Aid for Scientific Research); Ministry of Health, Labour and Welfare of Japan [Third-Term Comprehensive 10-Year Strategy for Cancer Control and Health and Labor Sciences Research Grant for Clinical Cancer Research (H24-Gannorinshou-Ippan-006)]; National Cancer Center Research and Development Fund (24- A-3); Foundation for Promotion of Cancer Research in Japan and Japan Society for the promotion of Science A3 Foresight Program</p> <p>Statistical methods: conditional logistic regression Variables controlled in analysis: age, sex, coffee and green tea intake, alcohol consumption, cumulative smoking, fruit and vegetable intake, BMI, occupation and frequency of rice intake Variables controlled by matching: sex and age (10-year categories)</p>

Peng 2013

Methods	PCC in China
Participants	Participants: 672 (male/female: 446/226) cases and 672 (male/female: 446/226) controls of unrelated ethnic Han Chinese from Fuzhou in Fujian Province and surrounding regions

Peng 2013 (Continued)

Inclusion criteria: histopathologically confirmed colorectal cancer cases from 3 hospitals (the Union Hospital of Medical University, the First Affiliated Hospital of Fujian Medical University and the National Fujian Hospital) in Fuzhou, in the Fujian Province of China. Controls recruited from local residents who underwent a routine health check and were free from any known major diseases

Recruitment: from June 2006-May 2010

Interventions	N/A
Outcomes	Number of cases Colorectal cancer: 672 (male/female: 446/226) cases
Green tea in exposure categories	Exposure assessment: green tea drinking Lowest exposure: no Highest exposure: yes
Notes	Funding: National Natural Science Foundation of China (N. 81001279), the Fujian Science and Technology Innovation Foundation for Young Scientists (N. 2010J05067), the Key Program of Scientific Research of Fujian Medical University (N. 09ZD004) and the Foundation of Fujian Educational Committee (N. JA10138 and JA11106). Statistical methods: conditional logistic regression Variables controlled in analysis: age, sex, education, income, marriage, job, a family history of cancer in first-degree relatives and intake of fruits, vegetables and meat, smoking status and alcohol drinking Variables controlled by matching: sex and age (± 5 years), ethnicity and area of residence

Peng 2015

Methods	PCC in China
Participants	Participants: 285 (male/female: 168/117) cases and 570 (male/female: 336/234) controls of unrelated ethnic Han Chinese from AnXi or the surrounding regions Inclusion criteria: histologically confirmed oesophageal squamous cell carcinoma, at AnXi Hospital in the Fujian Province of China Recruitment: from June 2010-May 2011
Interventions	N/A
Outcomes	Number of cases Oesophageal cancer: 285 (male/female: 168/117) cases of oesophageal squamous cell carcinoma
Green tea in exposure categories	Exposure assessment: green tea drinking Lowest exposure: no Highest exposure: yes, defined as drinking at least 1 cup of green tea/week for > 6 months
Notes	Funding: grants from the Program for Outstanding Young Talents of Scientific Research in University of Fujian Province, China (No. JA11106), the National Natural Science Foundation of China (No. 81473047), the Key Program of Scientific Research of Fujian Medical University (09ZD004) and the Foundation of Fujian Province Key Laboratory of Environment and Health (201405) Statistical methods: conditional logistic regression

Peng 2015 (Continued)

Variables controlled in analysis: age, sex, education, income, marital status, alcohol drinking, smoking, pickled vegetables, fresh vegetables and fruits, meat, family history of oesophageal squamous cell carcinoma, history of reflux oesophagitis and hot beverage/food intake
Variables controlled by matching: sex and age (± 5 years), ethnicity and area of residence

Roshdy 2013

Methods	RCT, parallel, double-blind in Egypt
Participants	<p>Participants: 39 Egyptian women, 22 in the intervention group and 17 in the control group</p> <p>Inclusion criteria: age ≥ 18 years, women in pre-menopause with follicle-stimulating hormone level < 10 mIU/L, had reported at least moderately severe leiomyoma-related symptoms (a score of ≥ 25 on the UF quality-of-life symptom severity subscale), had a total uterine volume of ≥ 160 mL by vaginal and abdominal ultrasound and at least 1 UF/leiomyoma that was ≥ 2 cm³, not pregnant or breastfeeding, with untreated abnormal pap smear, with no major morbidity of severe anaemia, elevated liver enzymes > 1.5 times the upper limit of normal, or active substance abuse and no use of such medication (oral or systemic corticosteroids, hormones i.e. oestrogen, progestin, oral contraceptives, herbal or botanical supplements with possible hormonal or GTE effects, or GnRH analogues or Depo-Provera) in the previous 6 months</p> <p>Recruitment: from November 2010-August 2011</p>
Interventions	<p>Treatment group: 2 capsules (400 mg each)/d with 95% polyphenols and 45% GTE = total 800 mg/d</p> <p>Control group: placebo (brown rice)</p> <p>Duration: 4 months</p>
Outcomes	<p>Primary outcome</p> <p>Mean change in uterine leiomyoma burden</p> <p>Secondary outcomes</p> <p>Health-related QoL assessed with 2 different questionnaires. Scale 1: the fibroid-specific symptom severity (SS) scale ranges from 5-40, where high values are indicative of greater symptom severity. Scale 2: the HRQoL questionnaire, which measures perceived impact of leiomyoma on activities of daily living, general concern and worry, energy, mood, sense of self-control, self-consciousness and sexual functioning of the participants. The scale ranges from 29-145 where higher scores indicate better QoL.</p> <p>Safety monitoring: monthly haemoglobin levels, liver- and kidney-function tests and pregnancy testing</p>
Green tea in exposure categories	N/A
Notes	Funding: Grant support: grant 1 - R01 HD04 228-01 from the National Institute of Child Health and Human Development, National Institutes of Health; RCMI grant 2 - G12 RR003032

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "The study pharmacist at Sohag Faculty of Medicine carried out the randomization process (by sequential digital assignment coding) and dispensed green tea extract or placebo capsules to participants, based on the assignment code randomly picked by each participant prior to treatment."

Roshdy 2013 (Continued)

Comment: probably done		
Allocation concealment (selection bias)	Low risk	Quote: "based on the assignment code randomly picked by each participant prior to treatment" Comment: probably done
Blinding of participants and personnel (performance bias) Uterine leiomyoma burden	Low risk	Quote: "The study staff and the participants were blinded to the treatment assignment throughout the whole study. The placebo capsules were identical to the EGCG capsules in appearance and weight" Comment: probably done
Blinding of outcome assessment (detection bias) Uterine leiomyoma burden	Low risk	Quote: "The study staff and the participants were blinded to the treatment assignment throughout the whole study. The placebo capsules were identical to the EGCG capsules in appearance and weight" Comment: probably done
Incomplete outcome data (attrition bias) Uterine leiomyoma burden	Unclear risk	Comment: number of participants included in analysis not stated
Selective reporting (reporting bias)	Low risk	The study protocol is available (ClinicalTrials.gov identifier (NCT number): NCT01311869) and the published reports include all expected outcomes
Other bias	Unclear risk	High rate of dropout in the placebo group (35%). In the protocol, treatment duration was reported to be 6 months. In the study, treatment duration was 4 months.

Ruan 2010

Methods	HCC in China
Participants	Participants: 1387 (male/female: 1025/362) cases and 1459 (male/female: 1038/421) controls Inclusion criteria: aged < 80 years, histologically confirmed cases with no previous diagnosis of or treatment for nasopharyngeal cancer, residents in Guangdong province and referring at the Sun Yat-sen University Cancer Center in Guangzhou, Guangdong province, southern China Recruitment: from October 2005-October 2007
Interventions	N/A
Outcomes	Number of cases Nasopharyngeal cancer: 1355 (male/female: NR) cases out of 1387 (male/female: 1025/362) eligible cases (green tea drinkers and non tea drinkers)
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: nondrinker Highest exposure: drinkers (≥ 1 cup/week for ≥ 6 months)

Ruan 2010 (Continued)

Notes

Funding: National Natural Science Foundation of China (grant nos. 30671798 and 30471487), the National Science and Technology Support Program of China (N. 2006BAI02A11) and the National Major Basic Research Program of China (863 Program) (N. 2006AA02A404).

Statistical methods: unconditional logistic regression

Variables controlled in analysis: sex, age, education, dialect, household type and family history of nasopharyngeal cancer

Variables controlled by matching: sex and age (± 5 years), education, dialect and household type (rural or urban)

Saito 2015

Methods	Cohort study in Japan
Participants	<p>Participants: 140,420 (male/female: 68,722/71,698), with 61,595 from cohort 1 and 78,825 from cohort 2 and 90,914 (male/female: 42,836/48,078) participants with complete data</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1, and aged 40-69 years for cohort 2 from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I</p> <p>cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2011</p> <p>Total cancer mortality: 5327 (male/female: 3468/1859) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: by the National Cancer Center Research and Development Fund (23-A-31[toku] and 26-A-2; since 2011), by a Grant-in-Aid for Cancer Research from the Ministry of Health, Labour and Welfare of Japan (from 1989 to 2010) and by Health and Labour Sciences Research Expenses for Commission (Comprehensive Research on Life-Style Related Diseases including Cardiovascular Diseases and Diabetes Mellitus H26-005)</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, Public Health Centre area, BMI, history of hypertension, history of diabetes, leisure-time sports or physical exercise, intake of coffee, Chinese tea, black tea and soda or juice, energy intake and intakes of fruits, vegetables, fish, meat, dairy products, rice and miso soup and job status (stratified by sex)</p> <p>Variables controlled by matching: -</p>

Setiawan 2001

Methods	PCC in China
Participants	<p>Participants: 133 (male/female: 93/40) cases and 433 (male/female: 214/219) controls</p> <p>Inclusion criteria: randomly selected patients, newly-diagnosed at Yangzhong Central Hospital Endoscopy Unit, who had lived for at least 1 year in Yangzhong, China</p> <p>Recruitment: from 1 January 1995-30 June 1995</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Stomach cancer: 133 (male/female: 93/40) cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: no</p> <p>Highest exposure: yes</p> <p>Exposure assessment B: green tea consumption</p> <p>Lowest exposure: nondrinkers</p> <p>Intermediate exposure: 1-21 cups/week</p> <p>Highest exposure: ≥ 21 cups/week</p>
Notes	<p>Funding: National Institute of Health National Cancer Institute, Department of Health and Human Services (CA77954, CA09142 and CA16042) and grants from the University of California-Los Angeles Jonsson Comprehensive Cancer Center Foundation and the Weissman Fund.</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, sex, education, BMI, pack-years of smoking and alcohol drinking.</p> <p>Variables controlled by matching: -</p>

Severson 1989

Methods	Cohort study in USA
Participants	<p>Participants: 7821 male participants out of 8006 recruited</p> <p>Inclusion criteria: American men of Japanese ancestry, born from 1990-1919 and residing on the Hawaiian island of Oahu, Hawaii, USA</p> <p>Parent cohort: Honolulu Heart Program</p> <p>Recruitment: from 1965-1968</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 30 September 1986</p> <p>Prostate cancer: 174 cases (all men)</p>

Severson 1989 (Continued)

Green tea in exposure categories	<p>Exposure assessment: green tea drinking habit</p> <p>Lowest exposure: never</p> <p>Highest exposure: ever</p>
Notes	<p>Funding: USPHS Grant ROI CA 33644, awarded by the National Cancer Institute, Mil. Bethesda, MD</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age at examination</p> <p>Variables controlled by matching: -</p>

Shimazu 2008

Methods	Cohort study in Japan
Participants	<p>Participants: 53,724 women from the Japan Public Health Centre study</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1, and aged 40-69 years for cohort 2 from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I</p> <p>Cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II</p> <p>Recruitment: 1990 (cohort 1) and 1993 (cohort 2)</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2005</p> <p>Endometrial cancer: 117 cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking habit</p> <p>Lowest exposure: ≤ 4 cups/week</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: Cox proportional hazard regression model</p> <p>Variables controlled in analysis: age, study area, BMI, menopausal status, age at menopause for menopausal women, parity, use of exogenous female hormones, smoking status, green vegetable consumption, beef consumption and pork consumption</p> <p>Variables controlled by matching: -</p>

Shrubsole 2009

Methods	PCC in China
Participants	<p>Participants: 3371 cases and 3380 controls (all female)</p> <p>Inclusion criteria: Shanghai Breast Cancer Study, with newly diagnosed cases aged 25–70 years, resident of urban Shanghai and with no previous history of any cancer</p> <p>Recruitment: from August 1996–March 1998 (phase 1) and from April 2002 to February 2005 (phase 2)</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Breast cancer: 3371 cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: never</p> <p>Highest exposure: ever</p> <p>Exposure assessment B: green tea consumption in tea leaves/month</p> <p>Lowest exposure: never regular</p> <p>Intermediate exposure 1: ≤ 50 g/month</p> <p>Intermediate exposure 2: $50 < 100$ g/month</p> <p>Intermediate exposure 3: $100 < 225$ g/month</p> <p>Highest exposure: ≥ 225 g/month</p>
Notes	<p>Funding: National Institute of Health National Cancer Institute (R01CA64277)</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, study phase, education, family history of breast cancer, personal history of fibroadenoma, age at menarche, parity, age at first live birth, age at menopause, physical activity, waist:hip ratio, total energy intake, total fruit and vegetable intake and fat intake</p> <p>Variables controlled by matching: age (± 5 years)</p>

Sinicrope 2017

Methods	RCT, parallel, double-blind in USA
Participants	<p>39 (male/female: 14/25) participants: participants with prior advanced adenoma (N = 37), or colon cancer (N = 2)</p> <p>Inclusion criteria: at least 5 rectal ACF at baseline. 19 (male/female: 6/13) participants in the treatment group and 20 (male/female: 8/12) in the control group</p>
Interventions	<p>Group A: GTE (Polyphenon E, 2 capsules of 200 mg twice/d = 800 mg) containing 400 mg of EGCG</p> <p>Group B: placebo</p> <p>Duration: 6 months</p>
Outcomes	<p>Change in rectal ACF</p> <p>Safety data</p>

Sinicrope 2017 (Continued)

Green tea in exposure categories N/A

Notes ClinicalTrials.gov identifier: NCT01606124

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Described as randomised in the abstract and in ClinicalTrials.gov
Allocation concealment (selection bias)	Unclear risk	No information about concealment process
Blinding of participants and personnel (performance bias) All outcomes	Low risk	Probably done as it is described as double-blind and placebo capsules were implemented
Blinding of outcome assessment (detection bias) All outcomes	Unclear risk	Probably done as it is described as double-blind and placebo capsules were implemented, but no explicit statement
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	All results reported for all included participants
Selective reporting (reporting bias)	Low risk	Results for the trial reported on (ClinicalTrials.gov identifier (NCT number): NCT01606124)
Other bias	Low risk	No withdrawals reported

Song 2008

Methods	PCC in USA
Participants	<p>Participants: 781 cases and 1263 controls (all women)</p> <p>Inclusion criteria: aged 35-74 years, diagnosed with a primary invasive or borderline epithelial ovarian cancer in English-speaking women who had residential telephones at the time of cancer diagnosis and were residents of a 13-county area of western Washington State, USA</p> <p>Recruitment: from 2002-2005</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Ovarian cancer: 781 cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: nondrinker</p> <p>Intermediate exposure: < 1 cup/d</p> <p>Highest exposure: ≥ 2 cups/d</p>

Song 2008 (Continued)

Notes	<p>Funding: National Institute of Health grant RO1 CA87538</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, county, year of diagnosis/reference date, race/ethnicity, number of full-term pregnancies, duration of hormonal contraception, education, BMI, smoking, tubal ligation/hysterectomy and family history of breast/ovarian cancer</p> <p>Variables controlled by matching: age, county of residence and year of diagnosis/reference date</p>
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Sonoda 2004

Methods	HCC in Japan
Participants	<p>Participants: 140 cases and 140 controls (all male)</p> <p>Inclusion criteria: aged 59-73 years, cases with confirmed histological diagnosis of prostatic adenocarcinoma from the Department of Urology of Tsukuba University Hospital in Ibaraki and from the Department of Urology of Sapporo Medical University Hospital in Hokkaido, Japan. Controls were recruited from Department of Oral Surgery, Ophthalmology, or Dermatology of the same hospitals</p> <p>Recruitment: from January 1996-September 2002</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Prostate cancer: 140 cases, including 2 cases of stage I, 86 cases of stage II, 36 cases of stage III and 16 cases of stage IV of adenocarcinoma</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: ≤ 1 cup/d</p> <p>Intermediate exposure 1: 2-4 cups/d</p> <p>Intermediate exposure 2: 5-9 cups/d</p> <p>Highest exposure: ≥ 10 cups/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age, cigarette smoking and energy intake</p> <p>Variables controlled by matching: age (± 5 years)</p>

Sun 2007

Methods	Cohort study in China
Participants	<p>Participants: 63,257 (male/female: 27,959/35,298) participants. Data on 61,320 (male/female: NR) with no history of invasive cancer other than non-melanoma skin cancer.</p> <p>Inclusion criteria: aged 45-74 years, belonging to the Hokkien or Cantonese dialect group in Singapore, China</p> <p>Parent cohort: Singapore Chinese Health Study (SCHS)</p> <p>Recruitment: from April 1993-December 1998</p>

Sun 2007 (Continued)

Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2004</p> <p>Colorectal cancer: 845 (male/female: 470/375) cases, mainly adenocarcinoma</p> <p>Colon cancer: 516 (male/female: 241/275) cases</p> <p>Rectal cancer: 329 (male/female: 204/125) cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: nondrinker</p> <p>Highest exposure: drinker</p> <p>Exposure assessment B: green tea intake</p> <p>Lowest exposure: nondrinker</p> <p>Intermediate exposure 1: monthly drinker</p> <p>Intermediate exposure 2: weekly drinker</p> <p>Highest exposure: daily drinker</p>
Notes	<p>Funding: National Cancer Institute, Bethesda, MD (R01 CA55069, R35 CA53890, R01 CA80205 and R01 CA98497)</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: sex, age at baseline interview, year of interview, dialect, education, family history of colorectal cancer, history of diabetes, cigarette smoking, alcohol drinking, coffee drinking, weekly moderate physical activity, BMI, total energy, total fat, dietary fibre, calcium, vitamin C and black tea intake</p> <p>Variables controlled by matching: -</p>

Suzuki 2004

Methods	Cohort study in Japan
Participants	<p>Participants: 31,345 (male/female: 13,992/17,353) from cohort 1 and 47,605 (male/female: 22,836/24,769) from cohort 2. Final included participants were 35,004 women, 14,409 from cohort 1 and 20,595 from cohort 2.</p> <p>Inclusion criteria: aged ≥ 40 years, residents in 3 municipalities of the Miyagi Prefecture, Northern Japan (cohort 1); aged 40-64 years, (cohort 2)</p> <p>Parent cohorts</p> <p>Cohort 1: Three Prefecture Study - Miyagi portion (3-pref MIYAGI)</p> <p>Cohort 2: Miyagi Cohort Study (MIYAGI)</p> <p>Recruitment: from 1984 for cohort 1 and from 1990 for cohort 2</p> <p>Same population and outcome of Tsubono 2001 in: Inoue 2009a for cohort 1 Characteristics of cohort 2 reported in Fukao 1995 in: Suzuki 2004. Same population also reported in Koizumi 2003 in: Inoue 2009a and Suzuki 2005</p>

Suzuki 2004 (Continued)

Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: not clearly stated, 9 and 7 years of follow-up for cohort 1 and cohort 2 respectively (probably 1992 and 1997)</p> <p>Breast cancer: 222 cases (all women), 103 in cohort 1 and 119 in cohort 2</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, types of health insurance, age at menarche, menopausal status, age at first birth, parity, mother's history of breast cancer, smoking, alcohol drinking, BMI, and consumption frequencies of black tea and coffee.</p> <p>Variables controlled by matching: -</p>

Suzuki 2005

Methods	Cohort study in Japan
Participants	<p>Participants: 31,345 (male/female: 13,992/17,353) from cohort 1 and 47,605 (male/female: 22,836/24,769) from cohort 2.</p> <p>Final included participants were 26,311 (male/female: NR) from cohort 1 and 39,604 (male/female: NR) from cohort 2</p> <p>Inclusion criteria: aged ≥ 40 years, residents in 3 municipalities of the Miyagi Prefecture, Northern Japan (cohort 1); aged 40-64 years (cohort 2)</p> <p>Parent cohorts</p> <p>Cohort 1: Three Prefecture Study - Miyagi portion (3-pref MIYAGI)</p> <p>Cohort 2: Miyagi Cohort Study (MIYAGI)</p> <p>Recruitment: from 1984 for cohort 1 and from 1990 for cohort 2</p> <p>Same population and outcome of Tsubono 2001 in: Inoue 2009a for cohort 1 Characteristics of cohort 2 reported in Fukao 1995 in: Suzuki 2004. Same population also reported in Koizumi 2003 in: Koizumi 2003 Inoue 2009a and Suzuki 2004</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 1992 for cohort 1 and 31 March 1997 for cohort 2</p> <p>Colon cancer: 305 (male/female: 185/120) cases, 158 (male/female: NR) in cohort 1 and 147 (male/female: NR) in cohort 2</p>

Suzuki 2005 (Continued)

	Rectal cancer: 211 (male/female: 119/92) cases 111 (male/female: NR) in cohort 1 and 100 (male/female: NR) in cohort 2
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, family history of colorectal cancer, cigarette smoking, alcohol consumption, BMI and consumption of black tea and coffee</p> <p>Variables controlled by matching: -</p> <p>Subsequent report on stomach cancer in Inoue 2009a, from which we used data in the analysis.</p>

Suzuki 2009

Methods	Cohort study in Japan
Participants	<p>Participants: 13,636 (male/female: 6,916/6,720) eligible participants and 12,251 (male/female: 6231/6020) participants included in the present analysis</p> <p>Inclusion criteria: aged 65-84 years, residents from 74 municipalities in Shizuoka, Japan, with reported information on green tea intake.</p> <p>Parent cohort: Prospective Shizuoka Elderly Cohort</p> <p>Recruitment: from December 1999</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: March 2006</p> <p>Total cancer mortality: 400 (male/female: 304/96) cases (deaths)</p> <p>Stomach cancer mortality: 68 (male/female: NR) cases (deaths)</p> <p>Lung cancer mortality: 88 (male/female: NR) cases (deaths)</p> <p>Colorectal cancer mortality: 43 (male/female: NR) cases (deaths), including 28 colon cancer deaths and 15 rectal cancer deaths</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-3 cups/d</p> <p>Intermediate exposure 2: 4-6 cups/d</p> <p>Highest exposure: ≥ 7 cups/d</p>

Suzuki 2009 (Continued)

Notes	<p>Funding: grant from Health and Labour Sciences Research Grants, Comprehensive Research on Aging and Health</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: smoking status, alcohol consumption, BMI and the frequency of physical activity</p> <p>Variables controlled by matching: -</p>
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Tajima 1985

Methods	HCC in Japan
Participants	<p>Participants: 186 (male/female: NR) cases and 186 controls (male/female: NR) controls</p> <p>Inclusion criteria: aged 40-70 years, newly diagnosed cases from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan</p> <p>Recruitment: from April 1981-March 1983</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Stomach cancer: 93 (male/female: NR) cases</p> <p>Colorectal cancer: 93 (male/female: NR) cases, including 42 colon cancer and 51 rectal cancer</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: < 4 cups/d</p> <p>Highest exposure: ≥ 4 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Cancer Research from the Ministry of Health and Welfare</p> <p>Statistical methods: Mantel-Haenszel method</p> <p>Variables controlled in analysis: sex and age</p> <p>Variables controlled by matching: -</p> <p>The estimates cannot be included due to missing CIs</p>

Takezaki 2000

Methods	HCC in Japan
Participants	<p>Participants: 127,477 inhabitants of 45 areas of Japan, data retrieved from 66,885 participants: 346 cases and 11,936 controls (all male) included in the present study</p> <p>Inclusion criteria: aged 40-79 years, from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan.</p> <p>Recruitment: from January 1988-1997</p>
Interventions	N/A
Outcomes	Number of cases

Takezaki 2000 (Continued)

	Pharynx (hypopharynx) cancer: 62 (male/female: NR) cases
	Oesophageal cancer: 284 cases, including 53, 159 and 72 cases in upper, middle and lower third of the oesophagus
Green tea in exposure categories	Exposure assessment: green tea drinking Lowest exposure: occasionally or less Intermediate exposure: 1-6 cups/d Highest exposure: ≥ 7 cups/d
Notes	Funding: Grant-in-Aid for Cancer Research and the Comprehensive 10-year Strategy for Cancer Control from the Ministry of Health and Welfare of Japan Statistical methods: unconditional logistic regression Variables controlled in analysis: age, year and season of visit, smoking and alcohol drinking Variables controlled by matching: -

Takezaki 2001

Methods	HCC in Japan
Participants	Participants: 945 cases (male/female: 748/297) and 4153 (male/female: 2964/1189) controls Inclusion criteria: newly diagnosed cases, 40-79 years of age from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan Recruitment: from 1988-1997 referring to Aichi Cancer Center Hospital
Interventions	N/A
Outcomes	Number of lung cases: Lung cancer: Adenocarcinoma: 507 (male/female: 367/240) cases Squamous cell and small-cell carcinomas 438 (male/female: 381/57) cases
Green tea in exposure categories	Exposure assessment: green tea intake Lowest exposure: < 1 cup/d Intermediate exposure 1: 1 cup/d Intermediate exposure 2: 2 cups/d Highest exposure: ≥ 3 cups/d
Notes	Funding: Grant-in-Aid for Cancer Research and the Comprehensive 10-year Strategy for Cancer Control from the Ministry of Health and Welfare of Japan Statistical methods: unconditional logistic regression Variables controlled in analysis: age, season and year of visit, occupation, prior lung diseases, smoking and consumption of green vegetables and meat Variables controlled by matching: sex and age (± 5 years)

Tamura 2018

Methods	Cohort study in Japan
Participants	<p>Participants: 30,824 (14,240/16,584) participants</p> <p>Inclusion criteria: aged ≥ 35 years, in residents in Takayama, Gifu Prefecture, Japan</p> <p>Recruitment: from 1 September 1992</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 March 2008</p> <p>Liver cancer: 172 (male/female: 106/66) cases</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: nondrinkers</p> <p>Intermediate exposure 1: < 1 time/d</p> <p>Intermediate exposure 2: 1 time/d</p> <p>Intermediate exposure 3: 2-3 times/d</p> <p>Highest exposure: ≥ 4 times/d</p>
Notes	<p>Funding: grants from the Ministry of Education, Culture, Sports, Science and Technology and the Minister of Health, Labour and Welfare of Japan</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, sex, ethanol intake, smoking status, BMI, education, total energy intake, physical activity and medical history of diabetes mellitus.</p> <p>Variables controlled by matching: -</p>

Tewes 1990

Methods	HCC in China
Participants	<p>Participants: 200 cases and 200 controls (all women)</p> <p>Inclusion criteria: female Chinese participants living in Hong Kong, mean age 61.8 (SD 10.0) for cases and 60.6 (SD 9.6) for controls.</p> <p>Recruitment: from 1981-1983</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 200 cases (all women)</p>
Green tea in exposure categories	<p>Exposure assessment: drinking habit</p> <p>Lowest exposure: no drinking</p> <p>Highest exposure: usually drinking</p>
Notes	Funding: not declared

Tewes 1990 (Continued)

Statistical methods: conditional logistic regression
Variables controlled in analysis: age, number of live births, schooling, smoking habits, alcohol drinking, frequency of consumption/month of fresh vegetables and fruits.
Variables controlled by matching: age and district of residence.

Tsao 2009

Methods	RCT, parallel, double-blind in Japan
Participants	<p>Participants: 41 (male/female: 19/22) participants aged 18-75 years, with ≥ 1 histologically confirmed, bidimensionally measurable oral premalignant lesions, with Zubrod performance status < 2, adequate hematologic, liver, renal and cardiac function, with one of the following: harbouring at least mild dysplasia, located in a high-risk area (i.e. floor of mouth, ventrolateral tongue and soft palate), significant extent of lesion tissue involvement and presence of symptoms. 11, 9 and 10 participants were randomised in intervention group A, B and C respectively and 11 participants in control group</p> <p>Recruitment: from August 2002-March 2008</p>
Interventions	<p>Treatment groups: GTE contains high amounts of polyphenols, including EGCG:</p> <p>Group A: 500 mg/m² GTE, N = 11 (male/female: 5/6)</p> <p>Group B: 750 mg/m² GTE, N = 9 (male/female: 4/5)</p> <p>Group C: 1,000 mg/m² GTE, N = 10 (male/female: 4/6)</p> <p>Control group: placebo, N = 11 (male/female: 6/5)</p> <p>Duration: 12 weeks</p>
Outcomes	<p>Primary outcome</p> <p>Clinical and histologic response of high-risk oral lesions</p> <p>Secondary outcome</p> <p>Safety data: qualitative and quantitative toxicities of GTE</p>
Green tea in exposure categories	NA
Notes	Funding: support to En Ltd., including YM Sagesaka as employee of Ito En Ltd

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	<p>Quote: "The randomization was done with the Pocock-Simon dynamic allocation scheme"</p> <p>Comment: done</p>
Allocation concealment (selection bias)	Low risk	<p>Quote: "The randomization was done with the Pocock-Simon dynamic allocation scheme"</p> <p>Comment: probably concealed</p>

Tsao 2009 (Continued)

Blinding of participants and personnel (performance bias) Oral premalignant-lesions	Low risk	Quote: "GTE and placebo capsules were supplied to the pharmacy in blister packs containing 10 capsules each" Comment: participants and personnel probably blinded
Blinding of outcome assessment (detection bias) Oral premalignant-lesions	Unclear risk	No explicit statement on blinded outcome assessment, only for immunohistochemical staining
Incomplete outcome data (attrition bias) Oral premalignant-lesions	Low risk	Data reported for all participants who completed the study. ITT analysis implemented
Selective reporting (reporting bias)	Unclear risk	The study protocol is not available and it is not clear if the published reports include all expected outcomes
Other bias	Low risk	No other bias

Tse 2017

Methods	HCC in China
Participants	Participants: 431 cases and 402 controls (all male) Inclusion criteria: aged 35-84 years, newly diagnosed at Department of Surgery and Clinical Oncology from the Prince of Wales Hospital of New Territories East Cluster in Hong Kong, China Recruitment: from August 2011-November 2016
Interventions	N/A
Outcomes	Number of cases Prostate cancer: 431 cases (all male)
Green tea in exposure categories	Exposure assessment: drinking habit Lowest exposure: non habitual users Highest exposure: habitual users
Notes	Funding: grant from the Health and Medical Research Fund (N. 11121091), Hong Kong Special Administrative Region, China Statistical methods: unconditional logistic regression Variables controlled in analysis: age at interview, marital status, unemployment status, family prostate cancer history, consumption of deep fried food, consumption of pickled vegetables, nightshift work and cumulative bisphenol A exposure index Variables controlled by matching: age (± 5 years)

Ugai 2017

Methods	Cohort study in Japan
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Ugai 2017 (Continued)

Participants	<p>Participants: 140,420 (male/female: 68,722/71,698), with 61,595 from cohort 1 and 78,825 from cohort 2 and 95,807 (male/female: 45,937/49,870) participants with complete data in the present study.</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1, and aged 40-69 years for cohort 2 from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up.</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I</p> <p>cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II</p> <p>Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2012</p> <p>Malignant lymphoma: 411 (male/female: 237/174) cases</p> <p>Multiple myeloma: 138 (male/female: 66/72) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: almost none</p> <p>Intermediate exposure 1: 1-4 times/week</p> <p>Intermediate exposure 2: 1-2 cups/d</p> <p>Intermediate exposure 3: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: National Cancer Center Research and Development Fund (23-A-31(toku) and 26-A-2; since 2011) and a Grant-in-Aid for Cancer Research from the Ministry of Health, Labour and Welfare of Japan (from 1989-2010).</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age at baseline, sex, smoking status, alcohol consumption, BMI, occupation and study area</p> <p>Variables controlled by matching: -</p>

Ugai 2018

Methods	Cohort study in Japan
Participants	<p>Participants: 140,420 (male/female: 68,722/71,698), with 61,595 from cohort 1 and 78,825 from cohort 2 and 95,807 (male/female: 45,937/49,870) participants with complete data in the present study.</p> <p>Inclusion criteria: aged 40-59 years, from 5 Public Health Centre areas (Iwate, Akita, Nagano, Okinawa and Tokyo) for cohort 1 and aged 40-69 years in cohort 2, from 6 Public Health Centre areas (Ibaraki, Niigata, Kochi, Nagasaki, Okinawa and Osaka), respondent at 5-year follow-up</p> <p>Parent cohorts</p> <p>Cohort 1: Japan Public Health Centre-based Prospective Study (JPHC)-I</p> <p>Cohort 2: Japan Public Health Centre-based Prospective Study (JPHC)-II</p>

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Ugai 2018 (Continued)

Recruitment: from 1990 for cohort 1 and 1993/1994 for cohort 2

Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2012</p> <p>Acute myeloid leukaemia: 85 (male/female: 50/85) cases</p> <p>(Also reported 70 (male/female: 50/20) cases of myelodysplastic syndromes, not cancer)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1 : 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p> <p>Highest exposure: ≥ 5 cups/d</p>
Notes	<p>Funding: National Cancer Center Research and Development Fund (23-A-31(toku) and 26-A-2; since 2011) and Ministry of Health, Labour and Welfare of Japan (from 1989-2010; a Grant-in-Aid for Cancer Research)</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age at baseline, sex, smoking status, alcohol consumption, BMI, occupation and study area</p> <p>Variables controlled by matching: -</p>

Ui 2009

Methods	Cohort study in Japan
Participants	<p>Participants: 52,029 participants. Final data on 41,761 (male/female: 19,749/22,012) participants included</p> <p>Inclusion criteria: aged 40-79 years, living in 14 municipalities of Miyagi Prefecture in the catchment area of the Ohsaki Public Health Centre, Miyagi, Japan</p> <p>Parent cohort: Ohsaki Cohort Study</p> <p>Recruitment: from October-December 1994</p> <p>Data on the same cohort also reported in Kuriyama 2006 and Naganuma 2009.</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2002</p> <p>Liver cancer: 247 (male/female: 164/83) cases</p>
Green tea in exposure categories	<p>Exposure assessment: green tea consumption</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-2 cups/d</p> <p>Intermediate exposure 2: 3-4 cups/d</p>

Green tea (*Camellia sinensis*) for the prevention of cancer (Review)

Ui 2009 (Continued)

Highest exposure: ≥ 5 cups/d

Notes	<p>Funding: Grant-in-Aid for Cancer Research and for the Third Term Comprehensive Ten-Year Strategy for Cancer Control (H18-3jigan-ippa-001), Ministry of Health, Labour and Welfare, in Japan</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, sex, alcohol consumption, smoking status, coffee consumption, vegetable consumption, dairy products consumption, fruit consumption, fish consumption and soy-bean consumption</p> <p>Variables controlled by matching: -</p>
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Wakai 2004

Methods	HCC in Japan
Participants	<p>Participants: 124 (male/female: 100/24) cases and 620 (male/female: 500/120) controls</p> <p>Inclusion criteria: aged 40-79 years, from the Aichi Cancer Center Hospital (ACCH) in Aichi Prefecture, Japan</p> <p>Recruitment: from January 1988-December 2000</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Bladder cancer: 124 (male/female: 100/24) cases, including cancers of renal pelvis (N = 5), ureter (N = 6) or bladder (N = 113)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking</p> <p>Lowest exposure: < 1 cup/d</p> <p>Intermediate exposure 1: 1-4 cups/d</p> <p>Intermediate exposure 2: 5-9 cups/d</p> <p>Highest exposure: ≥ 10 cups/d</p>
Notes	<p>Funding: Grant-in-Aid for Cancer Research and the Comprehensive 10-year Strategy for Cancer Control from the Ministry of Health, Labour and Welfare of Japan</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, sex, year of first visit, cumulative consumption of cigarettes, intake of green vegetables and intake frequency of eggs</p> <p>Variables controlled by matching: age (5 years, strata), sex and year of first visit</p>

Wang 1999

Methods	PCC in China
Participants	<p>Participants: 209 cases (male/female: 129/80) and 209 (male/female: 129/80) controls</p> <p>Inclusion criteria: 35-79 years of age; residence in Yangzhong, Jiangsu Province, China</p> <p>Recruitment: 2000</p>

Wang 1999 (Continued)

Interventions	N/A
Outcomes	Number of cases Oesophageal cancer: 68 cases Cardia (stomach) cancer: 69 cases Other stomach cancer: 72 cases
Green tea in exposure categories	Exposure assessment: drinking habit Lowest exposure: never drinking Highest exposure: drinking
Notes	Article in Chinese Sponsor: not declared Statistical methods: logistic regression Variables controlled in analysis: age, education, cigarette smoking and alcohol intake Variables controlled by matching: sex

Wang 2006

Methods	PCC in China
Participants	Participants: 107 cases (male/female: 60/47) and 107 (male/female: 60/47) controls Inclusion criteria: newly diagnosed unrelated ethnic Han Chinese and residents in 5 townships of Chuzhou District, which were located at the north side of the General Irrigation Canal, Huaian City, Jiangsu Province, China Recruitment: from 2002-2003
Interventions	N/A
Outcomes	Number of cases Oesophageal cancer: 107 (male/female: 60/47) cases of oesophageal squamous cell carcinoma
Green tea in exposure categories	Exposure assessment: green tea intake Lowest exposure: nondrinkers Highest exposure: drinking at least 1 cup/d for at least 6 months
Notes	Funding: grants CA94683 and CA90997 from NCI/NIH Statistical methods: conditional logistic regression Variables controlled in analysis: sex, age (± 5 years), residence, oesophageal lesion, eating fast, a family history of cancer, HP infection, clean up of storage utensils Variables controlled by matching: sex, age (± 5 years) and residence

Wang 2007

Methods	PCC in China
Participants	<p>Participants: 355 cases (male/female: 223/132) and 209 (male/female: 252/156) controls</p> <p>Inclusion criteria: aged ≥ 30 years, referring to Yangzhong Cancer Research Institute and Yangzhong People's Hospital and living in Yangzhong, China</p> <p>Recruitment: from 1 January 2004-28 February 2006</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Oesophageal cancer: 355 (male/female: 223/132) cases of squamous cell carcinoma</p>
Green tea in exposure categories	<p>Exposure assessment: drinking habit</p> <p>Lowest exposure: no drinking</p> <p>Highest exposure: drinking</p>
Notes	<p>Funding: National Nature Science Foundation of China</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, marital status and education years</p> <p>Variables controlled by matching: sex and age (± 5 years)</p>

Wang 2012a

Methods	HCC in China
Participants	<p>Participants: 250 cases (male/female: 150/100) and 299 (male/female: 178/121) controls</p> <p>Inclusion criteria: participants of Han Chinese ancestry newly diagnosed, pathologically confirmed sporadic cases of clear cell renal cell carcinoma at the Departments of Urology, the 1st and 2nd Affiliated Hospitals of Second Military Medical University, Shanghai, China</p> <p>Recruitment: from May 2007-December 2009</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Renal cancer: 250 (male/female: 150/100) cases of clear cell renal cell carcinoma</p>
Green tea in exposure categories	<p>Exposure assessment: drinking habit</p> <p>Lowest exposure: < 500 mL/d</p> <p>Highest exposure: ≥ 500 mL/d</p>
Notes	<p>Sponsor: National Natural Science Foundation of China (30873041, 81025015)</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, BMI, hypertension, diabetes, urolithiasis, smoking, alcohol consumption and the polymorphisms</p> <p>Variables controlled by matching: sex and age (± 3 years)</p>

Wang 2012b

Methods	HCC in China
Participants	<p>Participants: 220 cases (male/female: 135/85) and 220 (male/female: 135/85) controls</p> <p>Inclusion criteria: participants with pathologically confirmed diagnosis and interviewed within 6 months of diagnosis referring at 5 hospitals (Xijing Hospital, Tangdu Hospital, Northwest Hospital, Xi'an Centre Hospital and Shaanxi Province People's Hospital) in Xi'an, China.</p> <p>Recruitment: from August 2009-December 2011</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Multiple myeloma: 220 (male/female: 135/85) cases</p>
Green tea in exposure categories	<p>Exposure assessment: drinking habit</p> <p>Lowest exposure: never</p> <p>Intermediate exposure 1: 1-3 times/month</p> <p>Intermediate exposure 2: 1-2 times/ week</p> <p>Highest exposure: ≥ 3 times/week</p>
Notes	<p>Sponsor: China Special Grant for the Prevention and Control of Infectious Diseases (2009ZX10002-027).</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age, sex, education, family history of cancer in first-degree relatives and dietary risk factors (shallot and garlic, soy food, fried food, cured/smoked food, black tea, fish and brined vegetables, pickle or sauerkraut)</p> <p>Variables controlled by matching: sex, age (± 5 years) and inpatient hospital</p>

Wang 2012c

Methods	PCC in China
Participants	<p>Participants: 908 cases (male/female: 526/382) and 1067 (male/female: 605/462) controls</p> <p>Inclusion criteria: aged 35–79 years, residents in urban Shanghai through an 'instant case reporting' system in 37 major hospitals newly diagnosed with pancreatic cancer and living in Shanghai, China. Participants reported to drink other type of tea than green tea were excluded.</p> <p>Recruitment: from December 2006-January 2011</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Pancreatic cancer: 908 (male/female: 526/382) cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: never</p> <p>Highest exposure: ever</p> <p>Exposure assessment B: green tea consumption</p> <p>Lowest exposure: 0 g/month</p>

Wang 2012c (Continued)

Intermediate exposure 1: 1-99 g/month

Intermediate exposure 2: 100-149 g/month

Highest exposure: ≥ 150 g/month

Notes

Sponsor: grant of US National Cancer Institute (5R01CA114421), by the Science and Technology Commission of the Shanghai Municipality (08411954100), by the Shanghai Municipal Health Bureau (20114080) and by the Shanghai Cancer Institute (SB10-06).

Statistical methods: conditional logistic regression

Variables controlled in analysis: age, BMI, education level, family history of cancer, smoking, history of type 2 diabetes, menopausal status, oral contraceptive use and menopausal hormone therapy.

Variables controlled by matching: sex, age (± 5 years) and inpatient hospital

Wang 2013a

Methods

HCC in China

Participants

Participants: 157 cases and 314 controls (all women)

Inclusion criteria: newly diagnosed and histologically confirmed cases in participants referring to Chung-Shan Medical University Hospital

Recruitment: from June 2009-June 2011

Interventions

N/A

Outcomes

Number of cases

Breast cancer: 157 cases (all women)

Green tea in exposure categories

Exposure assessment: green tea intake

Lowest exposure: no (< 1 cup/d)

Highest exposure: yes (≥ 1 cup/d)

Notes

Sponsor: grant CSH-2010-A-03 from Chung-Shan Medical University Hospital, Taiwan

Statistical methods: conditional logistic regression

Variables controlled in analysis: education level, age at menarche and past hormone therapy

Variables controlled by matching: age (± 2 years)

Wang 2013b

Methods

HCC in USA

Participants

Participants: 1007 (male/female: 784/223) cases and 1299 (male/female: 1013/286) controls

Inclusion criteria: histologically confirmed bladder cancer with no prior treatment of chemotherapy or radiotherapy at the time of recruitment at the University of Texas MD Anderson Cancer Center and Baylor College of Medicine, Texas, USA.

