

Supplementary table.

Table S1. General characteristics of included studies (n=71)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
Sugar-sweetened beverages and cancer risk											
1	Li 2017 ^[16]	Case-Co ntrols	USA	US:1993-1995 LA:1992-1997	FFQ	US:1001 men, 221 women/ 30-64 years LA:1416 men, 418 women/30-74 years	500/2027 529/2027	EC GC	Sweetened beverages OR 1.22(0.87, 1.70) Sweetened beverages OR 1.21(0.86, 1.69)	Adjusted for age, sex, race, study indicator, BMI, fruits and vegetables intake, cigarette smoking, GERD frequency and total energy intake.	5
2	Yassibas 2012 ^[14]	Case-Co ntrols	Turkey	March 2008 - June 2009	Questionnaires	132 men, 80 women/ cases:57.4±13.0years, controls: 57.9±12.5 years	106/106	GC	Colas OR 3.397(0.918, 12.568) Other soft drinks OR 6.146(1.266, 29.832)	Adjusted for gender, residence, education, smoking, alcohol consumption and familial history of cancer or gastric cancer	5
3	Ren 2010 ^[66]	Cohort	USA	1995-1996; 8 years	Questionnaires	286,402 men, 195,161 women/ 50-71 years	392/481563 178/481563 307/481563 438/481563 455/481563	Oral Pharynx Larynx EC GC	Carbonated soft drinks HR 0.77(0.54, 1.09) Carbonated soft drinks HR 0.76(0.46, 1.25) Carbonated soft drinks HR 0.82(0.55, 1.23) Carbonated soft drinks ESCC:HR 0.85(0.46, 1.56); EADC: HR 1.11(0.66, 1.85) Carbonated soft drinks: Gastric cardia: HR 0.89(0.55, 1.45); Gastric non-cardia: HR 0.75(0.45, 1.24)	Adjusted for age, sex, tobacco smoking, alcohol drinking, BMI, education, ethnicity, usual physical activity throughout the day, vigorous physical activity, and the daily intake of fruit, vegetables, red meat, white meat, and calories	8
4	Pourfarzi 2009 ^[64]	Case-Co ntrols	Iran	June 2003 - April 2005	A structured questionnaire	532 men, 195 women/ cases:65.4±11.5 years, controls: NA	217/394	GC	Fruit juice OR 1.29(0.73, 2.29)	Adjusted for gender, age group, education, family history of GC, citrus fruits, garlic, onion, red meat, fish, dairy products, strength and warmth of tea, preference for salt intake and H. pylori.	6

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
5	Ibiebele 2008 [15]	Case-Co ntrols	Australia	2001-2005	FFQ	1668 men, 673 women/ 18-79 years	1102/1580	EC	Soft drinks EADC: OR 0.94(0.53, 1.66); ESCC: OR 0.40 (0.20, 0.78)	Adjusted for age; gender; body mass index; heartburn and acid reflux symptoms; cumulative history of smoking in pack years; alcohol intake status; educational status; total energy intake in kilojoules; and total vegetable intake	5
6	Mayne 2006 [55]	Case-Co ntrols	USA	NA	In-person structured questionnaire	1411 men, 371 women/ cases:65-79 years, controls:30-64 years	488/687 607/687	EC GC	Carbonated soft drinks EADC: OR 0.47(0.29, 0.76) ESCC: OR 0.85 (0.48, 1.52) Carbonated soft drinks Gastric cardia: HR 0.74(0.46, 1.16) Gastric non-cardia: HR 0.65(0.43, 0.98)	Adjusted for age; sex; center; race; proxy interview status; average adult body mass index; mean caloric intake; consumption of beer, wine, and liquor; consumption of meat; cigarettes per day; education; income; and frequency of reflux symptoms.	5
7	Chazelas 2019 [29]	Cohort	France	2009-2017 / 5.1years (median)	Questionnaires	21533 men, 79724 women/ 18-72.7 years	1386/19931 332/25314 582/5383	Breast CRC Prostate	Sugary drinks HR 1.37(1.08, 1.73); Artificially sweetened beverages HR 1.33(0.98, 1.75); Fruit juice HR 1.13(0.91, 1.39) Sugary drinks HR 1.07(0.63, 1.80); Artificially sweetened beverages HR 0.80(0.44, 1.46); Fruit juice HR 1.19(0.78, 1.82) Sugary drinks HR 1.39(0.96, 2.02); Artificially sweetened beverages HR 1.33(1.01, 1.75); Fruit juice HR 1.04(0.76, 1.42)	Adjusted for age, sex, energy intake without alcohol, sugar intake from other dietary sources, alcohol, sodium, lipid and fruit and vegetable intakes, body mass index, height, physical activity, smoking status, number of 24 hour dietary records, family history of cancer, educational level, and the following prevalent conditions at baseline, type 2 diabetes, hypertension, major cardiovascular event, the number of biological children, menopausal status at baseline, hormonal treatment for menopause at baseline and during follow-up, and oral contraception use at baseline and during follow-up.	8

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
8	Hodge 2018 ^[38]	Cohort	Australia	2003-2007 / 11.6 years (median)	FFQs	14101 men, 21485 women / 40-69 years	433/35593 130/35593 146/35593 1055/35593 946/35593 167/35593 165/35593	Prostate Ovary Kidney CRC Breast Endometri um GC	Sugary drinks HR 1.08(0.78, 1.50) Artificially sweetened beverages HR 0.81(0.49, 1.33) Sugary drinks HR 1.35(0.71, 2.56) Artificially sweetened beverages HR 1.37(0.72, 2.61) Sugary drinks HR 1.48(0.87, 2.53) Artificially sweetened beverages HR 0.92(0.46, 1.84) Sugary drinks HR 1.28(1.04, 1.57) Artificially sweetened beverages HR 0.79(0.60, 1.06) Sugary drinks HR 1.11(0.85, 1.45) Artificially sweetened beverages HR 0.95(0.73, 1.25) Sugary drinks HR 1.02(0.54, 1.91) Artificially sweetened beverages HR 0.81(0.42, 1.55) Sugary drinks HR 1.17(0.73, 1.89) Artificially sweetened beverages HR 1.03(0.53, 1.98)	Adjusted for country of birth, alcohol intake, smoking status, physical activity, Mediterranean diet score, and waist circumference.	9
9	Makarem 2018 ^[53]	Cohort	USA	1991-1995 / until 2013	FFQ	1222 men, 1962 women / 26-84 years	248/3378 314/2990 133/6368	Breast prostate CRC	Sugary drinks HR 1.00(0.65, 1.57); Fruit juice HR 1.03(0.67, 1.62) Sugary drinks HR 1.36(0.88, 2.09); Fruit juice HR 1.58(1.04, 2.41) Sugary drinks HR 1.39(0.68, 2.82); Fruit juice HR 1.66(0.88, 3.12)	Adjusted for age, sex, smoking, alcohol, energy, fiber intake and red and processed meat intake. Additional adjustment for BMI, waist circumference, chronic diseases (CVD and diabetes), education, physical activity, antioxidant use.	7

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
10	Romanos 2018 [68]	Cohort	Spain	2014-2016/ 10.0 years (average)	FFQ	10713 women/ median age 33 years	100/10613	Breast	Sugar-sweetened beverages HR 1.41(0.77, 2.57; p=0.245)	Adjusted for eight, number of relatives with history of BC, smoking status, physical activity, alcohol intake, BMI, age of menarche, menopause, number of pregnancies of more than 6 months, pregnancy before the age of 30 years, months of breastfeeding, use of hormone replacement therapy and its duration and years at university.	9
11	Marzbani 2019 [54]	Case-Co ntrols	Iran	2013-2015	Questionnaire	620 women/ under 50 years	424/816	Breast	Soft drinks OR 2.8(1.9, 4.3); Industrially produced juices OR 2.7(1.1, 6.5)	Adjusted for demographic variables including age, gender, education level, and body mass index	6
12	Farvid 2016 [34]	Cohort	USA	1991-1992/ until 2013	FFQ	44233 women/ 27-44 years	3235/44223	Breast	Fruit juice HR 1.02(0.86, 1.21; P=0.85)	smoking, race, parity and age at first birth, height, BMI at age 18, weight change since age 18, age at menarche, family history of breast cancer, history of benign breast disease, oral contraceptive use, adolescent alcohol intake, adult alcohol intake, adolescent energy intake.	9
13	Chandran 2014 [28]	Case-Co ntrols	USA	NY:2002-2008 NJ:2006-2012	FFQ	3148 women/ 20-75 years	1558/3148	Breast	Sugary drinks African American OR 0.97(0.74, 1.27; P=0.45); European American OR 1.31(0.91, 1.89; P=0.15)	Adjusted for age, ethnicity, country of origin, education, age at menarche, menopausal status, parity, age at first birth, breastfeeding status, family history of breast cancer, HRT use, OC use, history of benign breast disease, study site, BMI, total MET hours per week, total energy intake.	7
14	Potischman2002 [63]	Case-Co ntrols	USA	1990-1992	FFQ	2019 women/ 20-44 years	568/1451	Breast	Sugar-drinks 1.09(0.8, 1.5)	Adjusted for age at diagnosis, study site, race, education, alcohol consumption, years of oral contraceptive use, smoking status, BMI, and energy.	5

