

Figure S1: Sensitivity analyses for studies related with ovarian cancer risk (a) or endometrial cancer risk (b) or cervical cancer risk (c) or all studies included (d) by leave-one-out method.

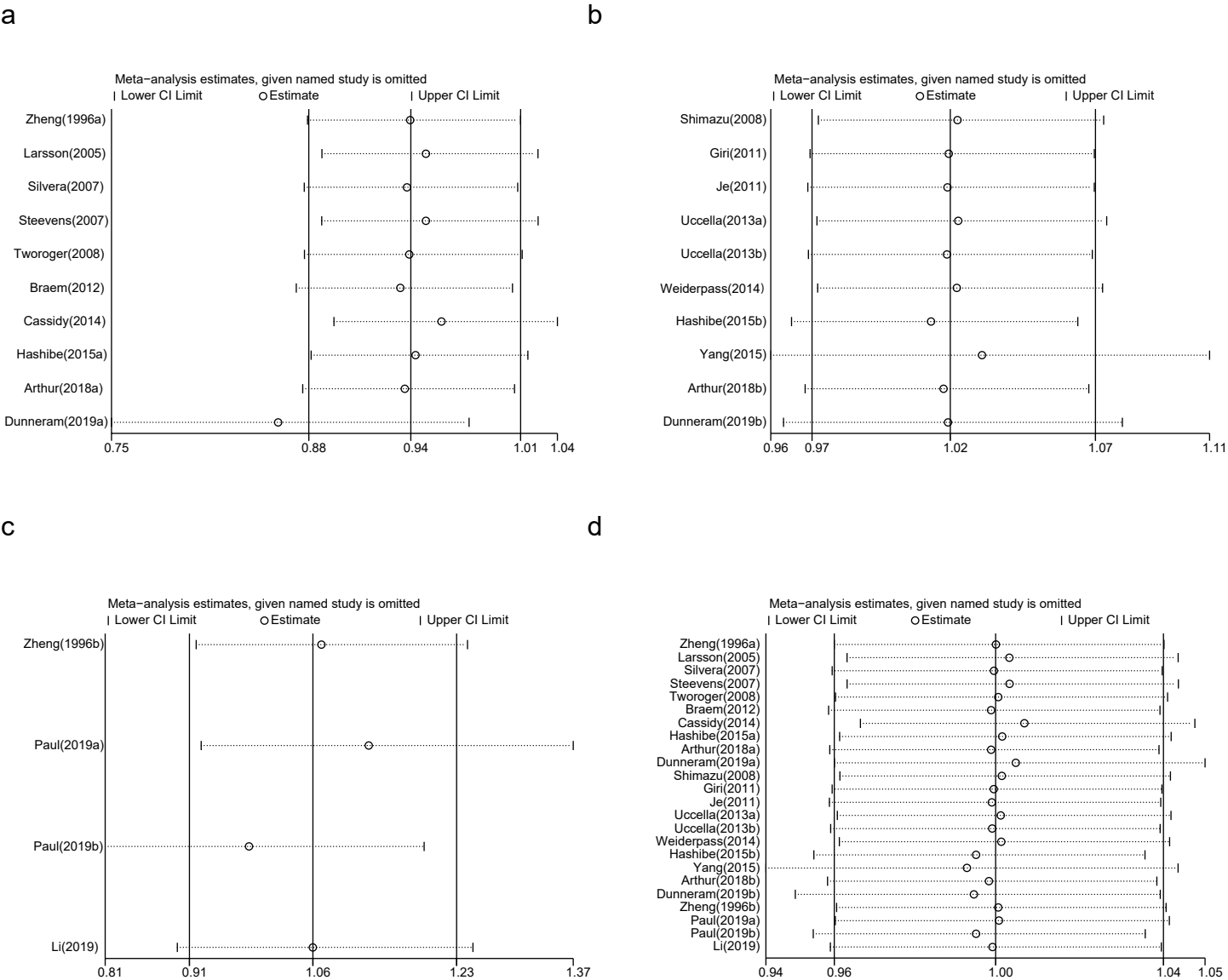


Table S1: Characteristic of studies included in the meta-analysis

Study	Study name		Period	Age/y	Quality ¹	Adjustments
Zheng (1996) [30]	Iowa Women's Health Study		1986-1993	55-69	7	Adjusted for age, education, smoking status, pack-years of smoking, physical activity, all fruit and vegetable intake, waist/hip ratio, family history of cancer, age at menarche, age at menopause, age at first pregnancy.
Larsson (2005) [37]	Swedish Cohort	Mammography	1987-2004	40-76	9	Adjusted for age in months; body mass index; education; parity; oral contraceptive use; intake of total energy; and consumption of fruit, vegetables, milk, liquor, beer, wine, and coffee.
Silvera (2007) [38]	National Breast Screening Study (NBSS)		1980-2000	40-59	9	Adjusted for age, smoking history, pack-years of smoking, alcohol intake, education, BMI in kg/m ² , parity, participation in vigorous physical activity, menopausal status, oral contraceptive use, energy intake, lactose intake, study center, and randomization group.
Steevens (2007) [39]	The Netherlands Cohort Study on Diet and Cancer		1986-1999	55-69	9	Adjusted for age, use of oral contraceptives, parity, cigarette smoking.
Tworoger (2008) [40]	Nurses' Health Study (NHS)		1976-2004	30-55	8	Adjusted for age, parity, oral contraceptive use, postmenopausal hormone use, tubal ligation, smoking status, and body mass index.
Braem (2012) [36]	European Investigation into Cancer and Nutrition (EPIC)	Prospective	1992-2011	25-70	9	Stratified by center and age and adjusted for parity, oral contraceptive use, BMI, smoking status, alcohol consumption, total energy intake, duration of breastfeeding, menopausal status, height, and educational level.
Cassidy (2014) [31]	NHS and NHS II		NHS:1976-2010 NHS II:1989-2011	NHS: 30-55 NHS II:25-42	9	Stratified by age, calendar time, and cohort and adjusted for menopausal status, duration of oral contraceptive use, parity, history of tubal ligation, history of hysterectomy, duration of postmenopausal hormone use by type, family history of breast or ovarian cancer, quintiles of cumulative updated energy-adjusted lactose and caffeine intake, and quintiles of cumulative updated total energy intake.
Hashibe (2015) [32]	PLCO ² cohort		1992-2011	55-74	9	Adjusted for age, sex, race, education, cigarette pack-years, and alcohol drinking frequency, smoking status, smoking frequency, smoking duration, time since stopping smoking for past smokers, and drinking frequency.
Arthur (2018) [33]	Canadian Study of Diet, Lifestyle, and Health (CSDLH)		1992-2010	44-71	9	Stratified by age at entry and adjusted for education, pack years of smoking, alcohol intake, total calories, BMI, physical activity, age at menarche, parity, breastfeeding, menopausal status, HRT use, oral contraceptive use, family history of breast cancer in a first degree relative.