Recruitment: from 1999, still ongoing in 2013

Interventions

N/A

Wang 2013b (Continued)

Outcomes	<p>Number of cases</p> <p>Bladder cancer: 1007 (male/female: 784/223) cases, all types, but generally transitional cell carcinoma</p>
Green tea in exposure categories	<p>Exposure assessment: green tea intake</p> <p>Lowest exposure: never</p> <p>Intermediate exposure: 0.1-0.13 serving/d</p> <p>Highest exposure: ≥ 0.14 serving/d</p> <p>(one serving = cup 8 fl oz/240 mL)</p>
Notes	<p>Sponsor: National Cancer Institute grants K07 CA134831 and R01 CA74880</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, sex, ethnicity, energy intake and smoking</p> <p>Variables controlled by matching: sex, age (± 5 years) and ethnicity</p>

Wang 2015

Methods	HCC in China
Participants	<p>Participants: 160 (male/female: 74/86) cases and 320 (male/female: 154/166) controls</p> <p>Inclusion criteria: histological or cytological confirmed cases in participants referring to Zhengzhou University and Liaoning Cancer Hospital, Zhengzhou, China</p> <p>Recruitment: from February 2005-February 2010</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Stomach cancer: 160 (male/female: 74/86) cases</p>
Green tea in exposure categories	<p>Exposure assessment A: green tea intake</p> <p>Lowest exposure: never</p> <p>Highest exposure: current</p> <p>Exposure assessment B: green tea consumption</p> <p>Lowest exposure: never</p> <p>Intermediate exposure 1: 1-24 g/week</p> <p>Intermediate exposure 2: 25-35 g/week</p> <p>Highest exposure: ≥ 35 g/week</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: not clearly reported</p> <p>Variables controlled by matching: sex and age (± 3 years)</p>

Wilkens 1996

Methods	PCC in USA
Participants	<p>Participants: 261 (male/female: 195/66) cases and 522 (male/female: 390/132) controls</p> <p>Inclusion criteria: white or Japanese ancestry with newly diagnosed cancer referring to the 7 largest civilian hospitals on the island of Oahu, Hawaii, USA</p> <p>Recruitment: from 1977-1986</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Urinary tract cancer: 261 (male/female: 195/66) cases, mainly transitional cell cancer (95%), including urinary bladder (90%), renal pelvis (7%) and ureter (3%)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking habit</p> <p>Lowest exposure: first tertile</p> <p>Intermediate exposure: second tertile</p> <p>Highest exposure: third tertile</p> <p>Values of tertiles NR</p>
Notes	<p>Funding: National Cancer Institute grants R26 CA 25903 and NOI CA 15655</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age, smoking status, pack-years, employment in a high-risk occupation, consumption of dark green vegetables in men and total vitamin C consumption in women.</p> <p>Variables controlled by matching: sex, age (± 5 years) and ethnic group</p>

Wu 2003

Methods	PCC in USA
Participants	<p>Participants: 501 cases and 594 controls (all women)</p> <p>Inclusion criteria: aged 25-74 years, in Asian Americans (Chinese, Japanese or Filipino), newly diagnosed cases identified through the Los Angeles County Cancer Surveillance Program, Los Angeles, USA</p> <p>Recruitment: from 1 January 1995-31 December 1998</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Breast cancer: 501 cases (all women)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking habit</p> <p>Lowest exposure: nondrinkers</p> <p>Intermediate exposure: $> 0-85.7$ mL/d</p> <p>Highest exposure: ≥ 85.7 mL/d</p>

Wu 2003 (Continued)

Notes	<p>Funding: grants of California Breast Cancer Research Program (1RB-0287, 3PB-0102) and of USC/Norris Comprehensive Cancer Center (2 P30 CA14089-26)</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age, Asian ethnicity, birthplace, education, age at menarche, pregnancy, current BMI, total caloric intake, menopausal status, use of menopausal hormones, intake of soy, dark green vegetables, smoking history, alcohol intake, physical activity and family history of breast cancer, coffee intake and black tea intake</p> <p>Variables controlled by matching: Asian ethnicity, age (5-year groups) and birthplace</p>
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Wu 2009a

Methods	HCC in China
Participants	<p>Participants: 142 cases and 142 control (all men)</p> <p>Inclusion criteria: aged ≥ 18 years, referring to the First, Second and Third affiliated hospitals of Shan-shan University and the Sun Yat-Sen University, Department of Urology, Cancer Center in Guangdong, China</p> <p>Recruitment: from May 2005-March 2008</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Prostate cancer: 142 cases (all men)</p>
Green tea in exposure categories	<p>Exposure assessment: green tea drinking habit</p> <p>Lowest exposure: occasionally or never</p> <p>Intermediate exposure 1: 3-4 time/month</p> <p>Intermediate exposure 2: 1-6 times/week</p> <p>Highest exposure: every d</p>
Notes	<p>Article in Chinese</p> <p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: age group ($\pm 4-5$ years), ethnic group and type of residence</p> <p>Variables controlled by matching: age group ($\pm 4-5$ years), ethnic group and type of residence</p>

Wu 2009b

Methods	PCC in China
Participants	<p>Participants: 1502 (male/female: 1191/329) cases and 3879 (male/female: 2916/963) controls, including 637 (male/female: 426/211) cases and 1938 (male/female: 1368/570) controls in the Dafeng area and 883 (male/female: 765/118) cases and 1941 (male/female: 1548/393) controls in Ganyu.</p> <p>Inclusion criteria: participants resident in 2 counties, Dafeng and Ganyu, with high and low mortality for oesophageal cancer in Jiangsu province, China</p>

Wu 2009b (Continued)

	Recruitment: from 2003-2007
Interventions	N/A
Outcomes	Number of cases Oesophageal cancer: 1502 (male/female: 1191/329) cases
Green tea in exposure categories	Exposure assessment: green-tea drinking habit Lowest exposure: never drinking Highest exposure: has ever drunk (≥ 1 cup/week for ≥ 6 months), further divided into former and current drinkers
Notes	Funding: Jiangsu Provincial Health Department (RC 2003090) Statistical methods: unconditional logistic regression Variables controlled in analysis: sex, age, education level, 10 years' income, cancer family history, BMI, pack-year of smoking, alcohol drinking and tea temperature Variables controlled by matching: sex and age (± 5 years)

Xu 2007

Methods	PCC in China
Participants	Participants: 1204 cases and 1212 controls (all women) Inclusion criteria: aged 30-69 years, medical confirmed cases from Shanghai Cancer Registry with no history of cancer or hysterectomy, within the Shanghai Endometrial Cancer Study Recruitment: from 1997-2003
Interventions	N/A
Outcomes	Number of cases Endometrial cancer: 1204 cases (all women)
Green tea in exposure categories	Exposure assessment: green-tea drinking habit Lowest exposure: never Highest exposure: primarily green tea drinking (≥ 3 times/week for ≥ 6 months)
Notes	Funding: USA Public Health Service grant R01CA92585 from the National Cancer Institute Statistical methods: unconditional logistic regression Variables controlled in analysis: age, education, menopausal status, years of menstruation, number of pregnancies, diagnosis of diabetes, alcohol consumption, BMI, physical activity, energy intake and total fruit and vegetable intake and soy protein intake Variables controlled by matching: age (± 5 years)

Xu 2013

Methods	PCC in China
Participants	Participants: 1225 cases (male/female: NR) and 1234 (male/female: NR) controls Inclusion criteria: newly diagnosed cases in China Recruitment: from 2006-2012
Interventions	N/A
Outcomes	Number of cases Lung cancer: 1225 cases (male/female: NR)
Green tea in exposure categories	Exposure assessment: drinking habit Lowest exposure: no drinking Highest exposure: drinking
Notes	Article in Chinese Sponsor: not declared Statistical methods: unconditional logistic regression Variables controlled in analysis: NR Variables controlled by matching: sex and age (± 3 years)

Yan 2016

Methods	PCC in China
Participants	Participants: 593 (male/female: 392/201) cases and 1128 (male/female: 695/433) controls Inclusion criteria: aged 20-80 years, newly diagnosed at the First Hospital of the University of Medical Sciences in residents for at least 10 years in Fujian Province, China Recruitment: from September 2010-March 2006
Interventions	N/A
Outcomes	Number of cases Oral cancer: 593 (male/female: 392/201) cases of oral squamous cell carcinoma
Green tea in exposure categories	Exposure assessment: green tea drinking habit Lowest exposure: nondrinkers Highest exposure: green tea drinker (≥ 1 cup/week for ≥ 6 consecutive months)
Notes	Article in Chinese Funding: grants of California Breast Cancer Research Program (1RB-0287, 3PB-0102) and of USC/Norris Comprehensive Cancer Center (2 P30 CA14089-26) Statistical methods: unconditional logistic regression Variables controlled in analysis: sex, age, residence, smoking, drinking and eating vegetables and fruits Variables controlled by matching: sex and age

Yang 2011a

Methods	Cohort study in China
Participants	<p>Participants: 61,500 Chinese men, included in the present study 60,567 participants</p> <p>Inclusion criteria: men aged 40-74 years, no history of cancer at baseline from 8 communities of Shanghai, China</p> <p>Parent cohort: Shanghai Men's Health Study</p> <p>Recruitment: from 2002-2006</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Outcome assessment: 31 December 2008</p> <p>Colorectal cancer: 243 cases (all male), including colon cancer (N = 133) and rectal cancer (N = 130)</p>
Green tea in exposure categories	<p>Exposure assessment A: intake of green tea</p> <p>Lowest exposure: nondrinker</p> <p>Highest exposure: drinker</p> <p>Exposure assessment B: consumption of green tea</p> <p>Lowest exposure: never</p> <p>Intermediate exposure: < 250 g/month</p> <p>Highest exposure: ≥ 250 g/month</p>
Notes	<p>Funding: US Public Health Service grants (R01 CA082729, in part by R01 CA122364).</p> <p>Statistical methods: Cox proportional hazard regression</p> <p>Variables controlled in analysis: age, education, cigarette smoking, pack-years of cigarette smoking, alcohol consumption, regular exercise, BMI, history of diabetes, family history of colorectal cancer and intakes of vegetables, fruits and red meat.</p> <p>Variables controlled by matching: -</p>

Ye 1998

Methods	PCC in China
Participants	<p>Participants: 272 (male/female: 233/39) cases, 544 (male/female: 466/78) controls</p> <p>Inclusion criteria: age 30-78 years, histologically confirmed or diagnosed by operation cases in residents in Changle City and Fuqing City for at least 20 years, Fujian Province, China</p> <p>Recruitment: from January 1993-July 1995</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Stomach cancer: 272 (male/female: 233/39) cases</p>

Ye 1998 (Continued)

Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: < 0.75 kg/year</p> <p>Highest exposure: ≥ 75 kg/year</p>
Notes	<p>Funding: 8.5 National Major Project, No. 95-914-01-10, China</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: matching variables</p> <p>Variables controlled by matching: sex, age (± 3 years) and village</p>

Yu 1995

Methods	PCC in China
Participants	<p>Participants: 711 (male/female: 453/258) cases and 711 (male/female: 453/258) controls</p> <p>Inclusion criteria: aged < 80 years, newly diagnosed cases among residents of Hongkou district of Shanghai and Nanhui county in suburb area of Shanghai, China</p> <p>Recruitment: from October 1991-December 1993</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Stomach cancer: 711 (male/female: 453/258) cases, including cancers of cardia (N = 128), pylori (N = 216), antrum (N = 153), other sites (N = 124) and site unknown (N = 90)</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: nondrinkers</p> <p>Highest exposure: drinkers further divided in:</p> <p>Highest exposure A: 1-3 new batches</p> <p>Highest exposure B: ≥ 4 new batches</p>
Notes	<p>Funding: USA Public Health Service grant CA52560 from the National Cancer Institute, National Institutes of Health, Department of Health and Human Service</p> <p>Statistical methods: conditional logistic regression</p> <p>Variables controlled in analysis: sex, age education, birthplace, alcohol drinking and cigarette smoking</p> <p>Variables controlled by matching: sex and age (± 3 years)</p>

Zhang 2002

Methods	PCC and HCC in China
Participants	<p>Participants: 254 cases and 652 controls, including 340 hospital and 261 population controls (all women)</p> <p>Inclusion criteria: aged < 75 years, newly diagnosed cases at Women's Hospital, School of Medicine, Zhejiang University, Zhejiang Cancer Hospital and other general hospitals in residents for at least 10 years living in Zhejiang province, China</p>

Zhang 2002 (Continued)

Recruitment: from July 1999-June 2000

Interventions	N/A
Outcomes	Number of cases Ovarian cancer: 254 cases of epithelial ovarian cancer
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: never or seldom Intermediate exposure 1: ≤ 1 time/week Intermediate exposure 2: 2-6 times/week Highest exposure: ≥ 1 time/d
Notes	Funding: US Public Health Service grant CA52560 from the National Cancer Institute, National Institutes of Health, Department of Health and Human Service Statistical methods: conditional logistic regression Variables controlled in analysis: age at interview, education, living area, BMI, tobacco smoking, alcohol consumption, coffee drinking, family income, marital status, menopause status, parity, tubal ligation, oral contraceptive use, physical activity and family history of ovarian cancer Variables controlled by matching: age and geographical area

Zhang 2007

Methods	HCC in China
Participants	Participants: 1009 cases and 1009 controls (all women) Inclusion criteria: aged 20-87 years, newly diagnosed with invasive ductal carcinomas or in situ carcinoma of the breast, residents in Hangzhou, Zhejiang Province, China Recruitment: from July 2004-September 2005
Interventions	N/A
Outcomes	Number of cases Breast cancer: 1009 cases (all female)
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: never or seldom Intermediate exposure 1: ≤ 1 cup/week Intermediate exposure 2: 2-6 times/week Intermediate exposure 3: 1 cup/d Highest exposure: ≥ 2 cups/d
Notes	Funding: not declared Statistical methods: conditional logistic regression

Zhang 2007 (Continued)

Variables controlled in analysis: resident area, education, BMI, age at menarche, number of children breastfed, menopausal status, oral contraceptive use, HRT, biopsy-confirmed benign breast diseases, breast cancer in first-degree relatives, total energy intake, passive smoking, alcohol consumption, coffee consumption, physical activity, soy intake, vegetable intake and fruit intake
Variables controlled by matching: age (± 5 years)

[Zhang 2009](#) reports same data as [Zhang 2007](#) but stratified by intake of mushrooms.

Zhang 2008

Methods	HCC in China
Participants	<p>Participants: 107 (male/female: 66/41) cases and 110 (male/female: 70/40) controls</p> <p>Inclusion criteria: aged 16/81 years, histopathologically confirmed cases Zhejiang University residents in Hangzhou, Zhejiang Province, China</p> <p>Recruitment: from 2005-2006</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Leukaemia: 107 (male/female: 66/41) cases, including acute myeloid leukaemia (N = 72), acute lymphocytic leukaemia (N = 22), chronic myeloid leukaemia (N = 10), chronic lymphocytic leukaemia (N = 3)</p>
Green tea in exposure categories	<p>Exposure assessment A: intake of green tea</p> <p>Lowest exposure: no</p> <p>Highest exposure: yes</p> <p>Exposure assessment B: consumption of green tea</p> <p>Lowest exposure: nondrinkers or ≤ 1 time/week</p> <p>Intermediate exposure: 2-6 times/week</p> <p>Highest exposure: ≥ 1 time/d</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: unconditional logistic regression</p> <p>Variables controlled in analysis: age, sex, residence, education, smoking, medication use of chloromycetin, occupational exposure to benzene and organophosphorous</p> <p>Variables controlled by matching: age and hospital</p> <p>Zhang 2008b reports same data as Zhang 2008 but paper in Chinese</p>

Zhao 2017

Methods	Cohort studies in China
Participants	<p>Participants: 61,491 men in Shanghai Men's Health Study and 74,941 women in Shanghai Women's Health Study. Total of 115,954 (male/female: 51,920/64,034) included in the present study</p> <p>Inclusion criteria: aged 40-74 years, in men's study and 40-70 years, in women's study with no prevalent cancer, coronary heart disease, stroke, or diabetes at the baseline survey and living in Shanghai, China</p>

Green tea (Camellia sinensis) for the prevention of cancer (Review)

Zhao 2017 (Continued)

	Parent cohorts: Shanghai Men's Health Study and Shanghai Women's Health Study Recruitment: from 2002-2006 (for men's study) and from 1997-2000 (for women's study)
Interventions	N/A
Outcomes	Number of cases Outcome assessment: 2006 for men's study and 2000 for women's study Total cancer mortality: 3210 (male/female: 1378/1832) deaths
Green tea in exposure categories	Exposure assessment A: intake of green tea Lowest exposure: nondrinker Highest exposure: drinker Exposure assessment B: consumption of green tea Lowest exposure: 0 g/d Intermediate exposure: 0-< median g/d Highest exposure: ≥ median g/d Median value = 8.22 g/d in men's study and 3.29 g/d in women's study
Notes	Funding: funds of State Key Laboratory of Oncogene and Related Genes (No. 91-15-10) and Shanghai Health Bureau Key Disciplines and Specialties Foundation and grants from the US National Institutes of Health (R37 CA070867 and UM1 CA182910, R01 CA082729 and UM1 CA173640) Statistical methods: Cox proportional hazard regression Variables controlled in analysis: age, education, income, smoking status, alcohol intake, energy intake, BMI, physical activity, history of hypertension, gastritis, menopause status for women Variables controlled by matching: -

Zheng 1993

Methods	HCC in China
Participants	Participants: 404 (male/female: NR) cases and 404 (male/female: NR) controls Inclusion criteria: aged 18-80 years, newly diagnosed oral cancer in residents in Beijing, China. Recruitment: from 1 May 1989-24 December 1989
Interventions	N/A
Outcomes	Number of cases Oral cancer: 404 (male/female: NR) cases
Green tea in exposure categories	Exposure assessment: intake of green tea Lowest exposure: < 1 cup/month Highest exposure: ≥ 1 cup/month
Notes	Funding: not declared

Zheng 1993 (Continued)

Statistical methods: conditional logistic regression
Variables controlled in analysis: sex, age, tobacco smoking, alcohol drinking, inadequate dentition, years of education and Quetelet Index
Variables controlled by matching: sex and age (± 5 years)

Zhong 2001

Methods	PCC in China
Participants	<p>Participants: 649 cases and 675 controls (all women)</p> <p>Inclusion criteria: aged 35–69 years, newly diagnosed primary lung carcinoma through Shanghai Cancer Registry in residents in Shanghai, China</p> <p>Recruitment: from 1 February 1992–31 January 1994</p>
Interventions	N/A
Outcomes	<p>Number of cases</p> <p>Lung cancer: 649 cases (all women), including 473 histologically confirmed: adenocarcinoma (N = 331, 70.0%), squamous cell carcinomas (N = 83, 17.5%), small-cell carcinomas (N = 13, 2.7%), large-cell carcinoma (N = 1, 0.2%) and mixed-cell carcinomas (N = 45, 9.5%)</p>
Green tea in exposure categories	<p>Exposure assessment: intake of green tea</p> <p>Lowest exposure: on regular drinkers</p> <p>Highest exposure: regular drinkers</p>
Notes	<p>Funding: not declared</p> <p>Statistical methods: conditional logistic regression Variables controlled in analysis: age, income, number of years of exposure to environmental tobacco smoke at work, high-risk occupation, family history of lung cancer, Vitamin C intake, cooking food at high temperature, and respondent status Variables controlled by matching: age (± 5 years)</p>

ACF: aberrant crypt foci; **AKP:** alkaline phosphatase; **ALT:** alanine aminotransferase; **ASAP:** atypical small acinar proliferation; **AST:** aspartate aminotransferase; **BMI:** body mass index; **CIN:** cervical intraepithelial neoplasia; **CI:** confidence interval; **EGCG:** (-)-epigallocatechin-3-gallate; **GnRH:** gonadotropin releasing hormone; **GTE:** green tea extract; **HBSAg:** hepatitis B surface antigen; **HCC:** hospital-based case-control study; **HG-PIN:** high-grade prostate intraepithelial neoplasia; **HP:** *Helicobacter pylori*; **HPV:** human papillomavirus; **HR:** hazard ratio; **HRQoL:** health-related quality of life; **HRT:** hormone replacement therapy; **IBD:** inflammatory bowel disease; **IPSS:** International Prostate Symptom Score; **ITT:** intention-to-treat; **LUTS:** lower urinary tract symptoms; **MENQOL:** Menopause-specific Quality of life; **N/A:** not applicable; **NR:** not reported; **OR:** odds ratio; **PCC:** population-based case-control study; **PSA:** prostate-specific antigen; **QoL:** quality of life; **RERF:** Radiation Effects Research Foundation; **RCT:** randomised controlled trial; **RR:** risk ratio; **SD:** standard deviation; **SNP:** single nucleotide polymorphisms; **UF:** uterine fibroid

Characteristics of excluded studies [ordered by study ID]

Study	Reason for exclusion
Ahmad 2012	Wrong exposure (not green tea)
Allen 2011	Wrong exposure (not green tea)

Study	Reason for exclusion
Alsanad 2016	Wrong patient population
Amarasinghe 2013	Wrong outcomes
Arts 2001	No distinction between green and black tea
Asgari 2011	Wrong exposure (not green tea)
Askari 2014	Wrong exposure (not green tea)
Azeem 2013	Wrong exposure (not green tea)
Bailey 2017	Paediatric population
Bamia 2015	Wrong exposure (not green tea)
Bao 2015	Wrong patient population
Baroudi 2014	Wrong exposure (not green tea)
Bates 2007	Wrong exposure (not green tea)
Bianchi 2000	No distinction between green and black tea
Bonaventure 2013	Paediatric population
Butler 2015	Wrong exposure (not green tea)
Chen 2009	Wrong exposure (not green tea)
Chyou 1995	No green tea
DArena 2013	Wrong patient population
Deandrea 2010	Wrong exposure (not only green tea)
Emami 2014	Wrong study design
Ettrich 2012	Wrong outcomes
Ferrucci 2014	Wrong exposure (not green tea)
Gao 2002	Wrong exposure (not green tea)
Gao 2009	Wrong exposure (not green tea)
Hara 1984	Participants all people with cancer
He 2017	Wrong exposure (not green tea)
Henning 2012	Wrong outcomes
Ide 2008	Wrong exposure (not green tea)
Il'yasova 2003	No distinction between green and black tea

Study	Reason for exclusion
Inoue 1997	Participants all people with cancer
Inoue 2001	Study does not address cancer
Ishizuka 2003	Measured gallstones
Jatoi 2003	Participants all people with cancer
Jia 2012	Cases not only people with cancer but included also participants with pre-cancerous lesions
Johnson 2011	Wrong exposure (not green tea)
Kono 1991	Measured polyps of the colon
Kuwahara 2000	Measured atrophic gastritis
Lee 1990	Mixed reporting of results for oolong, black and green tea No distinction between at least 2 amounts of frequency of green tea consumption
Lee 2013	Wrong exposure (not green tea)
Liu 2013a	Wrong exposure (not green tea)
Liu 2014	Wrong exposure (not green tea)
Liu 2015	Wrong outcomes
Luo 2010	Wrong exposure (not green tea)
Menzler 2015	Wrong outcomes
Mineharu 2011	Wrong outcomes
Montella 2007	No distinction between green and black tea
Montella 2009	No distinction between green and black tea
Nagano 2000	Summarised and added new data in Nagano 2001
Nakachi 1998	Participants all people with cancer
Nakachi 2003	Paper reviews Nakachi and colleague's 1998 study, participants all people with cancer
Oguni 1992	Abstract only, insufficient data
Ohno 1985	No amount of frequency of green tea consumption specified
Ohno 1995	"Okinawa tea" consumption, which is half-fermented oolong tea
Parodi 2017	Wrong exposure (not green tea)
Pisters 2001	Participants all people with cancer
Ren 1991	Type of tea not specified

Study	Reason for exclusion
Sasazuki 2008	Wrong exposure (not green tea)
Sasazuki 2012	Wrong study design
Sawada 2017	Wrong study design
Seo 2013	Wrong outcomes
Shibata 2000	Measured atrophic gastritis
Shim 1995	Study does not address cancer
Shimizu 2008	Wrong outcomes
Shin 2018	Wrong outcomes
Stingl 2011	Wrong outcomes
Suganuma 1999	Wrong study design
Sun 2002	Not clear green tea exposure, but urinary oesophagogastrroduodenoscopy
Tong 2014	Wrong study design
Tsubono 1997	Not related to cancer risk factors
Tsugane 2014	Wrong study design
Wakai 1993	Participants all people with cancer
Wang 2002	No cancer (precancerous lesions)
Wang 2008	Wrong exposure (not green tea)
Wang 2010	Wrong study design
Wang 2012d	Wrong patient population
Wang 2012e	Wrong study design
Wang 2014a	Wrong study design
Wu 2003a	Amount of frequency of green tea consumption not specified
Wu 2013a	Wrong study design
Yu 1991	Amount of frequency of green tea consumption not specified, not green tea only
YuanJ M 2007	Wrong exposure (not green tea)
Zeegers 2001a	Wrong exposure (not green tea)
Zeegers 2001b	Wrong study design
Zhang 2004	Follow-up study to Zhang 2002 , participants all people with cancer

Study	Reason for exclusion
Zhang 2006	Results did not differentiate between black and green tea drinkers
Zhang 2009	Wrong exposure (not green tea)
Zhang 2013	Wrong exposure (not green tea)
Zhang 2016	Wrong outcomes
Zhu 2016	Wrong exposure (not green tea)

Characteristics of ongoing studies *[ordered by study ID]*

[NCT01496521](#)

Trial name or title	Chemoprevention of esophageal squamous cell carcinoma (ESCC) with aspirin and tea polyphenols (CREAT)
Methods	RCT, quadruple-blind
Participants	Adults aged 40-60 years
Interventions	Intervention group A: aspirin 100 mg/d Intervention group B: tea polyphenols 100 mg/d Control group: placebo
Outcomes	Primary outcomes Occurrence of high-grade dysplasia and invasive ESCC (at six months) Secondary outcomes Mortality of the participants (at 6 months and at 3 or 5 years later) Number of participants with adverse events (at 6 months and at 3 or 5 years later) Occurrence of high-grade dysplasia and invasive ESCC (at 3 or 5 years later)
Starting date	January 2012
Contact information	Shu-Tian Zhang, MD, Beijing Friendship Hospital Capital Medical University
Notes	Estimated study completion date: January 2013. No information on ClinicalTrials.gov

[Shannon 2010](#)

Trial name or title	Fish oil and green tea extract in preventing prostate cancer in patients who are at risk for developing prostate cancer ClinicalTrial ID: Shannon 2010
Methods	Randomised, double-blind, placebo-controlled study

Shannon 2010 (Continued)

Participants	Men at high risk of prostate cancer Participants are stratified according to age (< 65 vs ≥ 65)
Interventions	Intervention group A: GTE polyphenols (75%) and EGCG (at least 30% = 300 mg) per 1000 mg capsule (2 capsules/d) Intervention group B: fish oil capsule per 1000 mg with ethyl esters of eicosapentaenoic acid (20:5n-3) and docosahexanoic acid (3 capsules/d) Intervention group C: A+B Control group: placebo, olive oil capsule 2/3 times/d Duration: 12 weeks
Outcomes	Primary outcomes Fatty acid synthase expression by immunohistochemistry at pre- and post-intervention (FAS Summary Score) Cell proliferation by Ki67-immunohistochemistry at pre- and post-intervention Incidence of prostate cancer
Starting date	July 2005
Contact information	Jackie Shannon, Principal Investigator, OHSU Knight Cancer Institute
Notes	According to 2010 abstract 67 men completed the study, 4 were enrolled. Anticipated sample size 120 men, or 30 men/group

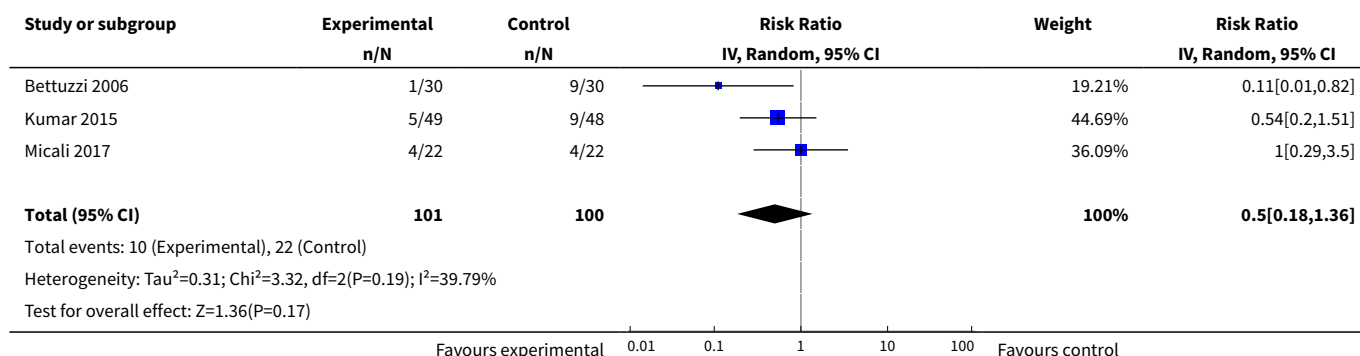
EGCG: epigallocatechin-3-gallate; **ESCC:** (o)esophageal squamous cell carcinoma; **FAS:** fatty acid synthase; **GTE:** green tea extract; **RCT:** randomised controlled trial

DATA AND ANALYSES

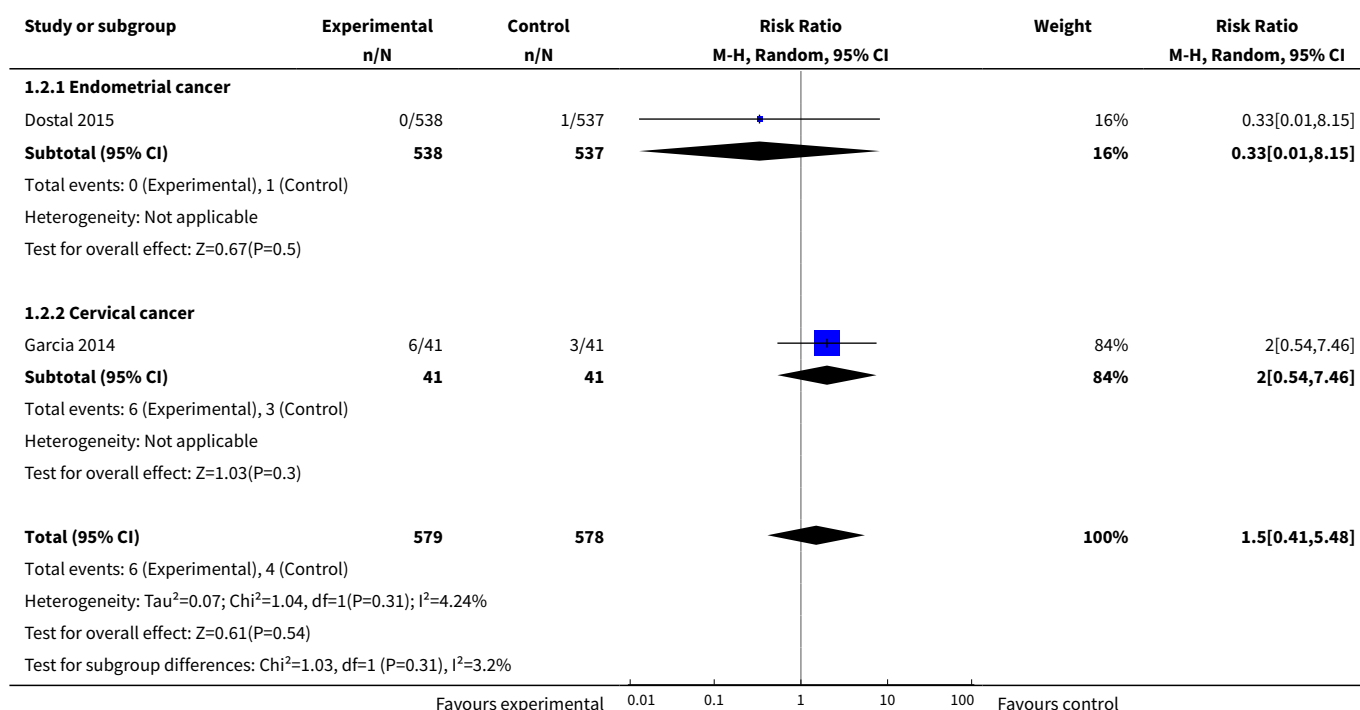
Comparison 1. Experimental studies: highest versus lowest green tea exposure

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Prostate cancer incidence	3	201	Risk Ratio (IV, Random, 95% CI)	0.50 [0.18, 1.36]
2 Gynaecological cancer incidence	2	1157	Risk Ratio (M-H, Random, 95% CI)	1.50 [0.41, 5.48]
2.1 Endometrial cancer	1	1075	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.01, 8.15]
2.2 Cervical cancer	1	82	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.54, 7.46]
3 Non-melanoma skin cancer incidence	1	1075	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.06, 15.92]

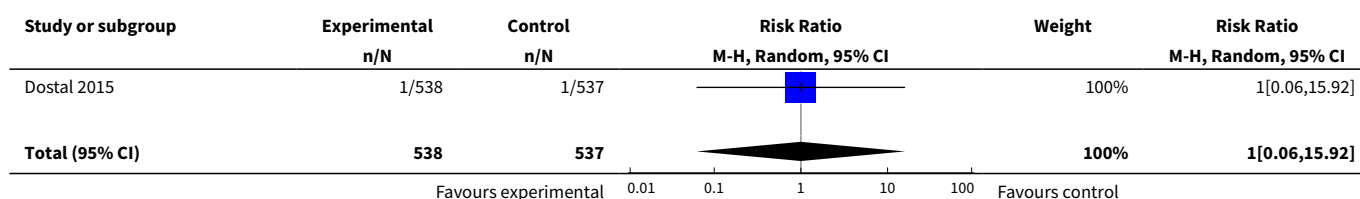
Analysis 1.1. Comparison 1 Experimental studies: highest versus lowest green tea exposure, Outcome 1 Prostate cancer incidence.

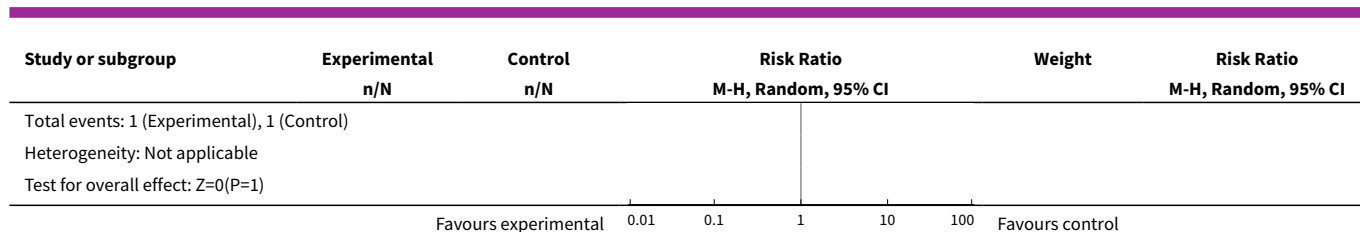


Analysis 1.2. Comparison 1 Experimental studies: highest versus lowest green tea exposure, Outcome 2 Gynaecological cancer incidence.



Analysis 1.3. Comparison 1 Experimental studies: highest versus lowest green tea exposure, Outcome 3 Non-melanoma skin cancer incidence.





Comparison 2. Nonexperimental studies: highest versus lowest green tea exposure

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Any cancer incidence	3	52479	Risk Ratio (Random, 95% CI)	0.83 [0.65, 1.07]
1.1 Cohort studies	2	51629	Risk Ratio (Random, 95% CI)	0.81 [0.50, 1.32]
1.2 Population-based case-control studies	1	850	Risk Ratio (Random, 95% CI)	0.78 [0.60, 1.01]
2 Any cancer mortality	8	504366	Risk Ratio (Random, 95% CI)	0.99 [0.91, 1.07]
3 Oral cancer	5	55977	Risk Ratio (Fixed, 95% CI)	0.71 [0.62, 0.82]
3.1 Cohort studies	1	50258	Risk Ratio (Fixed, 95% CI)	0.44 [0.19, 1.04]
3.2 Population-based case-control studies	1	1721	Risk Ratio (Fixed, 95% CI)	0.58 [0.42, 0.79]
3.3 Hospital-based case-control studies	3	3998	Risk Ratio (Fixed, 95% CI)	0.77 [0.65, 0.90]
4 Oral, pharyngeal and laryngeal cancer	1	2040	Risk Ratio (Random, 95% CI)	1.47 [1.12, 1.93]
4.1 Cohort studies	1	2040	Risk Ratio (Random, 95% CI)	1.47 [1.12, 1.93]
5 Pharyngeal cancer	1	12282	Risk Ratio (Random, 95% CI)	0.83 [0.30, 2.30]
5.1 Hospital-based case-control study	1	12282	Risk Ratio (Random, 95% CI)	0.83 [0.30, 2.30]
6 Any gut cancer	7	70299	Risk Ratio (Random, 95% CI)	0.78 [0.59, 1.02]
6.1 Cohort studies	2	52298	Risk Ratio (Random, 95% CI)	0.86 [0.27, 2.79]
6.2 Population-based case-control studies	1	1721	Risk Ratio (Random, 95% CI)	0.58 [0.42, 0.79]
6.3 Hospital-based case-control studies	4	16280	Risk Ratio (Random, 95% CI)	0.77 [0.65, 0.90]
7 Oesophageal cancer	13	74895	Risk Ratio (Random, 95% CI)	0.81 [0.64, 1.04]

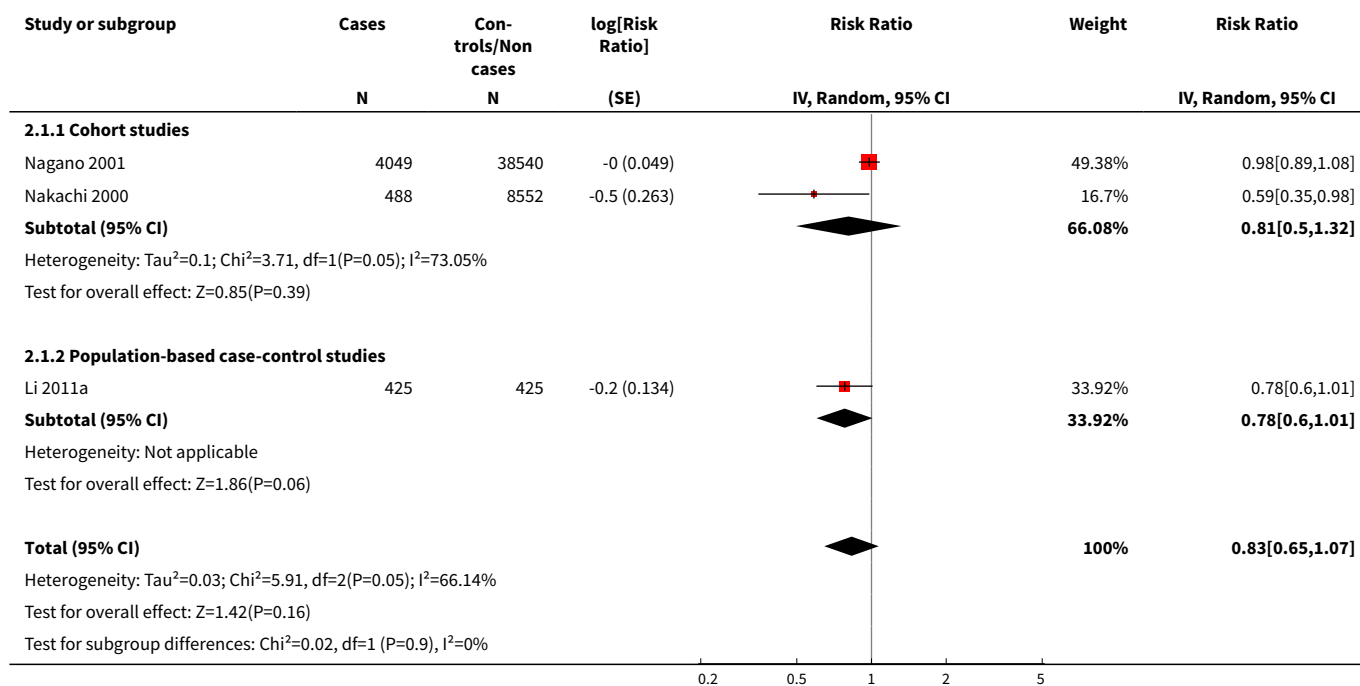
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
7.1 Cohort studies	1	26801	Risk Ratio (Random, 95% CI)	1.67 [0.88, 3.16]
7.2 Population-based case-control studies	9	14111	Risk Ratio (Random, 95% CI)	0.74 [0.55, 1.00]
7.3 Hospital-based case-control studies	3	33983	Risk Ratio (Random, 95% CI)	0.86 [0.57, 1.27]
8 Stomach cancer	18	438595	Risk Ratio (Random, 95% CI)	0.86 [0.74, 1.01]
8.1 Cohort studies	7	398286	Risk Ratio (Random, 95% CI)	0.99 [0.85, 1.14]
8.2 Population-based case-control studies	8	9923	Risk Ratio (Random, 95% CI)	0.74 [0.53, 1.02]
8.3 Hospital-based case-control studies	3	30386	Risk Ratio (Random, 95% CI)	0.90 [0.74, 1.09]
9 Liver cancer	6	198885	Risk Ratio (Random, 95% CI)	0.88 [0.68, 1.14]
9.1 Cohort studies	5	198266	Risk Ratio (Random, 95% CI)	0.93 [0.71, 1.20]
9.2 Population-based case-control studies	1	619	Risk Ratio (Random, 95% CI)	0.55 [0.28, 1.09]
10 Pancreatic cancer	10	326564	Risk Ratio (Random, 95% CI)	0.88 [0.70, 1.10]
10.1 Cohort studies	6	320596	Risk Ratio (Random, 95% CI)	1.04 [0.84, 1.30]
10.2 Population-based case-control studies	3	5720	Risk Ratio (Random, 95% CI)	0.67 [0.48, 0.96]
10.3 Hospital-based case-control studies	1	248	Risk Ratio (Random, 95% CI)	1.94 [1.06, 3.55]
11 Biliary tract cancer	3	195800	Risk Ratio (Random, 95% CI)	0.79 [0.57, 1.11]
11.1 Cohort studies	3	195800	Risk Ratio (Random, 95% CI)	0.79 [0.57, 1.11]
12 Colorectal cancer	16	610295	Risk Ratio (Random, 95% CI)	0.84 [0.74, 0.96]
12.1 Cohort studies	9	554298	Risk Ratio (Random, 95% CI)	1.00 [0.92, 1.08]
12.2 Population-based case-control studies	5	12811	Risk Ratio (Random, 95% CI)	0.74 [0.61, 0.90]
12.3 Hospital-based case-control studies	2	43186	Risk Ratio (Random, 95% CI)	0.53 [0.17, 1.60]
13 Colon cancer	10	389974	Risk Ratio (Random, 95% CI)	0.89 [0.80, 0.98]
13.1 Cohort studies	6	361348	Risk Ratio (Random, 95% CI)	0.93 [0.82, 1.05]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
13.2 Population-based case-control studies	3	7136	Risk Ratio (Random, 95% CI)	0.83 [0.69, 1.00]
13.3 Hospital-based case-control studies	1	21490	Risk Ratio (Random, 95% CI)	0.77 [0.47, 1.26]
14 Rectal cancer	9	356851	Risk Ratio (Random, 95% CI)	0.89 [0.75, 1.05]
14.1 Cohort studies	5	329570	Risk Ratio (Random, 95% CI)	0.92 [0.77, 1.09]
14.2 Population-based case-control studies	3	5887	Risk Ratio (Random, 95% CI)	0.83 [0.56, 1.24]
14.3 Hospital-based case-control studies	1	21394	Risk Ratio (Random, 95% CI)	1.25 [0.62, 2.51]
15 Nasopharyngeal carcinoma	2	2290	Risk Ratio (Random, 95% CI)	0.49 [0.36, 0.67]
15.1 Population-based case-control studies	1	685	Risk Ratio (Random, 95% CI)	0.61 [0.41, 0.91]
15.2 Hospital-based case-control studies	1	1605	Risk Ratio (Random, 95% CI)	0.44 [0.36, 0.54]
16 Lung cancer	17	269565	Risk Ratio (Random, 95% CI)	0.88 [0.76, 1.02]
16.1 Cohort studies	6	240987	Risk Ratio (Random, 95% CI)	1.02 [0.79, 1.31]
16.2 Population-based case-control studies	5	9703	Risk Ratio (Random, 95% CI)	0.73 [0.61, 0.87]
16.3 Hospital-based case-control studies	6	18875	Risk Ratio (Random, 95% CI)	0.90 [0.69, 1.17]
17 Breast cancer	14	250822	Risk Ratio (Random, 95% CI)	0.88 [0.75, 1.02]
17.1 Cohort studies	5	235706	Risk Ratio (Random, 95% CI)	1.01 [0.86, 1.19]
17.2 Population-based case-control studies	4	9336	Risk Ratio (Random, 95% CI)	0.87 [0.70, 1.08]
17.3 Hospital-based case-control studies	5	5780	Risk Ratio (Random, 95% CI)	0.81 [0.58, 1.13]
18 Gynaecological cancer	10	66738	Risk Ratio (Random, 95% CI)	0.69 [0.57, 0.83]
18.1 Cohort studies	1	53841	Risk Ratio (Random, 95% CI)	0.75 [0.43, 1.30]
18.2 Population-based case-control studies	9	12897	Risk Ratio (Random, 95% CI)	0.68 [0.56, 0.84]
19 Endometrial cancer	5	60416	Risk Ratio (Random, 95% CI)	0.77 [0.65, 0.91]