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
15	Stepien 2016 [74]	Cohort	European	1992-1998/ 11.4 years (average)	Questionnaires	142,194 men, 335,012 women/ NA	191/476713 302/476713	HCC BTC	Soft drinks HR 1.83(1.11, 3.02; P=0.01); Juice HR 1.38(0.80, 2.38; P=0.02) IHBC: Soft drinks HR 0.97(0.90, 1.06); Juice HR 1.04(1.00, 1.08) GBTC: Soft drinks HR 0.96(0.91, 1.00); Juice HR 0.99(0.95, 1.03)	Adjusted for non-alcoholic energy intake and stratified by age, sex and study centre, BMI, sex-specific physical activity, education level, alcohol at recruitment and alcohol intake pattern, smoking intensity, duration and history, diabetes status.	8
16	Larsson 2016 [49]	Cohort	Sweden	1987-1990/ 3.4 years (average)	Questionnaire	39,574 men, 31,258 women/ 45-83 years	148/70832	BTC	IHBC: sweetened beverages HR 1.69(0.41, 7.03; P=0.37); EHBC: sweetened beverages HR 1.79(1.02, 3.13; P=0.05); Gallbladder: sweetened beverages HR 2.24(1.02, 4.89; P=0.02)	Adjusted for age, sex education, smoking, body mass index, dietary protein intake, and total energy intake	8
17	Pacheco 2019 [61]	Cohort	USA	1995-1996/ 20.1 years (median)	FFQ	99798 women/ 52.0 ± 13.5 years	1318/99798	CRC	Sugar-sweetened beverage HR 1.16(0.87, 1.54)	Adjusted for age, race/ethnicity, socioeconomic status, total years smoked, alcohol intake, colorectum cancer family history of first-degree relatives, history of polyps, diabetes, physical activity, aspirin use, multivitamin use, menopausal status, menopausal hormone therapy use, oral contraceptive use, body mass index, total energy intake, and dietary variables: red meat, processed meat, and vegetable intakes.	8
18	Mahfouz 2014 [52]	Case-Co ntrols	Egypt	2010-2011	FFQ	216 men, 234 women/ NA	150/300	CRC	Artificial sweeteners OR 20.8(2.7, 159.7; P=0.003); Soft drinks OR 4.6(1.9, 11.01; P=0.001); fruit juice OR 0.18(0.09, 0.36)	NA	6

Table S1. (Continued)

Study	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
19	Theodoratou ^[76]	Case-Co ntrols	UK	1999-2006	FFQ	NA/ 16-79 years	2062/2776	CRC	Sugar-sweetened beverages OR 1.12(1.05, 1.19; P=0.0003)	NA	7
20	Annema ^[22]	Case-Co ntrols	Australia	2005-2007	FFQ	1065 men, 708 women/ 40-79 years	834/939	CRC	Fruit juice OR 1.38(1.08, 1.75; P=0.015)	Adjusted for sex, age, body mass index at age 20 y, energy intake, multivitamin use, alcohol consumption, physical activity, smoking, diabetes, and socioeconomic status.	6
21	Zhang ^[78]	Cohort	USA	1976-2003/ up to 6-20 years	FFQ	239,193 men, 492,248 women/ 25-93 years	4895/731,441	Colon	Sugar-sweetened carbonated soft drinks OR 0.94(0.66, 1.32)	Adjusted for education; smoking habits; height; body mass index; physical activity; family history of colorectal cancer; use of nonsteroidal anti-inflammatory drugs; multivitamin use; red meat intake; total milk consumption; alcohol consumption; dietary folate intake; total energy intake; and in women, oral contraceptive use; and postmenopausal hormone use.	7
22	Fung ^[35]	Cohort	USA	NHS:1980-2006; HPFS:1986-2006/ up to 20-26 years	FFQs	45,490 men, 87,256 women/ 30-75 years	2464/132,746	CRC	Sweetened beverage Men: OR 1.17(1.02, 1.33) Women: OR 1.04(0.94, 1.16)	NA	8
23	Bener ^[24]	Case-Co ntrols	UK	2008-2009	Questionnaire	249 men, 179 women/ 18-82 years	146/282	CRC	Soft drinks OR 1.62(1.19, 2.17; P=0.02)	NA	7
24	Rizk ^[68]	Case-Controls	France	2008-2012	Questionnaire	423 men, 159 women/ 51.8-70.1 years	181/401	HCC	Carbonated beverages OR 2.44(1.17, 5.09; P=0.021)	Adjusted for age, gender, center, total energy from nonalcoholic sources, cirrhosis diagnosis, Child-Pugh score, diabetes, etiology of cirrhosis and occupational physical activity.	6

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
25	Polesel 2013 ^[62]	Case-Co ntrols	Italy	1992-2008	A structured questionnaire	628 men, 164 women/18-76 years	198/594	Nasopharyngeal	Soft drinks OR 0.93(0.60, 1.45; P=0.70);	Adjusted for center, sex, age, place of living, year of interview, education, tobacco smoking, alcohol drinking, and non-alcohol energy	7
26	Sanchez 2003 ^[70]	Case-Co ntrols	Spain	1996-1999	A structured questionnaire	608 men, 142 women / 20-91 years	375/375	Oropharynx cancer	Fruit juice OR 0.72(0.47, 1.08; P=0.18); NA		6
27	Mccullough 2014 ^[56]	Cohort	USA	1999-2009/ 10 years	FFQ	43,350 men, 57,092 women/47-95 years	1196/100442	Lymphoma	Sugar-sweetened carbonated OR 1.10(0.77, 1.58; P=0.62); Artificial sweetened carbonated beverage OR 0.92(0.73, 1.17; P=0.14)	Adjusted for age, gender, history of diabetes, BMI, smoking status, energy intake, and artificially sweetened carbonated beverage intake.	7
28	Schernhammer 2012 ^[71]	Cohort	USA	NHS:1984-2006 HPFS:1986-2006	FFQ	51,529 men, 121,701 women/ 30-75 years	1948/125028	Lymphoma and leukemia	Sugar-sweetened soda NHL: OR 1.34(0.98, 1.83; P=0.05); Multiple myeloma: OR 1.47(0.76, 2.83; P=0.31); leukemia: OR 1.06(0.56, 2.00; P=0.68)	Adjusted for age; questionnaire cycle; diet soda consumption; fruit and vegetable consumption; multivitamin use; intakes of alcohol, saturated fat, animal protein, and total energy; race; BMI; height; discretionary physical activity; smoking history; and menopausal status and use of hormone replacement therapy (women only).	8
29	Inoue-choi 2013 ^[41]	Cohort	USA	1986-2010	FFQ	23,039 women/ 52-71 years	595/23039	Endometrial	Sugar-sweetened beverage and fruit juice: type I HR 1.54(1.12, 2.12; P=0.008).	Adjusted for age, smoking, physical activity, alcohol use, estrogen use, age at menarche, age at menopause, number of live births, history of diabetes, and coffee intake, BMI.	7