Dunneram (2019) [35]	UK Women's Cohort Study		1995-2016	35-69	9	Adjusted for age, ethanol intake, duration of breastfeeding, physical activity, smoking, social class, menopausal status. Adjusted for age, ethanol intake, duration of breastfeeding, physical activity, smoking, social class, menopausal status,

							history of diabetes and history of hypertension.
Shimazu (2008) [42]	Japan	Public Health	Center-based Prospective Study	1990-2005	40-69	9	Adjusted for age, study area, body mass index, menopausal status, age at menopause for postmenopausal women, parity, use of exogenous female hormones, smoking status, green vegetable consumption, beef consumption, pork consumption..
Giri (2011) [43]	WHI OS ³			1993-2005	50-79	8	Adjusted for age, ethnicity, unopposed estrogen use, progestin + estrogen use, smoking and BMI.
Je (2011) [44]	NHS			1980-2006	34-59	8	Adjusted for age, BMI, age at menopause, age at menarche, parity and age at last birth, duration of oral contraceptive use, postmenopausal hormone use, pack-years of smoking, alcohol intake, and total energy intake.
Uccella (2013) [45]	Iowa Women's Health Study			1986-2005	55-69	9	Adjusted for age, diabetes, duration of HT use, hypertension, age at menarche, age at menopause, quartiles of body mass index, waist-to-hip ratio, smoking status, pack years of smoking, total energy and alcohol use.
Weiderpass (2014) [34]	Swedish Women's Lifestyle and Health cohort study			1991-2009	30-49	9	Adjusted for age, education, duration of hormonal contraceptive use, parity, duration of breastfeeding, smoking status and number of cigarettes/day, menopausal status, body mass index, and diabetes mellitus.
Yang (2015) [46]	UK Million Women Study			1996-2011	58.5 ±4.6	9	Adjusted for region, socioeconomic status, height, age at menarche, parity, duration of oral contraceptive use, age and status of menopause at study baseline, duration of hormone therapy for menopause, BMI, smoking, alcohol consumption, strenuous exercise, coffee consumption, and other nonalcoholic fluid intake.
Paul(2019) [47]	Singapore Chinese Health Study			1993-2013	45-74	9	Adjusted for age, dialect group, year of interview, level of education, smoking status, duration of oral contraceptive use, history of Pap-based test, parity, menopausal status, and daily total calorie intake.
Li(2019) [14]	China Kadoorie Biobank			2004-2016	30-79	9	Adjusted for education, occupation, marital status, household income, physical activity, intakes of red meat, fresh fruits and vegetables, body mass index, waist-hip ratio, family history of cancer, prevalent diabetes and menopausal status.
Gates(2007) [41]	NHS			1984-2002	30-55	8	Adjusted for age, duration of oral contraceptive use, parity, history of tubal ligation, smoking status, history of postmenopausal hormone use, physical activity, lactose intake, and total energy intake.

1. Quality is assessed by NOS.
2. PLCO: Prostate, Lung, Colorectal, and Ovarian cancer Screening Trial.
3. WHI OS: Women's Health Initiative (WHI) Observational Study (OS).