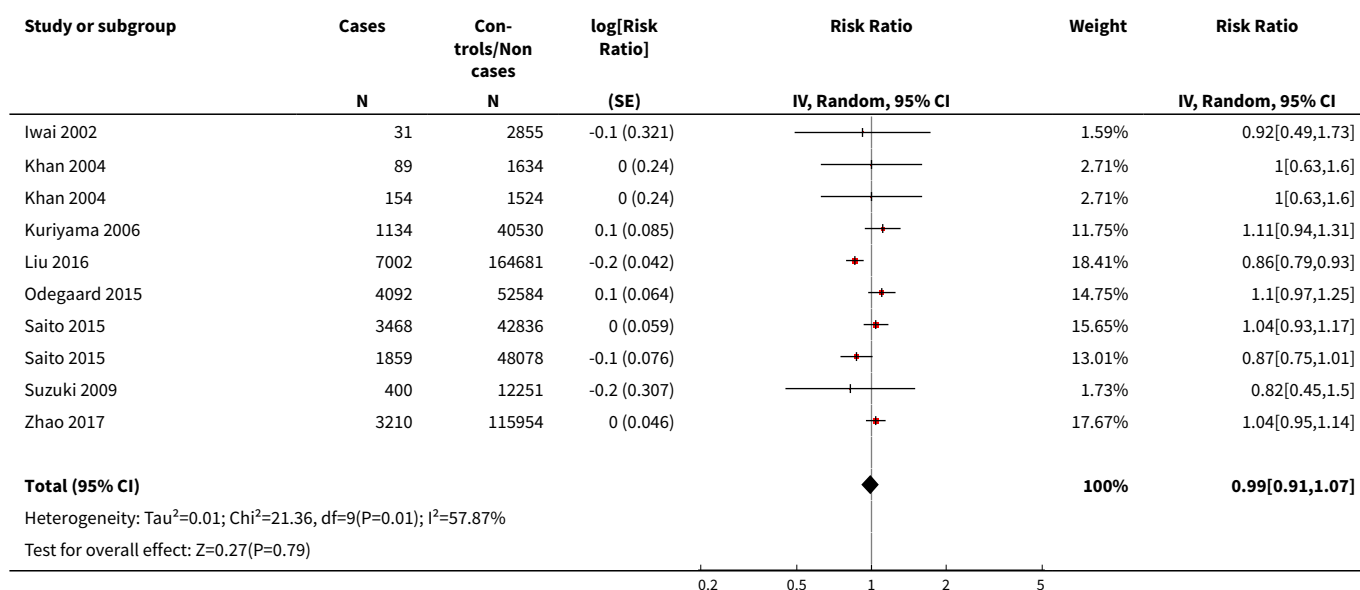
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
19.1 Cohort studies	1	53841	Risk Ratio (Random, 95% CI)	0.75 [0.43, 1.30]
19.2 Population-based case-control studies	4	6575	Risk Ratio (Random, 95% CI)	0.75 [0.61, 0.94]
20 Ovarian cancer	5	6322	Risk Ratio (Random, 95% CI)	0.64 [0.45, 0.90]
20.1 Population-based case-control studies	5	6322	Risk Ratio (Random, 95% CI)	0.64 [0.45, 0.90]
21 Prostate cancer	13	127239	Risk Ratio (Random, 95% CI)	0.73 [0.56, 0.94]
21.1 Cohort studies	5	123289	Risk Ratio (Random, 95% CI)	1.09 [0.89, 1.32]
21.2 Population-based case-control studies	1	750	Risk Ratio (Random, 95% CI)	0.59 [0.40, 0.87]
21.3 Hospital-based case-control studies	7	3200	Risk Ratio (Random, 95% CI)	0.50 [0.39, 0.63]
22 Renal cancer	1	549	Risk Ratio (Random, 95% CI)	0.34 [0.21, 0.55]
22.1 Hospital-based case-control studies	1	549	Risk Ratio (Random, 95% CI)	0.34 [0.21, 0.55]
23 Urinary tract cancer	7	156039	Risk Ratio (Random, 95% CI)	1.04 [0.79, 1.37]
23.1 Cohort studies	3	151395	Risk Ratio (Random, 95% CI)	1.24 [0.87, 1.76]
23.2 Population-based case-control studies	1	783	Risk Ratio (Random, 95% CI)	1.08 [0.61, 1.92]
23.3 Hospital-based case-control studies	3	3861	Risk Ratio (Random, 95% CI)	0.84 [0.53, 1.32]
24 Hematopoietic cancer	2	80646	Risk Ratio (Random, 95% CI)	0.75 [0.45, 1.27]
24.1 Cohort studies	2	80646	Risk Ratio (Random, 95% CI)	0.75 [0.45, 1.27]
25 Leukaemia	5	97778	Risk Ratio (Random, 95% CI)	0.81 [0.57, 1.15]
25.1 Cohort studies - acute myeloid leukaemia	1	95892	Risk Ratio (Random, 95% CI)	1.20 [0.62, 2.32]
25.2 Population-based case-control studies - all leukaemia	2	785	Risk Ratio (Random, 95% CI)	1.03 [0.50, 2.14]
25.3 Hospital-based case-control studies - all leukaemia	2	1101	Risk Ratio (Random, 95% CI)	0.64 [0.45, 0.91]
26 Lymphoma	1	96218	Risk Ratio (Random, 95% CI)	0.89 [0.61, 1.30]

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
26.1 Cohort studies	1	96218	Risk Ratio (Random, 95% CI)	0.89 [0.61, 1.30]
27 Multiple myeloma	2	96385	Risk Ratio (Random, 95% CI)	0.50 [0.26, 0.95]
27.1 Cohort studies	1	95945	Risk Ratio (Random, 95% CI)	0.74 [0.39, 1.41]
27.2 Hospital-based case-control studies	1	440	Risk Ratio (Random, 95% CI)	0.38 [0.27, 0.53]
28 Non-melanoma skin cancer	1	450	Risk Ratio (Random, 95% CI)	0.82 [0.35, 1.90]
28.1 Population-based case-control studies	1	450	Risk Ratio (Random, 95% CI)	0.82 [0.35, 1.90]
29 Thyroid cancer	1	100666	Risk Ratio (Random, 95% CI)	0.88 [0.56, 1.37]
29.1 Cohort studies	1	100666	Risk Ratio (Random, 95% CI)	0.88 [0.56, 1.37]
30 Brain cancer	1	106479	Risk Ratio (Random, 95% CI)	1.07 [0.71, 1.62]
30.1 Cohort studies	1	106479	Risk Ratio (Random, 95% CI)	1.07 [0.71, 1.62]

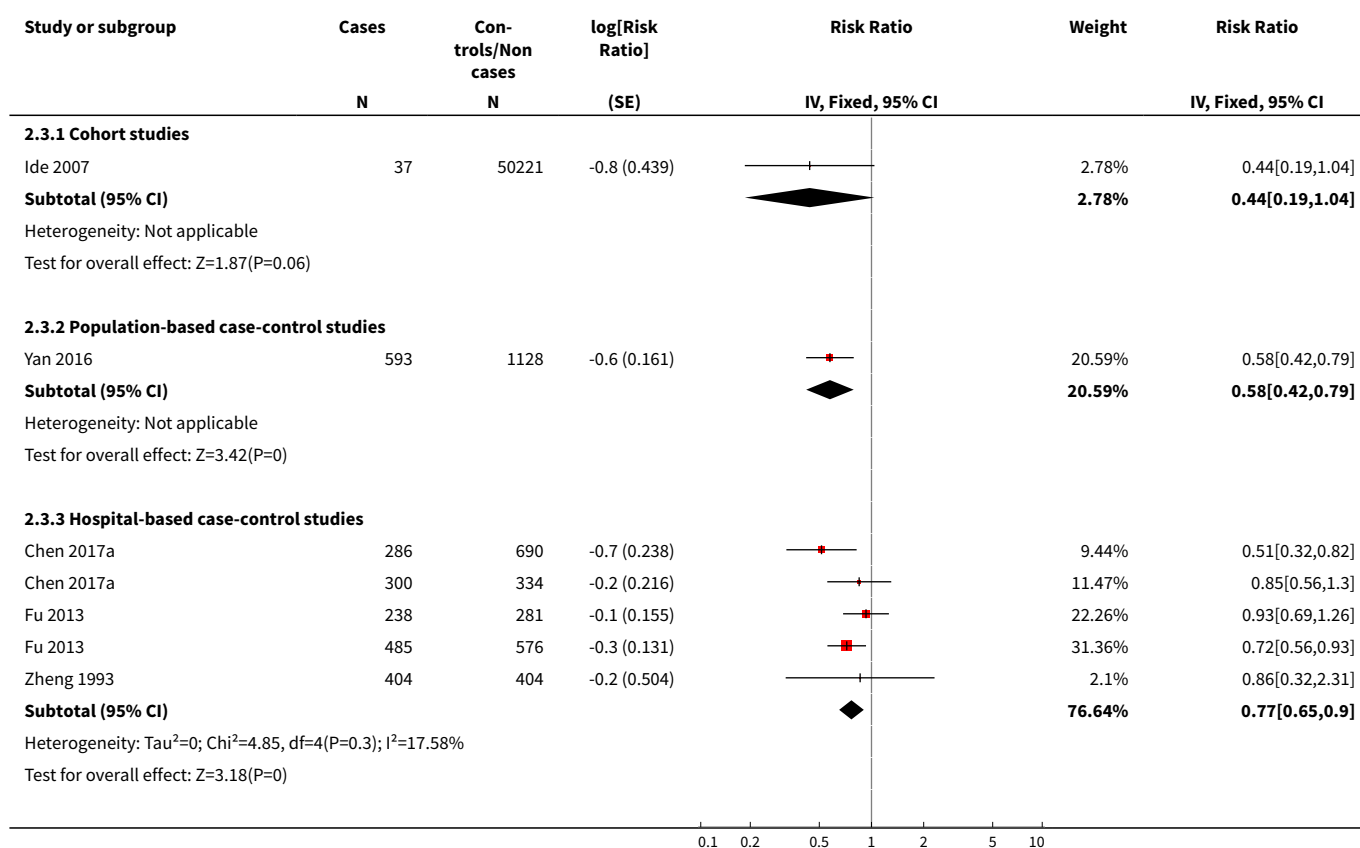
Analysis 2.1. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 1 Any cancer incidence.

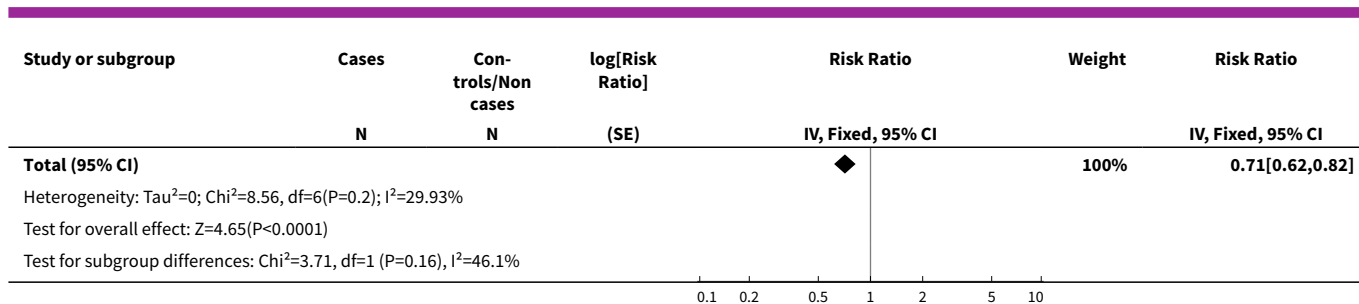


Analysis 2.2. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 2 Any cancer mortality.

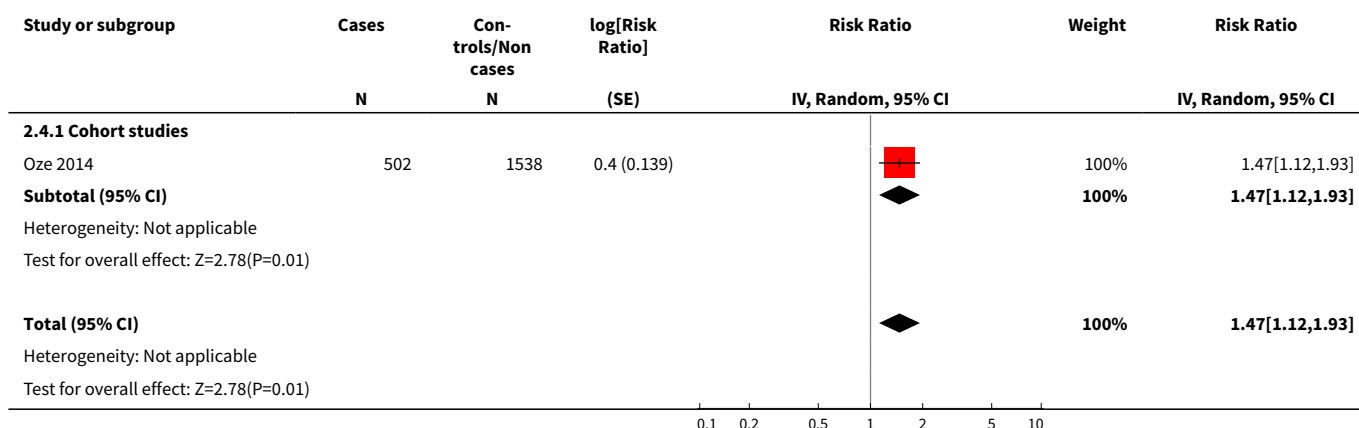


Analysis 2.3. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 3 Oral cancer.

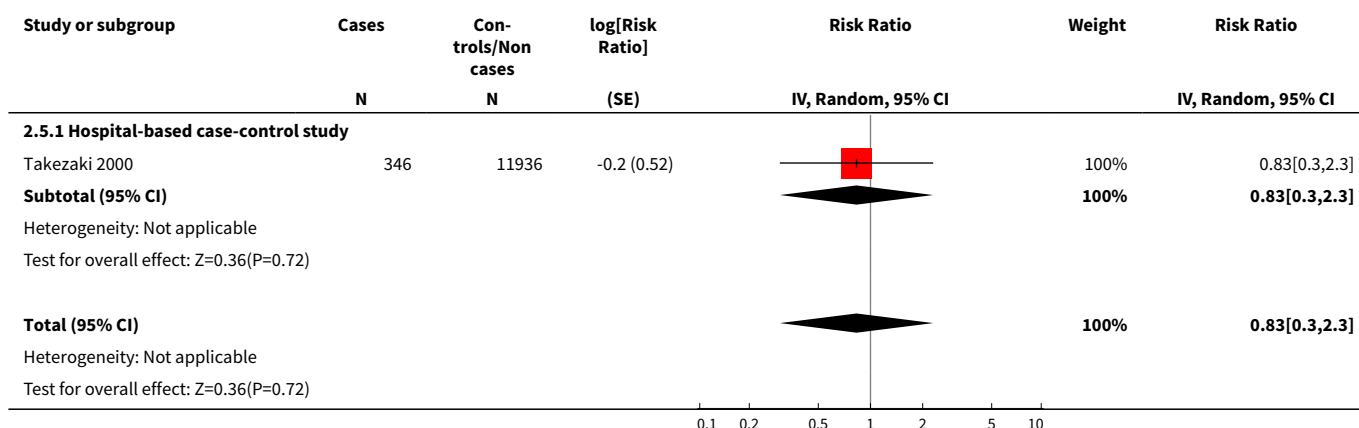




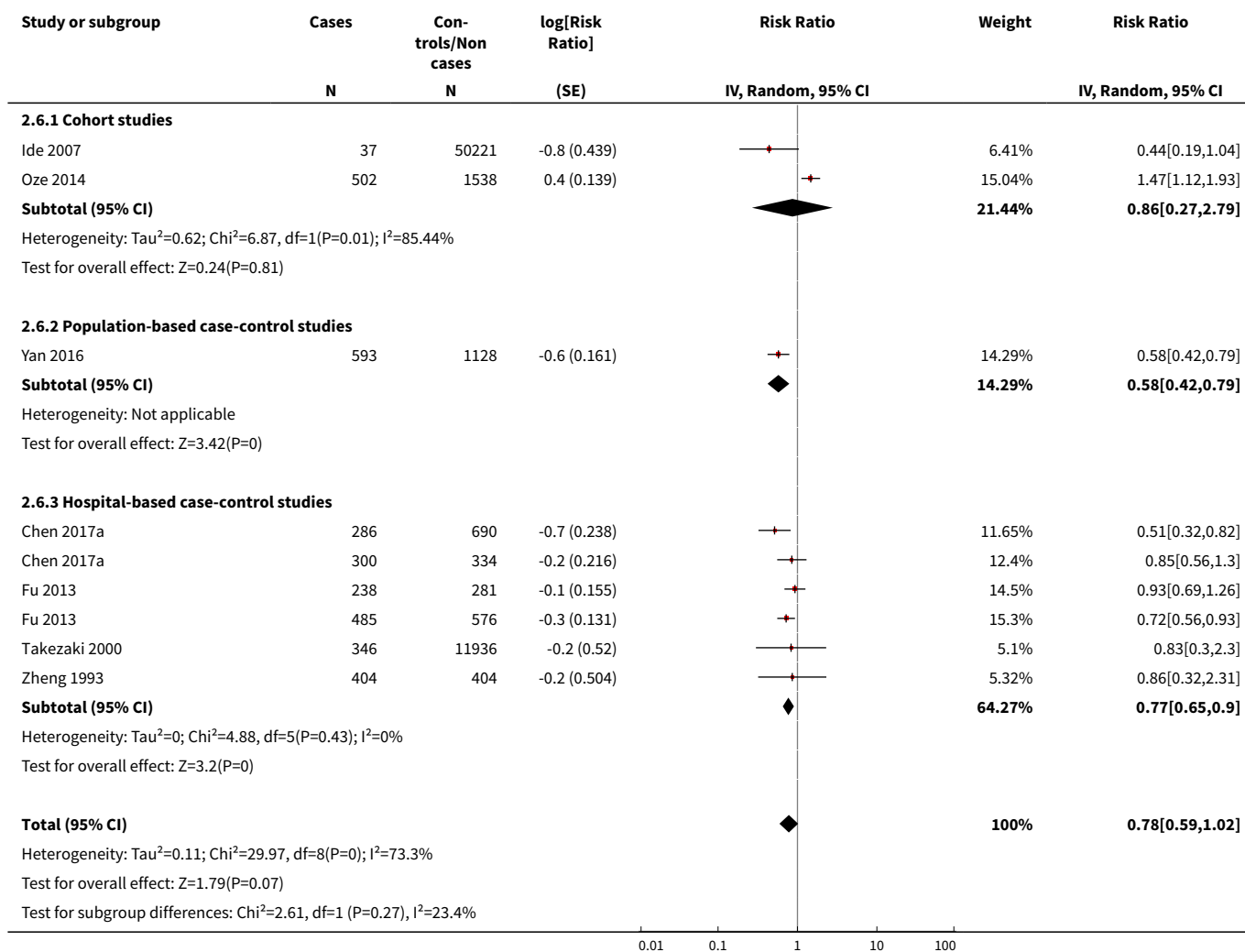
Analysis 2.4. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 4 Oral, pharyngeal and laryngeal cancer.



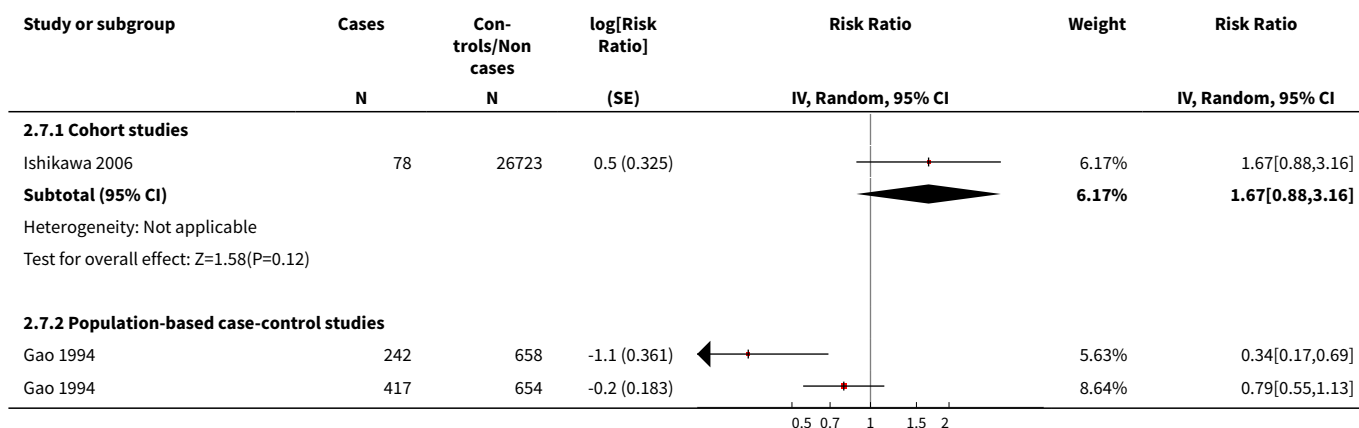
Analysis 2.5. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 5 Pharyngeal cancer.

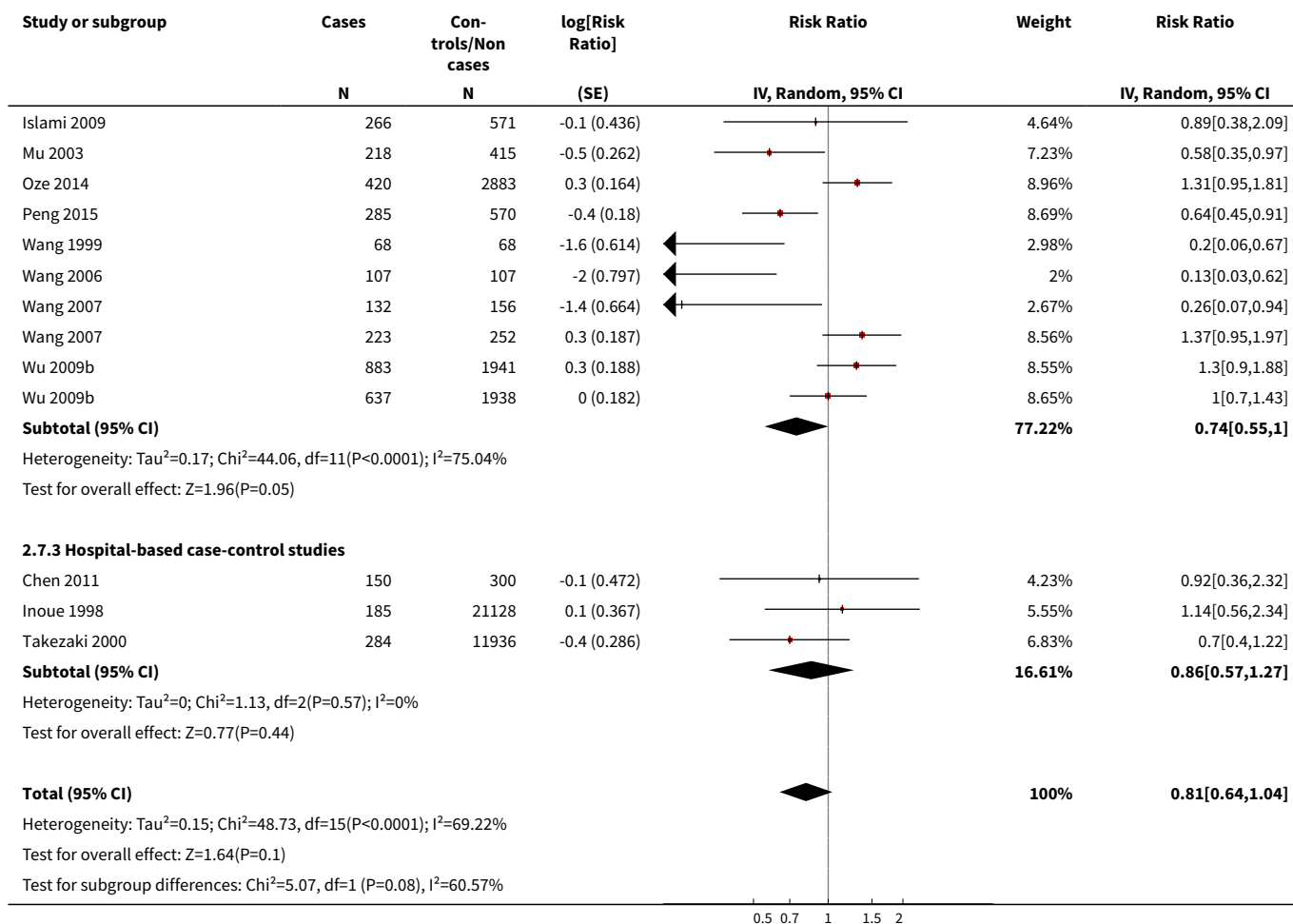


Analysis 2.6. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 6 Any gut cancer.

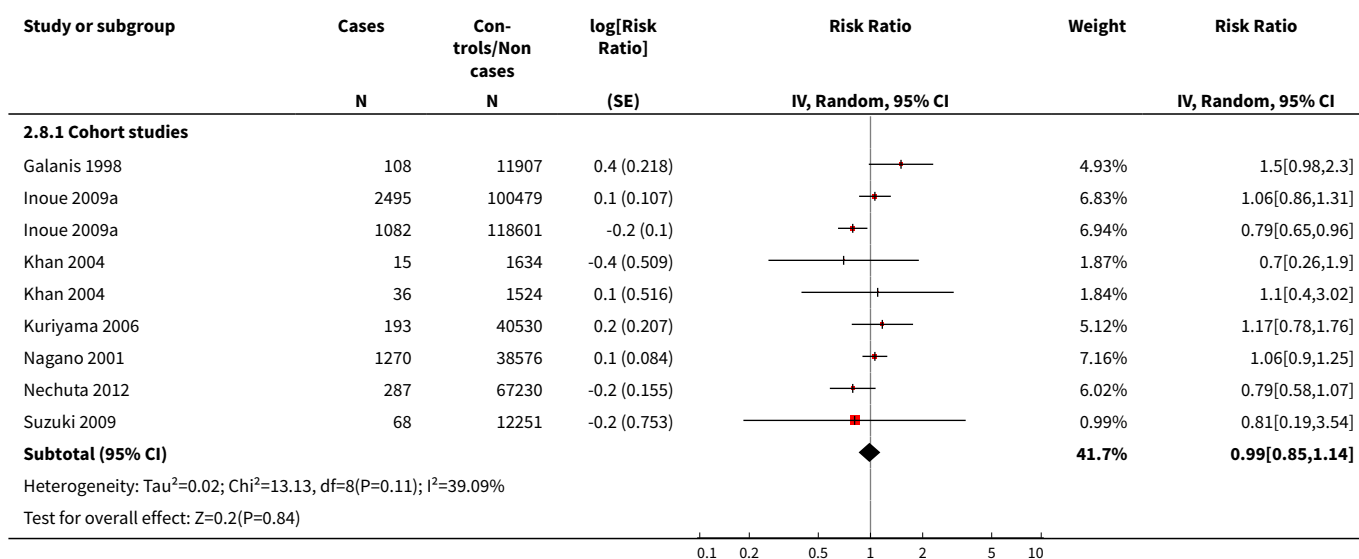


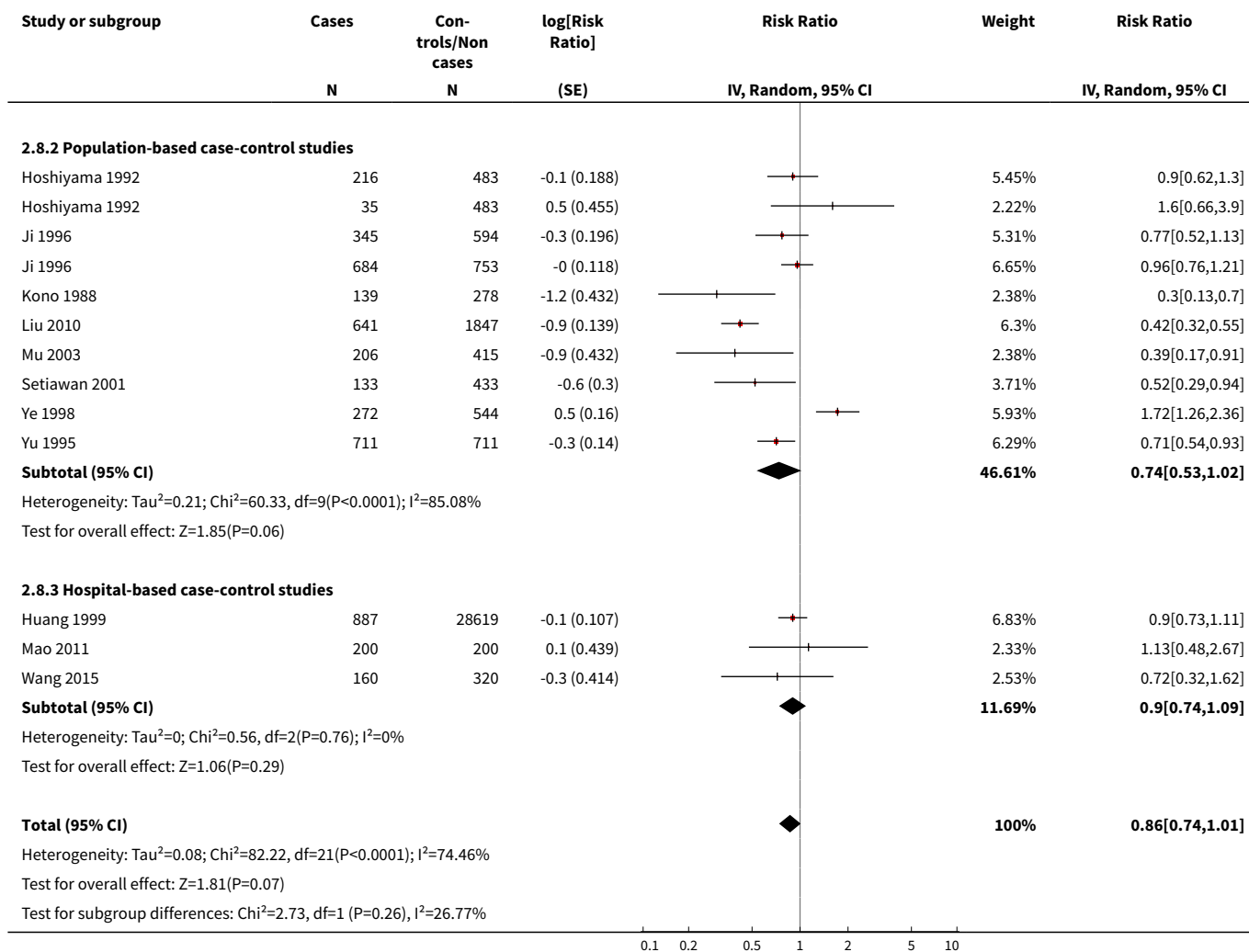
Analysis 2.7. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 7 Oesophageal cancer.



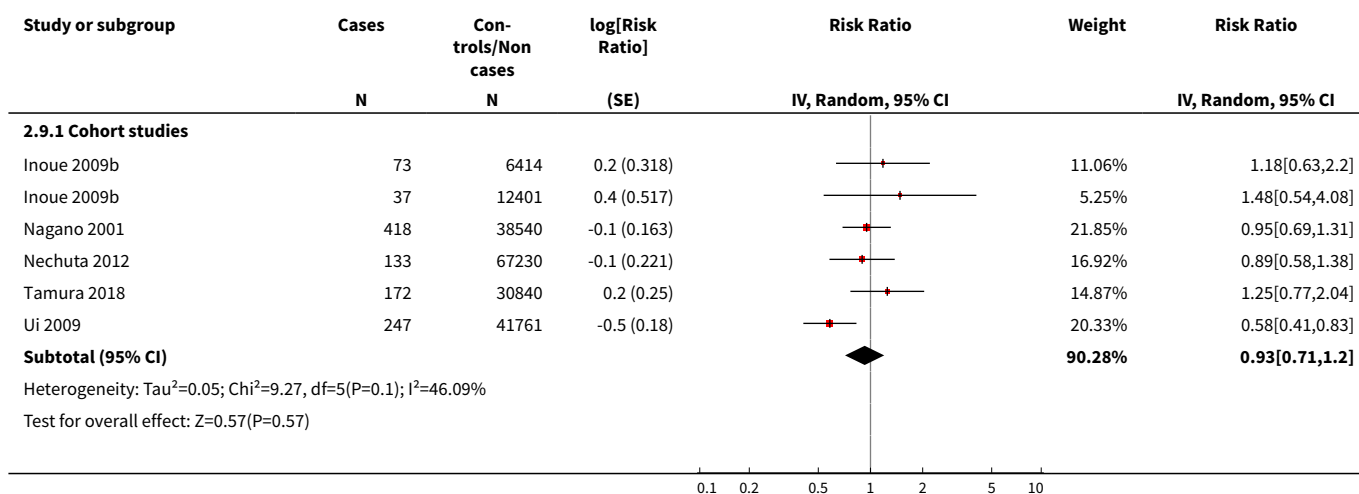


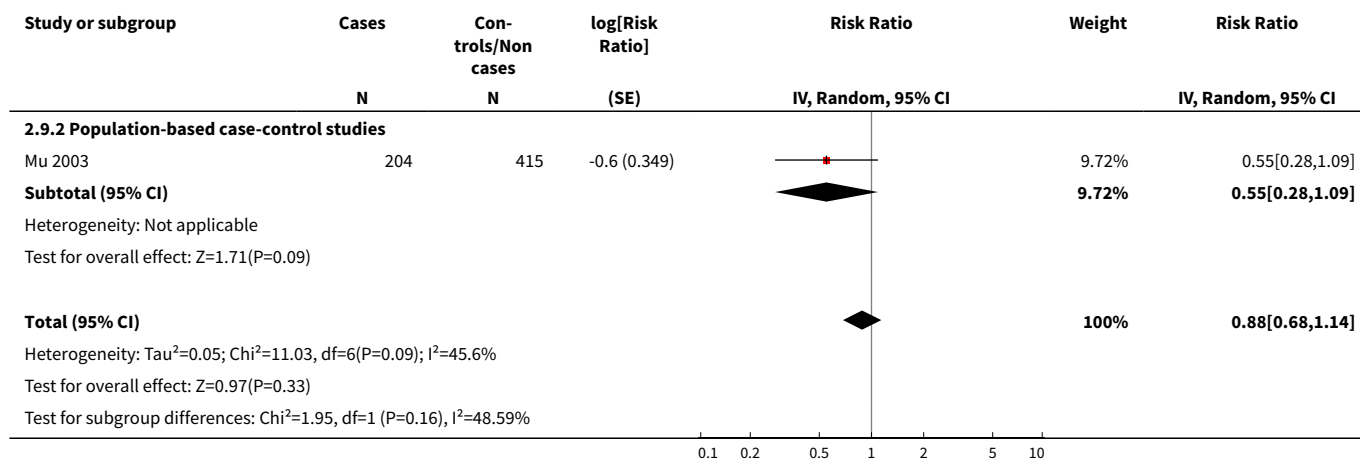
Analysis 2.8. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 8 Stomach cancer.



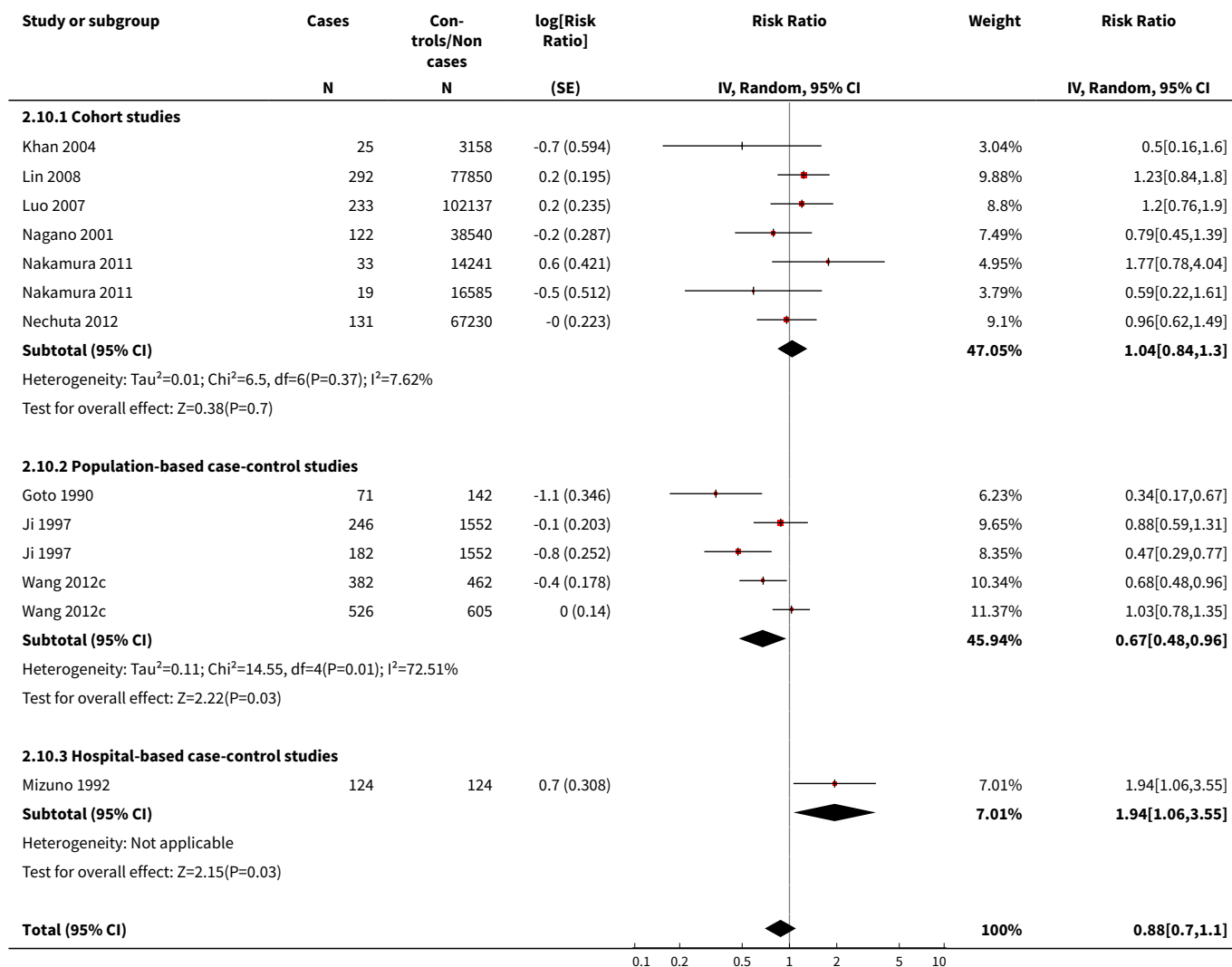


Analysis 2.9. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 9 Liver cancer.










Analysis 2.10. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 10 Pancreatic cancer.
