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
30	King 2013 ^[45]	Case-co ntrols	USA	2002-2006	FFQ	822 women/ 55+years and 65+years	417/295	Endometri al	Sugary drinks OR 1.48(0.94, 2.33; P=0.14)	Adjusted for age, energy intake, education, race, age 7 at menarche, menopausal status and age at menopause for postmenopausal women, parity, oral contraceptive use, HRT use, BMI, smoking status and pack-years for ever smokers, physical activity.	
31	King 2013 ^[46]	Case-co ntrols	USA	2001-2008	FFQ	595 women/ cases:21+ years, controls:55+years and 65+years	205/390	Ovarian	Sugary drinks OR 1.09(0.65, 1.84; P=0.47)	Adjusted for age, energy intake, education, race, age 6 at menarche, menopausal status and age at menopause for postmenopausal women, parity, oral contraceptive use, HRT use, BMI, smoking status, tubal ligation, and first degree relative with ovarian cancer.	
32	Navarrete 2016 ^[59]	Cohort	European	1992-2000; 11.6 years (median)	Questionnaires	142,202 men, 334,997 women/ mean age 51 years	865/477199	Pancreatic	Total sweet beverage OR 0.92(0.72, 1.17; P=0.17)	Adjusted for educational level, physical activity, smoking status, and alcohol consumption (g/d), diabetes, energy intake, and BMI	7
33	Gallus 2010 ^[36]	Case-co ntrols	Italy	1991-2008	FFQ	522 men, 455 women/ median age 63 years	325/652	Pancreatic	Carbonated drink OR 1.02(0.72, 1.44)	Adjusted for sex and age, year of interview, education, body mass index, tobacco smoking, alcohol drinking, total energy intake, family history of pancreatic cancer, and history of diabetes.	7
34	Mueller 2010 ^[58]	Cohort	Singapore	1999-2004/ 10.7 years (average)	A structured questionnaire	NA	140/648387	Pancreatic	Soft drinks HR 1.87(1.10, 3.15; P=0.02); Juice HR 1.31(0.74, 2.30); P=0.35);	Adjusted for age, sex, ethnicity, and year of interview, education, smoking index, moderate physical activity, alcohol, added sugar and candy, and total calories, type 2 diabetes mellitus and BMI.	9
35	Chan 2009 ^[27]	Case-co ntrol	USA	1995-1999	FFQ	1174 men, 1059 women/ 21-85 years	532/1701	Pancreatic	Sweetened beverage OR 1.0(0.7, 1.3; P=0.7)	Adjusted for age, sex, and energy intake, body mass index, race, education, smoking, history of diabetes, and physical activity, total red meat, white meat, vegetable and fruit, eggs, fish, dairy, whole grain, and refined grain.	6

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
36	Bao 2008 [23]	Cohort	USA	1995-1996/ 7.2 years (average)	FFQ	284,076 men, 203,846 women/ 50-71 years	1258/487922	Pancreatic	Sugar-sweetened beverage OR 0.83(0.67,1.04; P=0.10).	Adjusted for sex, race, education, BMI, alcohol, smoking, physical activity, energy-adjusted red meat consumption, energy-adjusted folate intake, and total energy	8
37	Nothling 2007 [60]	Cohort	Germany	1993-1996/ 8 years	FFQ	72,813 men, 89,337 women/ 45-75 years	434/161716	Pancreatic	Fruit juice OR 1.08(0.83,1.41; P=0.56).	Adjusted for race-ethnicity, age at cohort entry, smoking status, pack-years of smoking, family history of pancreatic cancer, energy intake, intakes of red meat and processed meat, and BMI.	8
38	Larsson 2006 [48]	Cohort	Sweden	1997-2005/ 7.2 years (average)	FFQ	42,524 men, 35,273 women/45-83 years	131/77797	Pancreatic	Soft drink HR 1.93(1.18,3.14; P=0.02);	Adjusted for age, sex, education, smoking status and 8 pack-years, BMI, and intakes of total energy and alcohol.	8
39	Schernhammer 2005 [72]	Cohort	USA	NHS:1980-2000; HPFS:1986-2000/up to 20years	FFQ	49,364 men, 88,794 women/ 30-75 years	379/138158	Pancreatic	Soft drink HR 1.13(0.81,1.58; P=0.47);	Adjusted for age in years, BMI, gender, follow-up cycle, history of diabetes, smoking status in nine categories, quintiles of caloric intake, quintiles of physical activity, and other soft drink consumption.	7
40	Chan 2005 [26]	Case-control	USA	1995-1999	FFQ	1171 men,1056 women/ 21-85 years	526/1701	Pancreatic	Fruit juice OR 0.72(0.54,0.98; P=0.05);	Adjusted for age, sex and energy intake.	6
41	Lyon 1992 [51]	Case-control	USA	1984-1987	A standardized questionnaire	NA/ 40-79 years	149/363	Pancreatic	Caffeine-containing soft drinks OR 1.31(0.89, 1.94)	NA	5
42	Turati 2015 [27]	Case-control	Italy	2003-2014	A structured questionnaire	1156 men, 199 women/ 25-80 years	690/665	Bladder	Cola drinks OR 1.04(0.73, 1.49)	Adjusted for age, sex, study center, year of interview, smoking, education, alcohol drinking, body mass index, family history	7
43	Lee 2007 [50]	Cohort	USA	1980-1986/ up to 7-20 years	FFQ	244,483 men, 530,469 women/ NA	1478/774952	Renal	Soda drinks OR 1.11(0.89, 1.38; P=0.24)	Adjusted for age, history of hypertension, body mass index, pack-years of smoking, combination of parity and age at first birth, fruit and vegetable consumption, alcohol intake and total energy intake.	7

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
44	Rashidkhanani2004 [65]	cohort	Sweden	1987-1990/ 13.4 years (average)	FFQ	61,000 women/ 40-76 years	122/61,000	Renal	Fruit juice RR 1.46(0.94, 2.26; P=0.26)	Adjusted for age and body mass index	8
45	Miles 2018 [57]	Cohort	USA	1993-2001/ 9 years (median)	Baseline (BQ) and diet history (DHQ) questionnaires	22,720 men/ 55-74 years	1996/22720	Prostate	Sugar-sweetened beverage HR 1.21(1.06, 1.39); Fruit juice HR 1.07(0.94, 1.22).	Adjusted for age, race, study center, BMI, education, smoking, family history of prostate cancer, history of diabetes, PSA screening, and energy intake	8
46	Darke 2012 [31]	Cohort	Sweden	1992-2009/ 14.9 years (median)	Questionnaires	8128 men/ 45-73 years	817/8128	Prostate	Fruit juice OR 0.99(0.81, 1.22); Sugar-sweetened beverages OR 1.13(0.92, 1.38)	Adjusted for age, year of study entry, season of data collection, energy intake, height, waist, physical activity, smoking, educational level, birth in Sweden, alcohol, calcium, and selenium.	7
47	Sharpe 2002 [73]	Case-control	Canada	1979-1985	Questionnaires	252 men/ 40-70 years	115/137	Prostate	Carbonated beverages OR 1.0(0.7, 1.4)	Adjusted for age, ethnicity, respondent status, family income, body mass index, cumulative cigarette smoking, and cumulative alcohol consumption.	6
48	Ellison 2000 [33]	Cohort	Canada	1970-1972/ up to 1993	Dietary interviews	3400 men/ 50-84 years	145/3400	Prostate	Cola OR 1.29(0.74, 2.26)	Adjusted for five-year age group	7
49	Jain 1998 [42]	Case-control	Canada	1989-1993	A structured questionnaire	1253 men/ cases:69.8 ± 7.3 years, controls: 69.9 ± 7.3years	617/636	Prostate	Cola OR 0.79(0.53, 1.17)	Adjusted for age and total energy intake	6
50	Genkinger 2012 [37]	Cohort	European	NA/ 3-16years	FFQ	318875men, 537204women/ 15-107 years	2057/NA	Pancreatic	Sugar-sweetened carbonated soft OR 1.19(0.98, 1.46)	Adjusted for r smoking status, alcohol intake, history of diabetes, BMI, and energy intake, age and years and year of questionnaire return	8

Table S1. (Continued)

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51	Lagergren 2006 ^[47]	Case-co ntrol	Swedish	1995-1997	FFQ	Men and women/ any	177/784 255/784	EC GC	Carbonated drinks OR 1.15(0.67, 2.00) Carbonated drinks OR 1.10(0.70, 1.72)	Adjusted for reflux symptoms, body mass index , tobacco smoking status, alcohol use, socioeconomic status, and dietary intake of fruits and vegetables.	6
52	Hu 2009 ^[40]	Case-co ntrol	Canada	1994-1997	Questionnaires	3164men,3013 women/ ≥20 years	1117/4897	Renal	Soft drinks OR 1.26(0.96, 1.67)	Adjusted for 10-year age groups, province, education, body mass index, sex, pack-years of smoking, alcohol drinking (g/day), total consumption of meat, total consumption of vegetables and fruit, and total energy intake.	6
53	Talamini 1990 ^[75]	Case-co ntrol	Italy	1986-1989	Questionnaires	595men, 310women/ 20-74 years	5/20	Renal	Colas OR 0.72(0.27, 1.97)	Adjusted for age, sex, education, area of residence, and BMI	5
54	Ros 2011 ^[26]	Cohort	European	1992-2000/ 9.3years(me an)	Dietary questionnaire	68276men,165637w omen/ 25-70 years	494/233236	Bladder	Soft drinks OR 1.03(0.83, 1.30)	Adjusted for energy intake, smoking status, duration of smoking and lifetime intensity of smoking.	8
55	Jensen 1986 ^[43]	Case-co ntrol	Denmark	1979-1981	A structured questionnaire	857men,285women/ any	371/771	Bladder	Soft drinks OR males 1.8(0.9, 3.5); females 0.7(0.1, 3.8)	Adjusted for smoking and age	6
56	Jiang 2008 ^[44]	Case-co ntrol	USA	1987-1999	A structured questionnaire	616men,233women/ 25-64 years	967/970	Bladder	Soda OR 1.39(0.87, 2.21)	Adjusted for level of education, use of NSAIDs, intake of carotenoids, number of years as a hairdresser/barber, cigarette smoking status, duration of smoking, and intensity of smoking.	5
57	Stefani 2007 ^[30]	Case-co ntrol	Uruguay	1996-2000	FFQ	666men,90women/ 30-89 years	255/501	Bladder	Soft OR 1.1(0.7, 1.7)	Adjusted for age, sex, residence, urban/rural status, education, family history of bladder cancer among first-degree relatives, BMI, occupation, smoking status, years since quitting, number of cigarettes smoked per day, <i>maté</i> drinking, milk intake, and, when appropriate, coffee drinking and tea drinking	6