Table S2: Quality assessment

Study	Representativeness of the exposed cohort	Selection of the non exposed cohort	Ascertainment of exposure	Demonstration that outcome of interest was not present at start of study	Comparability of cohorts on the basis of the design or analysis	Assessment of outcome	Was follow-up long enough for outcomes to occur	Adequacy of follow up of cohorts	Total
Zheng (1996) [30]	0	1	1	1	2	0	1	1	7
Larsson (2005) [37]	1	1	1	1	2	1	1	1	9
Silvera (2007) [38]	1	1	1	1	2	1	1	1	9
Steevens (2007) [39]	1	1	1	1	2	1	1	1	9
Tworoger (2008) [40]	0	1	1	1	2	1	1	1	8
Braem (2012) [36]	1	1	1	1	2	1	1	1	9
Cassidy (2014) [31]	1	1	1	1	2	1	1	1	9
Hashibe (2015) [32]	1	1	1	1	2	1	1	1	9
Arthur (2018) [33]	1	1	1	1	2	1	1	1	9
Shimazu (2008) [42]	1	1	1	1	2	1	1	1	9
Giri (2011) [43]	1	1	1	1	2	1	1	0	8
Je (2011) [44]	0	1	1	1	2	1	1	1	8
Uccella (2013) [45]	1	1	1	1	2	1	1	1	9
Weiderpass (2014) [34]	1	1	1	1	2	1	1	1	9
Paul (2019) [47]	1	1	1	1	2	1	1	1	9
Li (2019) [14]	1	1	1	1	2	1	1	1	9
Dunneram (2019) [35]	1	1	1	1	2	1	1	1	9
Yang (2015) [46]	1	1	1	1	2	1	1	1	9
Gates (2007) [41]	0	1	1	1	2	1	1	1	8

Table S3. Quality of evidence evaluated by GRADE approach.

Grade criteria	Rating	Footnotes	Quality of the evidence
Grade evidence profile on the association of tea consumption with risk of ovarian cancer			
Study design	Low	Cohort studies	⊕⊕○○ Low
Risk of Bias	0 point	No serious	
Inconsistency	0 point	I ² =41.2%, no considerable heterogeneity	
Indirectness	0 Point	No serious	
Imprecision	0 Point	No serious	
Publication bias	0 Point	Undetected	
Large effect	0 point	Pooled effect was 0.94 (95% CI: 0.90-1.01)	
Dose-response gradi	0 point	No significant dose-response gradient	
Grade evidence profile on the association of tea consumption with risk of endometrial cancer			
Study design	Low	Cohort studies	⊕⊕○○ Low
Risk of Bias	0 point	No serious	
Inconsistency	0 Point	I ² = 0.0%, no considerable heterogeneity	
Indirectness	0 Point	No serious	
Imprecision	0 Point	No serious	
Publication bias	0 point	Undetected	
Large effect	0 point	Pooled effect was 1.02 (95% CI: 0.97-1.07)	
Dose-response gradi	0 point	No significant dose-response gradient	
Grade evidence profile on the association of tea consumption with risk of cervical cancer			
Study design	Low	Cohort studies	⊕⊕○○ Low
Risk of Bias	0 point	No serious	
Inconsistency	0 Point	I ² = 0.0%, no considerable heterogeneity	
Indirectness	0 Point	No serious	
Imprecision	0 Point	No serious	
Publication bias	0 point	Undetected and <10 studies included in meta analysis	
Large effect	0 point	Pooled effect was 1.06 (95% CI: 0.96-1.04)	
Dose-response gradi	0 point	No significant dose-response gradient	

Table S4: Publication bias**Publication bias of all data****Egger's test**

Std_Eff	Coef.	Std. Err.	t	P> t	95% CI	
slope	.0198535	.0322117	0.62	0.544	-.0469495	.0866565
bias	-.305526	.3300415	-0.93	0.365	-.9899903	.3789382

Begg's test

adj. Kendall's Score (P-Q)	-30
Std. Dev. of Score	40.32
Number of Studies	24
z	-0.74
Pr > z	0.457
z (continuity corrected)	0.72
Pr > z (continuity corrected)	0.472

Publication bias of subgroup (ovarian cancer)**Egger's test**

Std_Eff	Coef.	Std. Err.	t	P> t	95% CI	
slope	-.0028468	.0734813	-0.04	0.970	-.1722951	.1666014
bias	-.6400596	.6252266	-1.02	0.336	-2.081835	.8017154

Begg's test

adj. Kendall's Score (P-Q)	-1
Std. Dev. of Score	11.18
Number of Studies	10
z	-0.09
Pr > z	0.929
z (continuity corrected)	0.00
Pr > z (continuity corrected)	1.000

Publication bias of subgroup (endometrial cancer)**Egger's test**

Std_Eff	Coef.	Std. Err.	t	P> t	95% CI	
slope	.0093312	.0321267	0.29	0.779	-.0647532	.0834155
bias	.1566356	.4101066	0.38	0.712	-.7890719	1.102343

Begg's test

adj. Kendall's Score (P-Q)	5
Std. Dev. of Score	11.18
Number of Studies	10
z	0.45
Pr > z	0.655
z (continuity corrected)	0.36
Pr > z (continuity corrected)	0.721