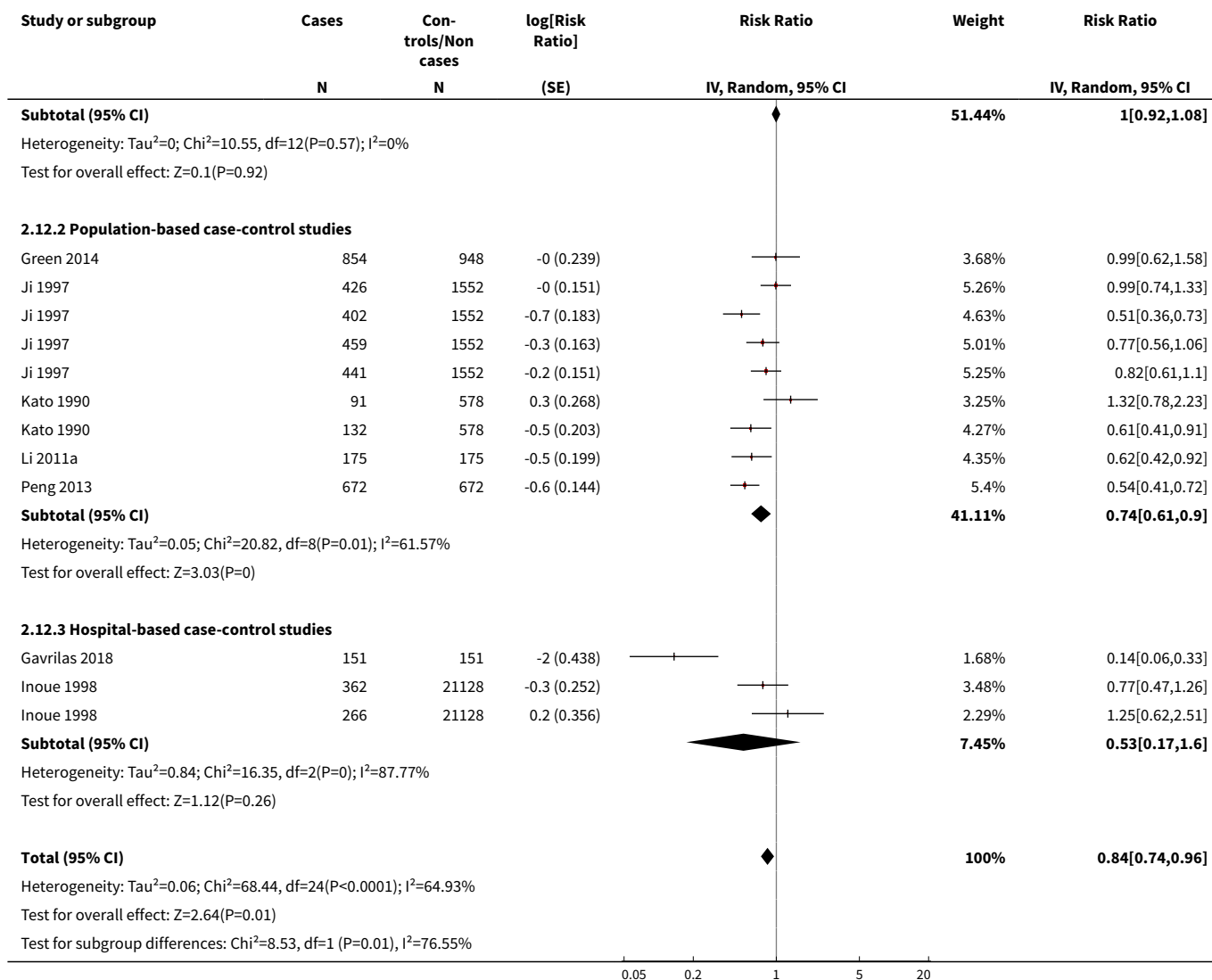
Study or subgroup	Cases	Con- trols/Non cases	log[Risk Ratio]	Risk Ratio	Weight	Risk Ratio
	N	N	(SE)	IV, Random, 95% CI		IV, Random, 95% CI
Heterogeneity: $\tau^2=0.1$; $\chi^2=32.75$, $df=12$ ($P=0$); $I^2=63.36\%$						
Test for overall effect: $Z=1.11$ ($P=0.27$)						
Test for subgroup differences: $\chi^2=9.64$, $df=1$ ($P=0.01$), $I^2=79.25\%$						
				0.1 0.2 0.5 1 2 5 10		

Analysis 2.11. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 11 Biliary tract cancer.

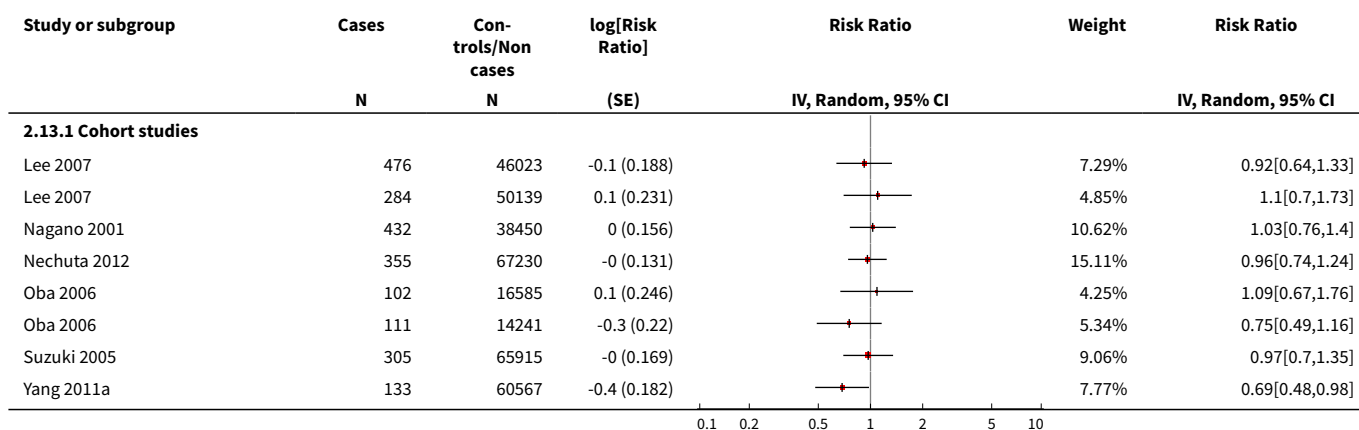
Study or subgroup	Cases	Con- trols/Non cases	log[Risk Ratio]	Risk Ratio	Weight	Risk Ratio
	N	N	(SE)	IV, Random, 95% CI		IV, Random, 95% CI
2.11.1 Cohort studies						
Makiuchi 2016	271	89555	-0.4 (0.189)		49.93%	0.67[0.46,0.97]
Nagano 2001	122	38540	0.2 (0.305)		25.38%	1.2[0.66,2.18]
Nechuta 2012	82	67230	-0.3 (0.31)		24.69%	0.73[0.4,1.35]
Subtotal (95% CI)					100%	0.79[0.57,1.11]
Heterogeneity: $\tau^2=0.02$; $\chi^2=2.68$, $df=2$ ($P=0.26$); $I^2=25.34\%$						
Test for overall effect: $Z=1.33$ ($P=0.18$)						
Total (95% CI)					100%	0.79[0.57,1.11]
Heterogeneity: $\tau^2=0.02$; $\chi^2=2.68$, $df=2$ ($P=0.26$); $I^2=25.34\%$						
Test for overall effect: $Z=1.33$ ($P=0.18$)						
				0.1 0.2 0.5 1 2 5 10		

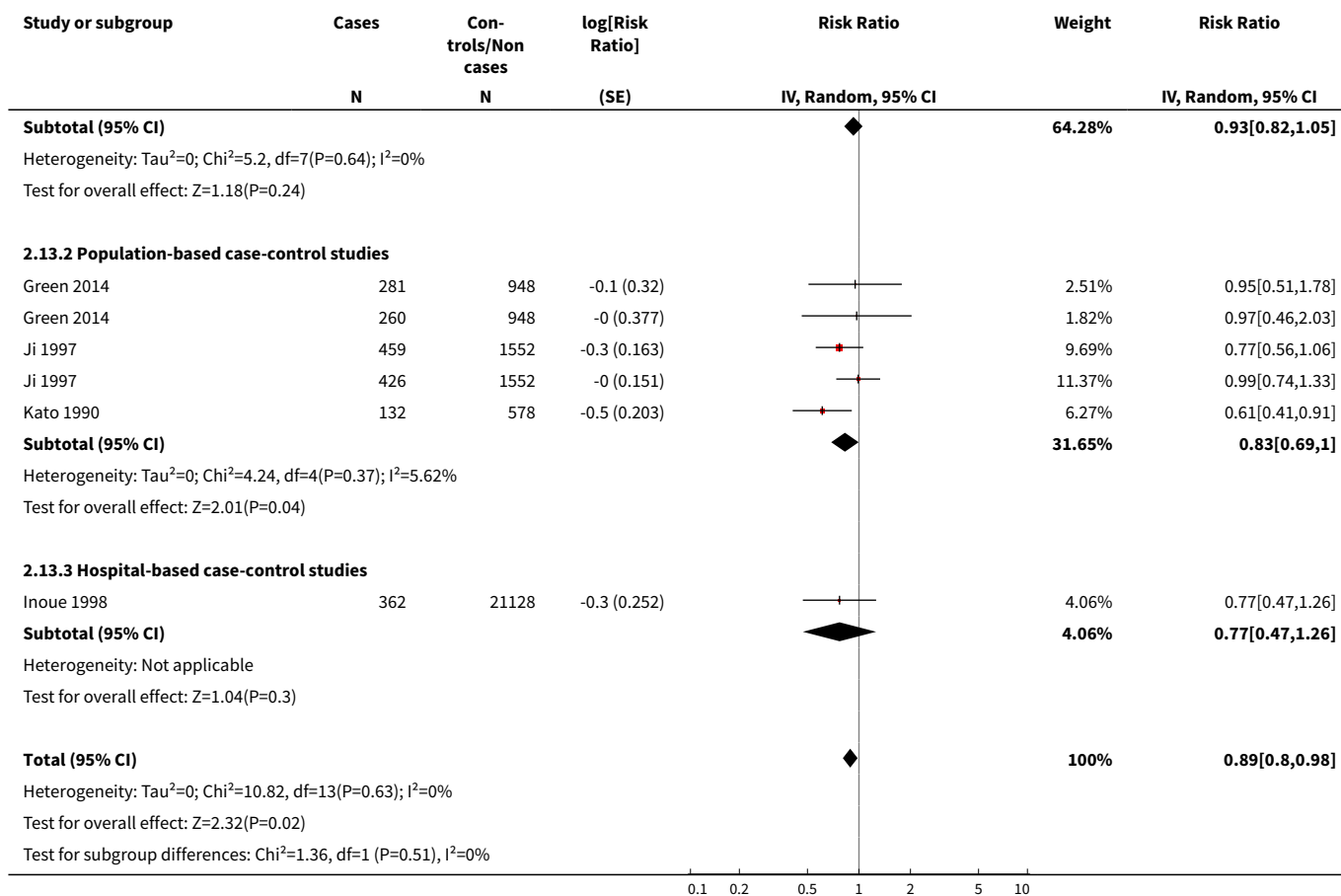
Analysis 2.12. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 12 Colorectal cancer.

Study or subgroup	Cases	Con- trols/Non cases	log[Risk Ratio]	Risk Ratio	Weight	Risk Ratio
	N	N	(SE)	IV, Random, 95% CI		IV, Random, 95% CI
2.12.1 Cohort studies						
Khan 2004	15	1524	0.3 (0.772)		0.64%	1.3[0.29,5.9]
Khan 2004	14	1634	0.2 (0.663)		0.85%	1.2[0.33,4.4]
Kuriyama 2006	132	40530	0.1 (0.257)		3.41%	1.1[0.66,1.82]
Lee 2007	724	46023	-0 (0.151)		5.26%	0.96[0.71,1.29]
Lee 2007	434	50139	0 (0.192)		4.46%	1.02[0.7,1.49]
Nagano 2001	193	38540	0.3 (0.267)		3.27%	1.3[0.77,2.19]
Nagano 2001	432	38540	0 (0.156)		5.16%	1.03[0.76,1.4]
Nechuta 2012	579	67230	-0.1 (0.106)		6.15%	0.91[0.74,1.12]
Sun 2007	845	61320	0.1 (0.073)		6.72%	1.12[0.97,1.29]
Suzuki 2005	305	65915	-0 (0.169)		4.9%	0.97[0.7,1.35]
Suzuki 2005	211	65915	-0.2 (0.189)		4.53%	0.85[0.59,1.23]
Suzuki 2009	43	12251	-1 (0.804)		0.6%	0.36[0.07,1.74]
Yang 2011a	243	60567	-0.3 (0.138)		5.5%	0.77[0.59,1.01]
				0.05 0.2 1 5 20		

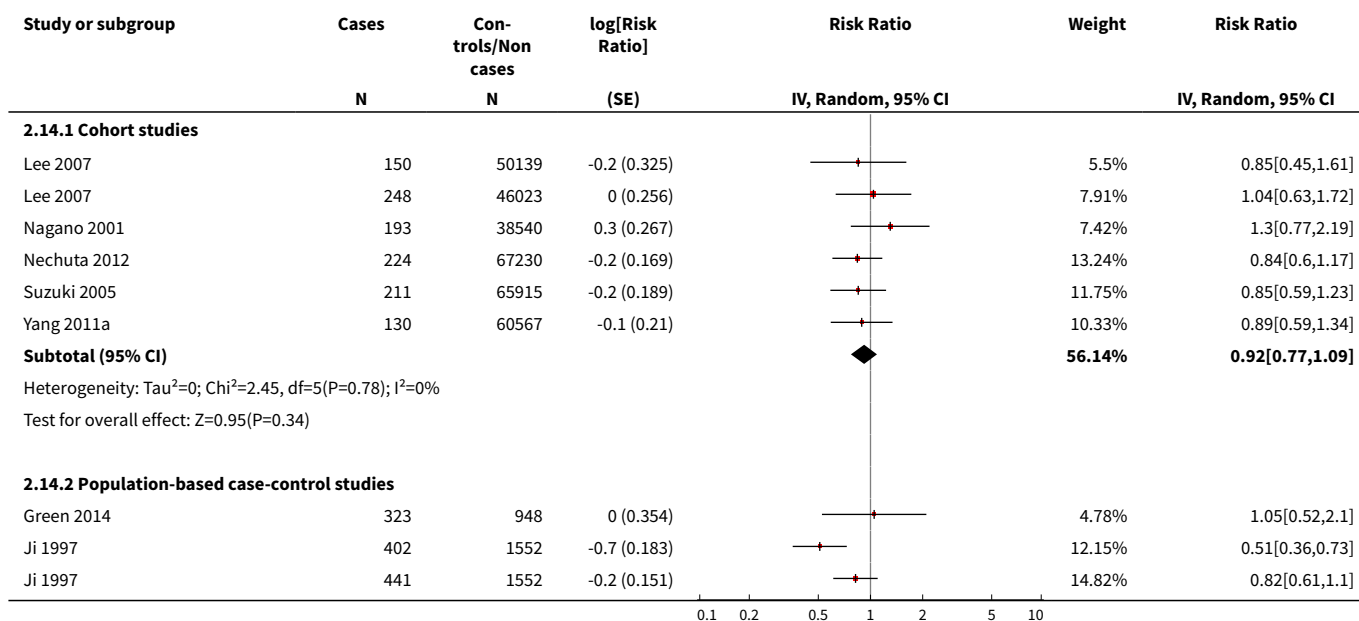


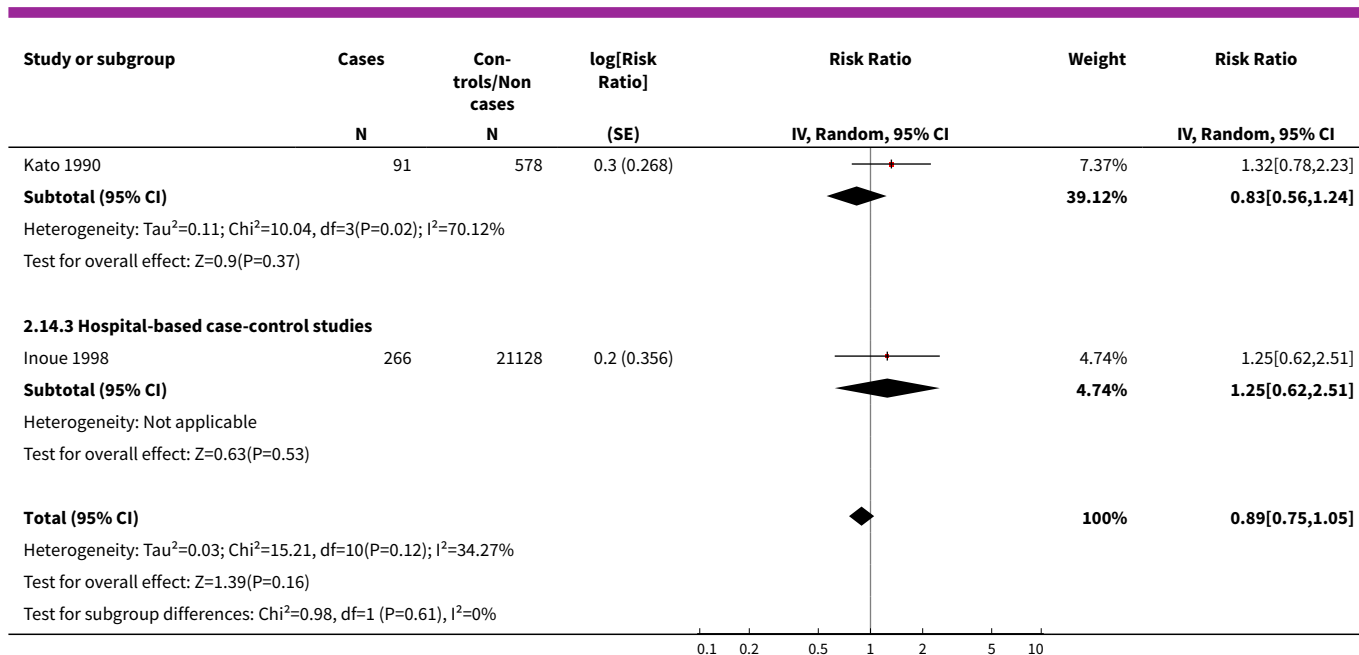
Analysis 2.13. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 13 Colon cancer.



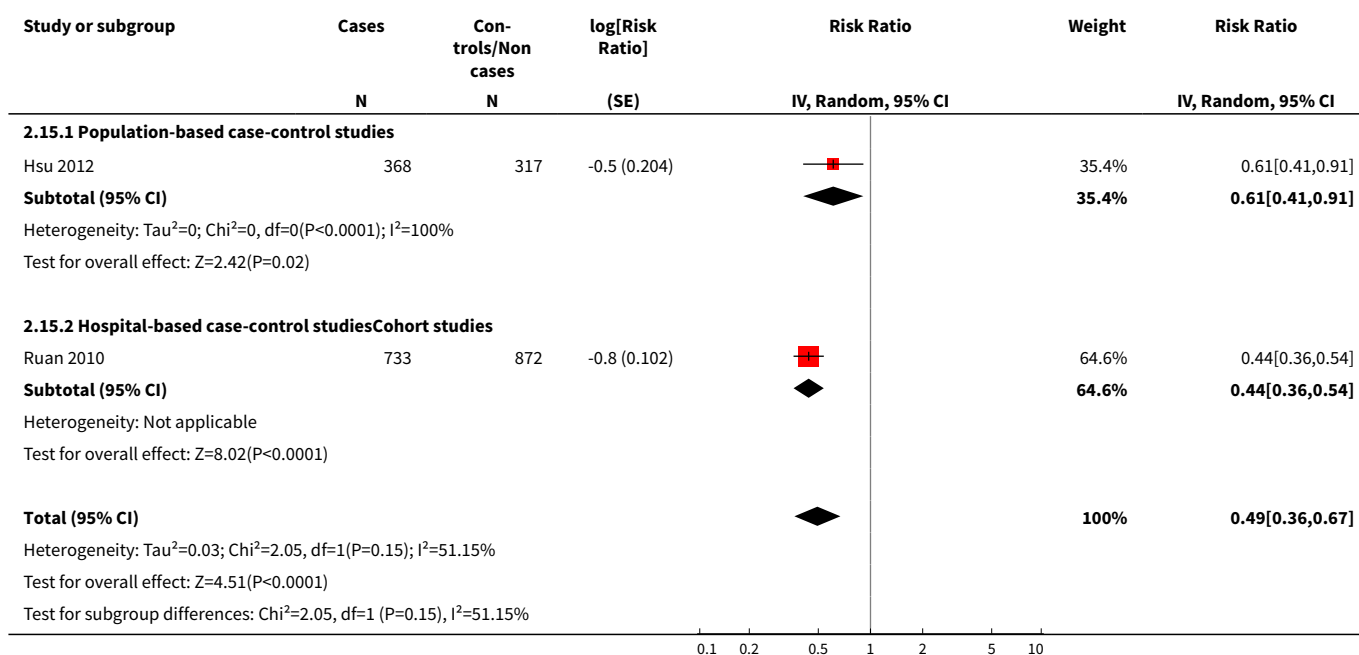


Analysis 2.14. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 14 Rectal cancer.

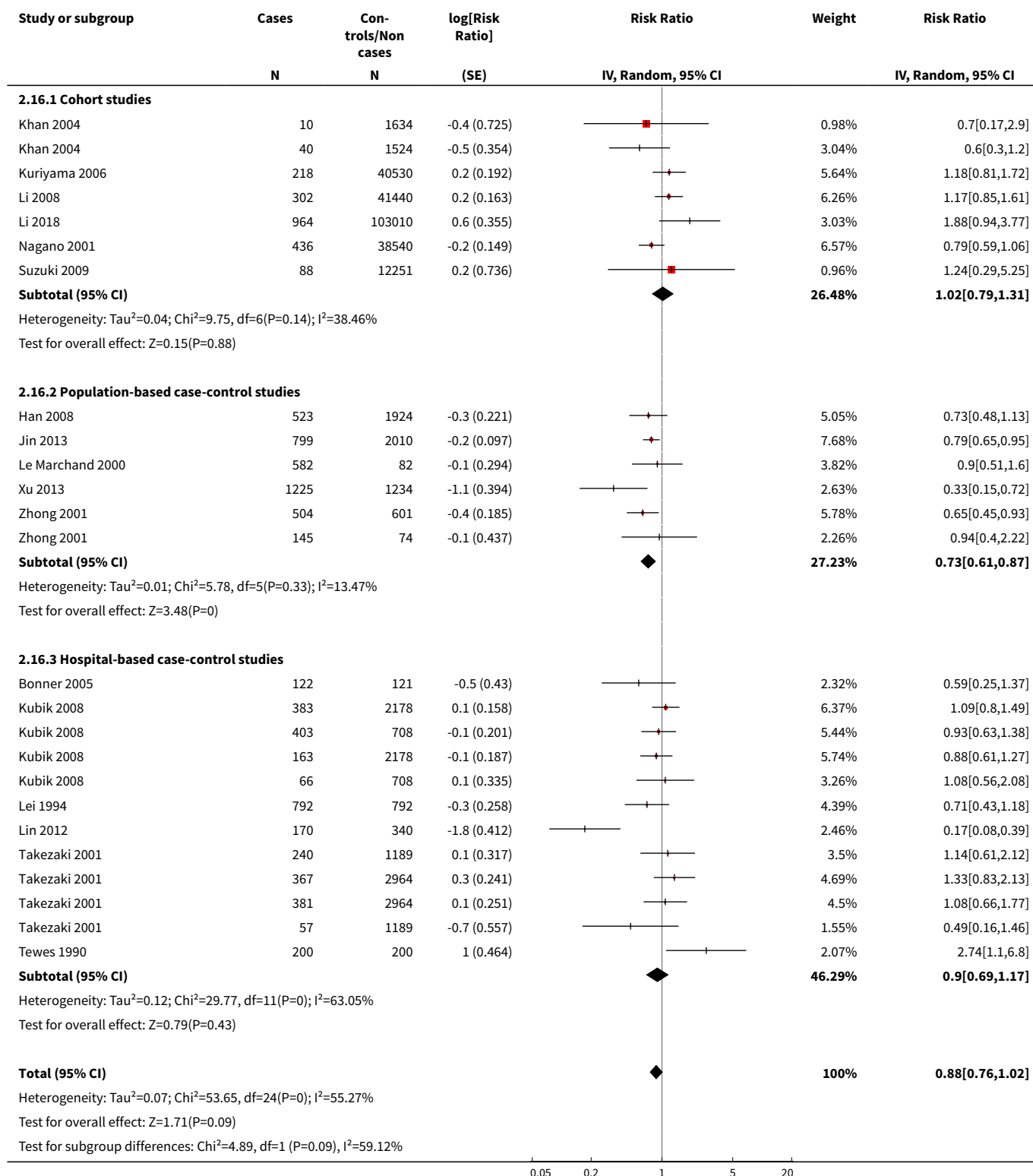




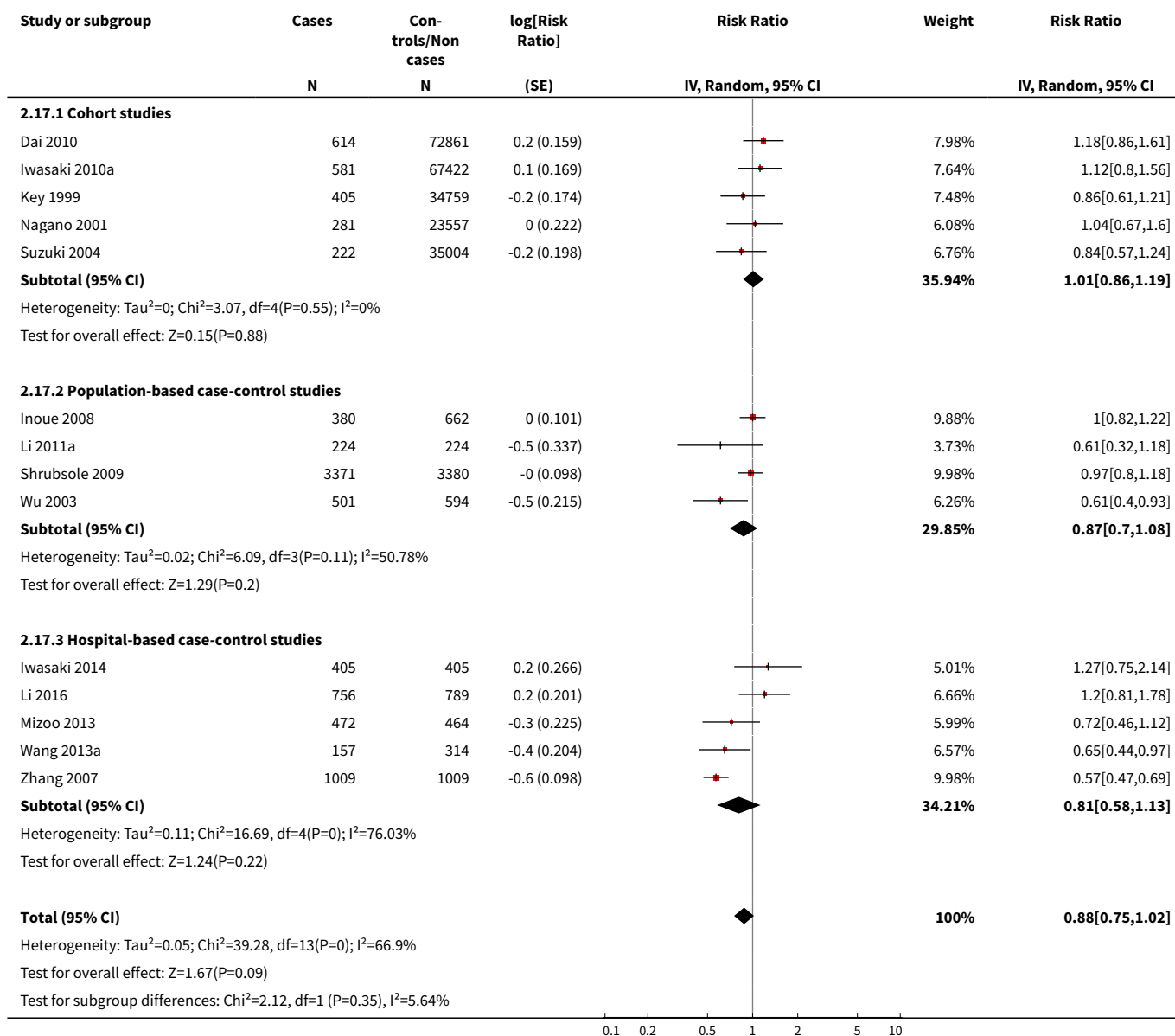
Analysis 2.15. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 15 Nasopharyngeal carcinoma.



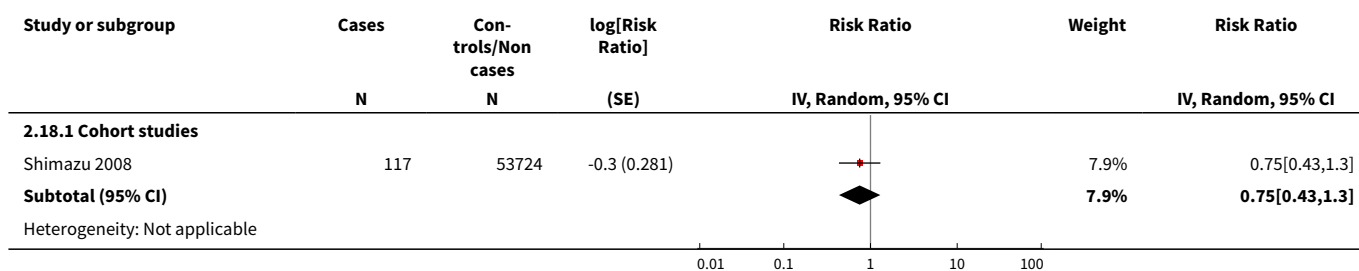
Analysis 2.16. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 16 Lung cancer.

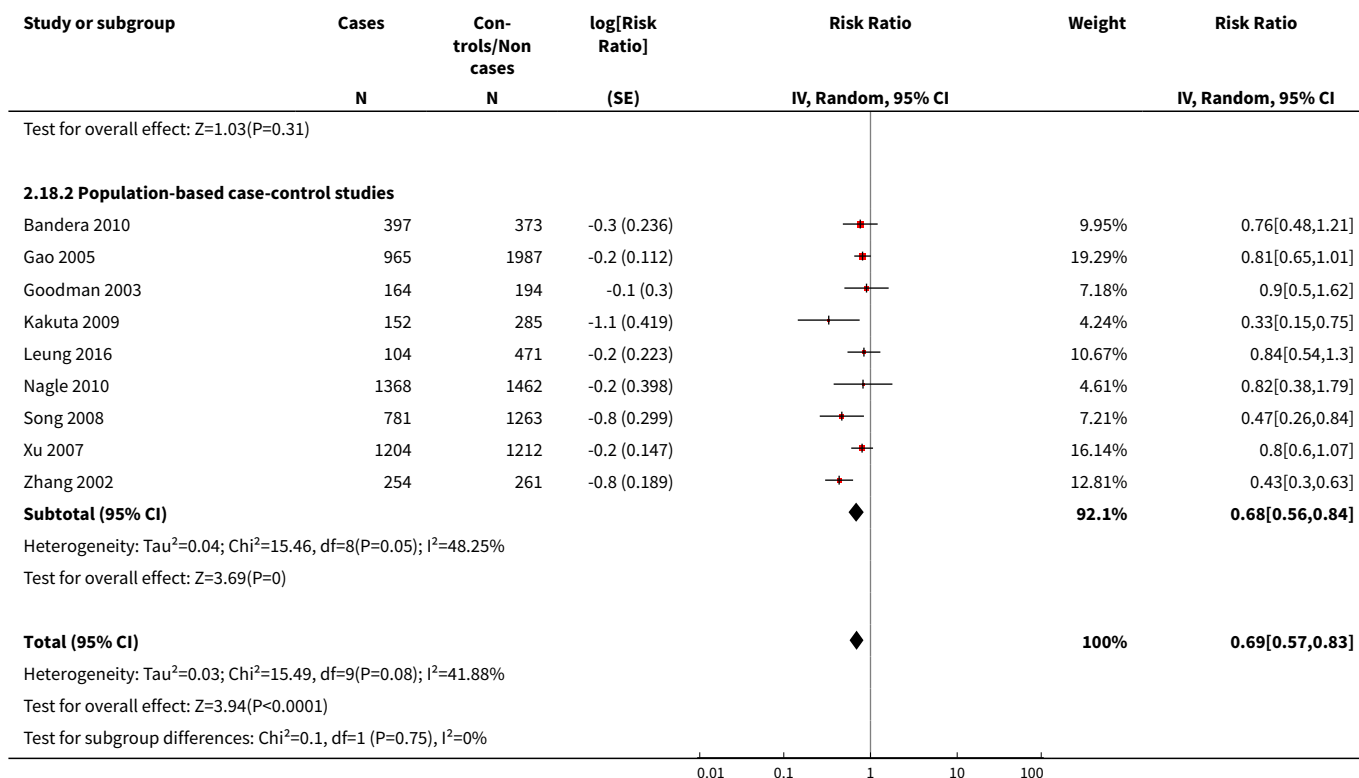


Analysis 2.17. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 17 Breast cancer.

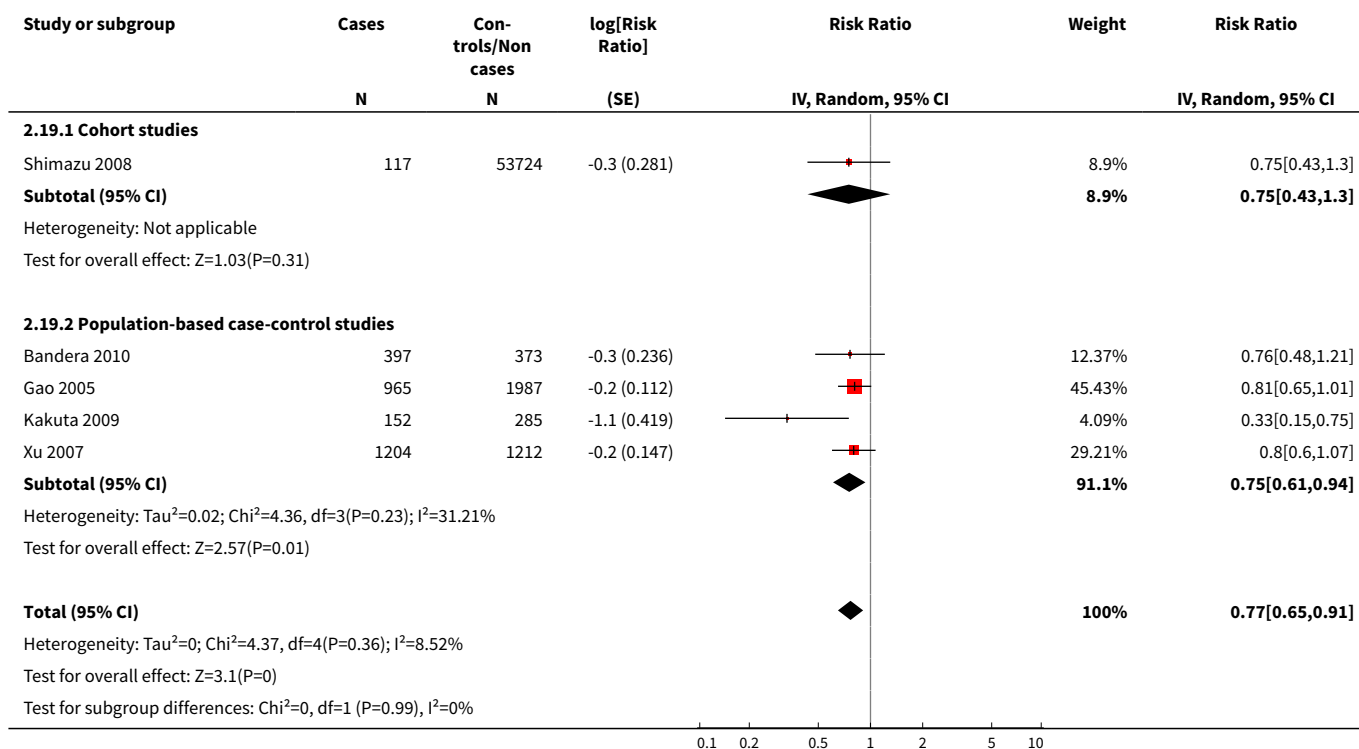


Analysis 2.18. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 18 Gynaecological cancer.

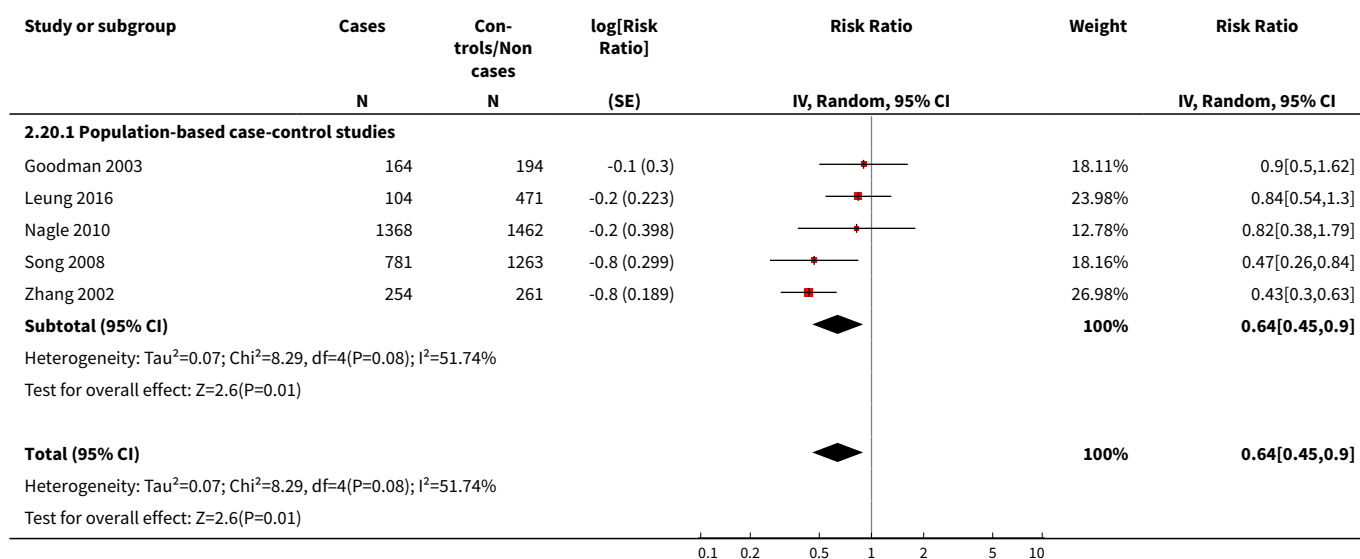




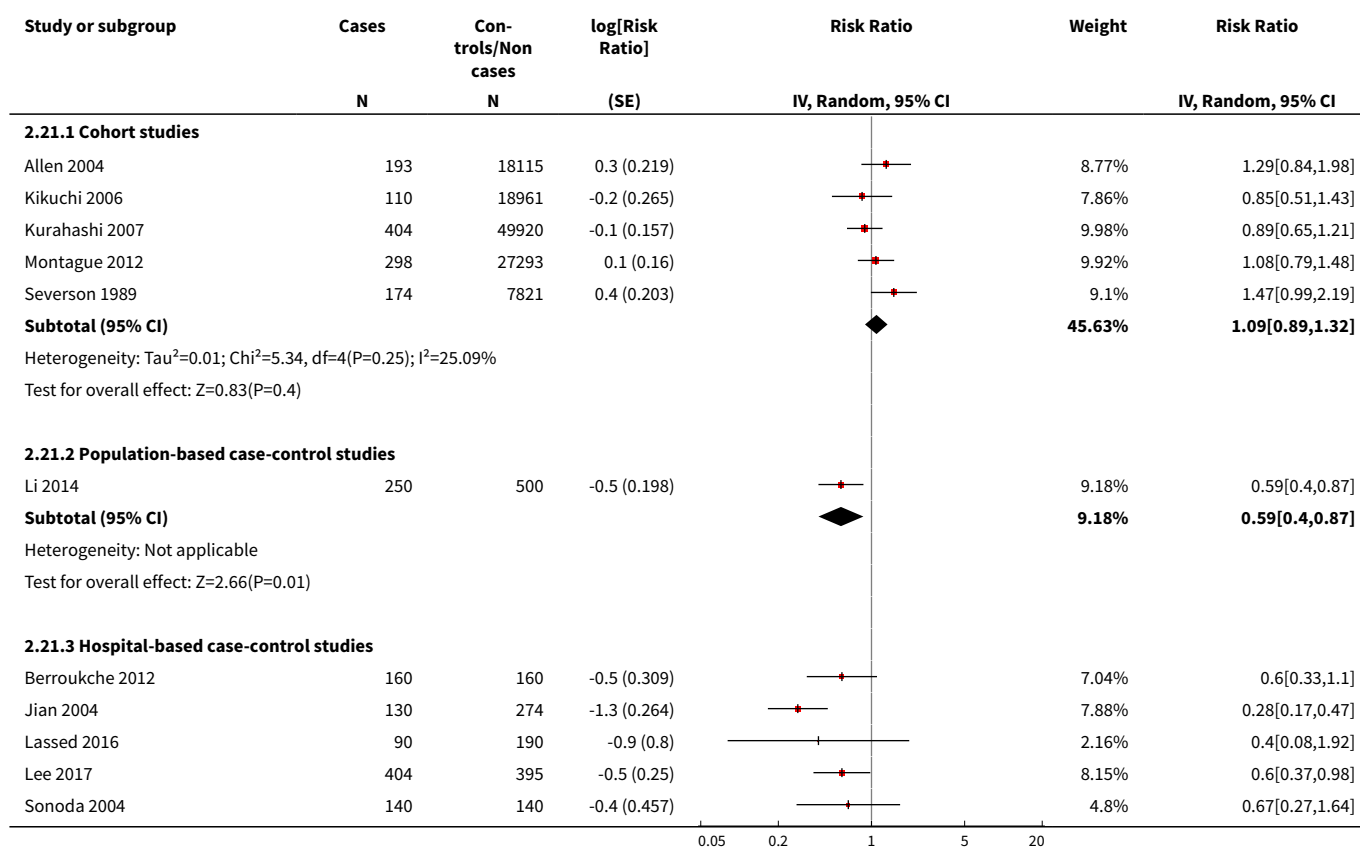
Analysis 2.19. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 19 Endometrial cancer.

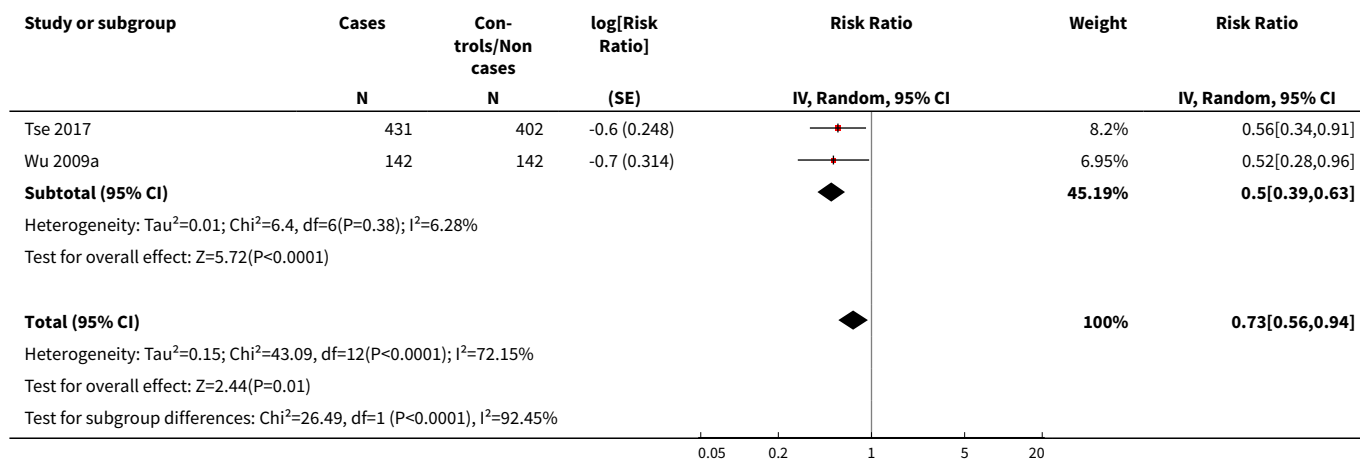


Analysis 2.20. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 20 Ovarian cancer.