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
58	Bruemmer 2013 ^[25]	Case-control	UK	1987-1990	A structured questionnaire	422men, 245women/ 45-65years	262/405	Bladder	Soft drinks OR: males 1.6(0.7, 3.6); females 2.3(0.8, 6.3)	Adjusted for r age, county, and smoking	7
59	Holick 2010 ^[39]	Cohort	USA	1980-2005/ 24 years	FFQ	36625men, 147353women/ 40-75years	335/610832	Glioma	Carbonated beverages OR: caffeinated 0.75(0.51, 1.11); decaffeinated 0.75(0.49, 1.17)	Adjusted for age and total caloric intake.	8
60	Dubrow 2012 ^[32]	Cohort	USA	1995-1996/ up to December 2006	Questionnaires	Men and women/ 50-71years	343/545771	Glioma	Soda OR 0.87(0.65, 1.15)	Adjusted for age, sex, race/ethnicity, energy intake, height, fruit and vegetable intake, and nitrite intake from plant sources	8
Sugar-sweetened beverages and cancer mortality											
61	Zhang 2020 ^[89]	Cohort	China	1999-2014/ 7.9 years	Questionnaire	Men and women/ ≥20years	1765/66026	Overall cancer	Sugar-sweetened beverages HR 1.05(0.80,1.39)	Adjusted for age, sex, family income-poverty ratio level, race, education level, marital status, alcohol consumption, smoking, and leisure-time physical activity, body mass index, prevalent high cholesterol level, hypertension, and diabetes, and history of cardiovascular disease and cancer.	8
62	Tasevska 2014 ^[88]	Cohort	USA	1995-1996/ 13 years	Questionnaire	Men and women/ 50-71years	17730/353751	Overall cancer	Sugar-sweetened beverages Women: HR 1.04(0.96,1.13); Men: HR 1.00(0.94,1.07)	Adjusted for age, BMI, marital status, smoking, race, education, physical activity, and intake of energy, vegetables, alcohol, family history of cancer and intakes of total fat and red meat.	8
63	Odegaard 2015 ^[87]	Cohort	China	1993-1998/ Follow up to 2011	Questionnaires	Men and women/ 45-74 years	4092/52584	Overall cancer	Soft drink HR 0.85(0.69,1.05)	Adjusted for age, sex, dialect, education, year of interview, smoking, moderate and vigorous activity, sleep, BMI, hypertension, non-beverage vegetable-fruit-soy-rich dietary pattern score, and energy intake.	7

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
64	Mullee 2019 ^[86]	Cohort	European	1992-2000/ 16.4 years	Questionnaires	Men and women/ 50.8 years	18003/451743	Overall cancer	Soft drink HR 1.02(0.95,1.11)	Adjusted for body mass index, calculated as weight in kilograms divided by height in meters squared, physical activity index, educational status, alcohol consumption, smoking status and intensity, smoking duration, ever use of contraceptive pill, menopausal status, ever use of menopausal hormone therapy, intakes of total energy, red and processed meat, fruits and vegetables, coffee, and fruit and vegetable juice, stratified by age, EPIC center, and sex.	9
65	Malik 2019 ^[84]	Cohort	USA	From 1980/ Follow up to 2014	FFQ	Men and women/ 40-75 and 30-55 years	12380/118363	Overall cancer	Sugar-sweetened beverages HR 1.16(1.04,1.29); Artificially sweetened beverages HR 1.04(0.96,1.12);	Adjusted for: age, smoking, alcohol intake, postmenopausal hormone use (NHS), physical activity, family history of diabetes, family history of myocardial infarction, family history of cancer, multivitamin use, ethnicity, aspirin use, baseline history of hypertension and hypercholesterolemia; intake of whole grains, fruit, vegetables, red and processed meat; total energy; and body mass index.	8
66	Khan 2004 ^[83]	Cohort	Japan	1984-2002/ NA	Questionnaires	Men and women/ ≥40 years	1010/3158	Overall cancer	Carbonated drink RR Men 0.9 (0.6, 1.3); Women 1.5 (0.9, 2.3);	NA	5
67	Guercio 2018 ^[82]	Cohort	USA	1999-2001/ 7.3 years	FFQ	Men and women/ ≥21 years	392/1264	CRC	Artificially sweetened beverages HR 0.58(0.31, 1.07);	Adjusted for age, depth of invasion through bowel wall, number of positive lymph nodes, baseline performance status, chemotherapy treatment group, consistent aspirin use, and time-varying physical activity, and body mass index, time-varying total calorie intake.	6

Table S1. (Continued)

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
68	Fung 2014 ^[81]	Cohort	USA	From 1986-2010	FFQ	Women 30-55 years	NA/121701	CRC	Sugary drinks HR 1.11 (1.01, 1.23)	Adjusted for age, physical activity, BMI, weight change, cancer grade, chemotherapy, smoking status, energy intake, colon or rectal cancer, stage of disease, date of colorectal cancer diagnosis, an AHEI-2010 score without the specific component.	6
69	Fuchs 2014 ^[80]	Cohort	USA	1999-2001/ 7.3 years	FFQ	Men and women/ ≥21 years	262/1011	CRC	Sugar-sweetened beverages HR 1.67(1.04,2.68)	Adjusting with Cox proportional hazards regression for age, sex, depth of invasion through bowel wall, number of positive lymph nodes, baseline performance status, treatment group, and the following time-varying covariates: total energy intake, body mass index, physical activity level, Western dietary pattern, and prudent dietary pattern.	6
70	Barrington 2016 ^[79]	Cohort	USA	2000-2002/ 6.9 years	FFQ	Men and women/ 50-76	1933/69582	Overall cancer	Sugar-sweetened beverages HR 1.23(1.04,1.47)	Adjusted for age, sex, race/ethnicity, marital status, education, annual income, BMI at age 45 years, current use of cholesterol-lowering medication, aspirin use in last 10 years, non-aspirin non-steroidal anti-inflammatory drug use in last 10 years, average physical activity in 10 years before baseline, smoking status, average alcohol intake, mammogram in past 2 years, prostate-specific antigen test in the last 2 years, sigmoidoscopy in the last 10 years, number of servings/d of fruits, number of servings/d of vegetables and total daily energy intake, history of cancer other than non-melanoma skin cancer, family history of cancer, years of oestrogen therapy, years of oestrogen plus progestin therapy, age at menopause and age at menarche.	7

Table S1. *(Continued)*

No.	Study	Study design	Location	Years / Follow-up	Exposure assessment	Gender/ Age	no. of study (case/control)	Type of cancer	Exposure	Covariate adjustments	NOS
71	Miles	Case-control	USA	1999-2004/ 12.1 years	Questionnaires	Men and women/ 18-65	240/1641	UADT	Sugary drinks HR 1.97(1.32,2.93)	Adjusted for age, gender, ethnicity, education, smoking, alcohol drinking, caloric intake, pathology type, and tumor differentiation grade.	6

EC: esophageal cancer; GC: gastric cancer; FFQ: food frequency questionnaires; ESCC: esophageal squamous cell carcinoma; EADC: esophageal adenocarcinoma; IHBC: intrahepatic bile duct; GBTC: biliary tract cancer; EHBC: extrahepatic bile duct; UADT: upper aerodigestive tract.