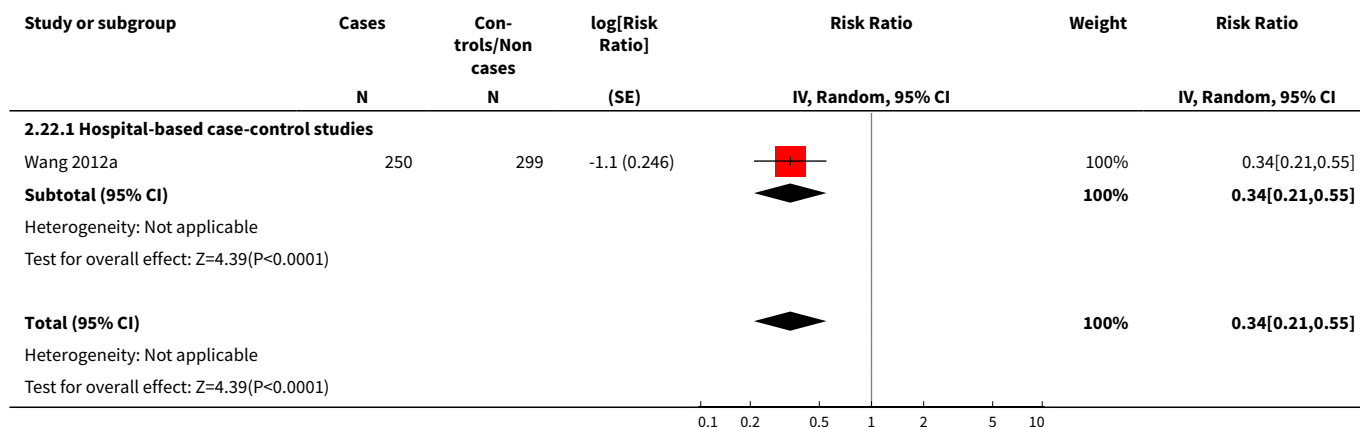


Analysis 2.21. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 21 Prostate cancer.

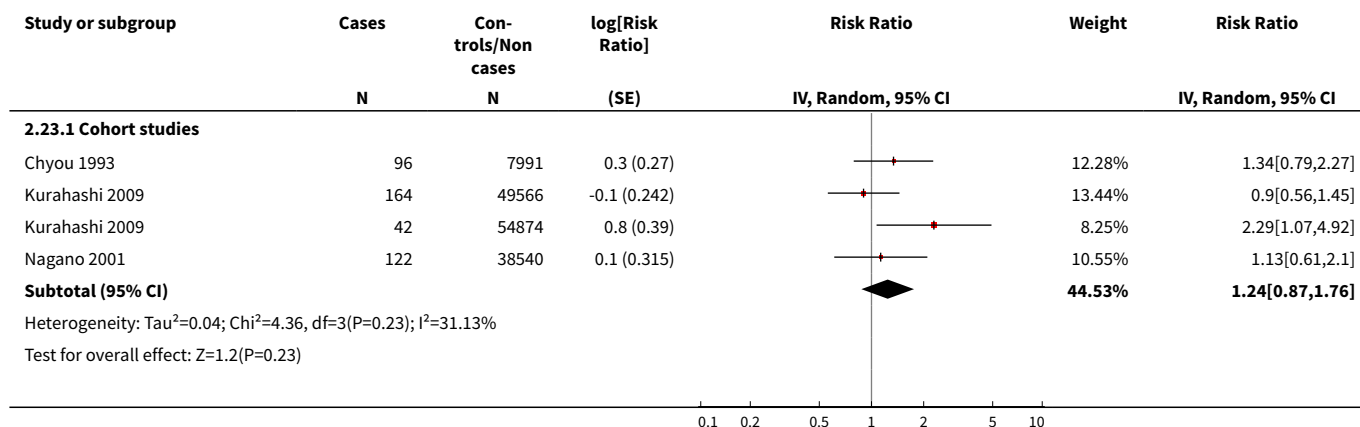


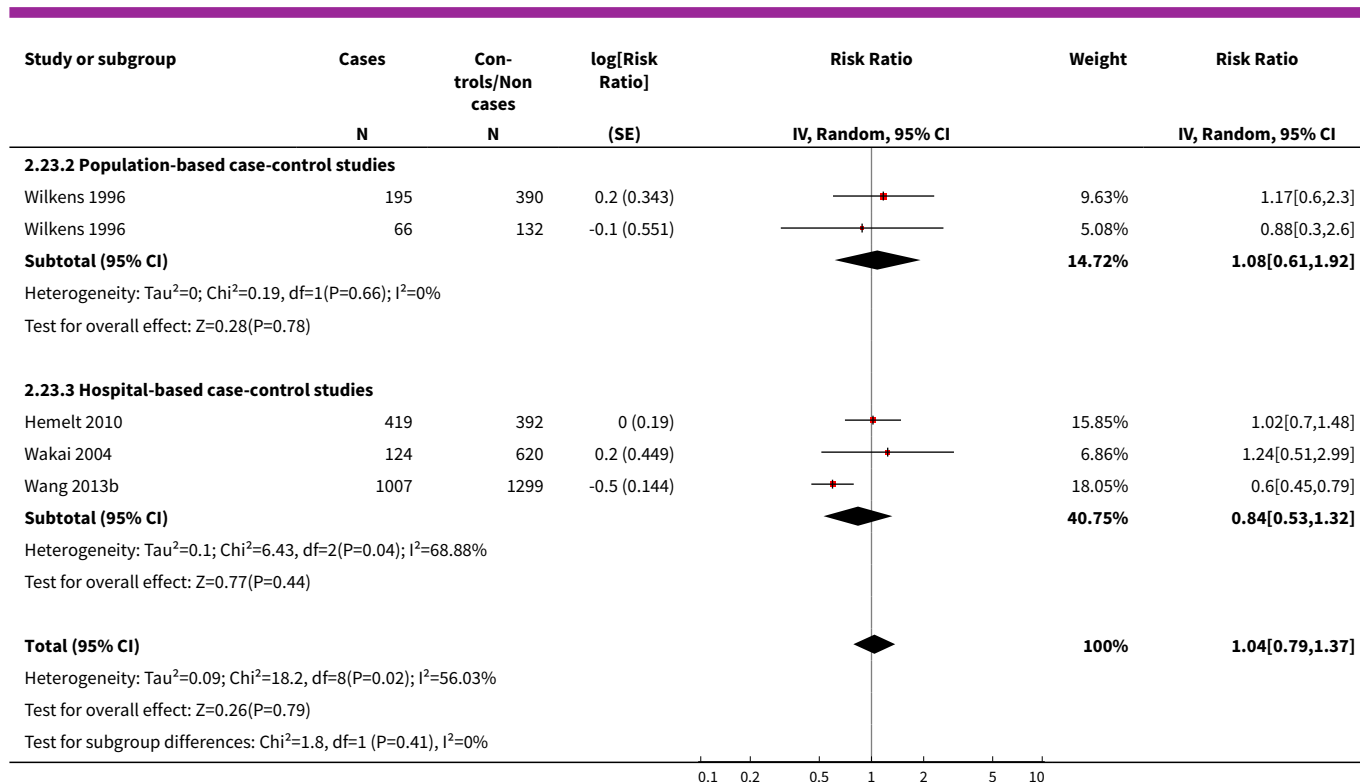


Analysis 2.22. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 22 Renal cancer.

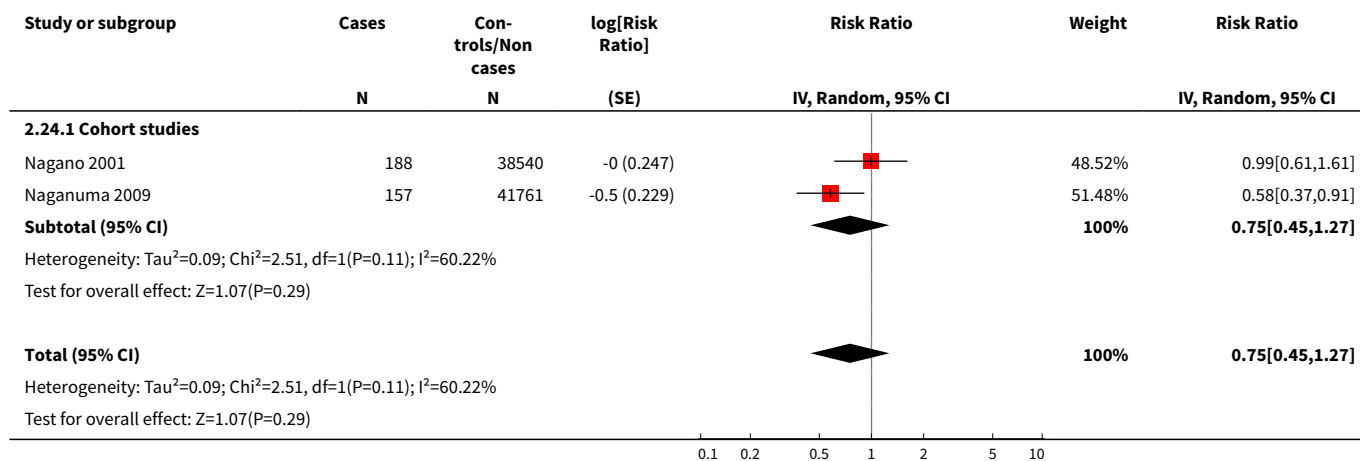


Analysis 2.23. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 23 Urinary tract cancer.

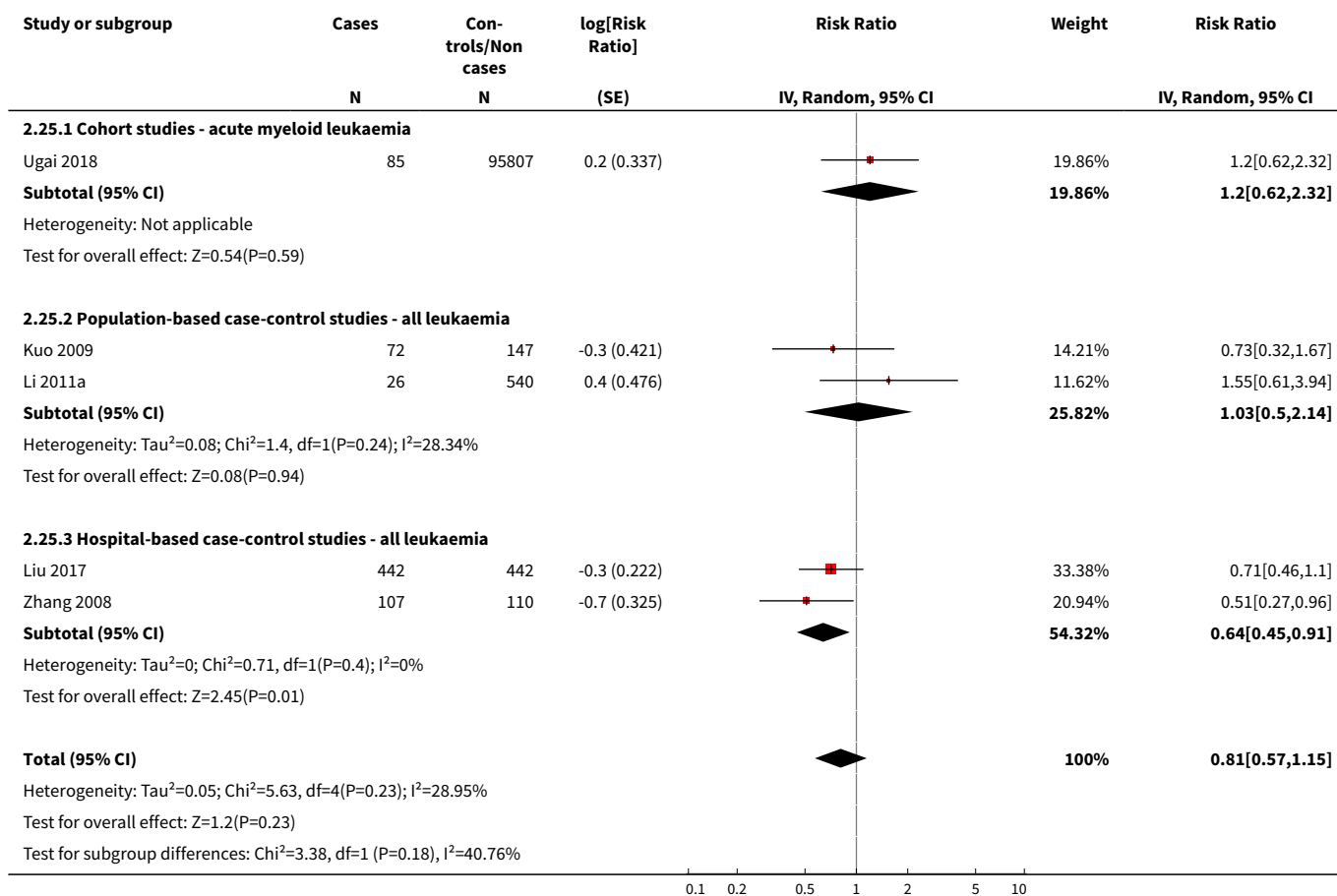




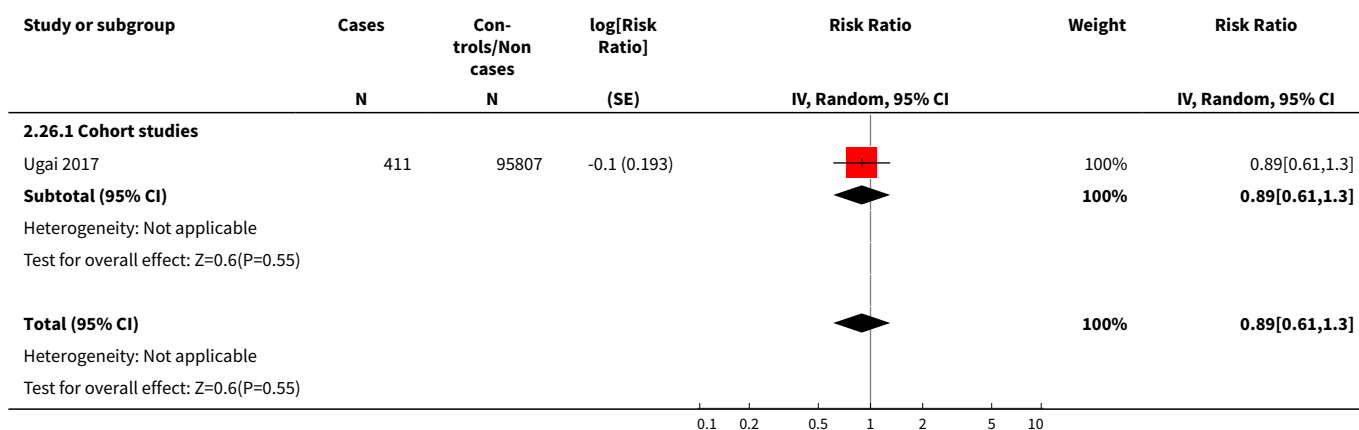
Analysis 2.24. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 24 Hematopoietic cancer.



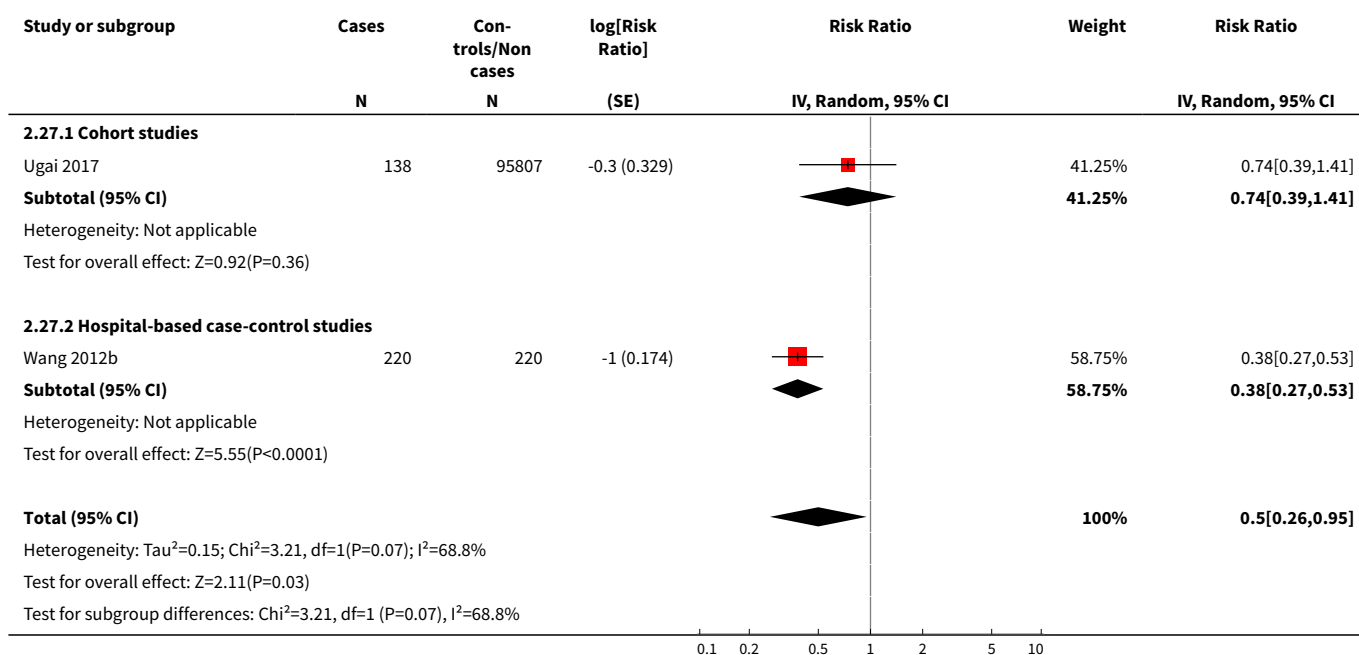
Analysis 2.25. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 25 Leukaemia.



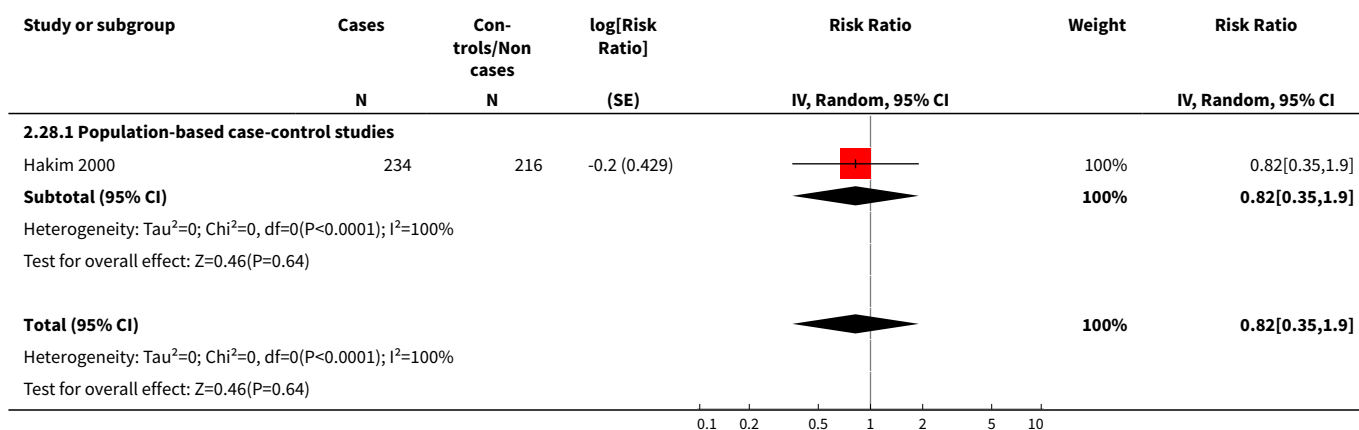
Analysis 2.26. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 26 Lymphoma.



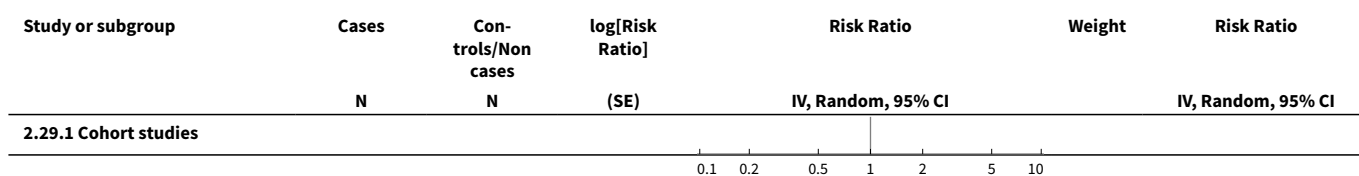
Analysis 2.27. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 27 Multiple myeloma.

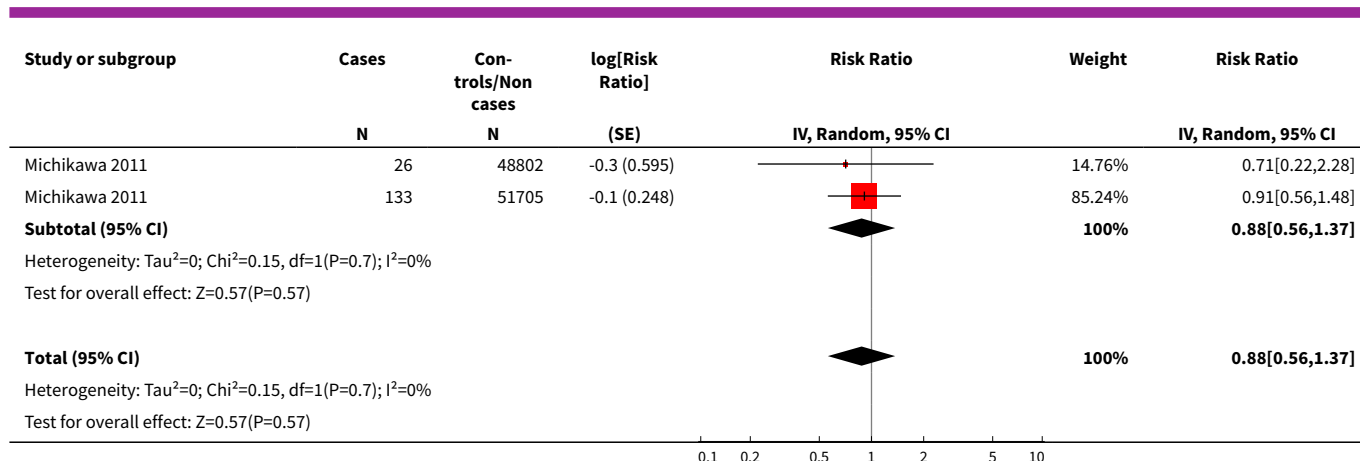


Analysis 2.28. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 28 Non-melanoma skin cancer.

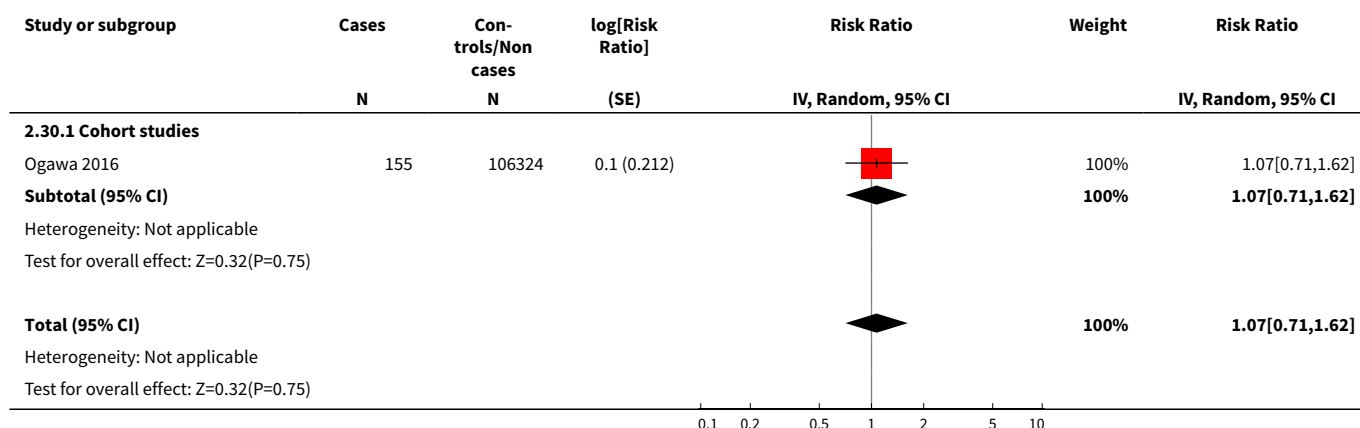


Analysis 2.29. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 29 Thyroid cancer.





Analysis 2.30. Comparison 2 Nonexperimental studies: highest versus lowest green tea exposure, Outcome 30 Brain cancer.



ADDITIONAL TABLES

Table 1. Summary characteristics of experimental studies

Study	Country	Target cancer	Outcomes	Partici- pants	Intervention	Duration
Bettuzzi 2006	Italy	Prostate cancer	Prostate cancer inci- dence LUTS PSA values QoL Safety data	60 men	Green tea total catechins 600 mg/day = EGCG: ~300 mg/day	12 months
Dostal 2015	USA	Breast cancer	Breast cancer biomark- ers	1075 women	Green tea total catechins: 1315 (± 116) mg/day	12 months

Table 1. Summary characteristics of experimental studies (Continued)

			Circulating F2-iso-prostane levels		= EGCG: 843 (± 44) mg/day	
			Oestrogen metabolite levels			
			Non-melanoma skin cancer			
			Uterine cancer			
			Safety data			
Dryden 2013	USA	-	Ulcerative disease activity	20 men and women	Green tea extracts: Polyphenon E = EGCG: 200 mg or 400 mg/day	56 days
			QoL			
			Safety data			
Garcia 2014	USA	Cervical cancer	Oncogenic HPV clearance	98 women	Green tea extracts: Polyphenon E = EGCG: 800 mg/day	4 months
			CIN1 clearance			
			Safety data			
Garland 2006	USA	Lung cancer	Biomarkers of oxidative stress	178 (89 men and 89 women)	Green tea extracts: Polyphenon E = EGCG 800 mg/day	6 months
			Safety data			
Kumar 2015	USA	Prostate cancer	Prostate cancer incidence	97 men	Green tea extracts: Polyphenon E = EGCG: 400 mg/day	12 months
			Safety data			
Lane 2018	UK	Prostate cancer	PSA levels	88 men	Green tea extracts = EGCG: 600 mg/day	6 months
			Clinical outcome (weight and blood pressure)			
			Safety data			
Micali 2017	Italy	Prostate cancer	Prostate cancer incidence	60 men	Green tea extracts 600 mg = EGCG: 300 mg/day	12 months
			PSA levels			
			QoL			
			Safety data			
Roshdy 2013	Egypt	Uterine fibroids	Severity of symptoms	39 women	Green tea extracts = EGCG: ~400 mg/day	4 months
			QoL			
			Safety data			
Sinicrope 2017	USA	Colon cancer	Change in rectal aberrant crypt foci	39 (14 men)	Green tea extracts = EGCG: 400 mg/day	6 months

Table 1. Summary characteristics of experimental studies (Continued)

		Safety data		(Continued) and 25 women)		
Tsao 2009	Japan	Oral cancer	Histological response Safety data	41 (19 men and 22 women)	Green tea extracts 500, 750 or 1000 mg/day	12 weeks
Shannon 2010	USA	Prostate cancer	Prostate cancer incidence Immunohistochemical response	67 men out of 120 planned	Green tea polyphenols = EGCG ~600 mg/day)	12 weeks
NCT01496521	China	Oesophageal cancer	Oesophageal cancer incidence Occurrence of high grade dysplasia Invasive oesophageal squamous cell carcinoma	Not reported	Tea polyphenols 600 mg/day	12 months

EGCG: (-)-epigallocatechin-3-gallate; **CIN:** cervical intraepithelial neoplasia; **HPV:** human papillomavirus **LUTS:** lower urinary tract symptoms; **PSA:** prostate-specific antigens; **QoL:** quality of life

Table 2. Summary characteristics of cohort studies

Study	Country	Cohort	Cancer	Outcome	Participants	Cases
Allen 2004	Japan	Life Span Study	Prostate	Incidence	18,115 men	193
Chyou 1993	USA	Honolulu Heart Program	Bladder	Incidence	7991 men	96
Dai 2010	China	Shanghai Women's Health Study	Breast	Incidence	72,861	614
Fujino 2002 in: Inoue 2009a	Japan	JACC Study	Stomach	Incidence	44,930	379
Galanis 1998	USA	Hawaii Health Surveillance Program	Stomach	Incidence	11,907	108
Hoshiyama 2002 in: Inoue 2009a	Japan	JACC Study	Stomach	Mortality	44,930	359
Ide 2007	Japan	JACC Study	Oral	Incidence	50,221	37
Inoue 2009a	Japan	JACC, JPHC-I, JPHC-II, MIYAGI, 3-pref MIYAGI, and 3-pref AICHI Studies	Stomach	Incidence	219,080	3577
Inoue 2009b	Japan	JPHC-II Study	Liver	Incidence	18,815	110

Table 2. Summary characteristics of cohort studies (Continued)

Ishikawa 2006	Japan	MIYAGI and 3-pref MIYAGI Studies	Oesophageal	Incidence	26,723	78
Iwai 2002	Japan	JACC Study	Any cancer	Mortality	2855	31
Iwasaki 2010a	Japan	JPHC-I and JPHC-II Studies	Breast	Incidence	67,422	581
Iwasaki 2010b in: Iwasaki 2010a	Japan	JPHC-I and JPHC-II Studies	Breast	Incidence	67,422	144
Key 1999	Japan	Life Span Study	Breast	Incidence	34,765	405
Khan 2004	Japan	Public Health Centers in Hokkaido Prefecture	Any cancer	Mortality	3158	243
			Lung			51
			Stomach			51
			Colorectal			29
			Pancreatic			25
Kikuchi 2006	Japan	Ohsaki Cohort Study	Prostate	Incidence	18,961	110
Koizumi 2003 in: Inoue 2009a	Japan	MIYAGI and 3-pref MIYAGI Studies	Stomach	Incidence	65,915	733
Kurahashi 2007	Japan	JPHC-I and JPHC-II Studies	Prostate	Incidence	49,920	404
Kurahashi 2009	Japan	JPHC-I and JPHC-II Studies	Bladder	Incidence	104,440	206
Kuriyama 2006	Japan	Ohsaki Cohort Study	Any cancer	Mortality	40,530	1134
			Lung			218
			Stomach			193
			Colorectal			132
Lee 2007	Japan	JPHC-I and JPHC-II Studies	Colorectal	Incidence	96,162	1158
Li 2008	Japan	Ohsaki Cohort Study	Lung	Incidence	41,440	302
Li 2018	China	Kailuan Cohort	Lung	Incidence	103,010	964
Lin 2008	Japan	JACC Study	Pancreatic	Mortality	77,850	292
Liu 2016	China	Chinese Prospective Smoking Study	Any cancer	Mortality	164,681	7002
Luo 2007	Japan	JPHC-I and JPHC-II Studies	Pancreatic	Incidence	102,137	233
Makiuchi 2016	Japan	JPHC-I and JPHC-II Studies	Biliary tract	Incidence	140,420	271
Michikawa 2011	Japan	JPHC-I and JPHC-II Studies	Thyroid	Incidence	100,507	159
Montague 2012	China	Singapore Chinese Health Study	Prostate	Incidence	27,293	298

Table 2. Summary characteristics of cohort studies (Continued)

Nagano 2001	Japan	Life Span Study	Any cancer and several specific types	Incidence	38,540	4049
Naganuma 2009	Japan	Ohsaki Cohort Study	Hematopoietic	Incidence	41,761	157
Nakachi 2000	Japan	Saitama Prefecture	Any cancer	Incidence	8552	488
Nakamura 2011	Japan	Takayama and Gifu Prefectures	Pancreatic	Mortality	30,826	52
Nechuta 2012	China	Shanghai Women's Health Study	Digestive system	Incidence	67,230	1239
Oba 2006	Japan	Takayama and Gifu Prefectures	Colon	Incidence	30,836	213
Odegaard 2015	China	Singapore Chinese Health Study	Any cancer	Mortality	52,584	4092
Ogawa 2016	Japan	JPHC-I and JPHC-II Studies	Brain	Incidence	106,324	155
Saito 2015	Japan	JPHC-I and JPHC-II Studies	Any cancer	Mortality	90,914	5327
Sasazuki 2004 in: Inoue 2009a	Japan	JPHC-I and JPHC-II Studies	Stomach	Incidence	72,943	892
Sauvaget 2005 in: Nagano 2001	Japan	Life Span Study	Stomach	Incidence	38,576	1270
Severson 1989	USA	Honolulu Heart Program	Prostate	Incidence	7821	174
Shimazu 2008	Japan	JPHC-I and JPHC-II Studies	Endometrial	Incidence	53,724	117
Sun 2007	China	Singapore Chinese Health Study	Colorectal	Incidence	61,320	845
Suzuki 2004	Japan	MIYAGI and 3-pref MIYAGI Studies	Breast	Incidence	35,004	222
Suzuki 2005	Japan	MIYAGI and 3-pref MIYAGI Studies	Colorectal	Incidence	65,915	516
Suzuki 2009	Japan	Prospective Shizuoka Elderly Cohort	Any cancer	Mortality	12,251	400
			Stomach			68
			Lung			88
			Colorectal			43
Tamura 2018	Japan	Takayama and Gifu Prefectures	Liver	Incidence	30,824	172
Tsubono 2001 in: Inoue 2009a	Japan	3-pref MIYAGI Study	Stomach	Incidence	26,311	419
Ugai 2017	Japan	JPHC-I and JPHC-II Studies	Lymphoma	Incidence	95,807	411

Table 2. Summary characteristics of cohort studies (Continued)

			Multiple myelo- ma			138
Ugai 2018	Japan	JPHC-I and JPHC-II Studies	Acute myeloid leukaemia	Incidence	95,807	85
Ui 2009	Japan	Ohsaki Cohort Study	Liver	Incidence	41,761	247
Yang 2007 in: Nechuta 2012	China	Shangai Women's Health Study	Colorectal	Incidence	69,710	256
Yang 2011a	China	Shangai Men's Health Study	Colorectal	Incidence	60,567	243
Zhao 2017	China	Shangai Women's Health Study and Shangai Men's Health Study	Any cancer	Incidence	115,954	3210

Table 3. Summary characteristics of case-control studies

Study	Country	Study type	Cancer	Cases/ Controls	Sex
Bandera 2010	USA	PCC	Endometrial	397/373	Women
Berroukche 2012	Algeria	HCC	Prostate	160/160	Men
Bonner 2005	China	PCC	Lung	122/121	Both
Chen 2011	China	HCC	Oesophageal	150/300	Both
Chen 2015 in: Chen 2017a	China	HCC	Oral	203/572	Both
Chen 2016 in: Chen 2017a	China	HCC	Oral	207/480	Women
Chen 2017a	China	HCC	Oral	586/1024	Both
Fu 2013	China	HCC	Oral	723/857	Both
Gao 1994	China	PCC	Oesophageal	902/1312	Both
Gao 2005	China	PCC	Endometrial	955/1087	Women
Gavrilas 2018	Romania	HCC	Colorectal	151/151	Both
Goodman 2003	USA	PCC	Ovarian	164/194	Women
Goto 1990	Japan	PCC	Pancreatic	71/142	Both
Green 2014	Australia	PCC	Colorectal	854/948	Both
Hakim 2000	USA	PCC	Skin	243/216	Both
Han 2008	China	PCC	Lung	523/1924	Both

Table 3. Summary characteristics of case-control studies (Continued)

Hemelt 2010	China	HCC	Bladder	419/392	Both
Hoshiyama 1992	Japan	PCC	Stomach	251/483	Men
Hoshiyama 2004 in: Inoue 2009a	Japan	Nested case-cohort	Stomach	151/256	Both
Hsu 2012	China	PCC	Nasopharyngeal	368/317	Both
Huang 1999	Japan	HCC	Stomach	887/28,619	Both
Inoue 1994 in: Huang 1999	Japan	HCC	Stomach	668/668	Both
Inoue 1998	Japan	HCC	Oesophageal Stomach Colorectal	1706/21,128	Both
Inoue 2008	China	PCC	Breast	380/662	Women
Islami 2009	Iran	PCC	Oesophageal	266/571	Both
Iwasaki 2014	Japan	HCC	Breast	369/405	Both
Ji 1996	China	PCC	Stomach	1029/1347	Both
Ji 1997	China	PCC	Colorectal Pancreatic	2156/1552	Both
Jia 2016	China	CC	Lung Mesothelioma	53/106	Both
Jian 2004	China	HCC	Prostate	130/274	Men
Jin 2013	China	PCC	Lung	799/2020	Both
Kakuta 2009	Japan	PCC	Endometrial	152/285	Women
Kato 1990	Japan	HCC	Colorectal	221/578	Both
Kato 1990a in: Huang 1999	Japan	HCC	Stomach	427/3014	Both
Kono 1988	Japan	PCC/HCC	Stomach	139/278 139/2575	Both
Kubik 2004 in: Kubik 2008	Czech Republic	HCC	Lung	435/1710	Women
Kubik 2008	Czech Republic	HCC	Lung	1096/2966	Both
Kuo 2009	China	PCC	Leukaemia	93/223	Both

Table 3. Summary characteristics of case-control studies (Continued)

Lassed 2016	Algeria	HCC	Prostate	90/190	Men
Lee 2017	China	HCC	Prostate	404/395	Men
Lei 1994	China	HCC	Lung	792/792	Both
Le Marchand 2000	USA	PCC	Lung	582/582	Both
Leung 2016	China	PCC	Ovarian	104/471	Women
Li 2011a	China	PCC/HCC	Any cancer	425/540	Both
			Breast	425/540	
			Colorectal		
			Leukaemia		
Li 2011b in: Mu 2003	China	PCC	Liver	204/415	Both
Li 2014	China	PCC	Prostate	250/500	Men
Li 2016	China	HCC	Breast	756/789	Women
Lin 2012	China	HCC	Lung	170/340	Both
Liu 2010	China	PCC	Stomach	641/1847	Both
Liu 2017	China	HCC	Leukaemia	442/442	Both
Mao 2011	China	HCC	Stomach	200/200	Both
Mizoo 2013	Japan	HCC	Breast	472/464	Women
Mizuno 1992	Japan	HCC	Pancreatic	124/124	Both
Mu 2003	China	HCC	Stomach	628/415	Both
			Liver		
			Oesophagus		
Mu 2005 in: Mu 2003	China	PCC	Stomach	206/415	Both
Nagle 2010	Australia	PCC	Ovarian	1368/1462	Women
Oze 2014	Japan	PCC	Upper digestive system	922/2883	Both
Peng 2013	China	PCC	Colorectal	672/672	Both
Peng 2015	China	PCC	Oesophageal	285/570	Both
Ruan 2010	China	HCC	Nasopharyngeal	1355/1459	Both
Setiawan 2001	China	PCC	Stomach	133/433	Both
Shrubsole 2009	China	PCC	Breast	3371/3380	Women

Table 3. Summary characteristics of case-control studies (Continued)

Song 2008	USA	PCC	Ovarian	781/1263	Women
Sonoda 2004	Japan	HCC	Prostate	140/140	Men
Tajima 1985	Japan	HCC	Stomach	93/93	Both
Takezaki 2000	Japan	HCC	Pharynx Oesophageal	346/11,936	Both
Takezaki 2001	Japan	HCC	Lung	945/4153	Both
Tewes 1990	China	HCC	Lung	200/200	Women
Tse 2017	China	HCC	Prostate	431/402	Men
Wakai 2004	Japan	HCC	Bladder	124/620	Both
Wang 1999	China	PCC	Oesophageal and stomach	209/209	Both
Wang 2006	China	PCC	Oesophageal	107/107	Both
Wang 2007	China	PCC	Oesophageal	355/209	Both
Wang 2012a	China	HCC	Renal	250/299	Both
Wang 2012b	China	HCC	Multiple myeloma	220/220	Both
Wang 2012c	China	PCC	Pancreatic	908/1067	Both
Wang 2013a	China	HCC	Breast	157/314	Women
Wang 2013b	USA	HCC	Bladder	1007/1299	Both
Wang 2015	China	HCC	Stomach	160/320	Both
Wilkins 1996	USA	PCC	Bladder	261/522	Both
Wu 2003	USA	PCC	Breast	501/594	Women
Wu 2009a	China	HCC	Prostate	142/142	Men
Wu 2009b	China	PCC	Oesophageal	1,502/3,879	Both
Xu 2007	China	PCC	Endometrial	1204/1212	Women
Xu 2013	China	PCC	Lung	1225/1234	Both
Yan 2016	China	PCC	Oral	593/1128	Both
Ye 1998	China	PCC	Stomach	272/544	Both
Yu 1995	China	PCC	Stomach	711/711	Both
Zhang 2002	China	PCC/HCC	Ovarian	254/261 254/340	Women

Table 3. Summary characteristics of case-control studies (Continued)

Zhang 2007	China	HCC	Breast	1009/1009	Women
Zhang 2008	China	HCC	Leukaemia	107/110	Both
Zheng 1993	China	HCC	Oral	404/404	Both
Zhong 2001	China	PCC	Lung	649/675	Both

HCC: hospital-based case-control study; **PCC:** population-based case-control study

Table 4. Detailed summary results of included experimental studies

References	Detailed results
Bettuzzi 2006	<p>Prostate cancer incidence</p> <p>Bettuzzi 2006: one prostate cancer case in the treatment group and 9 cases in the placebo group</p> <p>Brausi 2008 reported a longer follow-up on a subset of participants: 13 cases in the intervention group and 9 in the placebo group, all after the suspension of the treatment. Further 3 cases of prostate cancer were diagnosed, 1 in the treatment group and 2 cases in the placebo group</p> <p>LUTS: a slightly higher decrease in IPSS was found in the treatment group from 11.12 to 9.12, than in the placebo group, from 8.27 to 7.00</p> <p>PSA levels: no substantial difference in the PSA levels between groups</p> <p>QoL: QoL score assessed after 3 months decreased in the intervention group (from 2.06 to 1.76), while slightly increased in the placebo group (from 1.30 to 1.47)</p> <p>Safety data: 2 cases of diarrhoea in each arm, reported as very mild disorders</p>
Dostal 2015	<p>Dostal 2015</p> <p>Follow-up: 59 participants (39 in the intervention and 20 in the control group) stopped taking study product but remained in the study. Participants stopped mainly due to adverse symptoms (N = 50).</p> <p>Dropout: 138 participants withdrew from the study due to request (N = 93), adverse event (N = 22), protocol violation (N = 10), lost to follow-up (N = 10), investigator judgment (N = 3) and death (N = 1). 18 of 22 (82%) who withdrew to adverse events were in the intervention group.</p> <p>Cancer incidence: 2 participants in the placebo group were diagnosed with uterine cancer after randomisation, 1 woman 1 day after beginning study product (for this reason not included in the risk analysis) and the other during the last month of participation. 2 women (1 in the treatment and 1 in the placebo group) reported a diagnosis of non-melanoma skin cancer during the study.</p> <p>Safety data: total 1141 adverse events documented in the intervention group and 1031 in the placebo group. The most common events were infections; gastrointestinal disorders (nausea, indigestion, diarrhoea, constipation, vomiting, increased gassiness, abdominal pain, increased acid reflux); vascular disorders; respiratory, thoracic and mediastinal disorders; general disorders and administration site condition; musculoskeletal and connective tissue disorders, mainly of grade 1 and 2 of severity. Higher adverse effects in intervention groups were skin and subcutaneous tissue disorders (mainly rash or allergic skin reaction), ALT elevations and nausea and partially indigestion and constipation. Groups did not differ in severity of adverse effects.</p> <p>Yu 2017 in: Dostal 2015</p>

Table 4. Detailed summary results of included experimental studies (Continued)

	<p>Follow-up: in the present report data on 513 men in the intervention group and 508 women in the control group are reported, due to missing data of ALT at baseline (N = 3) or during follow-up (N = 51).</p> <p>Treatment increased both ALT and AST, whereas no increase was reported in the control group. AKP and total bilirubin did not increase in both treatment and control group.</p> <p>Webster 2018 in: Dostal 2015</p> <p>QoL: data on overall QoL of recruited women. QoL assessed using MENQOL scale showed overall scores higher in women aged 50-54.9 years</p>
Dryden 2013	<p>Follow-up: 10 participants randomised in cohort 1: 8 to treatment group (low-dose) and 2 to placebo; 10 participants randomised in cohort 2: 8 to treatment group (high-dose) and 2 in placebo</p> <p>Safety data: no participants required termination due to serious adverse event. 1 participant in the treatment group required hospitalisation due to disease progression. Higher incidence of heart-burn, increased thirst and increased diarrhoea were found in treatment group.</p> <p>QoL: measured with the Inflammatory Bowel Disease Questionnaire, QoL generally inversely correlated with the activity of the disease.</p>
Garcia 2014	<p>Follow-up: 82 participants (41 in the intervention and 41 in the control group) analysed for primary outcome</p> <p>Primary outcome</p> <p>Complete response (negative high-risk HPV and normal histopathology) was noted in 7 (17.1%) and 6 (14.6%) for the treatment and control group, respectively</p> <p>Partial response (negative high-risk HPV and evidence of low-grade CIN) occurred more frequently in the control group, 1 (2.4%) vs. 6 (14.6%)</p> <p>Progression/negative response (persistence of high-risk HPV+ and worsening of CIN or invasive cancer) was more common in the treatment group, 6 (14.6%) vs 3 (7.3%)</p> <p>No response (persistence of high-risk HPV+ with no progression similar to intervention and control group, 27 (65.9%) vs. 26 (63.4%)</p> <p>Secondary outcome</p> <p>Safety data: 163 and 136 adverse events in the control and in the intervention group. 2 serious events occurred in 1 participant in the placebo group. 1 and 2 participants in the control and in the intervention group respectively discontinued the study due to adverse events</p> <p>Adverse events were all Grade 1 and Grade 2, except 1 Grade 3 ALT elevation and one Grade 3 back pain in the Polyphenon E arm and one Grade 3 ALT and AST elevation in the placebo arm. Nausea was reported more frequently by participants receiving Polyphenon E compared to those receiving placebo, 32.0% vs 18.8%, respectively, as well as elevated ALT/AST, 10.0%/8.0% and 2.1%/2.1%, respectively, as well as incidence of dizziness (14.0% vs 6.3%)</p>
Garland 2006	<p>Primary outcome</p> <p>Urinary 8-hydroxydeoxyguanosine levels increased in Group A (+2.36) and B (+5.20), while decreased in Group C (-1.08)</p> <p>Urinary 8-F2-isoprostanes levels decreased in both Group A (-39.87) and B (-35.80), with no change in Group C (0.71)</p> <p>Secondary outcome</p> <p>Safety data: no significant adverse events were reported, including no liver toxicity, but higher frequency of nausea, constipation and gastrointestinal reflux disease detected</p>

Table 4. Detailed summary results of included experimental studies (Continued)

Kumar 2015	<p>Prostate cancer incidence: total 14 cases at the end of the study (1 year): 5 prostate cancer cases in the treatment group and 9 cases in the control group.</p> <p>Prostate cancer + ASAP: total 13 (8 + 5) cases at the end of the study (1 year): 3 (3 + 0) prostate cancer cases in the treatment group and 10 (5 + 5) cases in the control group.</p> <p>No significant differences between the treatment and placebo arms were observed in LUTS and QoL scores from baseline to end of study.</p> <p>Safety data: 26 adverse effects (14 in the treatment group and 12 in control group censored at 6 months due to adverse effects), 2 (1 + 1) between 6 and 12 months and 55 (29 + 26) adverse effects at 12 months. Higher possible and probable events in the treatment arm, all but 1 of grade 1 and 2. Total 381 adverse effects, 212 in the treatment group and 169 in the control group. 11 and 7 in treatment and control groups respectively met off-study criteria due to adverse effects. Higher incidence of coagulation toxicity, gastrointestinal and pain reported in the treatment group as well as toxicity to skin and musculoskeletal/soft tissue.</p> <p>Data on adverse effects also reported in Kumar 2016.</p> <p>Data on body weight or abdominal obesity in Kumar 2017</p>
Lane 2018	<p>Primary outcome</p> <p>Risk for prostate cancer NR</p> <p>Secondary outcomes</p> <p>PSA levels did not differ between green tea groups after 6 months of treatment</p> <p>Safety data: most incident adverse events were nocturia and insomnia that were higher in green tea drink (46% and 22%) and green tea capsules (50% and 21%) compared to placebo (33% and 8%). Hypertension was similar across groups, while fatigue was higher in green tea capsules (24%) and placebo (18%) than green tea drink (5%). Less frequent adverse events were cramp, shortness of breath, heartburn, headache and diarrhoea.</p>
Micali 2017	<p>Follow-up: 44 (22 in the intervention and 22 in the control group) completed the study. 16 participants (8 in the intervention and 8 in the control group) chose to withdraw from the study.</p> <p>Primary outcome</p> <p>Prostate cancer incidence</p> <p>After 6 months, 2/22 (9%) and 4/22 (18%) prostate cancer occurred in the treatment and control group, respectively. After 1 year total prostate cancer cases were 4/22 (18%) in both groups</p> <p>Secondary outcomes</p> <p>Safety data: only Grade 1 and 2 side effects occurred, including nausea, emesis, abdominal pain, insomnia, fatigue and diarrhoea</p> <p>Mean (SD) PSA levels decreased from 5.9 (2.3) ng/mL to 3.8 (1.8) in treatment group and increased from 4.7 (2.5) to 5.8 (2.6) in control group</p> <p>LUTS and QoL scores reported to be improved after 1-year study but results were NR.</p>
Roshdy 2013	<p>Primary outcome</p> <p>Total fibroid volume decreased by an average of 32.6% in the treatment group and increased by an average of 24.2% in the placebo group</p> <p>Secondary outcomes</p> <p>HRQoL</p>

Table 4. Detailed summary results of included experimental studies (Continued)

	<p>Scale 1: mean change in score for the intervention group of -25.28 (SD ± 17.38) mean change of 7.1 (SD ± 15.5) in placebo group</p> <p>Scale 2: overall increase of 20.7 (SD ± 21) in the percentile scores for HRQoL in the treatment group and 2.19 (SD ± 17.4) in the placebo group</p> <p>Safety data: none of the participants reported any adverse events of any grade throughout the whole study period.</p>
Sinicrope 2017	<p>Percent change in rectal ACF did not differ between the study arms after 6 months of treatment</p> <p>Safety data: similar adverse events between the study arms. 1 participant in placebo arm reported grade 3 adverse event and 2 participants (1 in each arm) reported grade 2+ adverse events, namely elevated AST, ALT in the treatment group</p>
Tsao 2009	<p>Histological response</p> <p>Higher response rate in the 3 combined GTE arms (50%) versus placebo (18.2%), with dose-dependent effect: 58% in the combined higher-dose GTE arms (750 and 1000 mg/m²) versus 36.4% (GTE at 500 mg/m²) and 18.2% (placebo)</p> <p>Higher histological response rate in the 3 combined GTE arms (21.4%) vs placebo (9.1%), not dose-dependent</p> <p>Safety data: adverse events reported by 28 of the 30 (93.3%) participants in treatment groups and 9 of the 11 (81.8%) participants of control group</p> <p>The most frequently reported adverse effects are grade 1 to 2, including insomnia, headache, nausea and nervousness. The grade 3 toxicity was reported by 2 participants in Group B, namely insomnia, diarrhoea and oral/neck pain. Insomnia was the most frequent adverse event.</p>

Table 5. Detailed summary results of included nonexperimental cohort studies

References	Detailed summary results	The Newcastle-Ottawa Scale (NOS)
Allen 2004	<p>Reference category: lowest exposure</p> <p>Prostate cancer</p> <p>Intermediate exposure: RR 1.03 (95% CI 0.69-1.55)</p> <p>Highest exposure: RR 1.29 (95% CI 0.84-1.98)</p>	<p>Low risk:</p> <p>Selection: 3/4 stars since the exposed population is a highly selected group (survivors of the atomic bomb).</p> <p>Comparability: 1/2 stars, since the study did not control for smoking habits.</p> <p>Outcome: 3/3 stars, low risk</p> <p>Total score: 7/9 stars, moderate quality.</p>
Chyou 1993	<p>Urinary tract cancer</p> <p>Reference category: lowest exposure</p> <p>Highest exposure: RR 1.34 (95% CI 0.79-2.27)</p>	<p>Low risk:</p> <p>Selection: 4/4 stars, low risk</p>

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

		Comparability: 2/2 stars, low risk Outcome: 3/3 stars, low risk Total score: 9/9 stars, high quality.
Dai 2010	Reference category: lowest exposure Breast cancer Exposure assessment A: intake of green tea Highest exposure: HR 1.04 (95% CI 0.88-1.26) Exposure assessment B: dosage of green tea: Intermediate exposure 1: HR 1.07 (95% CI 0.81-1.42) Intermediate exposure 2: HR 0.98 (95% CI 0.75-1.29) Intermediate exposure 3: HR 1.00 (95% CI 0.68-1.48) Highest exposure: HR 1.18 (95% CI 0.86-1.61)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Outcome: 2/3 stars, follow-up < 5 years Total score: 8/9 stars, moderate quality.
Galanis 1998	Stomach cancer Reference category: lowest exposure All Intermediate exposure: HR 1.3 (95% CI 0.7-2.1) Highest exposure: HR 1.5 (95% CI 0.9-2.3) Men Intermediate exposure: HR 1.2 (95% CI 0.6-2.5) Highest exposure: HR 1.6 (95% CI 0.9-2.9) Women Intermediate exposure: HR 1.3 (95% CI 0.6-2.9) Highest exposure: HR 1.3 (95% CI 0.6-2.6)	Low risk: Selection: 4/4 stars, low risk Comparability: 1/2 stars, the study did not control for smoking in the overall analysis, only in men Outcome: 2/3 stars, follow-up < 5 years, low risk Total score: 7/9 stars, moderate quality.
Ide 2007	Reference category: lowest exposure Oral cancer All participants Intermediate exposure 1: HR 0.65 (95% CI 0.22-1.94) Intermediate exposure 2: HR 0.69 (95% CI 0.28-1.71) Highest exposure: HR 0.44 (95% CI 0.19-1.04) Men Intermediate exposure 1: HR 0.79 (95% CI 0.18-3.57) Intermediate exposure 2: HR 0.81 (95% CI 0.22-3.03) Highest exposure HR 0.61 (95% CI 0.18-2.06) Women Intermediate exposure 1: HR 0.51 (95% CI 0.10-2.68)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Outcome: 3/3 stars, low risk Total score: 9/9 stars, high quality.

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Intermediate exposure 2: HR 0.60 (95% CI 0.17-2.10) Highest exposure: HR 0.31 (95% CI 0.09-1.07)	
Inoue 2009a	Reference category: lowest exposure Stomach cancer Men All cohorts Intermediate exposure 1: HR 0.97 (95% CI 0.83-1.12) Intermediate exposure 2: HR 0.93 (95% CI 0.81-1.08) Highest exposure: HR 1.06 (95% CI 0.86-1.30) JPHC-I Intermediate exposure 1: HR 0.85 (95% CI 0.62-1.17) Intermediate exposure 2: HR 0.87 (95% CI 0.65-1.16) Highest exposure: HR 0.97 (95% CI 0.73-1.28) JPHC-II Intermediate exposure 1: HR 1.11 (95% CI 0.82-1.52) Intermediate exposure 2: HR 1.08 (95% CI 0.80-1.45) Highest exposure: HR 1.06 (95% CI 0.78-1.43) JACC Intermediate exposure 1: HR 0.80 (95% CI 0.59-1.08) Intermediate exposure 2: HR 0.75 (95% CI 0.57-1.00) Highest exposure: HR 0.81 (95% CI 0.63-1.05) MIYAGI Intermediate exposure 1: HR 0.90 (95% CI 0.67-1.20) Intermediate exposure 2: HR 0.87 (95% CI 0.65-1.17) Highest exposure: HR 0.88 (95% CI 0.67-1.15) 3-pref MIYAGI Intermediate exposure 1: HR 1.28 (95% CI 0.84-1.94) Intermediate exposure 2: HR 1.20 (95% CI 0.79-1.80) Highest exposure: HR 1.55 (95% CI 1.09-2.20) 3-pref AICHI Intermediate exposure 1: HR 1.27 (95% CI 0.74-2.21) Intermediate exposure 2: HR 1.22 (95% CI 0.73-2.03) Highest exposure: HR 1.60 (95% CI 0.97-2.63) Women:	Low risk: Inoue 2009a Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Outcome: 3/3 stars, low risk Total score: 9/9 stars, high quality. Fujino 2002 Selection: 4/4 stars, low risk Comparability: 1/2 stars, the study did not control for smoking Outcome: 2/3 stars, follow-up < 90%. Total score: 8/9 stars, moderate quality. Hoshiyama 2002 Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Outcome: 2/3 stars, follow-up < 90% Total score: 8/9 stars, moderate quality. Hoshiyama 2004 Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Outcome: 2/3 stars, follow-up < 90%. Total score: 8/9 stars, moderate quality. Sasazuki 2004

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

All cohorts:	Selection: 4/4 stars, low risk
Intermediate exposure 1: HR 0.90 (95% CI 0.73-1.10)	
Intermediate exposure 2: HR 0.92 (95% CI 0.76-1.11)	Comparability: 2/2 stars, low risk
Highest exposure: HR 0.79 (95% CI 0.65-0.96)	Outcome: 3/3 stars, low risk
JPHC-I	
Intermediate exposure 1: HR 0.75 (95% CI 0.45-1.25)	Total score: 9/9 stars, high quality.
Intermediate exposure 2: HR 0.90 (95% CI 0.58-1.42)	Tsubono 2001
Highest exposure: HR 0.58 (95% CI 0.36-0.95)	Selection: 4/4 stars, low risk
JPHC-II	
Intermediate exposure 1: HR 0.93 (95% CI 0.56-1.56)	Comparability: 2/2 stars, low risk
Intermediate exposure 2: HR 1.18 (95% CI 0.74-1.86)	Outcome: 3/3 stars, low risk
Highest exposure: HR 0.74 (95% CI 0.45-1.20)	Total score: 9/9 stars, high quality.
JACC	
Intermediate exposure 1: HR 1.04 (95% CI 0.71-1.53)	
Intermediate exposure 2: HR 0.85 (95% CI 0.60-1.19)	
Highest exposure: HR 0.88 (95% CI 0.64-1.21)	
MIYAGI	
Intermediate exposure 1: HR 0.81 (95% CI 0.53-1.26)	
Intermediate exposure 2: HR 0.89 (95% CI 0.59-1.35)	
Highest exposure: HR 0.67 (95% CI 0.44-1.02)	
3-pref MIYAGI	
Intermediate exposure 1: HR 0.82 (95% CI 0.45-1.49)	
Intermediate exposure 2: HR 0.72 (95% CI 0.41-1.27)	
Highest exposure: HR 0.83 (95% CI 0.51-1.35)	
3-pref AICHI	
Intermediate exposure 1: HR 1.20 (95% CI 0.49-2.95)	
Intermediate exposure 2: HR 1.29 (95% CI 0.59-2.80)	
Highest exposure: HR 1.54 (95% CI 0.72-3.28)	
Stratified data available by sex and further stratified by smoking status (never smokers and current smokers)	
Stratified data available by subsite (proximal and distal stomach cancer)	
Previous reports	
Fujino 2002	
Stomach cancer mortality	
Reference category: lowest exposure	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

Men

Intermediate exposure: RR 0.82 (95% CI 0.41-1.64)

Highest exposure: RR 1.11 (95% CI 0.75-1.63)

Women

Intermediate exposure: RR 1.74 (95% CI 0.71-4.26)

Highest exposure: RR 1.43 (95% CI 0.78-2.62)

Hoshiyama 2002

Reference category: lowest exposure

Stomach cancer mortality

Men

Intermediate exposure 1: RR 1.6 (95% CI 0.9-2.9)

Intermediate exposure 2: RR 1.1 (95% CI 0.6-1.9)

Intermediate exposure 3: RR 1.0 (95% CI 0.5-2.5)

Highest exposure: RR 1.0 (95% CI 0.5-2.0)

Women

Intermediate exposure 1: RR 1.1 (95% CI 0.5-2.5)

Intermediate exposure 2: RR 1.0 (95% CI 0.5-2.5)

Intermediate exposure 3: RR 0.8 (95% CI 0.4-1.6)

Highest exposure: RR 0.7 (95% CI 0.3-2.1)

Hoshiyama 2004

Reference category: lowest exposure

Stomach cancer

Intermediate exposure 1: RR 1.3 (95% CI 0.6-2.8)

Intermediate exposure 2: RR 1.0 (95% CI 0.5-1.9)

Intermediate exposure 3: RR 0.8 (95% CI 0.4-1.6)

Highest exposure: RR 1.2 (95% CI 0.6-2.5)

Koizumi 2003

Stomach cancer

Intermediate exposure 1: HR 1.01 (95% CI 0.80-1.27)

Intermediate exposure 2: HR 0.89 (95% CI 0.70-1.13)

Highest exposure: HR 1.06 (95% CI 0.86-1.30)

Stratified data available by histological subtype (differentiated and nondifferentiated)

Stratified data available by subsite (cardia, body and antrum)

Tsubono 2001

Stomach cancer

All participants

Intermediate exposure 1: RR 1.2 (95% CI 0.8-1.8)

Intermediate exposure 2: RR 1.0 (95% CI 0.7-1.5)

Table 5. Detailed summary results of included nonexperimental cohort studies *(Continued)*

Highest exposure: RR 1.4 (95% CI 1.0-1.9)

Men

Intermediate exposure 1: RR 1.2 (95% CI 0.7-1.9)

Intermediate exposure 2: RR 1.2 (95% CI 0.7-1.9)

Highest exposure: RR 1.5 (95% CI 1.0-2.3)

Women

Intermediate exposure 1: RR 1.2 (95% CI 0.6-2.3)

Intermediate exposure 2: RR 0.7 (95% CI 0.4-1.5)

Highest exposure: RR 1.1 (95% CI 0.6-2.0)

Sasazuki 2004

Reference category: lowest exposure

Men

Stomach cancer

Intermediate exposure 1: RR 0.95 (95% CI 0.74-1.21)

Intermediate exposure 2: RR 0.89 (95% CI 0.71-1.13)

Highest exposure: RR 0.97 (95% CI 0.77-1.22)

Subsite

Upper-third including cardia cancer

Intermediate exposure 1: RR 1.07 (95% CI 0.53-2.17)

Intermediate exposure 2: RR 0.88 (95% CI 0.44-1.75)

Highest exposure: RR 1.24 (95% CI 0.65-2.35)

Distal cancer

Intermediate exposure 1: RR 0.88 (95% CI 0.65-1.17)

Intermediate exposure 2: RR 0.85 (95% CI 0.64-1.12)

Highest exposure: RR 0.88 (95% CI 0.67-1.16)

Women

Stomach cancer

Intermediate exposure 1: RR 0.93 (95% CI 0.61-1.41)

Intermediate exposure 2: RR 1.10 (95% CI 0.75-1.60)

Highest exposure: RR 0.70 (95% CI 0.47-1.05)

Subsite:

Upper-third including cardia cancer

Intermediate exposure 1: RR 2.28 (95% CI 0.56-9.33)

Intermediate exposure 2: RR 0.70 (95% CI 0.13-3.62)

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Highest exposure: RR 1.74 (95% CI 0.44–6.86)	
	Distal cancer	
	Intermediate exposure 1: RR 0.92 (95% CI 0.58–1.47)	
	Intermediate exposure 2: RR 1.05 (95% CI 0.69–1.60)	
	Highest exposure: RR 0.53 (95% CI 0.33–0.85)	
Inoue 2009b	Reference category: lowest exposure	Low risk:
	Liver cancer	Selection: 4/4 stars, low risk
	Men	Comparability: 2/2 stars, low risk
	Intermediate exposure: HR 1.20 (95% CI 0.64–2.23)	Outcome: 3/3 stars, low risk
	Highest exposure: HR 1.18 (95% CI 0.63–2.20)	Total score: 9/9 stars, high quality.
	Women	
	Intermediate exposure: HR 2.58 (95% CI 1.01–6.59)	
	Highest exposure: HR 1.48 (95% CI 0.54–4.08)	
Ishikawa 2006	Reference category: lowest exposure	Low risk:
	Oesophageal cancer	Selection: 4/4 stars, low risk
	Cohort 1 + cohort 2	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: HR 1.03 (95% CI 0.46–2.28)	Outcome: 2/3 stars, follow-up rate < 90%
	Intermediate exposure 2: HR 1.13 (95% CI 0.53–2.42)	Total score: 8/9 stars, moderate quality.
	Highest exposure: HR 1.67 (95% CI 0.89–3.16)	
	Cohort 1	
	Intermediate exposure 1: HR 0.69 (95% CI 0.17–2.91)	
	Intermediate exposure 2: HR 1.58 (95% CI 0.52–4.76)	
	Highest exposure: HR 1.78 (95% CI 0.66–4.82)	
	Cohort 2	
	Intermediate exposure 1: HR 1.22 (95% CI 0.47–3.19)	
	Intermediate exposure 2: HR 0.85 (95% CI 0.30–2.40)	
	Highest exposure: HR 1.61 (95% CI 0.71–3.66)	
Iwai 2002	Reference category: lowest exposure	Low risk:
	Total cancer mortality	Selection: 4/4 stars, low risk
	Intermediate exposure: HR 0.93 (95% CI 0.51–1.70)	Comparability: 1/2 stars, the study did not control for smoking
	Highest exposure: HR 0.92 (95% CI 0.49–1.73)	Outcome: 3/3 stars, low risk

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

		Total score: 8/9 stars, moderate quality.
Iwasaki 2010a	Reference category: lowest exposure	Low risk:
	Breast cancer	Iwasaki 2010a :
	Iwasaki 2010a	Selection: 4/4 stars, low risk
	Intermediate exposure: HR 1.19 (95% CI 0.80-1.76)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 1.13 (95% CI 0.72-1.75)	Outcome: 3/3 stars, low risk
	Intermediate exposure 3: HR 1.13 (95% CI 0.81-1.58)	Total score: 9/9 stars, high quality.
	Intermediate exposure 4: HR 1.17 (95% CI 0.85-1.62)	Iwasaki 2010b
	Highest exposure: HR 1.12 (95% CI 0.81-1.56)	Selection: 4/4 stars, low risk
	Iwasaki 2010b	Comparability: 1/2 stars, the study did not control for smoking
	Highest exposure: OR 1.02 (95% CI 0.62-1.65)	Outcome: 3/3 stars, low risk
		Total score: 8/9 stars, moderate quality.
Key 1999	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 3/4 stars, exposure based on self-report not within a structured interview or questionnaire.
	Intermediate exposure: RR 1.02 (95% CI 0.76-1.36)	Comparability: 1/2 stars, the study did not control for smoking
	Highest exposure: RR 0.86 (95% CI 0.62-1.21)	Outcome: 3/3 stars, low risk
		Total score: 7/9 stars, moderate quality.
Khan 2004	Reference category: lowest exposure	Low risk:
	Men	Selection: 4/4 stars, low risk
	Total cancer mortality	Comparability: 2/2 stars, low risk
	Highest exposure: RR 1.0 (95% CI 0.7-1.6)	Outcome: 3/3 stars, low risk
	Lung cancer mortality	Total score: 9/9 stars, high quality.
	Highest exposure: RR 0.6 (95% CI 0.3-1.2)	
		Stomach cancer mortality

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Highest exposure: RR 1.1 (95% CI 0.4-2.5)	
	Colorectal cancer mortality	
	Highest exposure: RR 1.3 (95% CI 0.3-5.9)	
	Pancreatic cancer mortality	
	Highest exposure: RR not estimated	
	Women	
	Total cancer mortality	
	Highest exposure: RR 1.0 (95% CI 0.6-1.6)	
	Lung cancer mortality	
	Highest exposure: RR 0.7 (95% CI 0.2-2.9)	
	Stomach cancer mortality	
	Highest exposure: RR 0.7 (95% CI 0.2-1.9)	
	Colorectal cancer mortality	
	Highest exposure: RR 1.2 (95% CI 0.3-4.4)	
	Pancreatic cancer mortality	
	Highest exposure: RR 0.5 (95% CI 0.2-1.6)	
Kikuchi 2006	Reference category: lowest exposure	Low risk:
	Prostate cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: HR 0.77 (95% CI 0.42-1.40)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 1.15 (95% CI 0.69-1.94)	Outcome: 3/3 stars, low risk
	Highest exposure: HR 0.85 (95% CI 0.50-1.43)	Total score: 9/9 stars, high quality.
Kurahashi 2007	Reference category: lowest exposure	Low risk:
	Prostate cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: RR 0.96 (95% CI 0.68-1.35)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: RR 0.94 (95% CI 0.68-1.30)	Outcome: 3/3 stars, low risk
	Highest exposure: RR 0.89 (95% CI 0.65-1.21)	Total score: 9/9 stars, high quality.
Kurahashi 2009	Reference category: lowest exposure	Low risk:
	Bladder cancer	Selection: 4/4 stars, low risk
	Men	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Intermediate exposure 1: HR 1.18 (95% CI 0.73-1.91)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 0.71 (95% CI 0.43-1.18)	
	Highest exposure: HR 0.90 (95% CI 0.56-1.45)	Outcome: 3/3 stars, low risk
	Women	Total score: 9/9 stars, high quality.
	Intermediate exposure: HR 1.22 (95% CI 0.49-3.00)	
	Highest exposure: HR 2.29 (95% CI 1.06-4.92)	
	Analysis also available stratified by smoking status	
Kuriyama 2006	Reference category: lowest exposure	Low risk:
	All participants	Selection: 4/4 stars, low risk
	Total cancer mortality	
	Intermediate exposure 1: HR 1.11 (95% CI 0.93-1.34)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 1.16 (95% CI 0.97-1.38)	
	Highest exposure: HR 1.11 (95% CI 0.94-1.31)	Outcome: 3/3 stars, low risk
	Stomach cancer mortality	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: HR 1.33 (95% CI 0.86-2.04)	
	Intermediate exposure 2: HR 1.00 (95% CI 0.64-1.58)	
	Highest exposure: HR 1.17 (95% CI 0.78-1.76)	
	Lung cancer mortality	
	Intermediate exposure 1: HR 1.03 (95% CI 0.67-1.58)	
	Intermediate exposure 2: HR 1.05 (95% CI 0.69-1.59)	
	Highest exposure: HR 1.18 (95% CI 0.81-1.72)	
	Colorectal cancer mortality	
	Intermediate exposure 1: HR 1.04 (95% CI 0.59-1.82)	
	Intermediate exposure 2: HR 1.45 (95% CI 0.87-2.42)	
	Highest exposure: HR 1.10 (95% CI 0.67-1.82)	
	Men	
	Total cancer mortality	
	Intermediate exposure 1: HR 1.02 (95% CI 0.82-1.28)	
	Intermediate exposure 2: HR 1.18 (95% CI 0.95-1.46)	
	Highest exposure: HR 1.11 (95% CI 0.90-1.36)	
	Stomach cancer mortality	
	Intermediate exposure 1: HR 1.29 (95% CI 0.78-2.16)	
	Intermediate exposure 2: HR 1.19 (95% CI 0.71-2.00)	
	Highest exposure: HR 1.20 (95% CI 0.74-1.95)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

Lung cancer mortality		
Intermediate exposure 1: HR 0.88 (95% CI 0.54-1.42)		
Intermediate exposure 2: HR 0.97 (95% CI 0.61-1.54)		
Highest exposure: HR 1.14 (95% CI 0.75-1.73)		
Colorectal cancer mortality		
Intermediate exposure 1: HR 1.09 (95% CI 0.57-2.09)		
Intermediate exposure 2: HR 1.23 (95% CI 0.66-2.29)		
Highest exposure: HR 0.88 (95% CI 0.47-1.63)		
Women		
Total cancer mortality		
Intermediate exposure 1: HR 1.27 (95% CI 0.93-1.74)		
Intermediate exposure 2: HR 1.09 (95% CI 0.79-1.49)		
Highest exposure: HR 1.07 (95% CI 0.80-1.44)		
Stomach cancer mortality		
Intermediate exposure 1: HR 1.32 (95% CI 0.59-2.94)		
Intermediate exposure 2: HR 0.64 (95% CI 0.26-1.63)		
Highest exposure: HR 1.08 (95% CI 0.50-2.33)		
Lung cancer mortality		
Intermediate exposure 1: HR 1.83 (95% CI 0.68-4.96)		
Intermediate exposure 2: HR 1.46 (95% CI 0.54-3.95)		
Highest exposure: HR 1.59 (95% CI 0.63-4.05)		
Colorectal cancer mortality		
Intermediate exposure 1: HR 0.98 (95% CI 0.32-2.97)		
Intermediate exposure 2: HR 1.96 (95% CI 0.78-4.95)		
Highest exposure: HR 1.49 (95% CI 0.60-3.71)		
Lee 2007	Reference category: lowest exposure	Low risk:
	Men	Selection: 4/4 stars, low risk
	Colorectal cancer	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: RR 0.80 (95% CI 0.57-1.06)	Outcome: 3/3 stars, low risk
	Intermediate exposure 2: RR 1.00 (95% CI 0.73-1.35)	
	Intermediate exposure 3: RR 1.04 (95% CI 0.78-1.40)	Total score: 9/9 stars, high quality.
	Highest exposure: RR 0.96 (95% CI 0.71-1.29)	
	Colon cancer	
	Intermediate exposure 1: RR 0.73 (95% CI 0.47-1.14)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Intermediate exposure 2: RR 1.09 (95% CI 0.75-1.59)	
	Intermediate exposure 3: RR 1.06 (95% CI 0.74-1.53)	
	Highest exposure: RR 0.92 (95% CI 0.63-1.33)	
	Rectal cancer	
	Intermediate exposure 1: RR 0.93 (95% CI 0.53-1.67)	
	Intermediate exposure 2: RR 0.81 (95% CI 0.47-1.39)	
	Intermediate exposure 3: RR 1.01 (95% CI 0.60-1.67)	
	Highest exposure: RR 1.04 (95% CI 0.63-1.72)	
	Women	
	Colorectal cancer	
	Intermediate exposure 1: RR 1.01 (95% CI 0.67-1.52)	
	Intermediate exposure 2: RR 0.81 (95% CI 0.55-1.22)	
	Intermediate exposure 3: RR 0.96 (95% CI 0.66-1.40)	
	Highest exposure: RR 1.02 (95% CI 0.70-1.47)	
	Colon cancer	
	Intermediate exposure 1: RR 0.97 (95% CI 0.57-1.63)	
	Intermediate exposure 2: RR 0.81 (95% CI 0.49-1.35)	
	Intermediate exposure 3: RR 0.99 (95% CI 0.62-1.57)	
	Highest exposure: RR 1.10 (95% CI 0.70-1.73)	
	Rectal cancer	
	Intermediate exposure 1: RR 1.09 (95% CI 0.56-2.13)	
	Intermediate exposure 2: RR 0.81 (95% CI 0.42-1.57)	
	Intermediate exposure 3: RR 0.92 (95% CI 0.49-1.71)	
	Highest exposure: RR 0.85 (95% CI 0.45-1.61)	
Li 2008	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 4/4 stars, low risk
	All participants	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: HR 1.14 (95% CI 0.80-1.62)	Outcome: 3/3 stars, low risk
	Intermediate exposure 2: HR 1.18 (95% CI 0.83-1.66)	
	Highest exposure: HR 1.17 (95% CI 0.85-1.61)	
	Men	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: HR 1.05 (95% CI 0.70-1.57)	
	Intermediate exposure 2: HR 1.21 (95% CI 0.82-1.79)	
	Highest exposure: HR 1.17 (95% CI 0.82-1.68)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Women	
	Intermediate exposure 1: HR 1.48 (95% CI 0.71-3.10)	
	Intermediate exposure 2: HR 1.11 (95% CI 0.52-2.37)	
	Highest exposure: HR 1.30 (95% CI 0.65-2.60)	
Li 2018	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 3/4 stars, exposure based on self-report not within a structured interview or questionnaire.
	Highest exposure: HR 1.88 (95% CI 0.93-3.77)	Comparability: 2/2 stars, low risk
		Outcome: 3/3 stars, low risk
		Total score: 8/9 stars, moderate quality.
Lin 2008	Reference category: lowest exposure	Low risk:
	Pancreatic cancer mortality	Selection: 4/4 stars, low risk
	All participants	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: RR 1.04 (95% CI 0.67-1.60)	Outcome: 3/3 stars, low risk
	Intermediate exposure 2: RR 1.14 (95% CI 0.80-1.63)	
	Intermediate exposure 3: RR 0.99 (95% CI 0.69-1.42)	
	Highest exposure: RR 1.23 (95% CI 0.84-1.80)	
	Men	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: RR 0.79 (95% CI 0.42-1.51)	
	Intermediate exposure 2: RR 1.09 (95% CI 0.65-1.83)	
	Intermediate exposure 3: RR 0.88 (95% CI 0.53-1.48)	
	Highest exposure: RR 0.95 (95% CI 0.5-1.65)	
	Women	
	Intermediate exposure 1: RR 1.32 (95% CI 0.73-2.38)	
	Intermediate exposure 2: RR 1.20 (95% CI 0.73-1.97)	
	Intermediate exposure 3: RR 1.08 (95% CI 0.66-1.78)	
	Highest exposure: RR 1.54 (95% CI 0.91-2.60)	
Liu 2016	Reference category: highest exposure	Low risk:
	Total cancer mortality	Selection: 4/4 stars, low risk.
	Intermediate exposure 1: HR 0.93 (95% CI 0.85-1.01)	Comparability: 2/2 stars, low risk.
	Intermediate exposure 2: HR 0.91 (95% CI 0.85-0.98)	Outcome: 3/3 stars, low risk.
	Lowest exposure: HR 0.86 (95% CI 0.79-0.93)	Total score: 9/9 stars, high quality.
	Available also stratified analysis by smoking status, alcohol drinking, rural and urban locality	
Luo 2007	Reference category: lowest exposure	Low risk:

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Pancreatic cancer	Selection: 4/4 stars, low risk
	All participants	
	Intermediate exposure 1: HR 1.1 (95% CI 0.6-1.9)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 1.1 (95% CI 0.7-1.9)	
	Intermediate exposure 3: HR 1.2 (95% CI 0.7-2.0)	Outcome: 3/3 stars, low risk
	Highest exposure: HR 1.2 (95% CI 0.7-1.9)	
	Men	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: HR 1.3 (95% CI 0.6-2.9)	
	Intermediate exposure 2: HR 1.4 (95% CI 0.7-2.9)	
	Intermediate exposure 3: HR 1.5 (95% CI 0.7-3.1)	
	Highest exposure: HR 1.4 (95% CI 0.7-2.8)	
	Women	
	Intermediate exposure 1: HR 0.9 (95% CI 0.4-2.1)	
	Intermediate exposure 2: HR 0.9 (95% CI 0.4-1.8)	
	Intermediate exposure 3: HR 0.9 (95% CI 0.5-1.9)	
	Highest exposure: HR 1.0 (95% CI 0.5-2.0)	
Makiuchi 2016	Reference category: lowest exposure	Low risk:
	Biliary tract cancer	Selection: 4/4 stars, low risk
	All participants	
	Intermediate exposure 1: HR 0.74 (95% CI 0.52-1.04)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 0.86 (95% CI 0.62-1.21)	
	Highest exposure: HR 0.67 (95% CI 0.46-0.97)	Outcome: 3/3 stars, low risk
	Men	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: HR 0.74 (95% CI 0.48-1.15)	
	Intermediate exposure 2: HR 0.89 (95% CI 0.58-1.37)	
	Highest exposure: HR 0.66 (95% CI 0.40-1.08)	
	Women	
	Intermediate exposure 1: HR 0.74 (95% CI 0.42-1.29)	
	Intermediate exposure 2: HR 0.84 (95% CI 0.49-1.44)	
	Highest exposure: HR 0.66 (95% CI 0.37-1.20)	
	Gallbladder	
	Intermediate exposure 1: HR 0.56 (95% CI 0.32-0.97)	
	Intermediate exposure 2: HR 0.88 (95% CI 0.54-1.45)	
	Highest exposure: HR 0.57 (95% CI 0.32-1.01)	
	Extrahepatic bile duct cancer	
	Intermediate exposure 1: HR 0.83 (95% CI 0.53-1.31)	
	Intermediate exposure 2: HR 0.79 (95% CI 0.50-1.26)	
	Highest exposure: HR 0.69 (95% CI 0.41-1.15)	
Michikawa 2011	Reference category: lowest exposure	Low risk:

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Thyroid cancer	Selection: 4/4 stars, low risk
	Men	
	Intermediate exposure 1: HR 1.13 (95% CI 0.39-3.27)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 0.95 (95% CI 0.33-2.78)	
	Highest exposure: HR 0.71 (95% CI 0.22-2.28)	Outcome: 3/3 stars, low risk
	Women	Total score: 9/9 stars, high quality
	Intermediate exposure 1: HR 0.64 (95% CI 0.37-1.14)	
	Intermediate exposure 2: HR 1.10 (95% CI 0.70-1.75)	
	Highest exposure: HR 0.91 (95% CI 0.56-1.48)	
Montague 2012	Reference category: lowest exposure	Low risk:
	Prostate cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: HR 1.07 (95% CI 0.73-1.56)	
	Intermediate exposure 2: HR 1.09 (95% CI 0.80-1.48)	Comparability: 2/2 stars, low risk
	Highest exposure: HR 1.08 (95% CI 0.79-1.48)	Outcome: 3/3 stars, low risk
		Total score: 9/9 stars, high quality.
Nagano 2001	Reference category: lowest exposure	Low risk:
	Total cancer	Nagano 2001
	Intermediate exposure: RR 1.0 (95% CI 0.93-1.1)	Selection: 3/4 stars, exposure based on self-report not within a structured interview or questionnaire.
	Highest exposure: RR 0.98 (95% CI 0.89-1.1)	
	Total solid cancer	Comparability: 2/2 stars, low risk
	Intermediate exposure: RR 1.0 (95% CI 0.92-1.1)	
	Highest exposure: RR 0.98 (95% CI 0.88-1.1)	Outcome: 3/3 stars, low risk
	Stomach cancer (also reported in Sauvaget 2005)	
	Intermediate exposure: RR 1.0 (95% CI 0.82-1.2)	Total score: 8/9 stars, moderate quality.
	Highest exposure: RR 0.95 (95% CI 0.76-1.2)	Sauvaget 2005
	Colon cancer	Selection: 3/4 stars, exposure based on self report not within a structured interview or questionnaire.
	Intermediate exposure: RR 1.0 (95% CI 0.76-1.4)	
	Highest exposure: RR 1.0 (95% CI 0.76-1.4)	Comparability: 2/2 stars, low risk
	Rectal cancer	
	Intermediate exposure: RR 1.3 (95% CI 0.80-2.0)	Outcome: 3/3 stars, low risk
	Highest exposure: RR 1.3 (95% CI 0.77-2.1)	
	Liver cancer	Total score: 8/9 stars, moderate quality.
	Intermediate exposure: RR 1.1 (95% CI 0.80-1.4)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Highest exposure: RR 0.95 (95% CI 0.69-1.3)	
	Gallbladder cancer	
	Intermediate exposure: RR 0.9 (95% CI 0.57-1.7)	
	Highest exposure: RR 1.2 (95% CI 0.66-2.2)	
	Pancreatic cancer	
	Intermediate exposure: RR 0.8 (95% CI 0.51-1.4)	
	Highest exposure: RR 0.79 (95% CI 0.45-1.4)	
	Lung cancer	
	Intermediate exposure: RR 0.78 (95% CI 0.60-1.0)	
	Highest exposure: RR 0.79 (95% CI 0.59-1.1)	
	Breast cancer	
	Intermediate exposure: RR 1.2 (95% CI 0.86-1.8)	
	Highest exposure: RR 1.0 (95% CI 0.67-1.6)	
	Bladder cancer	
	Intermediate exposure: RR 1.1 (95% CI 0.62-2.0)	
	Highest exposure: RR 1.1 (95% CI 0.6-2.1)	
	Haematopoietic cancer	
	Intermediate exposure: RR 1.2 (95% CI 0.75-1.8)	
	Highest exposure: RR 0.99 (95% CI 0.61-1.7)	
	Sauvaget 2005:	
	Reference category: lowest exposure	
	Stomach cancer:	
	Intermediate exposure: IRR 1.03 (95% C 0.89-1.19)	
	Highest exposure: IRR 1.06 (95% CI 0.89-1.25)	
Naganuma 2009	Reference category: lowest exposure	Low risk:
	All participants	Selection: 4/4 stars, low risk
	Haematopoietic cancer	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: HR 0.88 (95% CI 0.57-1.38)	Outcome: 3/3 stars, low risk
	Intermediate exposure 2: HR 0.90 (95% CI 0.59-1.39)	Total score: 9/9 stars, high quality.
	Highest exposure: HR 0.58 (95% CI 0.37-0.89)	
	Lymphoid cancer	
	Intermediate exposure 1: HR 1.00 (95% CI 0.61-1.65)	
	Intermediate exposure 2: HR 0.92 (95% CI 0.56-1.52)	
	Highest exposure: HR 0.52 (95% CI 0.31-1.87)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Myeloid cancer	
	Intermediate exposure 1: HR 0.57 (95% CI 0.20-1.64)	
	Intermediate exposure 2: HR 0.91 (95% CI 0.37-2.23)	
	Highest exposure: HR 0.76 (95% CI 0.32-1.78)	
	Men	
	Hematopoietic cancer	
	Intermediate exposure 1: HR 0.75 (95% CI 0.41-1.35)	
	Intermediate exposure 2: HR 0.82 (95% CI 0.47-1.46)	
	Highest exposure: HR 0.57 (95% CI 0.32-1.00)	
	Women	
	Hematopoietic cancer	
	Intermediate exposure 1: HR 1.09 (95% CI 0.55-2.16)	
	Intermediate exposure 2: HR 1.01 (95% CI 0.52-1.99)	
	Highest exposure: HR 0.58 (95% CI 0.29-1.16)	
Nakachi 2000	Reference category: lowest exposure	Low risk:
	Total cancer	Selection: 4/4 stars, low risk
	All participants	Comparability: 2/2 stars, low risk
	Intermediate exposure: RR 0.81 (95% CI 0.52-1.27)	Outcome: 3/3 stars, low risk
	Highest exposure: RR 0.59 (95% CI 0.35-0.98)	
	Men	
	Intermediate exposure: RR 1.00 (95% CI 0.50-2.04)	Total score: 9/9 stars, high quality.
	Highest exposure: RR 0.54 (95% CI 0.22-1.34)	
	Women	
	Intermediate exposure: RR 0.92 (95% CI 0.64-1.31)	
	Highest exposure: RR 0.57 (95% CI 0.34-0.98)	
Nakamura 2011	Pancreatic cancer mortality	Low risk:
	Reference category: lowest exposure	Selection: 4/4 stars, low risk
	Men	
	Intermediate exposure: HR 2.02 (95% CI 0.61-6.63)	Comparability: 2/2 stars, low risk
	Highest exposure: HR 1.77 (95% CI 0.78-4.04)	Outcome: 3/3 stars, low risk
	Women	
	Intermediate exposure: HR 0.31 (95% CI 0.04-2.59)	Total score: 9/9 stars, high quality.
	Highest exposure: HR 0.59 (95% CI 0.21-1.61)	
Nechuta 2012	Reference category: lowest exposure	Low risk:

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Digestive system cancer	Nechuta 2012
	Highest exposure: HR 0.86 (95% CI 0.75-1.00)	Selection: 4/4 stars, low risk
	Stomach cancer	
	Highest exposure: HR 0.79 (95% CI 0.58-1.07)	Comparability: 2/2 stars, low risk
	Stomach and oesophageal cancer	
	Highest exposure: HR 0.77 (95% CI 0.57-1.03)	Outcome: 3/3 stars, low risk
	Colorectal cancer	Total score: 9/9 stars, high quality.
	Highest exposure: HR 0.91 (95% CI 0.74-1.12)	Yang 2007
	Colon cancer	
	Highest exposure: HR 0.96 (95% CI 0.74-1.24)	Selection: 4/4 stars, low risk
	Rectal cancer	
	Highest exposure: HR 0.84 (95% CI 0.60-1.17)	Comparability: 2/2 stars, low risk
	Liver cancer	
	Highest exposure: HR 0.89 (95% CI 0.58-1.38)	Outcome: 3/3 stars, low risk
	Pancreatic cancer	Total score: 9/9 stars, high quality.
	Highest exposure: HR 0.96 (95% CI 0.62-1.49)	
	Gallbladder and bile duct cancer	
	Highest exposure: HR 0.73 (95% CI 0.40-1.35)	
	Yang 2007:	
	Colorectal cancer	
	Highest exposure: RR 0.63 (95% CI 0.45-0.88)	
	Further divided in:	
	Highest exposure A: RR 0.70 (95% CI 0.47-1.02)	
	Highest exposure B: RR 0.56 (95% CI 0.32-0.98)	
Oba 2006	Reference category: lowest exposure	Low risk:
	Colon cancer	
	Men	
	Intermediate exposure: RR 0.99 (95% CI 0.61-1.63)	Selection: 4/4 stars, low risk
	Highest exposure: RR 0.75 (95% CI 0.49-1.16)	Comparability: 2/2 stars, low risk
	Women	
	Intermediate exposure: RR 1.00 (95% CI 0.53-1.86)	Outcome: 3/3 stars, low risk
	Highest exposure: RR 1.08 (95% CI 0.67-1.76)	Total score: 9/9 stars, high quality.
Odegaard 2015	Reference category: lowest exposure	Low risk:
	Total cancer mortality	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Intermediate exposure 1: HR 1.00 (95% CI 0.92-1.08)	Selection: 4/4 stars, low risk
	Intermediate exposure 2: HR 0.95 (95% CI 0.83-1.09)	
	Highest exposure: HR 1.10 (95% CI 0.97-1.25)	Comparability: 2/2 stars, low risk
		Outcome: 3/3 stars, low risk
		Total score: 9/9 stars, high quality.
Ogawa 2016	Reference category: lowest exposure	Low risk:
	Brain cancer	Selection: 4/4 stars, low risk
	All participants	
	Intermediate exposure: HR 0.96 (95% CI 0.58-1.59)	Comparability: 2/2 stars, low risk
	Highest exposure: HR 1.07 (95% CI 0.70-1.62)	
	Men	Outcome: 3/3 stars, low risk
	Intermediate exposure: HR 1.19 (95% CI 0.59-2.40)	
	Highest exposure: HR 0.96 (95% CI 0.51-1.81)	Total score: 9/9 stars, high quality.
	Women	
	Intermediate exposure: HR 0.74 (95% CI 0.35-1.55)	
	Highest exposure: HR 1.17 (95% CI 0.66-2.06)	
	Glioma	
	Intermediate exposure: HR 1.12 (95% CI 0.51-2.43)	
	Highest exposure: HR 1.05 (95% CI 0.54-2.05)	
	Meningioma	
	Intermediate exposure: HR 0.89 (95% CI 0.38-2.12)	
	Highest exposure: HR 1.01 (95% CI 0.49-2.08)	
Saito 2015	Reference category: lowest exposure	Low risk:
	Total cancer mortality	Selection: 4/4 stars, low risk
	Men	
	Intermediate exposure 1: HR 1.09 (95% CI 0.97-1.22)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 1.03 (95% CI 0.92-1.16)	
	Highest exposure: HR 1.04 (95% CI 0.93-1.17)	Outcome: 3/3 stars, low risk
	Women	
	Intermediate exposure 1: HR 0.86 (95% CI 0.73-1.01)	Total score: 9/9 stars, high quality.
	Intermediate exposure 2: HR 0.93 (95% CI 0.80-1.07)	
	Highest exposure: HR 0.87 (95% CI 0.75-1.01)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

Severson 1989	Prostate cancer	Low risk:
	Reference category: lowest exposure	Selection: 4/4 stars, low risk
	Highest exposure: RR 1.47 (95% CI 0.99-2.19)	Comparability: 1/2 stars, the study did not control for smoking
		Outcome: 3/3 stars, low risk
		Total score: 8/9 stars, moderate quality.
Shimazu 2008	Reference category: lowest exposure	Low risk:
	Endometrial cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: HR 1.04 (95% CI 0.62-1.74)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 0.79 (95% CI 0.47-1.35)	Outcome: 3/3 stars, low risk
	Highest exposure: HR 0.75 (95% CI 0.44-1.30)	Total score: 9/9 stars, high quality.
Sun 2007	Reference category: lowest exposure	Low risk:
	Colorectal cancer	Selection: 4/4 stars, low risk
	All participants	Comparability: 2/2 stars, low risk
	Exposure assessment A: green tea intake	Outcome: 3/3 stars, low risk
	Highest exposure: RR 1.12 (95% CI 0.97-1.29)	Total score: 9/9 stars, high quality.
	Exposure assessment B: green tea intake	
	Intermediate exposure 1: RR 1.05 (95% CI 0.84-1.31)	
	Intermediate exposure 2: RR 1.11 (95% CI 0.92-1.35)	
	Highest exposure: RR 1.18 (95% CI 0.97-1.45)	
	Men	
	Exposure assessment A: green tea intake	
	Highest exposure: RR 1.31 (95% CI 1.08-1.58)	
	Exposure assessment B: green tea intake	
	Intermediate exposure 1: RR 1.32 (95% CI 0.98-1.78)	
	Intermediate exposure 2: RR 1.25 (95% CI 0.98-1.61)	
	Highest exposure: RR 1.36 (95% CI 1.06-1.74)	
	Women	
	Exposure assessment A: green tea intake	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Highest exposure: RR 0.89 (95% CI 0.71–1.12)	
	Exposure assessment B: green tea intake	
	Intermediate exposure 1: RR 0.79 (95% CI 0.56–1.13)	
	Intermediate exposure 2: RR 0.96 (95% CI 0.71–1.31)	
	Highest exposure: RR 0.91 (95% CI 0.63–1.32)	
	Reported stratified analysis in colon cancer and rectal cancer, only in men.	
	Reported stratified analysis by localised and advanced disease.	
	Reported nondrinkers vs. drinkers:	
	Men with colon cancer	
	Localised	
	Highest exposure: RR 1.23 (95% CI 0.81–1.87)	
	Advanced	
	Highest exposure: RR 1.75 (95% CI 1.24–2.46)	
	Men with rectal cancer:	
	Localised	
	Highest exposure: RR 1.17 (95% CI 0.75–1.81)	
	Advanced	
	Highest exposure: RR 1.32 (95% CI 0.90–1.91)	
Suzuki 2004	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: RR 0.87 (95% CI 0.57–1.32)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: RR 1.07 (95% CI 0.73–1.57)	Outcome: 3/3 stars, low risk
	Highest exposure: RR 0.84 (95% CI 0.57–1.24)	Total score: 9/9 stars, high quality.
Suzuki 2005	Reference category: lowest exposure	Low risk:
	All participants	Selection: 4/4 stars, low risk
	Colon cancer	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: RR 1.06 (95% CI 0.74–1.52)	Outcome: 3/3 stars, low risk
	Intermediate exposure 2: RR 1.10 (95% CI 0.78–1.55)	Total score: 9/9 stars, high quality.
	Highest exposure: RR 0.97 (95% CI 0.70–1.35)	
	Rectal cancer	
	Intermediate exposure 1: RR 0.85 (95% CI 0.56–1.29)	
	Intermediate exposure 2: RR 0.70 (95% CI 0.45–1.08)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Highest exposure: RR 0.85 (95% CI 0.58-1.23)	
	Men	
	Colon cancer	
	Intermediate exposure 1: RR 1.32 (95% CI 0.83-2.10)	
	Intermediate exposure 2: RR 1.35 (95% CI 0.86-2.12)	
	Highest exposure: RR 1.12 (95% CI 0.72-1.74)	
	Rectal cancer	
	Intermediate exposure 1: RR 0.85 (95% CI 0.50-1.45)	
	Intermediate exposure 2: RR 0.58 (95% CI 0.32-1.04)	
	Highest exposure: RR 0.62 (95% CI 0.38-1.02)	
	Women	
	Colon cancer	
	Intermediate exposure 1: RR 0.78 (95% CI 0.43-1.40)	
	Intermediate exposure 2: RR 0.78 (95% CI 0.45-1.35)	
	Highest exposure: RR 0.79 (95% CI 0.49-1.29)	
	Rectal cancer	
	Intermediate exposure 1: RR 0.81 (95% CI 0.40-1.66)	
	Intermediate exposure 2: RR 0.95 (95% CI 0.48-1.89)	
	Highest exposure: RR 1.30 (95% CI 0.70-2.42)	
Suzuki 2009	Reference category: lowest exposure	Low risk:
	All participants	Selection: 4/4 stars, low risk
	Total cancer mortality	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: RR 0.63 (95% CI 0.34-1.16)	Outcome: 3/3 stars, low risk
	Intermediate exposure 2: RR 0.76 (95% CI 0.42-1.37)	Total score: 9/9 stars, high quality.
	Highest exposure: RR 0.82 (95% CI 0.45-1.50)	
	Stomach cancer mortality	
	Intermediate exposure 1: RR 0.49 (95% CI 0.11-2.28)	
	Intermediate exposure 2: RR 0.78 (95% CI 0.19-3.30)	
	Highest exposure: RR 0.81 (95% CI 0.18-3.54)	
	Lung cancer mortality	
	Intermediate exposure 1: RR 0.85 (95% CI 0.19-3.74)	
	Intermediate exposure 2: RR 1.13 (95% CI 0.27-4.68)	
	Highest exposure: RR 1.24 (95% CI 0.29-5.25)	
	Colorectal cancer mortality	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Intermediate exposure 1: RR 0.47 (95% CI 0.10–2.18)	
	Intermediate exposure 2: RR 0.35 (95% CI 0.08–1.55)	
	Highest exposure: RR 0.36 (95% CI 0.07–1.74)	
	Men	
	Total cancer mortality	
	Intermediate exposure 1: RR 0.61 (95% CI 0.32–1.17)	
	Intermediate exposure 2: RR 0.69 (95% CI 0.37–1.27)	
	Highest exposure: RR 0.82 (95% CI 0.44–1.55)	
	Women	
	Total cancer mortality	
	Intermediate exposure 1: RR 1.14 (95% CI 0.15–8.82)	
	Intermediate exposure 2: RR 1.85 (95% CI 0.25–13.57)	
	Highest exposure: RR 1.31 (95% CI 0.17–10.01)	
Tamura 2018	Reference category: lowest quartile	Low risk:
	Liver cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: HR 1.36 (95% CI 0.86–2.16)	
	Intermediate exposure 2: HR 1.08 (95% CI 0.60–1.94)	Comparability: 2/2 stars, low risk
	Intermediate exposure 3: HR 0.75 (95% CI 0.51–1.11)	
	Highest exposure: HR 1.25 (95% CI 0.77–2.04)	Outcome: 3/3 stars, low risk
		Total score: 9/9 stars, high quality.
Ugai 2017	Reference category: lowest exposure	Low risk:
	Malignant lymphoma	Selection: 4/4 stars, low risk
	All participants	
	Intermediate exposure 1: HR 0.84 (95% CI 0.53–1.31)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 1.38 (95% CI 0.92–1.94)	
	Intermediate exposure 3: HR 1.10 (95% CI 0.76–1.59)	Outcome: 3/3 stars, low risk
	Highest exposure: HR 0.89 (95% CI 0.61–1.29)	
	Men	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: HR 0.81 (95% CI 0.44–1.50)	
	Intermediate exposure 2: HR 1.45 (95% CI 0.87–2.39)	
	Intermediate exposure 3: HR 1.21 (95% CI 0.73–2.00)	
	Highest exposure: HR 1.08 (95% CI 0.65–1.79)	
	Women	
	Intermediate exposure 1: HR 0.87 (95% CI 0.45–1.69)	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Intermediate exposure 2: HR 1.21 (95% CI 0.70–2.11)	
	Intermediate exposure 3: HR 0.96 (95% CI 0.56–1.67)	
	Highest exposure: HR 0.67 (95% CI 0.38–1.19)	
	Multiple myeloma	
	All participants	
	Intermediate exposure 1: HR 0.98 (95% CI 0.47–2.03)	
	Intermediate exposure 2: HR 0.84 (95% CI 0.43–1.66)	
	Intermediate exposure 3: HR 1.18 (95% CI 0.64–2.20)	
	Highest exposure: HR 0.74 (95% CI 0.38–1.41)	
	Men	
	Intermediate exposure 1: HR 0.81 (95% CI 0.29–2.28)	
	Intermediate exposure 2: HR 0.77 (95% CI 0.31–1.94)	
	Intermediate exposure 3: HR 1.13 (95% CI 0.49–2.61)	
	Highest exposure: HR 0.55 (95% CI 0.22–1.37)	
	Women	
	Intermediate exposure 1: HR 1.18 (95% CI 0.41–3.44)	
	Intermediate exposure 2: HR 0.93 (95% CI 0.34–2.53)	
	Intermediate exposure 3: HR 1.25 (95% CI 0.50–3.15)	
	Highest exposure: HR 0.92 (95% CI 0.36–2.38)	
Ugai 2018	Reference category: lowest exposure	Low risk:
	Acute myeloid leukaemia	Selection: 4/4 stars, low risk
	All participants	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: HR 0.91 (95% CI 0.44–1.90)	Outcome: 3/3 stars, low risk
	Intermediate exposure 2: HR 1.19 (95% CI 0.62–2.31)	Total score: 9/9 stars, high quality.
	Highest exposure: HR 1.20 (95% CI 0.62–2.32)	
	Men	
	Intermediate exposure 1: HR 0.66 (95% CI 0.24–1.76)	
	Intermediate exposure 2: HR 1.26 (95% CI 0.56–2.84)	
	Highest exposure: HR 0.86 (95% CI 0.36–2.06)	
	Women	
	Intermediate exposure 1: HR 1.53 (95% CI 0.50–4.69)	
	Intermediate exposure 2: HR 1.08 (95% CI 0.34–3.44)	
	Highest exposure: HR 1.96 (95% CI 0.68–5.67)	
Ui 2009	Reference category: lowest exposure	Low risk:

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

	Liver cancer	Selection: 4/4 stars, low risk
	All participants	
	Intermediate exposure 1: HR 0.78 (95% CI 0.54–1.12)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: HR 0.98 (95% CI 0.69–1.37)	
	Highest exposure: HR 0.58 (95% CI 0.41–0.83)	Outcome: 3/3 stars, low risk
	Men	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: HR 0.83 (95% CI 0.53–1.30)	
	Intermediate exposure 2: HR 1.11 (95% CI 0.73–1.68)	
	Highest exposure: HR 0.63 (95% CI 0.41–0.98)	
	Women	
	Intermediate exposure 1: HR 0.68 (95% CI 0.35–1.31)	
	Intermediate exposure 2: HR 0.79 (95% CI 0.44–1.44)	
	Highest exposure: HR 0.50 (95% CI 0.27–0.90)	
Yang 2011a	Reference category: lowest exposure	Low risk:
	Exposure assessment A: intake of green tea	Selection: 4/4 stars, low risk
	Colorectal cancer	
	Highest exposure: HR 0.77 (95% CI 0.59–1.01)	Comparability: 2/2 stars, low risk
	Colon cancer	
	Highest exposure: HR 0.69 (95% CI 0.48–0.98)	Outcome: 3/3 stars, low risk
	Rectal cancer	
	Highest exposure: HR 0.89 (95% CI 0.59–1.34)	Total score: 9/9 stars, high quality.
	Exposure assessment B: consumption of green tea	
	Intermediate exposure: HR 0.66 (95% CI 0.46–0.93)	
	Highest exposure: HR 0.85 (95% CI 0.62–1.15)	
	Data also available stratified by smoking status (non-smokers and smokers)	
Zhao 2017	Reference category: lowest exposure	Low risk:
	Total cancer mortality	Selection: 4/4 stars, low risk
	All participants	
	Exposure assessment A: intake of green tea	Comparability: 2/2 stars, low risk
	Highest exposure: HR 1.01 (95% CI 0.93–1.10)	
	Exposure assessment B: consumption of green tea	Outcome: 3/3 stars, low risk
	Intermediate exposure: HR 0.98 (95% CI 0.87–1.10)	
	Highest exposure: HR 1.04 (95% CI 0.95–1.14)	Total score: 9/9 stars, high quality.
	Men	

Table 5. Detailed summary results of included nonexperimental cohort studies (Continued)

Exposure assessment A: intake of green tea

Highest exposure: HR 1.06 (95% CI 0.94-1.19)

Exposure assessment B: consumption of green tea

Intermediate exposure: HR 1.06 (95% CI 0.92-1.22)

Highest exposure: HR 1.06 (95% CI 0.93-1.21)

Women

Exposure assessment A: intake of green tea

Highest exposure: HR 0.97 (95% CI 0.86-1.08)

Exposure assessment B: consumption of green tea

Intermediate exposure: HR 0.82 (95% CI 0.67-1.01)

Highest exposure: HR 1.03 (95% CI 0.91-1.17)

Table 6. Detailed summary results of included nonexperimental case-control studies

References	Detailed summary results	The Newcastle-Ottawa Scale (NOS)
Bandera 2010	Reference category: lowest exposure	Low risk:
	Endometrial cancer	Selection: 4/4 stars, low risk
	Intermediate exposure: OR 1.04 (95% CI 0.72-1.50)	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.76 (95% CI 0.48-1.21)	Exposure: 2/3 stars, difference in response rate between cases and controls or no designation
		Total score: 8/9 stars, moderate quality.
Berroukche 2012	Reference category: lowest exposure	Low risk:
	Prostate cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: OR 1.4 (95% CI 0.8-2.2)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.9 (95% CI 0.5-1.4)	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.6 (95% CI 0.3-1.1)	Total score: 8/9 stars, moderate quality.
Bonner 2005	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 3/4 stars, no description of source of controls
	Intermediate exposure: OR 0.84 (95% CI 0.38-1.85)	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.59 (95% CI 0.26-1.37)	Exposure: 2/3 stars, low risk
		Total score: 7/9 stars, moderate quality.
Chen 2011	Oesophageal cancer	Low risk:
	Reference category: lowest exposure	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: OR 1.27 (95% CI 0.72-1.89)	Comparability: 2/2 stars, low risk

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

	Intermediate exposure 2: OR 0.97 (95% CI 0.59-2.56)	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.92 (95% CI 0.49-2.32)	Total score: 8/9 stars, moderate quality.
Chen 2017a	Oral cancer	Low risk:
	Reference category: lowest exposure	Chen 2015
	Chen 2015	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.48 (95% CI 0.28-0.82)	Comparability: 2/2 stars, low risk
	Chen 2016	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.501 (95% CI 0.284-0.883)	Total score: 9/9 stars, high quality.
	Chen 2017a	Chen 2016
	non-smokers	Selection: 3/4 stars, hospital controls
	Highest exposure: OR 0.515 (95% CI 0.323-0.821)	Comparability: 2/2 stars, low risk
	Former/current smokers	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.849 (95% CI 0.556-1.298)	Total score: 8/9 stars, moderate quality.
	Non-alcohol drinkers	Chen 2017a
	Highest exposure: OR 0.551 (95% CI 0.372-0.817)	Selection: 3/4 stars, hospital controls
	Former/current alcohol drinkers	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.934 (95% CI 0.934-1.563)	Exposure: 3/3 stars, low risk
		Total score: 8/9 stars, moderate quality.
Fu 2013	Oral cancer	Low risk:
	Reference category: lowest exposure	Selection: 3/4 stars, hospital controls
	Men	Comparability: 2/2 stars, low risk
	Intermediate exposure: OR 0.82 (95% CI 0.69-1.07)	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.72 (95% CI 0.54-0.93)	Total score: 8/9 stars, moderate quality.
	Women	
	Intermediate exposure: OR 1.00 (95% CI 0.80-1.25)	
	Highest exposure: OR 0.93 (95% CI 0.74-1.26)	
Gao 1994	Oesophageal cancer	Low risk:
	Reference category: lowest exposure	Selection: 3/4 stars, hospital controls
	Exposure assessment A: intake of green tea	Comparability: 2/2 stars, low risk
	Men	Exposure: 2/3 stars, non-response rate difference between cases and controls or NR
	Highest exposure: OR 0.80 (95% CI 0.58-1.09)	Total score: 7/9 stars, moderate quality.
	Women	
	Highest exposure: OR 0.50 (95% CI 0.30-0.83)	
	Exposure assessment B: green tea consumption	

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

Men		
Intermediate exposure: OR 0.79 (95% CI 0.53-1.17)		
Highest exposure: OR 0.79 (95% CI 0.56-1.13)		
Women		
Intermediate exposure: OR 0.77 (95% CI 0.39-1.53)		
Highest exposure: OR 0.34 (95% CI 0.17-0.69)		
Gao 2005	Reference category: lowest exposure	Low risk:
	Endometrial cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.81 (95% CI 0.65-1.00)	Comparability: 1/2 stars, the study did not control for smoking.
		Exposure: 2/3 stars, nonresponse rate different between cases and controls or NR
		Total score: 7/9 stars, moderate quality.
Gavrilas 2018	Colorectal cancer	Low risk:
	Reference category: lowest exposure	Selection: 3/4 stars, no description of controls
	Intermediate exposure 1: OR 0.34 (95% CI 0.15-0.76)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.03 (95% CI 0.01-0.10)	Exposure: 2/3 stars, non-response rate NR
	Highest exposure: OR 0.14 (95% CI 0.05-0.34)	Total score: 7/9 stars, moderate quality.
Goodman 2003	Ovarian cancer	Low risk:
	Reference category: lowest exposure	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.9 (95% CI 0.6-1.5)	Comparability: 1/2 stars, the study did not control for smoking
	Highest exposure A: OR 1.0 (95% CI 0.6-1.9)	Exposure: 3/3 stars, low risk
	Highest exposure B: OR 0.9 (95% CI 0.5-1.6)	Total score: 8/9 stars, moderate quality.
Goto 1990	Pancreatic cancer	Low risk:
	Reference category: lowest exposure	Selection: 3/4 stars, no description of source of controls
	Highest exposure: OR 0.34 (95% CI 0.17-0.67)	Comparability: 2/2 stars, low risk
		Exposure: 2/3 stars, non-response rate different between cases and controls or NR
		Total score: 7/9 stars, moderate quality.
Green 2014	Reference category: lowest exposure	Low risk:
	Colorectal cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: OR 0.99 (95% CI 0.64-1.52)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 1.15 (95% CI 0.62-2.13)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

	Highest exposure: OR 0.99 (95% CI 0.62-1.58)	Total score: 8/9 stars, moderate quality.
	Proximal colon cancer	
	Intermediate exposure 1: OR 1.36 (95% CI 0.76-2.41)	
	Intermediate exposure 2: OR 0.61 (95% CI 0.20-1.83)	
	Highest exposure: OR 0.95 (95% CI 0.50-1.78)	
	Distal colon cancer	
	Intermediate exposure 1: OR 0.75 (95% CI 0.38-1.46)	
	Intermediate exposure 2: OR 1.31 (95% CI 0.55-3.10)	
	Highest exposure: OR 0.97 (95% CI 0.47-2.03)	
	Rectal cancer	
	Intermediate exposure 1: OR 0.91 (95% CI 0.48-1.71)	
	Intermediate exposure 2: OR 1.49 (95% CI 0.67-3.32)	
	Highest exposure: OR 1.05 (95% CI 0.53-2.10)	
Hakim 2000	Skin cancer	Low risk:
	Reference category: lowest exposure	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.82 (95% CI 0.35-1.90)	Comparability: 1/2 stars, the study did not control for smoking.
		Exposure: 3/3 stars, low risk
		Total score: 8/9 stars, moderate quality.
Han 2008	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 4/4 stars, low risk
	Exposure assessment 1:	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.520 (95% CI 0.392-0.691)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Exposure assessment 2:	Total score: 8/9 stars, moderate quality.
	Intermediate exposure 1: OR 0.222 (95% CI 0.127-0.390)	
	Intermediate exposure 2: OR 0.687 (95% CI 0.448-1.052)	
	Highest exposure: OR 0.734 (95% CI 0.476-1.132)	
Hemelt 2010	Bladder cancer	Low risk:
	Reference category: lowest exposure	Selection: 3/4 stars, hospital controls
	Exposure assessment 1:	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.95 (95% CI 0.68-1.32)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Exposure assessment 2:	Total score: 7/9 stars, moderate quality.
	Intermediate exposure: OR 0.83 (95% CI 0.54-1.27)	

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

	Highest exposure: OR 1.02 (95% CI 0.71-1.48)	
	further divided by cups/d: < 4 cups/d OR 1.23 (95% CI 0.76-1.97);	
	> 4 cups/d OR 0.83 (95% CI 0.53-1.28)	
Hoshiyama 1992	Reference category: lowest exposure Single stomach cancer Intermediate exposure: OR 1.2 (95% CI 0.8-1.7) Highest exposure: OR 0.9 (95% CI 0.6-1.3) Multiple stomach cancer Intermediate exposure: OR 1.5 (95% CI 0.6-3.5) Highest exposure: OR 1.6 (95% CI 0.7-3.9)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Exposure: 3/3 stars, non-response rate different between cases and controls or NR Total score: 8/9 stars, moderate quality.
Hsu 2012	Reference category: lowest exposure Nasopharyngeal carcinoma Intermediate exposure: OR 0.58 (95% CI 0.35-0.98) Highest exposure: OR 0.61 (95% CI 0.40-0.91)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Exposure: 2/3 stars, non-response rate different between cases and controls or NR Total score: 8/9 stars, moderate quality.
Huang 1999	Huang 1999 Reference category: lowest exposure Stomach cancer Intermediate exposure 1: OR 0.88 (95% CI 0.73-1.05) Intermediate exposure 2: OR 1.08 (95% CI 0.90-1.24) Highest exposure: OR 0.90 (95% CI 0.73-1.11) Inoue 1994 Reference category: lowest exposure Stomach cancer (total) Highest exposure: OR 1.09 (95% CI 0.83-1.43) Subsite Cardia Highest exposure: OR 1.12 (95% CI 0.70-1.79) Middle Highest exposure: OR 1.06 (95% CI 0.73-1.54) Antrum Highest exposure: OR 1.10 (95% CI 0.78-1.57) Kato 1990a	High risk: Huang 1999 Selection: 3/4 stars, hospital controls Comparability: 2/2 stars, low risk Exposure: 2/3 stars, non-respondent described Total score: 7/9 stars, moderate quality. Kato 1990a Selection: 2/4 stars, potential bias in selection of cases and hospital controls Comparability: 1/2 stars, the study did not control for smoking. Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire. Total score: 5/9 stars, low quality. Inoue 1994 Selection: 3/4 stars, hospital controls Comparability: 1/2 stars, the study did not control for smoking. Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

	Reference category: lowest exposure	Total score: 6/9 stars, low quality.
	Stomach cancer	
	Men	
	Intermediate exposure: RR 1.14 (95% CI 0.82-1.60)	
	Highest exposure: RR 1.01 (95% CI 0.70-1.47)	
	Women	
	Intermediate exposure: RR 0.71 (95% CI 0.45-1.14)	
	Highest exposure: RR 0.81 (95% CI 0.51-1.27)	
Inoue 1998	Reference category: lowest exposure	Low risk:
	Oesophageal cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: OR 1.02 (95% CI 0.50-2.10)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 1.07 (95% CI 0.58-2.00)	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
	Intermediate exposure 3: OR 0.96 (95% CI 0.50-1.83)	Total score: 7/9 stars, moderate quality.
	Highest exposure: OR 1.14 (95% CI 0.55-2.34)	
	Stomach cancer (also reported in Inoue 1994 in: Huang 1999 and Inoue 2009a)	
	Intermediate exposure 1: OR 1.00 (95% CI 0.77-1.44)	
	Intermediate exposure 2: OR 0.96 (95% CI 0.70-1.32)	
	Intermediate exposure 3: OR 1.01 (95% CI 0.74-1.39)	
	Highest exposure: OR 0.69 (95% CI 0.48-1.00)	
	Colon cancer	
	Intermediate exposure 1: OR 0.62 (95% CI 0.36-1.05)	
	Intermediate exposure 2: OR 0.64 (95% CI 0.42-1.00)	
	Intermediate exposure 3: OR 0.76 (95% CI 0.49-1.17)	
	Highest exposure: OR 0.77 (95% CI 0.47-1.26)	
	Rectal cancer	
	Intermediate exposure 1: OR 1.41 (95% CI 0.70-2.83)	
	Intermediate exposure 2: OR 1.04 (95% CI 0.55-1.98)	
	Intermediate exposure 3: OR 1.42 (95% CI 0.75-2.69)	
	Highest exposure: OR 1.25 (95% CI 0.62-2.51)	
Inoue 2008	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 4/4 stars, low risk
	Intermediate exposure: OR 0.65 (95% CI 0.45-0.94)	Comparability: 1/2 stars, the study did not control for smoking
	Highest exposure: OR 1.00 (95% CI 0.82-1.22)	

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

		Exposure: 2/3 stars, non-response rate different between cases and controls
		Total score: 7/9 stars, moderate quality.
Islami 2009	Reference category: lowest exposure	Low risk:
	Oesophageal cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.89 (95% CI 0.38-2.09)	Comparability: 2/2 stars, low risk
		Exposure: 2/3 stars, non-respondents described
		Total score: 8/9 stars, moderate quality.
Iwasaki 2014	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure: OR 0.86 (95% CI 0.53-1.41)	Comparability: 2/2 stars, low risk
	Highest exposure: OR 1.27 (95% CI 0.75-2.14)	Exposure: 2/3 stars, non-respondents described
		Total score: 7/9 stars, moderate quality.
Ji 1996	Reference category: lowest exposure	Low risk:
	Stomach cancer	Selection: 4/4 stars, low risk
	Men	Comparability: 2/2 stars, low risk
	Exposure assessment A: green tea drinking status	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Highest exposure: OR 0.96 (95% CI 0.77-1.21)	Total score: 8/9 stars, moderate quality.
	Exposure assessment B: consumption of green tea leaves	
	Intermediate exposure 1: OR 1.06 (95% CI 0.76-1.49)	
	Intermediate exposure 2: OR 1.15 (95% CI 0.82-1.61)	
	Intermediate exposure 3: OR 0.88 (95% CI 0.55-1.24)	
	Highest exposure: OR 0.76 (95% CI 0.55-1.27)	
	Women	
	Exposure assessment A: green tea drinking status	
	Highest exposure: OR 0.77 (95% CI 0.52-1.13)	
	Exposure assessment B: consumption of green tea leaves	
	Intermediate exposure: OR 0.74 (95% CI 0.45-1.21)	
	Highest exposure: OR 0.81 (95% CI 0.46-1.43)	
Ji 1997	Reference category: lowest exposure	Low risk:
	Men	Selection: 4/4 stars, low risk
	Colon cancer	Comparability: 2/2 stars, low risk
	Exposure assessment A: green tea drinking habit	Exposure: 2/3 stars, non-respondents described

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

Highest exposure: OR 0.99 (95% CI 0.74-1.33) Total score: 8/9 stars, moderate quality.

Exposure assessment B: green tea consumption

Intermediate exposure 1: OR 1.13 (95% CI 0.80-1.61)

Intermediate exposure 2: OR 0.92 (95% CI 0.62-1.37)

Highest exposure: OR 0.82 (95% CI 0.52-1.28)

Exposure assessment C: lifetime green tea consumption

Intermediate exposure 1: OR 0.93 (95% CI 0.63-1.35)

Intermediate exposure 2: OR 1.06 (95% CI 0.72-1.56)

Highest exposure: OR 1.01 (95% CI 0.67-1.51)

Rectal cancer

Exposure assessment A: green tea drinking habit

Highest exposure: OR 0.82 (95% CI 0.61-1.10)

Exposure assessment B: green tea consumption

Intermediate exposure 1: OR 0.99 (95% CI 0.69-1.41)

Intermediate exposure 2: OR 0.66 (95% CI 0.43-0.99)

Highest exposure: OR 0.72 (95% CI 0.46-1.13)

Exposure assessment C: lifetime green tea consumption

Intermediate exposure 1: OR 0.88 (95% CI 0.60-1.27)

Intermediate exposure 2: OR 0.75 (95% CI 0.50-1.13)

Highest exposure: OR 0.80 (95% CI 0.53-1.23)

Pancreatic cancer

Exposure assessment A: green tea drinking habit

Highest exposure: OR 0.88 (95% CI 0.60-1.31)

Exposure assessment B: green tea consumption

Intermediate exposure 1: OR 1.23 (95% CI 0.79-1.92)

Intermediate exposure 2: OR 0.57 (95% CI 0.32-1.03)

Highest exposure: OR 0.63 (95% CI 0.34-1.17)

Exposure assessment C: lifetime green tea consumption

Intermediate exposure 1: OR 1.11 (95% CI 0.69-1.79)

Intermediate exposure 2: OR 0.86 (95% CI 0.51-1.45)

Highest exposure: OR 0.59 (95% CI 0.32-1.07)

Women

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

Colon cancer		
Exposure assessment A: green tea drinking habit		
Highest exposure: OR 0.77 (95% CI 0.56-1.06)		
Exposure assessment B: green tea consumption		
Intermediate exposure: OR 0.83 (95% CI 0.57-1.21)		
Highest exposure: OR 0.67 (95% CI 0.41-1.10)		
Exposure assessment C: lifetime green tea consumption		
Intermediate exposure: OR 0.87 (95% CI 0.60-1.27)		
Highest exposure: OR 0.62 (95% CI 0.38-1.02)		
Rectal cancer		
Exposure assessment A: green tea drinking habit		
Highest exposure: OR 0.51 (95% CI 0.36-0.73)		
Exposure assessment B: green tea consumption		
Intermediate exposure: OR 0.51 (95% CI 0.33-0.79)		
Highest exposure: OR 0.57 (95% CI 0.34-0.97)		
Exposure assessment C: lifetime green tea consumption		
Intermediate exposure: OR 0.54 (95% CI 0.35-0.84)		
Highest exposure: OR 0.52 (95% CI 0.30-0.89)		
Pancreatic cancer:		
Exposure assessment A: green tea drinking habit		
Highest exposure: OR 0.47 (95% CI 0.29-0.77)		
Exposure assessment B: green tea consumption		
Intermediate exposure: OR 0.47 (95% CI 0.25-0.89)		
Highest exposure: OR 0.53 (95% CI 0.25-1.09)		
Exposure assessment C: lifetime green tea consumption		
Intermediate exposure: OR 0.59 (95% CI 0.32-1.10)		
Highest exposure: OR 0.38 (95% CI 0.18-0.82)		
Jia 2016	Reference category: lowest exposure	Low risk:
	Lung cancer + mesothelioma mortality	Selection: 4/4 stars, low risk
	Intermediate exposure 1: OR 0.88 (95% CI 0.66-0.87)	Comparability: 1/2 stars, the study did not control for smoking
	Intermediate exposure 2: OR 2.18 (95% CI 0.96-3.50)	Exposure: 2/3 stars, interview not blinded to case/control status
	Highest exposure: OR 0.70 (95% CI 0.57-0.86)	

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

Total score: 7/9 stars, moderate quality.

Jian 2004	Prostate cancer	Low risk:
	Reference category: lowest exposure	Selection: 3/4 stars, hospital controls
	Exposure assessment A: green tea drinking habits	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.28 (95% CI 0.17-0.47)	Exposure: 3/3 stars, low risk
	Exposure assessment B: intake of green tea	Total score: 8/9 stars, moderate quality.
	Intermediate exposure: OR 0.53 (95% CI 0.30-0.94)	
	Highest exposure: OR 0.27 (95% CI 0.15-0.48)	
Jin 2013	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 4/4 stars, low risk
	Exposure assessment A: green tea drinking habits	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.78 (95% CI 0.65-0.95)	Exposure: 3/3 stars, low risk
	Exposure assessment B: consumption of green tea	Total score: 9/9 stars, high quality.
	Intermediate exposure 1: OR 0.76 (95% CI 0.54-1.07)	
	Intermediate exposure 2: OR 0.84 (95% CI 0.66-1.08)	
Kakuta 2009	Reference category: lowest exposure	Low risk:
	Endometrial cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: OR 0.77 (95% CI 0.37-1.58)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.61 (95% CI 0.30-1.23)	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.33 (95% CI 0.15-0.75)	Total score: 8/9 stars, moderate quality.
Kato 1990	Reference category: lowest exposure	High risk:
	Colon cancer	Selection: 3/4 stars, potential for selection bias in cases
	Highest exposure: RR 0.61 (95% CI 0.41-0.91)	Comparability: 1/2 stars, the study did not control for smoking
	Rectal cancer	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
Kono 1988	Highest exposure: RR 1.32 (95% CI 0.78-2.23)	Total score: 6/9 stars, low quality.
	Stomach cancer	High risk:
	Reference category: lowest exposure	Selection: 4/4 stars when using population controls and 3/4 when using hospital controls
	Population controls	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.3 (95% CI 0.1-0.7)	Exposure: 1/3 stars, different methods of exposure ascertainment in cases and controls and self-reported
Kono 1988	Hospital controls	

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

	Highest exposure: OR 0.5 (95% CI 0.3-1.1)	exposure not within a structured interview or questionnaire. Total score: 7/9 stars, moderate quality and 6/9 stars low quality.
Kubik 2008	<p>Kubik 2008</p> <p>Reference category: lowest exposure (OR for trend only reported)</p> <p>Lung cancer</p> <p>Men nonsmokers</p> <p>Highest exposure: OR 1.08 (95% CI 0.56-2.08)</p> <p>Men smokers</p> <p>Highest exposure: OR 0.93 (95% CI 0.63-1.38)</p> <p>Women nonsmokers</p> <p>Highest exposure: OR 0.88 (95% CI 0.61-1.27)</p> <p>Women smokers</p> <p>Highest exposure: OR 1.09 (95% CI 0.80-1.49)</p> <p>Data on former smokers who quit from 10 to < 20 years were excluded from the reported analysis. Previous report on fewer female cases reported in Kubik 2004.</p> <p>Kubik 2004</p> <p>Reference category: lowest exposure</p> <p>Lung cancer</p> <p>Intermediate exposure: OR 0.97 (95% CI 0.69-1.38)</p> <p>Highest exposure: OR 1.02 (95% CI 0.74-1.40)</p> <p>Also analysis available stratified by smoking habits</p> <p>Subsequent report in Kubik 2008 with longer recruitment of women from the same area</p>	<p>Low risk:</p> <p>Kubik 2004</p> <p>Selection: 3/4 stars, hospital controls</p> <p>Comparability: 2/2 stars, low risk</p> <p>Exposure: 2/3 stars, non-response rate different between cases and controls or NR</p> <p>Total score: 7/9 stars, moderate quality.</p> <p>Kubik 2008</p> <p>Selection: 3/4 stars, hospital controls</p> <p>Comparability: 2/2 stars, low risk</p> <p>Exposure: 2/3 stars, non-response rate different between cases and controls or NR</p> <p>Total score: 7/9 stars, moderate quality.</p>
Kuo 2009	<p>Leukaemia</p> <p>Green-tea-only consumption compared to no-tea consumption</p> <p>Cases exposed = 9, controls exposed = 24, cases not exposed = 63, controls not exposed = 123</p> <p>OR 0.73 (95% CI 0.32-1.67)</p> <p>Consumption of green tea with other types of tea compared to no-tea consumption</p> <p>Cases exposed = 17, controls exposed = 61, cases not exposed = 63, controls not exposed = 123</p>	<p>High risk:</p> <p>Selection: 4/4 stars, low risk</p> <p>Comparability: 0/2 stars, only crude analysis without adjustment for confounding factors</p> <p>Exposure: 2/3 stars, non-response rate different between cases and controls or NR</p> <p>Total score: 6/9 stars, low quality.</p>

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

OR 0.54 (95% CI 0.29-1.01)

Lassed 2016	Reference category: lowest exposure	High risk:
	Postate cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure: OR 0.64 (95% CI 0.36-1.15)	Comparability: 0/2 stars, crude analysis with no adjustment for confounding factors
	Highest exposure: OR 0.40 (95% CI 0.08-1.92)	Exposure: 3/3 stars, low risk
		Total score: 6/9 stars, low quality.
Le Marchand 2000	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: OR 1.0 (95% CI 0.6-1.7)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.7 (95% CI 0.4-1.3)	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.9 (95% CI 0.5-1.6)	Total score: 9/9 stars, high quality.
Lee 2017	Reference category: lowest exposure	Low risk:
	Prostate cancer	Selection: 3/4 stars, hospital controls
	Exposure assessment A	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.60 (95% CI 0.37-0.98)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Exposure assessment B	Total score: 7/9 stars, moderate quality.
	Intermediate exposure 1: OR 1.53 (95% CI 0.39-5.93)	
	Intermediate exposure 2: OR 0.16 (95% CI 0.01-2.22)	
Lei 1994	Reference category: lowest exposure	High risk:
	Lung cancer	Selection: 1/4 stars, no description of identification of cases with potential selection bias and hospital controls
	Highest exposure: OR 0.71 (95% CI 0.43-1.18)	Comparability: 1/2 stars, the study did not control for smoking.
Leung 2016		Exposure: 1/3 star, no description of exposure ascertainment and non-response rate between cases and controls NR
		Total score: 3/9 stars, low quality.
	Reference category: lowest exposure	Low risk:
	Ovarian cancer	Selection: 4/4 stars, low risk
	Exposure assessment A	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.84 (95% CI 0.54-1.30)	Exposure: 3/3 stars, low risk
	Exposure assessment B	Total score: 9/9 stars, high quality
	Intermediate exposure 1: OR 1.03 (95% CI 0.50-2.00)	