Table S2. Subgroup analysis of sugar-sweetened beverages consumption and cancer risk

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
All studies					
Geographic location					
European	19	58.2%	1.16	(1.06,1.27)	0.001
North America	28	59.0%	1.06	(0.98,1.15)	0.147
Oceania	2	33.6%	0.97	(0.66,1.45)	0.898
Asia	2	31.4%	2.39	(1.64,3.48)	<0.001
South America	1				
Africa	1				
No. of cases					
<500	28	69.5%	1.25	(1.12,1.41)	<0.001
≥500	25	59.7%	1.06	(0.99,1.13)	0.076
Type of FFQ					
validated	27	41.8%	1.10	(1.04,1.18)	0.002
unvalidated	26	75.6%	1.10	(1.04,1.30)	0.007
Study quality score					
High (>6)	34	55.3%	1.09	(1.03,1.15)	0.002
Low (≤6)	19	75.4%	1.25	(1.03,1.52)	0.025
Cohort studies					
Geographic location					
European	8	59.1%	1.10	(0.98,1.24)	0.091
North America	16	62.2%	1.06	(0.96,1.16)	0.246
Oceania	1				
Asia	1				
No. of cases					
<500	12	60.1%	1.10	(0.98,1.23)	0.123
≥500	14	60.7%	1.08	(0.99,1.17)	0.075
Type of FFQ					
validated	15	56.3%	1.10	(1.00,1.20)	0.043
unvalidated	11	64.7%	1.06	(0.96,1.17)	0.239
Study quality score					
High (>6)	26	59.3%	1.08	(1.01,1.15)	0.020
Low (≤6)	0				

Table S2. (Continued)

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
Case-control studies					
Geographic location					
European	12	74.6%	1.40	(1.13,1.73)	0.002
North America	12	57.7%	1.07	(0.92,1.24)	0.380
Asia	1				
Oceania	1				
South America	1				
Africa	1				
No. of cases					
<500	16	65.1%	1.43	(1.16,1.76)	0.001
≥500	11	62.2%	1.03	(0.90,1.17)	0.673
Type of FFQ					
validated	12	7.4%	1.12	(1.04,1.21)	0.003
unvalidated	15	80.0%	1.31	(1.02,1.67)	0.032
Study quality score					
High (>6)	8	23.6%	1.15	(1.03,1.52)	0.015
Low (≤6)	19	75.4%	1.25	(1.03,1.29)	0.025
EC					
Geographic location					
European	1				
North America	3	63.1%	0.87	(0.61,1.25)	0.445
Oceania	1				
No. of cases					
<500	1				
≥500	4	62.8%	0.80	(0.58,1.11)	0.182
Type of FFQ					
validated	3	65.2%	0.90	(0.58,1.40)	0.649
unvalidated	2	51.4%	0.77	(0.52,1.14)	0.194
Study quality score					
High (>6)	1				
Low (≤6)	4	69.3%	0.79	(0.54,1.16)	0.974

Table S2. (Continued)

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
GC					
Geographic location					
European	2	67.9%	2.34	(0.77,7.08)	0.132
North America	3	37.5%	0.85	(0.66,1.08)	0.190
Oceania	1				
No. of cases					
<500	2	67.9%	2.34	(0.77,7.08)	0.132
≥500	4	23.5%	0.90	(0.74,1.10)	0.323
Type of FFQ					
validated	3	0.0%	1.15	(0.92,1.44)	0.208
unvalidated	3	59.7%	0.93	(0.63,1.38)	0.721
Study quality score					
High (>6)	2	0.0%	0.94	(0.73,1.22)	0.664
Low (≤6)	4	63.4%	1.11	(0.78,1.56)	0.566
CRC					
Geographic location					
European	3	57.4%	1.17	(0.92,1.49)	0.196
North America	4	0.0%	1.08	(1.00,1.17)	0.040
Oceania	1				
Africa	1				
No. of cases					
<500	4	76.0%	1.56	(0.93,2.64)	0.095
≥500	5	42.4%	1.10	(1.01,1.27)	0.022
Type of FFQ					
validated	7	68.6%	1.16	(0.74,1.81)	0.070
unvalidated	2	63.2%	1.12	(0.99,1.26)	0.513
Study quality score					
High (>6)	8	44.5%	1.11	(1.02,1.20)	0.017
Low (≤6)	1				

Table S2. (Continued)

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
<i>Pancreatic cancer</i>					
Geographic location					
European	3	71.9%	1.16	(0.78,1.72)	0.468
North America	5	46.1%	1.06	(0.89,1.25)	0.515
Asia	1				
No. of cases					
<500	5	42.0%	1.33	(1.05,1.69)	0.018
≥500	4	51.6%	0.98	(0.82,1.17)	0.802
Type of FFQ					
validated	6	58.8%	1.24	(0.83,1.87)	0.370
unvalidated	3	69.8%	1.09	(0.90,1.32)	0.297
Study quality score					
High (>6)	7	66.2%	1.13	(0.92,1.38)	0.232
Low (≤6)	2	11.6%	1.11	(0.86,1.44)	0.414
<i>Breast cancer</i>					
Geographic location					
European	3	77.0%	1.62	(1.11,2.37)	0.012
North America	3	0.0%	1.03	(0.85,1.24)	0.385
Oceania	1				
No. of cases					
<500	4	73.2%	1.50	(1.08,2.09)	0.014
≥500	3	0.0%	1.06	(0.93,1.20)	0.410
Type of FFQ					
validated	5	0.0%	1.07	(0.94,1.21)	0.295
unvalidated	2	82.7%	1.69	(1.08,2.64)	0.022
Study quality score					
High (>6)	4	0.0%	1.11	(0.98,1.26)	0.089
Low (≤6)	3	81.7%	1.49	(0.99,2.23)	0.053

Table S2. (Continued)

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
<i>Prostatic cancer</i>					
Geographic location					
European	2	0.0%	1.20	(1.03,1.39)	0.019
North America	5	18.1%	1.10	(0.95,1.28)	0.206
Oceania	1				
No. of cases					
<500	4	0.0%	1.18	(1.00,1.39)	0.047
≥500	4	32.2%	1.09	(0.94,1.25)	0.257
Type of FFQ					
validated	2	0.0%	1.01	(0.80,1.27)	0.932
unvalidated	6	0.0%	1.16	(1.06,1.28)	0.001
Study quality score					
High (>6)	6	0.0%	1.17	(1.07,1.28)	0.001
Low (≤6)	2	0.0%	0.90	(0.70,1.17)	0.442
<i>Renal cancer</i>					
Geographic location					
European	1				
North America	2	0.0%	1.17	(0.98,1.38)	0.081
Oceania	1				
No. of cases					
<500	1				
≥500	3	0.0%	1.18	(1.00,1.38)	0.046
Type of FFQ					
validated	2	0.0%	1.14	(0.94,1.38)	0.198
unvalidated	2	11.6%	1.18	(0.82,1.68)	
Study quality score					
High (>6)	2	0.0%	1.14	(0.94,1.38)	0.198
Low (≤6)	2	0.0%	1.18	(0.82,1.68)	0.372

Table S2. (Continued)

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
<i>Bladder cancer</i>					
Geographic location					
European	4	7.9%	1.14	(0.93,1.39)	0.208
North America	1				
South America	1				
No. of cases					
<500	4	4.9%	1.16	(0.87,1.54)	0.169
≥500	2	0.0%	1.15	(0.94,1.41)	0.311
Type of FFQ					
validated	1				
unvalidated	5	2.9%	1.15	(0.97,1.37)	0.101
Study quality score					
High (>6)	3	5.1%	1.09	(0.90,1.33)	0.391
Low (≤6)	3	0.0%	1.30	(0.97,1.73)	0.075

EC: esophageal cancer; GC: gastric cancer; FFQ: food frequency questionnaires.

Table S3. Subgroup analysis of fruit juice consumption and cancer risk

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
All studies					
Geographic location					
European	6	47.2%	1.11	(0.96,1.28)	0.162
North America	7	16.7%	1.02	(0.96,1.09)	0.506
Asia	2	0%	1.30	(0.87,1.94)	0.201
Oceania	1				
Africa	1				
No. of cases					
<500	8	80.2%	0.99	(0.77,1.27)	0.926
≥500	9	41.9%	1.07	(0.97,1.17)	0.173
Type of FFQ					
validated	9	79.6%	1.00	(0.85,1.18)	0.958
unvalidated	8	24.7%	1.09	(0.99,1.20)	0.094
Study quality score					
High (>6)	11	7.2%	1.06	(1.01,1.11)	0.013
Low (≤6)	6	86.6%	0.76	(0.48,1.20)	0.240
Cohort studies					
Geographic location					
European	5	20.9%	1.14	(1.02,1.28)	0.020
North America	5	0%	1.03	(0.99,1.08)	0.174
Asia	1				
No. of cases					
<500	5	47.1%	1.10	(0.98,1.35)	0.079
≥500	6	0%	1.08	(1.01,1.16)	0.027
Type of FFQ					
validated	6	0%	1.03	(0.99,1.08)	0.182
unvalidated	5	9.1%	1.11	(1.02,1.21)	0.014
Study quality score					
High (>6)	11	7.2%	1.06	(1.01,1.11)	0.013
Low (≤6)	0				

Table S3. (Continued)