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

	Intermediate exposure 2: OR 0.78 (95% CI 0.37-1.55)	
	Highest exposure: OR 0.77 (95% CI 0.39-1.46)	
Li 2011a	Reference category: lowest exposure	Low risk:
	Results using population controls	Selection: 4/4 stars when using population controls and 3/4 when using hospital controls, low risk
	All cancer	Comparability: 2/2 stars, low risk
	Exposure assessment A	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Highest exposure: OR 0.78 (95% CI 0.60-1.01)	Total score: 8/9 stars and 7/9 stars, moderate quality.
	Exposure assessment B	
	Intermediate exposure: OR 0.71 (95% CI 0.47-1.08)	
	Highest exposure: OR 0.51 (95% CI 0.27-0.74)	
	Breast cancer	
	Exposure assessment A	
	Highest exposure: OR 0.61 (95% CI 0.32-1.18)	
	Exposure assessment B	
	Intermediate exposure: OR 0.60 (95% CI 0.24-1.50)	
	Highest exposure: OR 0.07 (95% CI 0.01-0.47)	
	Colorectal cancer	
	Exposure assessment A	
	Highest exposure: OR 0.62 (95% CI 0.42-0.92)	
	Exposure assessment B	
	Intermediate exposure: OR 0.55 (95% CI 0.28-1.06)	
	Highest exposure: OR 0.45 (95% CI 0.25-0.82)	
	Leukaemia	
	Exposure assessment A	
	Highest exposure: OR 1.55 (95% CI 0.61-3.96)	
	Exposure assessment B	
	Intermediate exposure: OR not estimable	
	Highest exposure: OR 0.57 (95% CI 0.07-4.79)	
	Results using hospital controls	
	All cancer	
	Exposure assessment A	
	Highest exposure: OR 0.77 (95% CI 0.59-1.00)	
	Exposure assessment B:	
	Intermediate exposure: OR 0.60 (95% CI 0.40-0.92)	

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

	Highest exposure: OR 0.51 (95% CI 0.31-0.83)	
	Breast cancer	
	Exposure assessment A	
	Highest exposure: OR 0.55 (95% CI 0.28-1.06)	
	Exposure assessment B	
	Intermediate exposure: OR 0.54 (95% CI 0.22-1.33)	
	Highest exposure: OR 0.06 (95% CI 0.01-0.61)	
	Colorectal cancer	
	Exposure assessment A	
	Highest exposure: OR 0.67 (95% CI 0.45-0.99)	
	Exposure assessment B	
	Intermediate exposure: OR 0.51 (95% CI 0.26-0.99)	
	Highest exposure: OR 0.52 (95% CI 0.29-0.94)	
	Leukaemia	
	Exposure assessment A	
	Highest exposure: OR 1.46 (95% CI 0.55-3.84)	
	Exposure assessment B	
	Intermediate exposure: OR not estimable	
	Highest exposure: OR 0.65 (95% CI 0.08-5.63)	
Li 2014	Reference category: lowest exposure	Low risk:
	Prostate cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.59 (95% CI 0.40-0.87)	Comparability: 1/2 stars, the study did not control for smoking
		Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
		Total score: 7/9 stars, moderate quality.
Li 2016	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 3/4 stars, hospital controls
	Highest exposure: OR 1.20 (95% CI 0.80-1.78)	Comparability: 1/2 stars, the study did not control for smoking
		Exposure: 3/3 stars, low risk
		Total score: 7/9 stars, moderate quality.
Lin 2012	Reference category: highest exposure	High risk:
	Lung cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure: RR 3.01 (95% CI 1.13-8.05)	

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

	Lowest exposure: RR 6.34 (95% CI 2.69-14.91)	Comparability: 1/2 stars, the study did not control for smoking. Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire. Total score: 6/9 stars, low quality.
Liu 2010	Reference category: lowest exposure Stomach cancer: Highest exposure: OR 0.42 (95%CI 0.32-0.55)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Exposure: 3/3 stars, low risk Total score: 9/9 stars, high quality.
Liu 2017	Reference category: highest exposure Leukaemia Lowest exposure: OR 0.71 (95% CI 0.46-1.07)	Low risk: Selection: 3/4 stars, hospital controls Comparability: 2/2 stars, low risk Exposure: 3/3 stars, low risk Total score: 8/9 stars, moderate quality.
Mao 2011	Reference category: lowest exposure Stomach cancer Exposure assessment A: green-tea drinking status Intermediate exposure: OR 0.58 (95% CI 0.46-5.03) Highest exposure: OR 1.02 (95% CI 0.70-1.64) Exposure assessment B: green tea consumption Intermediate exposure 1: OR 0.88 (95% CI 0.57-1.36) Intermediate exposure 2: OR 1.15 (95% CI 0.76-2.35) Highest exposure: OR 1.13 (95% CI 0.52-2.67)	High risk: Selection: 2/4 stars, hospital controls with no description Comparability: 2/2 stars, low risk Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire. Total score: 6/9 stars, low quality.
Mizoo 2013	Reference category: lowest exposure Breast cancer Intermediate exposure 1: OR 0.97 (95% CI 0.71-1.33) Intermediate exposure 2: OR 0.63 (95% CI 0.43-0.93) Highest exposure: OR 0.72 (95% CI 0.46-1.12)	Low risk: Selection: 3/4 stars, hospital controls Comparability: 1/2 stars, the study did not control for smoking Exposure: 3/3 stars, low risk Total score: 7/9 stars, moderate quality.
Mizuno 1992	Reference category: lowest exposure Pancreatic cancer Highest exposure: OR 1.94 (95% CI 1.06-3.55)	High risk: Selection: 3/4 stars, hospital controls Comparability: 1/2 stars, the study did not control for smoking

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

		Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
		Total score: 6/9 stars, low quality.
Mu 2003	Reference category: lowest exposure	Low risk:
	Stomach cancer (Mu 2005)	Li 2011b
	Intermediate exposure 1: OR 1.09 (95% CI 0.53-2.23)	Selection: 4/4 stars, low risk
	Intermediate exposure 2: OR 0.44 (95% CI 0.19-1.01)	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.40 (95% CI 0.14-1.09)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Exposure assessment B: green tea intake	Total score: 8/9 stars, moderate quality.
	Highest exposure: OR 0.59 (95% CI 0.34-1.01)	Mu 2003
	Liver cancer (Li 2011b)	Selection: 3/4 stars, potential selection bias for cases
	Intermediate exposure 1: OR 1.21 (95% CI 0.62-2.36)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.76 (95% CI 0.38-1.51)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Highest exposure: OR 0.55 (95% CI 0.28-1.09)	Total score: 7/9 stars, moderate quality.
	Oesophageal cancer	Mu 2005
	Intermediate exposure 1: OR 1.13 (95% CI 0.67-1.92)	Selection: 4/4 stars, low risk
	Intermediate exposure 2: OR 0.78 (95% CI 0.46-1.34)	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.58 (95% CI 0.35-0.97)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
		Total score: 8/9 stars, moderate quality.
Nagle 2010	Reference category: lowest exposure	Low risk:
	Ovarian cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: OR 0.77 (95% CI 0.61-0.98)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.85 (95% CI 0.63-1.15)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Intermediate exposure 3: OR 0.80 (95% CI 0.54-1.19)	Total score: 8/9 stars, moderate quality
	Intermediate exposure 4: OR 0.92 (95% CI 0.57-1.49)	
	Highest exposure: OR 0.82 (95% CI 0.38-1.79)	
Oze 2014	Reference category: lowest exposure	Low risk:
	Upper aerodigestive tract cancer	Selection: 4/4 stars, low risk
	Intermediate exposure 1: OR 1.25 (95% CI 0.98-1.60)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 1.02 (95% CI 0.77-1.34)	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
	Highest exposure: OR 1.39 (95% CI 1.13-1.70)	Total score: 8/9 stars, moderate quality.
	Subsite	

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

Oesophageal cancer Intermediate exposure 1: OR 1.20 (95% CI 0.82–1.77) Intermediate exposure 2: OR 1.00 (95% CI 0.65–1.55) Highest exposure: OR 1.31 (95% CI 0.95–1.81) Oral, pharyngeal and laryngeal cancer Intermediate exposure 1: OR 1.34 (95% CI 0.97–1.86) Intermediate exposure 2: OR 1.03 (95% CI 0.71–1.50) Highest exposure: OR 1.47 (95% CI 1.12–1.93) Available also stratified analysis by smoking status (never, ever) and alcoholic drinker		
Peng 2013	Reference category: lowest exposure Colorectal cancer Highest exposure: OR 0.54 (95% CI 0.41–0.72)	Low risk: Selection: 4/4 stars, low risk Comparability: 1/2 stars, the study did not control for smoking. Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire. Total score: 7/9 stars, moderate quality
Peng 2015	Reference category: lowest exposure Oesophageal cancer Highest exposure: OR 0.63 (95% CI 0.45–0.91)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire. Total score: 8/9 stars, moderate quality.
Ruan 2010	Reference category: lowest exposure Nasopharyngeal cancer Highest exposure: OR 0.44 (95% CI 0.36–0.54)	Low risk: Selection: 3/4 stars, hospital controls Comparability: 1/2 stars, the study did not control for smoking Exposure: 3/3 stars, low risk Total score: 7/9 stars, moderate quality.
Setiawan 2001	Reference category: lowest exposure Stomach cancer Exposure assessment A Highest exposure: OR 0.52 (95% CI 0.29–0.94) Exposure assessment B Intermediate exposure: OR 0.70 (95% CI 0.36–1.36)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Exposure: 2/3 stars, non-response rate different between cases and controls or NR Total score: 8/9 stars, moderate quality.

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

Highest exposure: OR 0.39 (95% CI 0.15–1.01)

Shrubsole 2009	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 4/4 stars, low risk
	Exposure assessment A	Comparability: 1/2 stars, the study did not control for smoking.
	Highest exposure: OR 0.88 (95% CI 0.79–0.98)	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
	Exposure assessment B	Total score: 7/9 stars, moderate quality.
	Intermediate exposure 1: OR 0.89 (95% CI 0.73–1.08)	
	Intermediate exposure 2: OR 0.93 (95% CI 0.77–1.12)	
	Intermediate exposure 3: OR 0.72 (95% CI 0.59–0.88)	
	Highest exposure: OR 0.97 (95% CI 0.80–1.16)	
Stratified analysis also available in pre- and post-menopausal women		
Song 2008	Reference category: lowest exposure	Low risk:
	Ovarian cancer	Selection: 4/4 stars, low risk
	Intermediate category: OR 0.82 (95% CI 0.66–1.04)	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.46 (95% CI 0.26–0.84)	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
		Total score: 8/9 stars, moderate quality
Sonoda 2004	Reference category: lowest exposure	Low risk:
	Prostate cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: OR 0.99 (95% CI 0.48–2.03)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.79 (95% CI 0.38–1.63)	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
	Highest exposure: OR 0.67 (95% CI 0.27–1.64)	Total score: 7/9 stars, moderate quality.
Tajima 1985	Reference category: lowest exposure	High risk:
	Stomach cancer	Selection: 3/4 stars, hospital controls
	Highest exposure: OR 0.64, CIs NR	Comparability: 1/2 stars, the study did not control for smoking
	Colon cancer	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
	Highest exposure: OR 0.97, CIs NR	Total score: 6/9 stars, low quality.
	Rectal cancer	
	Highest exposure: OR 0.91, CIs NR	
Takezaki 2000	Reference category: lowest exposure	Low risk:
	Pharynx (hypopharynx) cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure: OR 0.8 (95% CI 0.4–1.5)	Comparability: 2/2 stars, low risk

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

	Highest exposure: OR 0.8 (95% CI 0.3-2.3)	Exposure: 3/3 stars, low risk
	Oesophageal cancer	Total score: 8/9 stars, moderate quality.
	Intermediate exposure: OR 0.8 (95% CI 0.6-1.1)	
	Highest exposure: OR 0.7 (95% CI 0.4-1.2)	
	Analysis also reported for upper, middle and lower third of the oesophagus	
Takezaki 2001	Reference category: lowest quartile	Low risk:
	Adenocarcinoma	Selection: 3/4 stars, hospital controls
	Men	Comparability: 2/2 stars, low risk
	Intermediate exposure 1: OR 1.06 (95% CI 0.72-1.57)	Exposure: 3/3 stars, low risk
	Intermediate exposure 2: OR 1.11 (95% CI 0.74-1.66)	Total score: 8/9 stars, moderate quality.
	Highest exposure: OR 1.33 (95% CI 0.83-2.15)	
	Women	
	Intermediate exposure 1: OR 0.98 (95% CI 0.58-1.66)	
	Intermediate exposure 2: OR 1.14 (95% CI 0.68-1.93)	
	Highest exposure: OR 1.14 (95% CI 0.61-2.12)	
	Squamous cell and small-cell carcinoma	
	Men	
	Intermediate exposure 1: OR 0.99 (95% CI 0.67-1.47)	
	Intermediate exposure 2: OR 1.17 (95% CI 0.78-1.73)	
	Highest exposure: OR 1.08 (95% CI 0.66-1.75)	
	Women	
	Intermediate exposure 1: OR 0.36 (95% CI 0.14-0.93)	
	Intermediate exposure 2: OR 0.41 (95% CI 0.16-1.04)	
	Highest exposure: OR 0.49 (95% CI 0.17-1.46)	
Tewes 1990	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 3/4 stars, case identification with no independent validation
	Highest exposure: OR 2.74 (95% CI 1.10-6.80)	Comparability: 2/2 stars, low risk
		Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
		Total score: 7/9 stars, moderate quality.
Tse 2017	Reference category: lowest exposure	High risk:
	Prostate cancer	Selection: 3/4 stars, hospital controls
	Highest exposure: OR 0.56 (95% CI 0.34-0.91)	

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

		<p>Comparability: 1/2 stars, the study did not control for smoking.</p> <p>Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.</p> <p>Total score: 6/9 stars, low quality.</p>
Wakai 2004	<p>Reference category: lowest exposure</p> <p>Bladder cancer</p> <p>Intermediate exposure 1: OR 1.49 (95% CI 0.78–2.84)</p> <p>Intermediate exposure 2: OR 2.79 (95% CI 1.49–5.23)</p> <p>Highest exposure: OR 1.24 (95% CI 0.51–2.99)</p>	<p>Low risk:</p> <p>Selection: 3/4 stars, hospital controls</p> <p>Comparability: 2/2 stars, low risk</p> <p>Exposure: 3/3 stars, low risk</p> <p>Total score: 8/9 stars, moderate quality.</p>
Wang 1999	<p>Reference category: lowest exposure</p> <p>Oesophageal cancer</p> <p>Highest exposure: OR 0.20 (95% CI 0.06–0.67)</p> <p>Other stomach cancer</p> <p>Highest exposure: OR 0.28 (CIs NR)</p>	<p>Low risk:</p> <p>Selection: 4/4 stars, low risk</p> <p>Comparability: 2/2 stars, low risk</p> <p>Exposure: 1/3 stars, no description of exposure ascertainment and non-response rate different between cases and controls or NR</p> <p>Total score: 7/9 stars, moderate quality.</p>
Wang 2006	<p>Reference category: lowest quartile</p> <p>Oesophageal cancer</p> <p>Highest exposure: OR 0.13 (95% CI 0.03–0.62)</p>	<p>High risk:</p> <p>Selection: 4/4 stars, low risk</p> <p>Comparability: 0/2 stars, no information on confounders as smoking</p> <p>Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.</p> <p>Total score: 6/9 stars, low quality.</p>
Wang 2007	<p>Reference category: lowest exposure</p> <p>Oesophageal cancer</p> <p>Men</p> <p>Highest exposure: OR 1.368 (95% CI 0.948–1.975)</p> <p>Women</p> <p>Highest exposure: OR 0.257 (95% CI 0.070–0.941)</p> <p>Available analysis according green tea drinking duration (years)</p>	<p>Low risk:</p> <p>Selection: 4/4 stars, low risk</p> <p>Comparability: 1/2 stars, the study did not control for smoking.</p> <p>Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.</p> <p>Total score: 7/9 stars, moderate quality.</p>
Wang 2012a	<p>Reference category: lowest exposure</p> <p>Renal cancer</p> <p>Highest exposure: OR 0.34 (95% CI 0.21–0.55)</p>	<p>High risk:</p> <p>Selection: 3/4 stars, hospital controls</p> <p>Comparability: 1/2 stars, the study did not control for smoking.</p>

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

		Exposure: 2/3 stars, non-response rate different between cases and controls or NR
		Total score: 6/9 stars, low quality.
Wang 2012b	Reference category: lowest exposure	Low risk:
	Multiple myeloma	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: OR 0.94 (95% CI 0.52–1.72)	Comparability: 1/2 stars, the study did not control for smoking.
	Intermediate exposure 2: OR 0.51 (95% CI 0.35–0.73)	Exposure: 3/3 stars, low risk
	Highest exposure: OR 0.27 (95% CI 0.13–0.58)	Total score: 7/9 stars, moderate quality.
	Overall exposure: OR 0.38 (95% CI 0.27–0.53)	
Wang 2012c	Reference category: lowest exposure	Low risk:
	Pancreatic cancer	Selection: 4/4 stars, low risk
	Men	Comparability: 2/2 stars, low risk
	Exposure assessment A	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Highest exposure: OR 1.02 (95% CI 0.78–1.35)	Total score: 8/9 stars, moderate quality.
	Exposure assessment B	
	Intermediate exposure 1: OR 0.99 (95% CI 0.71–1.40)	
	Intermediate exposure 2: OR 1.38 (95% CI 0.91–2.11)	
	Highest exposure: OR 0.91 (95% CI 0.65–1.27)	
	Women	
	Exposure assessment A	
	Highest exposure: OR 0.68 (95% CI 0.48–0.96)	
	Exposure assessment B	
	Intermediate exposure 1: OR 0.85 (95% CI 0.49–1.46)	
	Intermediate exposure 2: OR 0.64 (95% CI 0.37–1.11)	
	Highest exposure: OR 0.56 (95% CI 0.32–0.98)	
Wang 2013a	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 3/4 stars, hospital controls
	Highest exposure: OR 0.65 (95% CI 0.44–0.97)	Comparability: 1/2 stars, the study did not control for smoking.
		Exposure: 3/3 stars, low risk
		Total score: 7/9 stars, moderate quality.
Wang 2013b	Reference category: lowest exposure	Low risk:
	Bladder cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure: OR 0.82 (95% CI 0.61–1.11)	Comparability: 2/2 stars, low risk

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

	Highest exposure: OR 0.60 (95% CI 0.45–0.79)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR Total score: 7/9 stars, moderate quality.
Wang 2015	Reference category: lowest exposure Stomach cancer Exposure assessment A: green tea intake Highest exposure: OR 0.72 (95% CI 0.32–0.98) Exposure assessment B: green tea consumption Intermediate exposure: OR 0.87 (95% CI 0.43–1.81) Intermediate exposure: OR 0.66 (95% CI 0.36–1.17) Highest exposure: OR 0.53 (95% CI 0.23–0.97)	Low risk: Selection: 3/4 stars, hospital controls Comparability: 2/2 stars, low risk Exposure: 2/3 stars, non-response rate different between cases and controls or not reported Total score: 7/9 stars, moderate quality.
Wilkens 1996	Reference category: lowest exposure Urinary tract cancer Men Intermediate exposure: OR 1.1 (95% CI 0.6–1.9) Highest exposure: OR 1.1 (95% CI 0.6–2.3) Women Intermediate exposure: OR 0.8 (95% CI 0.3–2.1) Highest exposure: OR 0.9 (95% CI 0.3–2.6)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Exposure: 2/3 stars, non-response rate different between cases and controls or NR Total score: 8/9 stars, moderate quality.
Wu 2003	Reference category: lowest exposure Breast cancer Intermediate exposure: OR 0.74 (95% CI 0.52–1.04) Highest exposure: OR 0.61 (95% CI 0.40–0.93)	Low risk: Selection: 4/4 stars, low risk Comparability: 2/2 stars, low risk Exposure: 3/3 stars, low risk Total score: 9/9 stars, high quality.
Wu 2009a	Reference category: lowest exposure Prostate cancer Highest exposure: OR 0.52 (95% CI 0.28–0.96) Intermediate categories NR	High risk: Selection: 2/4 stars, potential selection bias for cases and hospital controls Comparability: 1/2 stars, the study did not control for smoking. Exposure: 2/3 stars, non-response rate different between cases and controls or NR Total score: 5/9 stars, low quality.
Wu 2009b	Reference category: lowest exposure Oesophageal cancer Dafeng (high risk area)	Low risk: Selection: 3/4 stars, potential for selection bias in cases

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

	Highest exposure: OR 1.0 (95% CI 0.7-1.3)	Comparability: 2/2 stars, low risk
	Ganyu (low risk area)	Exposure: 3/3 stars, low risk
	Highest exposure: OR 1.3 (95% CI 0.9-1.7)	Total score: 8/9 stars, moderate quality.
Xu 2007	Reference category: lowest exposure	Low risk:
	Endometrial cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.8 (95% CI 0.6-0.9)	Comparability: 1/2 stars, the study did not control for smoking.
		Exposure: 3/3 stars, low risk
		Total score: 8/9 stars, moderate quality.
Xu 2013	Reference category: lowest exposure	High risk:
	Lung cancer	Selection: 1/4 star, no description of cases, potential selection bias in cases, no description of controls
	Highest exposure: OR 0.333 (95% CI 0.154 -0.720)	Comparability: 1/2 stars, the study did not control for smoking.
		Exposure: 2/3 stars, non-response rate different between cases and controls or NR
		Total score: 4/9 stars, low quality.
Yan 2016	Reference category: lowest exposure	Low risk:
	Oral cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.58 (95% CI 0.42-0.79)	Comparability: 2/2 stars, low risk
		Exposure: 2/3 stars, non-response rate different between cases and controls or NR
		Total score: 8/9 stars, moderate quality.
Ye 1998	Reference category: lowest exposure	Low risk:
	Stomach cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 1.72 (95% CI 1.26-2.36)	Comparability: 1/2 stars, the study did not control for smoking.
		Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
		Total score: 7/9 stars, moderate quality.
Yu 1995	Reference category: lowest exposure	Low risk:
	Stomach cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.71 (95% CI 0.54-0.93)	Comparability: 2/2 stars, low risk
	Highest exposure A: OR 0.76 (95% CI 0.57-1.03)	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
	Highest exposure B: OR 0.54 (95% CI 0.33-0.88)	Total score: 8/9 stars, moderate quality.
	Subsite	

Table 6. Detailed summary results of included nonexperimental case-control studies (Continued)

Cardia		
Highest exposure: OR 0.95 (95% CI 0.51-1.77)		
Highest exposure A: OR 0.94 (95% CI 0.47-1.87)		
Highest exposure B: OR 0.98 (95% CI 0.34-2.89)		
Pylori		
Highest exposure: OR 0.29 (95% CI 0.13-0.68)		
Highest exposure A: OR 0.30 (95% CI 0.13-0.73)		
Highest exposure B: OR 0.24 (95% CI 0.05-1.17)		
Antrum		
Highest exposure: OR 0.67 (95% CI 0.41-1.08)		
Highest exposure A: OR 0.79 (95% CI 0.48-1.31)		
Highest exposure B: OR 0.29 (95% CI 0.12-0.71)		
Other sites		
Highest exposure: OR 0.82 (95% CI 0.41-1.65)		
Highest exposure A: OR 0.83 (95% CI 0.40-1.73)		
Highest exposure B: OR 0.76 (95% CI 0.15-3.87)		
Site unknown		
Highest exposure: OR 0.69 (95% CI 0.23-2.06)		
Highest exposure A: OR 0.62 (95% CI 0.17-2.18)		
Highest exposure B: OR 0.87 (95% CI 0.15-5.00)		
Zhang 2002	Reference category: lowest exposure	Low risk:
	Ovarian cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: OR 0.42 (95% CI 0.24-0.73)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: OR 0.40 (95% CI 0.23-0.70)	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
	Highest exposure: OR= 0.43 (95% CI 0.30-0.63)	Total score: 7/9 stars, moderate quality.
Zhang 2007	Reference category: lowest exposure	Low risk:
	Breast cancer	Selection: 3/4 stars, hospital controls
	Intermediate exposure 1: 0.85 (95% CI 0.68-1.05)	Comparability: 2/2 stars, low risk
	Intermediate exposure 2: 0.92 (95% CI 0.75-1.12)	Exposure: 3/3 stars, low risk
	Intermediate exposure 3: 0.57 (95% CI 0.38-0.85)	Total score: 8/9 stars, moderate quality.
	Highest exposure: 0.57 (95% CI 0.47-0.69)	
Zhang 2008	Reference category: lowest exposure	Low risk:
	Leukaemia	Selection: 3/4 stars, hospital controls

Table 6. Detailed summary results of included nonexperimental case-control studies *(Continued)*

	Exposure assessment A: intake of green tea	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.51 (95% CI 0.27–0.96)	Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire.
	Exposure assessment B: intake of green tea	Total score: 7/9 stars, moderate quality.
	Intermediate exposure: OR 0.40 (95% CI 0.14–1.14)	
	Highest exposure: OR 0.40 (95% CI 0.19–0.82)	
Zheng 1993	Reference category: lowest exposure	Low risk:
	Oral cancer	Selection: 3/4 stars, hospital controls
	Highest exposure: HR 0.85 (95% CI 0.32–2.31)	Comparability: 2/2 stars, low risk
		Exposure: 2/3 stars, self-reported exposure not within a structured interview or questionnaire
		Total score: 7/9 stars, moderate quality.
Zhong 2001	Reference category: lowest exposure	Low risk:
	Lung cancer	Selection: 4/4 stars, low risk
	Highest exposure: OR 0.65 (95% CI 0.45–0.93) in non-smokers	Comparability: 2/2 stars, low risk
	Highest exposure: OR 0.94 (95% CI 0.40–2.22) in smokers	Exposure: 2/3 stars, non-response rate different between cases and controls or NR
		Total score: 8/9 stars, moderate quality.

Table 7. Methodological quality of experimental studies

Study	Random sequence generation	Allocation concealment	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Selective reporting	Other bias
Bettuzzi 2006	Low risk	Unclear risk	Low risk (all outcomes)	Low risk: PSA levels Unclear risk: prostate cancer and LUTS	Low risk: prostate cancer and PSA levels Unclear risk: LUTS	Unclear risk	Low risk
Dostal 2015	Low risk	Low risk	Low risk (all outcomes)	Low risk (all outcomes)	Low risk (all outcomes)	Low risk	Unclear risk
Dryden 2013	Low risk	Low risk	Low risk (all outcomes)	Low risk (all outcomes)	Low risk (all outcomes)	Low risk	High risk
Garcia 2014	Low risk	Low risk	Low risk (all outcomes)	Low risk (all outcomes)	Low risk (all outcomes)	Low risk	Low risk
Garland 2006	Low risk	Unclear risk	Low risk (all outcomes)	Low risk (all outcomes)	High risk	Low risk	Unclear risk
Kumar 2015	Low risk	Low risk	Low risk (all outcomes)	Low risk (all outcomes)	Low risk: prostate cancer and PSA levels Unclear risk: LUTS	Low risk	Unclear risk
Lane 2018	Low risk	Low risk	Low risk (all outcomes)	Low risk (all outcomes)	Unclear risk (all outcomes)	High risk	Unclear risk
Micali 2017	Low risk	Unclear risk	Low risk (all outcomes)	Low risk (all outcomes)	Low risk (all outcomes)	Unclear risk	High risk
Roshdy 2013	Low risk	Low risk	Low risk (all outcomes)	Low risk (all outcomes)	Unclear risk (all outcomes)	Low risk	Unclear risk
Sinicrope 2017	Low risk	Unclear risk	Low risk (all outcomes)	Unclear risk (all outcomes)	Low risk (all outcomes)	Low risk	Low risk
Tsao 2009	Low risk	Low risk	Low risk (all outcomes)	Low risk: other outcomes Unclear risk: oral lesions	Unclear risk (all outcomes)	Unclear risk	Low risk
LUTS: lower urinary tract symptoms; PSA: prostate-specific antigens							

Table 8. Methodological quality of nonexperimental cohort studies (Continued)

Study	Selection				Com- para- bility		Outcome			To- tal (out of 9)
	S1	S2	S3	S4	C1	C2	O1	O2	O3	
Allen 2004	c(0)	a(1)	b(1)	a(1)	1	0	b(1)	a(1)	a(1)	7
Chyou 1993	b(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Dai 2010	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	b(0)	b(1)	8
Fujino 2002 in: Inoue 2009a	a(1)	a(1)	b(1)	a(1)	1	0	b(1)	a(1)	a(1)	8
Galanis 1998	b(1)	a(1)	b(1)	a(1)	1	0	b(1)	b(0)	b(1)	7
Hoshiyama 2002 in: Inoue 2009a	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Hoshiyama 2004 ^a in: Inoue 2009a	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Ide 2007	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Inoue 2009a	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Inoue 2009b	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Ishikawa 2006	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Iwai 2002	a(1)	a(1)	b(1)	a(1)	1	0	b(1)	a(1)	b(1)	8
Iwasaki 2010a	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Iwasaki 2010b in: Iwasaki 2010a	a(1)	a(1)	b(1)	a(1)	1	0	b(1)	a(1)	b(1)	8
Key 1999	c(0)	a(1)	b(1)	a(1)	1	0	b(1)	a(1)	a(1)	7
Khan 2004	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Kikuchi 2006	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Kurahashi 2007	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9

Table 8. Methodological quality of nonexperimental cohort studies *(Continued)*

Kurahashi 2009	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Kuriyama 2006	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Lee 2007	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Li 2008	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Li 2018	c(0)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	8
Lin 2008	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Liu 2016	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Luo 2007	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Makiuchi 2016	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Michikawa 2011	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Montague 2012	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Nagano 2001	c(0)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	8
Naganuma 2009	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Nakachi 2000	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Nakamura 2011	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Nechuta 2012	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Oba 2006	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Odegaard 2015	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Ogawa 2016	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Saito 2015	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Sasazuki 2004 in: Inoue 2009a	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9

Table 8. Methodological quality of nonexperimental cohort studies (Continued)

Sauvagat 2005 in: Nagano 2001	c(0)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	a(1)	8
Severson 1989	a(1)	a(1)	b(1)	a(1)	1	0	b(1)	a(1)	b(1)	8
Shimazu 2008	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Sun 2007	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Suzuki 2004	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Suzuki 2005	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Suzuki 2009	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Tamura 2018	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Tsubono 2001 in: Inoue 2009a	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Ugai 2017	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Ugai 2018	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Ui 2009	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Yang 2007 in: Nechuta 2012	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Yang 2011a	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9
Zhao 2017	a(1)	a(1)	b(1)	a(1)	1	1	b(1)	a(1)	b(1)	9

^aCase-cohort study

Table 9. Methodological quality of nonexperimental case-control studies (Continued)

Study	Selection				Com- para- bility		Exposure			To- tal (out of 9)
	S1	S2	S3	S4	C1	C2	E1	E2	E3	
Bandera 2010	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8



Table 9. Methodological quality of nonexperimental case-control studies (Continued)

Berroukche 2012	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Bonner 2005	a(1)	a(1)	a(1)	b(0)	1	1	c(0)	a(1)	a(1)	7
Chen 2011	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Chen 2015 in: Chen 2017a	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Chen 2016 in: Chen 2017a	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Chen 2017a	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Fu 2013	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Gao 1994	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Gao 2005	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	c(0)	7
Gavrilas 2018	a(1)	a(1)	c(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Goodman 2003	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	a(1)	8
Goto 1990	a(1)	a(1)	a(1)	b(0)	1	1	b(1)	a(1)	c(0)	7
Green 2014	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Hakim 2000	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	a(1)	8
Han 2008	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Hemelt 2010	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Hoshiyama 1992	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Hsu 2012	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Huang 1999	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	b(0)	7
Inoue 1994 in: Huang 1999	a(1)	a(1)	b(0)	a(1)	1	0	d(0)	a(1)	a(1)	6
Inoue 1998	a(1)	a(1)	b(0)	a(1)	1	1	d(0)	a(1)	a(1)	7



Table 9. Methodological quality of nonexperimental case-control studies (Continued)

Inoue 2008	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	c(0)	7
Islami 2009	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	b(0)	8
Iwasaki 2014	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	b(0)	7
Ji 1996	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Ji 1997	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	b(0)	8
Jia 2016	a(1)	a(1)	a(1)	a(1)	1	0	c(0)	a(1)	a(1)	7
Jian 2004	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Jin 2013	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Kakuta 2009	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Kato 1990	a(1)	b(0)	a(1)	a(1)	1	0	d(0)	a(1)	a(1)	6
Kato 1990a in: Huang 1999	a(1)	b(0)	b(0)	a(1)	1	0	d(0)	a(1)	a(1)	5
Kono 1988 ^a	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	b(0)	b(0)	7
Kono 1988 ^b	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	b(0)	b(0)	6
Kubik 2004 in: Kubik 2008	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Kubik 2008	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Kuo 2009	a(1)	a(1)	a(1)	a(1)	0	0	b(1)	a(1)	c(0)	6
Lassed 2016	a(1)	a(1)	b(0)	a(1)	0	0	b(1)	a(1)	a(1)	6
Le Marchand 2000	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Lee 2017	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Lei 1994	c(0)	b(0)	b(0)	a(1)	1	0	e(0)	a(1)	c(0)	3
Leung 2016	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	a(1)	9

Table 9. Methodological quality of nonexperimental case-control studies *(Continued)*

Li 2011a ^a	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Li 2011a ^b	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Li 2011b in: Mu 2003	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Li 2014	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	b(0)	7
Li 2016	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	a(1)	7
Lin 2012	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	b(0)	6
Liu 2010	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Liu 2017	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Mao 2011	a(1)	a(1)	b(0)	b(0)	1	1	b(1)	a(1)	b(0)	6
Mizoo 2013	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	a(1)	7
Mizuno 1992	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	b(0)	6
Mu 2003	a(1)	b(0)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	7
Mu 2005 in: Mu 2003	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Nagle 2010	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Oze 2014	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	b(0)	8
Peng 2013	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	b(0)	7
Peng 2015	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	b(0)	8
Ruan 2010	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	a(1)	7
Setiawan 2001	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Shrubsole 2009	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	b(0)	7
Song 2008	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	b(0)	8



Table 9. Methodological quality of nonexperimental case-control studies *(Continued)*

Sonoda 2004	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	b(0)	7
Tajima 1985	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	b(0)	6
Takezaki 2000	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Takezaki 2001	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Tewes 1990	b(0)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	b(0)	7
Tse 2017	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	b(0)	6
Wakai 2004	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Wang 1999	a(1)	a(1)	a(1)	a(1)	1	1	e(0)	a(1)	c(0)	7
Wang 2006	a(1)	a(1)	a(1)	a(1)	0	0	b(1)	a(1)	b(0)	6
Wang 2007	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	b(0)	7
Wang 2012a	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	c(0)	6
Wang 2012b	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	a(1)	7
Wang 2012c	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Wang 2013a	a(1)	a(1)	b(0)	a(1)	1	0	b(1)	a(1)	a(1)	7
Wang 2013b	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Wang 2015	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	c(0)	7
Wilkens 1996	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Wu 2003	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	a(1)	9
Wu 2009a	a(1)	b(0)	b(0)	a(1)	1	0	b(1)	a(1)	c(0)	5
Wu 2009b	a(1)	b(0)	a(1)	a(1)	1	1	b(1)	a(1)	a(1)	8
Xu 2007	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	a(1)	8

Table 9. Methodological quality of nonexperimental case-control studies *(Continued)*

Xu 2013	c(0)	b(0)	c(0)	a(1)	1	0	b(1)	a(1)	c(0)	4
Yan 2016	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Ye 1998	a(1)	a(1)	a(1)	a(1)	1	0	b(1)	a(1)	b(0)	7
Yu 1995	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8
Zhang 2002	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	b(0)	7
Zhang 2007	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	a(1)	8
Zhang 2008	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	b(0)	7
Zheng 1993	a(1)	a(1)	b(0)	a(1)	1	1	b(1)	a(1)	b(0)	7
Zhong 2001	a(1)	a(1)	a(1)	a(1)	1	1	b(1)	a(1)	c(0)	8

^aPopulation controls considered; ^bHospital controls considered.

APPENDICES

Appendix 1. CENTRAL search strategy

- #1. MeSH descriptor: [Tea] explode all trees
- #2. MeSH descriptor: [Camellia sinensis] this term only
- #3. (green or antiox* or anti-ox* or matsu or mattsu* or gruner*) near/5 (tea* or tee* or thea* or cha*)
- #4. camellia sinensis
- #5. tea or thea or tee or matsu-cha or mattsu-cha
- #6. #1 or #2 or #3 or #4 or #5
- #7. MeSH descriptor: [Neoplasms] explode all trees
- #8. cancer* or tumor* or tumour* or neoplas* or malignan* or carcinoma* or adenocarcinoma* or oncol*
- #9. #7 or #8
- #10. #6 and #9

Appendix 2. Medline Ovid search strategy

1. exp Tea/
2. Camellia sinensis/
3. ((green or antiox* or anti-ox* or matsu or mattsu* or gruner*) adj5 (tea* or tee* or thea* or cha*)).mp.
4. camellia sinensis.mp.
5. (tea or thea or tee or matsu-cha or mattsu-cha).mp. [mp=title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
6. 1 or 2 or 3 or 4 or 5
7. exp Neoplasms/
8. (cancer* or tumor* or tumour* or neoplas* or malignan* or carcinoma* or adenocarcinoma* or oncol*).mp.
9. 7 or 8
10. 6 and 9
11. randomized controlled trial.pt.
12. controlled clinical trial.pt.
13. randomized.ab.
14. placebo.ab.
15. clinical trials as topic.sh.
16. randomly.ab.
17. trial.ti.
18. exp case control studies/
19. exp cohort studies/
20. case control.tw.
21. (cohort adj (study or studies)).tw.
22. cohort analy*.tw.
23. (follow up adj (study or studies)).tw.
24. (observational adj (study or studies)).tw.
25. longitudinal.tw.
26. retrospective.tw.
27. cross sectional.tw.
28. cross-sectional studies/
29. 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28
30. (animals not (humans and animals)).sh.
31. 29 not 30
32. 10 and 31

key:

mp = title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier

pt = publication type

ab = abstract

fs = floating subheading

Appendix 3. Embase Ovid search strategy

1. exp tea/
2. Camellia sinensis/
3. ((green or antiox* or anti-ox* or matsu or mattsu* or gruner*) adj5 (tea* or tee* or thea* or cha*)).mp.

Green tea (Camellia sinensis) for the prevention of cancer (Review)

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4. camellia sinensis.mp.
5. (tea or thea or tee or matsu-cha or mattsu-cha).mp.
6. 1 or 2 or 3 or 4 or 5
7. exp neoplasm/
8. (cancer* or tumor* or tumour* or neoplas* or malignan* or carcinoma* or adenocarcinoma* or oncol*).mp.
9. 7 or 8
10. 6 and 9
11. exp controlled clinical trial/
12. randomized.ab.
13. randomly.ab.
14. trial.ab.
15. groups.ab.
16. exp case control study/
17. exp cohort analysis/
18. case control.tw.
19. (cohort adj (study or studies)).tw.
20. cohort analy*.tw.
21. (follow up adj (study or studies)).tw.
22. (observational adj (study or studies)).tw.
23. longitudinal.tw.
24. retrospective.tw.
25. cross sectional.tw.
26. cross-sectional studies/
27. 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26
28. (animals not (humans and animals)).sh.
29. 27 not 28
30. 10 and 29

key:

[mp = title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]

Appendix 4. Newcastle-Ottawa Scale for nonexperimental cohort studies

Note: a study can be awarded a maximum of one star for each numbered item within the selection and outcome categories. A maximum of two stars can be given for comparability.

Selection

1. Representativeness of the exposed cohort
 - a. truly representative of the average **general population** in the community (*)
 - b. somewhat representative of the average **general population** in the community (*)
 - c. selected group of users eg nurses, volunteers
 - d. no description of the derivation of the cohort
2. Selection of the non exposed cohort
 - i. drawn from the same community as the exposed cohort (*)
 - ii. drawn from a different source
 - iii. no description of the derivation of the non exposed cohort
3. Ascertainment of exposure
 - a. secure record (eg surgical records) (*)
 - b. structured interview or use of food frequency questionnaire (*)
 - c. written self-report
 - d. no description
4. Demonstration that outcome of interest was not present at start of study
 - a. yes (*)
 - b. no

Comparability

1. Comparability of cohorts on the basis of the design or analysis
 - a. study controls for **age and sex** (when appropriate) (*)
 - b. study controls for any additional factor (*) **smoking habits**

Outcome

1. Assessment of outcome
 - a. independent blind assessment (*)
 - b. record linkage (e.g. cancer registry) (*)
 - c. self-report
 - d. no description
2. Was follow-up long enough for outcomes to occur
 - a. yes, more than **5 years** (*)
 - b. no, less than 5 years
3. Adequacy of follow-up of cohorts
 - a. complete follow-up - all participants accounted for (*)
 - b. participants lost to follow-up unlikely to introduce bias - small number lost - **> 90%** (select an adequate %) follow up, or description provided of those lost) (*)
 - c. follow-up rate **< 90 %** (select an adequate %) and no description of those lost
 - d. no statement

Appendix 5. Newcastle-Ottawa Scale for nonexperimental case-control studies

Note: a study can be awarded a maximum of one star for each numbered item within the selection and exposure categories. A maximum of two stars can be given for comparability.

Selection

1. Is the case definition adequate?
 - a. yes, with independent validation (*)
 - b. yes, e.g. record linkage or based on self-reports
 - c. no description
2. Representativeness of the cases
 - a. consecutive or obviously representative series of cases (*)
 - b. potential for selection biases or not stated
3. Selection of controls
 - a. community/population controls (*)
 - b. hospital controls
 - c. no description
4. Definition of controls
 - a. no history of disease (endpoint) (*)
 - b. no description of source

Comparability

1. Comparability of cases and controls on the basis of the design or analysis
2. study controls for **age and sex** (when appropriate) (*)
3. study controls for any additional factor (*) **smoking status**

Exposure

1. Ascertainment of exposure
 - a. secure record (eg surgical records) (*)
 - b. structured interview blinded to case/control status or use of food frequency questionnaire (*)
 - c. interview not blinded to case/control status
 - d. written self-report or medical record only
 - e. no description

2. Same method of ascertainment for cases and controls
 - a. yes (*)
 - b. no
3. Non-response rate
 - a. same rate for both groups (*)
 - b. nonrespondents described
 - c. rate different and no designation

WHAT'S NEW

Date	Event	Description
18 July 2019	New search has been performed	An updated search from January 2009 to January 2019 was conducted and 93 new studies were added to 52 in the review.
18 July 2019	New citation required but conclusions have not changed	We included an additional 130 references relating to 93 studies. However the conclusions overall remain unchanged.

CONTRIBUTIONS OF AUTHORS

Link with editorial base and co-ordination of contributions from co-reviewers (FB, MM, MV, TF)
 Draft protocol (AAI, FB; with contributions from all)
 Identify relevant titles (FB, MM, TF)
 Selection of included studies (MM, MV, TF)
 Extraction of data from included studies (MM, TF)
 Methodological quality assessment (AAI, FB, MM, MV, TF)
 Interpretation of analysis (all authors)
 Drafting final review (MV and TF, with contributions from all)

DECLARATIONS OF INTEREST

TF: none known
 MM: none known
 FB: none known
 AAI: none known
 SF: none known
 MH: none known
 MV: none known

SOURCES OF SUPPORT

Internal sources

- Pilkington Family Trusts, UK.

External sources

- AG Biologische Krebstherapie, Deutsche Krebshilfe, Bonn, Germany.
- Cochrane Gynaecological Cancer Review Group, UK.
- Nordic Cochrane Centre / ViFab, Denmark.

DIFFERENCES BETWEEN PROTOCOL AND REVIEW

In contrast to the previous version of this review ([Boehm 2009](#)), we included a quantitative assessment of cancer risk related to green tea intake, adding a meta-analysis of all cancer outcomes whenever there were sufficient data available to perform the analysis.