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
Case-control studies					
Geographic location					
European	1				
North America	2	0%	0.75	(0.57,0.98)	0.380
Oceania	1				
Africa	1				
Asia	1				
No. of cases					
<500	3	89.4%	0.56	(0.21,1.50)	0.253
≥500	3	82.5%	0.97	(0.60,1.57)	0.898
Type of FFQ					
validated	3	94.2%	0.89	(0.63,1.26)	0.244
unvalidated	3	23.5%	1.31	(0.26,1.41)	0.520
Study quality score					
High (>6)	0				
Low (≤6)	6	86.6%	0.76	(0.48,1.20)	0.240

Table S4. Subgroup analysis of SSB consumption and cancer mortality

Subgroup	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
All studies					
Geographic location					
European	1				
North America	7	69.7%	1.10	(1.02,1.19)	0.013
Asia	3	43.2%	0.99	(0.81,1.22)	0.952
No. of cases					
<500	3	81.8%	1.29	(0.66,2.50)	0.457
≥500	7	31.3%	1.04	(0.98,1.10)	0.168
Type of FFQ					
validated	5	57.2%	1.12	(1.02,1.23)	0.017
unvalidated	6	58.8%	1.03	(0.95,1.12)	0.430
Study quality score					
High (>6)	6	45.1%	1.04	(0.99,1.10)	0.089
Low (≤6)	5	71.2%	1.22	(0.93,1.60)	0.158
Cohort studies					
Geographic location					
European	1				
North America	6	59.0%	1.08	(1.01,1.15)	0.022
Asia	3	43.2%	0.99	(0.81,1.22)	0.952
No. of cases					
<500	2	85.9%	1.00	(0.36,2.83)	0.994
≥500	7	31.3%	1.04	(0.98,1.10)	0.168
Type of FFQ					
validated	5	57.2%	1.12	(1.02,1.23)	0.017
unvalidated	5	5.9%	1.01	(0.97,1.06)	0.594
Study quality score					
High (>6)	6	45.1%	1.04	(0.99,1.10)	0.089
Low (≤6)	4	59.2%	1.10	(0.86,1.43)	0.430

Table S5. The sensitivity analysis of the relationship between SSB intake and cancer risk

Excluded studies	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
All studies					
No	53	64.9%	1.12	(1.06,1.20)	<0.001
Chazelas2019	52	65.4%	1.13	(1.06,1.20)	<0.001
Makarem2018	52	65.6%	1.13	(1.06,1.20)	<0.001
Hodge2018	52	65.6%	1.13	(1.06,1.20)	<0.001
Li2017	52	65.4%	1.12	(1.05,1.20)	<0.001
Yassibas2012	52	63.8%	1.12	(1.05,1.18)	<0.001
Ren2010	52	63.2%	1.13	(1.07,1.20)	<0.001
Ibiebele2008	52	65.2%	1.13	(1.06,1.20)	<0.001
Mayne2006	52	60.8%	1.13	(1.07,1.20)	<0.001
Lagergren2006	52	65.6%	1.12	(1.06,1.20)	<0.001
Turati2015	52	65.6%	1.12	(1.06,1.20)	<0.001
Ros2011	52	65.5%	1.13	(1.06,1.20)	<0.001
Jensen1985	52	65.3%	1.12	(1.06,1.19)	<0.001
Jiang2008	52	65.3%	1.12	(1.05,1.19)	<0.001
Stefani2007	52	65.6%	1.12	(1.06,1.19)	<0.001
Bruemmer(males)2013	52	65.0%	1.12	(1.05,1.19)	<0.001
Holick2010	52	64.1%	1.13	(1.07,1.20)	<0.001
Dubrow2012	52	65.0%	1.13	(1.06,1.20)	<0.001
Romanos2019	52	65.4%	1.12	(1.06,1.19)	<0.001
Marzbani2019	52	58.7%	1.10	(1.04,1.16)	<0.001
Chandran2014	52	65.6%	1.12	(1.06,1.19)	<0.001
Potischman2002	52	65.6%	1.12	(1.06,1.19)	<0.001
Stepien2016	52	64.8%	1.13	(1.06,1.20)	<0.001
Larsson2016	52	64.0%	1.11	(1.05,1.18)	<0.001
Rizk2019	52	64.5%	1.12	(1.05,1.18)	<0.001
Pacheco2019	52	65.5%	1.12	(1.06,1.19)	<0.001
Theodoratou2014	52	65.3%	1.13	(1.06,1.20)	<0.001
Mahfouz2014	52	63.8%	1.12	(1.05,1.18)	<0.001
Zhang2010	52	65.4%	1.13	(1.06,1.20)	<0.001
Fung2010	52	65.6%	1.13	(1.06,1.20)	<0.001
Bener2010	52	63.9%	1.11	(1.05,1.18)	<0.001
Mccullough2014	52	65.3%	1.13	(1.06,1.20)	<0.001
Schernhammer2012	52	65.1%	1.12	(1.05,1.19)	<0.001
King2013	52	65.6%	1.12	(1.06,1.19)	<0.001
King2013	52	65.2%	1.12	(1.05,1.19)	<0.001

Table S5. (Continued)

Excluded studies	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
Inoue-choi2013	52	63.4%	1.11	(1.05,1.18)	<0.001
Navarrete2016	52	65.2%	1.13	(1.06,1.20)	<0.001
Genkinger2012	52	65.4%	1.12	(1.06,1.19)	<0.001
Gallus2010	52	65.6%	1.12	(1.06,1.19)	<0.001
Mueller2010	52	64.6%	1.12	(1.05,1.18)	<0.001
Chan2009	52	65.5%	1.13	(1.06,1.20)	<0.001
Bao2008	52	64.2%	1.13	(1.07,1.20)	<0.001
Larsson2006	52	64.3%	1.12	(1.05,1.18)	<0.001
Schernhammer2005	52	65.6%	1.12	(1.06,1.19)	<0.001
Lyon1992	52	65.4%	1.12	(1.05,1.19)	<0.001
Miles2018	52	65.0%	1.12	(1.05,1.19)	<0.001
Darke2012	52	65.6%	1.12	(1.06,1.19)	<0.001
Sharpe2002	52	65.5%	1.13	(1.06,1.20)	<0.001
Ellison2000	52	65.5%	1.12	(1.06,1.19)	<0.001
Jain1998	52	65.0%	1.13	(1.06,1.20)	<0.001
Hu2009	52	65.3%	1.12	(1.05,1.19)	<0.001
lee2007	52	65.6%	1.12	(1.06,1.19)	<0.001
Talamini1990	52	65.4%	1.12	(1.06,1.19)	<0.001
Polesel2013	52	65.5%	1.13	(1.06,1.20)	<0.001
Cohort studies					
No	26	59.3%	1.08	(1.01,1.15)	0.020
Chazelas2019	25	60.8%	1.09	(1.01,1.17)	0.025
Makarem2018	25	60.9%	1.08	(1.01,1.16)	0.020
Hodge2018	25	60.9%	1.08	(1.01,1.16)	0.026
Ren2010	25	54.9%	1.09	(1.03,1.17)	0.006
Ros2011	25	60.9%	1.08	(1.01,1.16)	0.020
Holick2010	25	57.0%	1.09	(1.02,1.16)	0.007
Dubrow2012	25	59.7%	1.09	(1.02,1.16)	0.012
Romanos2019	25	60.4%	1.08	(1.01,1.15)	0.026
Stepien2019	25	59.7%	1.09	(1.02,1.17)	0.016
Larsson2016	25	55.8%	1.09	(1.00,1.14)	0.040
Pacheco2019	25	60.7%	1.08	(1.01,1.15)	0.027
Zhang2010	25	60.6%	1.08	(1.01,1.16)	0.016
Fung2010	25	60.7%	1.08	(1.01,1.16)	0.029
Mccullough2014	25	60.4%	1.09	(1.02,1.16)	0.016
Schemhammer2012	25	59.2%	1.07	(1.00,1.15)	0.038
Inoue-choi2013	25	53.7%	1.06	(1.00,1.13)	0.051

Table S5. (Continued)

Excluded studies	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
Nararrete2016	25	60%	1.09	(1.02,1.16)	0.013
Genkinger2012	25	60.1%	1.08	(1.01,1.15)	0.033
Mueller2010	25	57.9%	1.07	(1.01,1.14)	0.033
Bao2008	25	57.5%	1.09	(1.02,1.17)	0.008
Larsson2006	25	56.9%	1.07	(1.00,1.14)	0.036
Schemhammer2005	25	60.8%	1.08	(1.01,1.15)	0.024
Miles2018	25	58.3%	1.07	(1.00,1.15)	0.041
Darke2012	25	60.7%	1.08	(1.01,1.15)	0.028
Ellison2000	25	60.6%	1.08	(1.01,1.15)	0.025
Lee2007	25	60.8%	1.08	(1.01,1.16)	0.026
Case-control studies					
No	27	68.5%	1.20	(1.06,1.35)	0.003
Li2017	26	69.5%	1.20	(1.06,1.36)	0.005
Yassibas2012	26	67.0%	1.18	(1.05,1.32)	0.006
Ibiebele2008	26	69.0%	1.21	(1.07,1.36)	0.002
Mayne2006	26	58.8%	1.23	(1.10,1.36)	0.000
Lagergren2006	26	69.7%	1.20	(1.06,1.36)	0.004
Turati2015	26	69.6%	1.21	(1.07,1.37)	0.003
Jensen1985	26	69.3%	1.19	(1.05,1.34)	0.005
Jiang2008	26	69.4%	1.19	(1.05,1.35)	0.005
Stefani2007	26	69.7%	1.20	(1.06,1.36)	0.003
Bruemmen2013	26	68.9%	1.18	(1.05,1.34)	0.006
Marzbani2019	26	58.0%	1.14	(1.03,1.27)	0.014
Chandran2014	26	69.7%	1.20	(1.06,1.37)	0.004
Patischman2002	26	69.7%	1.20	(1.06,1.36)	0.003
Rizk2019	26	68.1%	1.18	(1.05,1.33)	0.006
Theodoratou2014	26	69.6%	1.22	(1.05,1.41)	0.008
Mahfouz2014	26	66.8%	1.18	(1.05,1.32)	0.005
Bener2010	26	67.5%	1.18	(1.04,1.33)	0.008
King2013	26	69.7%	1.20	(1.06,1.36)	0.003
King2013	26	69.2%	1.19	(1.05,1.34)	0.005
Gallus2010	26	69.6%	1.21	(1.07,1.37)	0.003
Chan2009	26	69.5%	1.21	(1.07,1.37)	0.003
Lyon1992	26	69.5%	1.19	(1.06,1.35)	0.005
Sharpe2002	26	69.5%	1.21	(1.07,1.37)	0.003
Jain1998	26	68.5%	1.22	(1.08,1.37)	0.001

Table S5. *(Continued)*

Excluded studies	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
Hu2009	26	69.5%	1.20	(1.06,1.36)	0.005
Talamini1990	26	69.4%	1.20	(1.07,1.36)	0.002
Polesel2013	26	69.4%	1.21	(1.07,1.37)	0.002

Table S6. The sensitivity analysis of the relationship between fruit juice intake and cancer risk

Excluded studies	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
All studies					
No	17	68.4%	1.05	(0.95,1.16)	0.338
Chazelas2019	16	69.0%	1.04	(0.93,1.15)	0.514
Stepien2016	16	69.2%	1.04	(0.92,1.18)	0.501
Makarem2018	16	67.8%	1.03	(0.93,1.14)	0.543
Pourfarzi2009	16	70.0%	1.04	(0.94,1.15)	0.407
Jiang2008	16	70.2%	1.05	(0.95,1.16)	0.311
Farvid2016	16	70.3%	1.05	(0.94,1.17)	0.373
Mahfouz2014	16	42.0%	1.08	(1.00,1.16)	0.044
Annema2011	16	66.9%	1.03	(0.93,1.13)	0.574
Inoue-choi2013	16	70.0%	1.04	(0.94,1.15)	0.438
Mueller2010	16	70.0%	1.04	(0.94,1.15)	0.408
Nothling2007	16	70.3%	1.05	(0.94,1.16)	0.395
Chan2005	16	66.4%	1.07	(0.97,1.18)	0.149
Miles2018	16	70.3%	1.04	(0.94,1.16)	0.448
Darke2012	16	70.2%	1.05	(0.95,1.17)	0.337
Lee2007	16	70.3%	1.04	(0.94,1.16)	0.409
Rashidkhani2004	16	69.0%	1.04	(0.94,1.14)	0.474
Sanchez2003	16	68.5	1.06	(0.97,1.17)	0.211
Cohort studies					
No	11	7.2%	1.06	(1.01,1.11)	0.013
Chazelas2019	10	0%	1.04	(1.00,1.08)	0.056
Stepien2016	10	0%	1.10	(1.04,1.18)	0.002
Makarem2018	10	0%	1.04	(1.00,1.09)	0.028
Farvid2016	10	15.5%	1.08	(1.02,1.14)	0.012
Inoue-choi2013	10	11.9%	1.06	(1.01,1.12)	0.019
Mueller2010	10	11.6%	1.06	(1.01,1.12)	0.016
Nothing2007	10	16.1%	1.07	(1.01,1.13)	0.016
Miles2018	10	15.8%	1.07	(1.01,1.14)	0.021
Darke2012	10	13.8%	1.07	(1.01,1.13)	0.010
Lee2007	10	15.5%	1.07	(1.01,1.13)	0.017
Rashidkhani2004	10	0%	1.05	(1.01,1.09)	0.019
Case-control studies					
No	6	86.6%	0.76	(0.48,1.20)	0.240
Pourfarzi2009	5	88.9%	0.68	(0.40,1.16)	0.158

Table S6. *(Continued)*

Excluded studies	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
Jiang2008	5	89.3%	0.73	(0.43,1.25)	0.258
Mahfouz2014	5	73.1%	0.96	(0.68,1.34)	0.802
Annema2011	5	79.7%	0.66	(0.41,1.07)	0.090
Chan2005	5	88.1%	0.76	(0.41,1.36)	0.360
Sanchez2003	5	88.8%	0.76	(0.43,1.33)	0.335

Table S7. The sensitivity analysis of the relationship between SSB intake and cancer mortality

Excluded studies	No. of included studies	I ²	Random-effect model		
			OR	95%CI	P
All studies					
No	11	61.8%	1.07	(1.01,1.14)	0.029
Zhang2020	10	64.8%	1.07	(1.01,1.15)	0.033
Tasevska2014	10	64.2%	1.10	(1.01,1.19)	0.033
Odegaard2015	10	60.1%	1.09	(1.02,1.16)	0.009
Mullee2019	10	64.1%	1.08	(1.01,1.16)	0.032
Malik2019	10	63.9%	1.07	(0.99,1.16)	0.094
Khan2004	10	64.8%	1.07	(1.00,1.14)	0.036
Guercio2018	10	60.7%	1.08	(1.01,1.14)	0.016
Fuchs2014	10	60.5%	1.06	(1.00,1.13)	0.045
Barrington2016	10	61.0%	1.06	(0.99,1.13)	0.071
Miles2016	10	50.9%	1.06	(1.00,1.12)	0.046
Fung2014	10	63.3%	1.07	(1.00,1.15)	0.060
Cohort studies					
No	10	50.9%	1.06	(1.00,1.12)	0.046
Zhang2020	9	55.0%	1.06	(1.00,1.12)	0.054
Tasevska2014	9	53.9%	1.10	(1.04,1.18)	0.061
Odegaard2015	9	46.6%	1.07	(1.01,1.12)	0.014
Mullee2019	9	54.1%	1.06	(1.00,1.13)	0.055
Malik2019	9	51.4%	1.05	(0.98,1.12)	0.184
Khan2004	9	53.7%	1.05	(1.00,1.11)	0.052
Guercio2018	9	47.5%	1.06	(1.01,1.12)	0.025
Fuchs2014	9	46.7%	1.05	(1.00,1.11)	0.057
Barrington2016	9	47.5%	1.05	(0.99,1.10)	0.101
Fung2014	10	52.0%	1.05	(0.99,1.11)	0.107

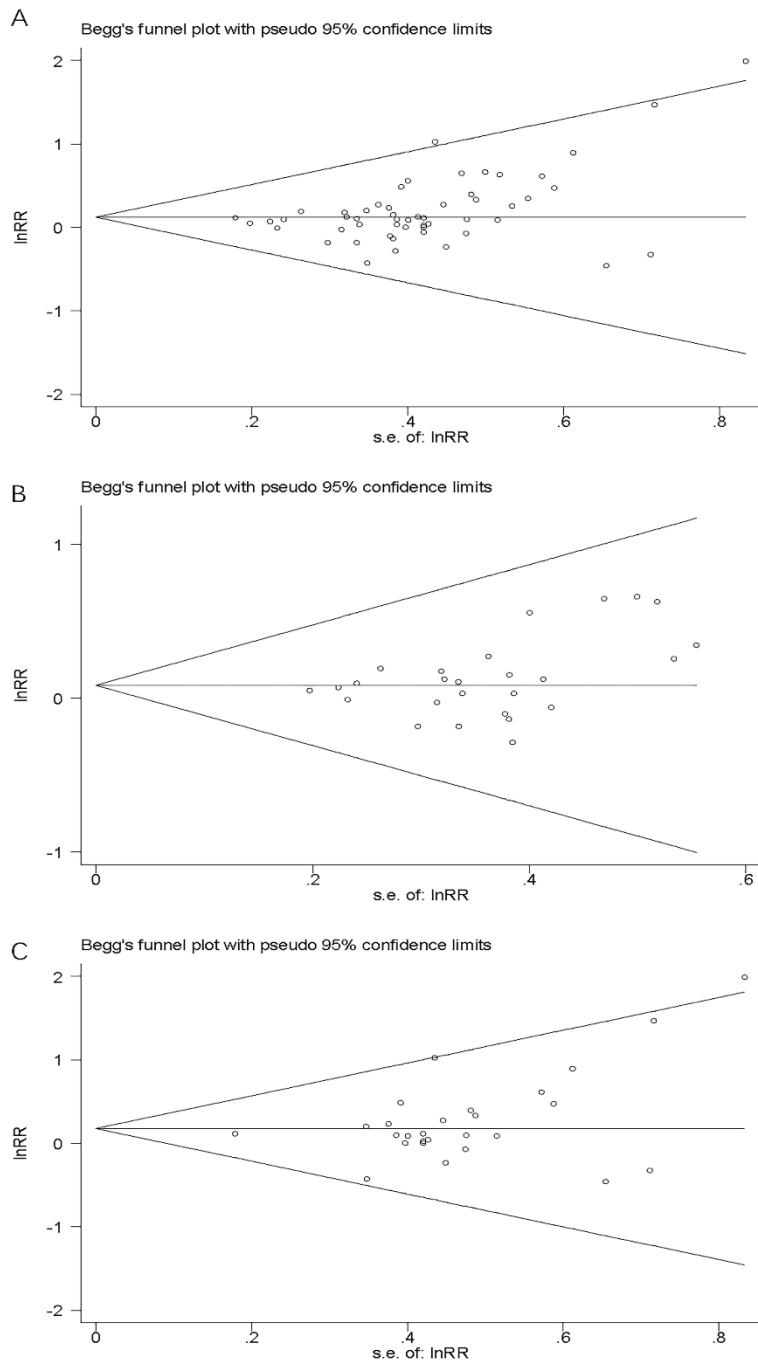


Fig.S1 Funnel plot for publication bias for SSB consumption and cancer risk by all studies (A), the cohort studies (B), and the case-control studies(C).

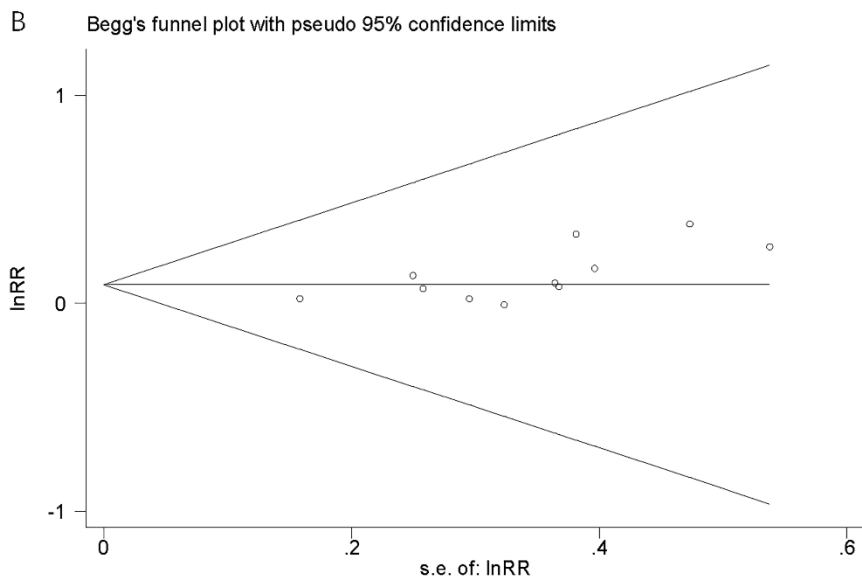
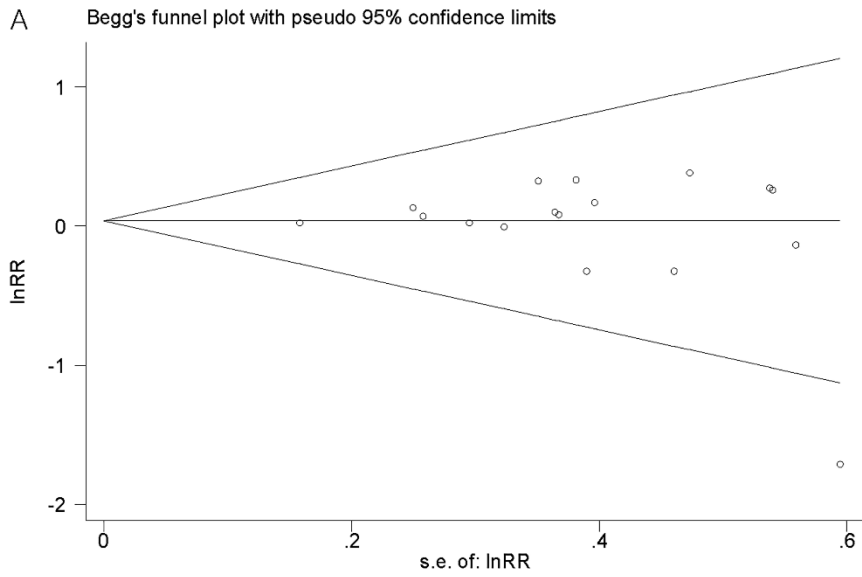


Fig.S2 Funnel plot for publication bias for fruit juice consumption and cancer risk by all studies (A), and the cohort studies (B).

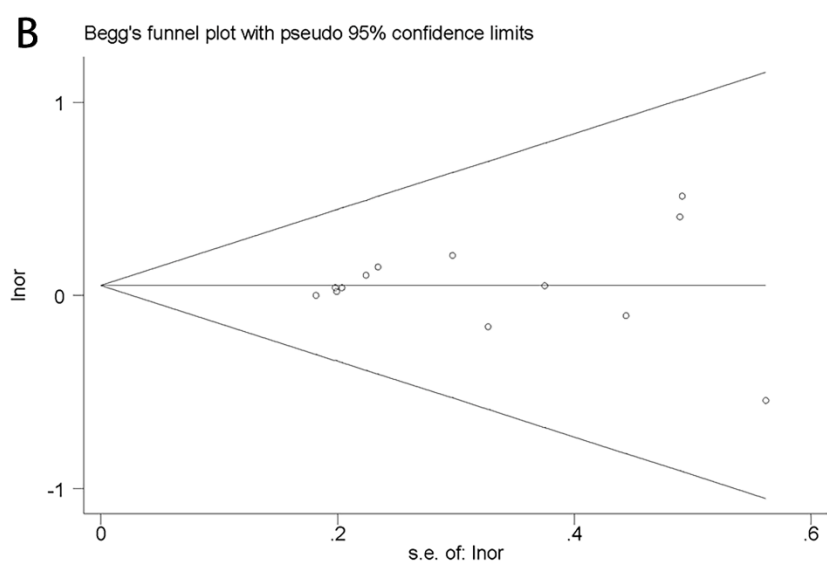
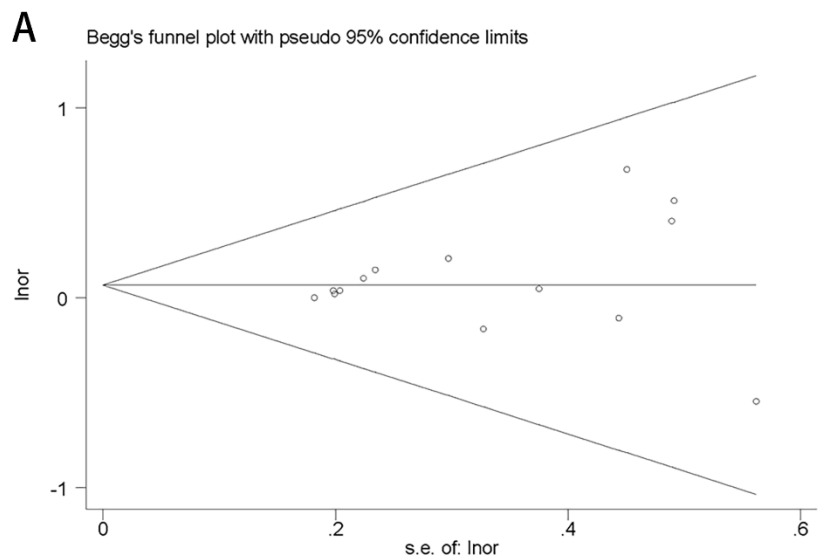


Fig.S3 Funnel plot for publication bias for SSB consumption and cancer mortality by overall studies (A), and the cohort studies (B).