

Table S1 Characteristics of the studies included in the meta-analysis

Reference	Numbers of cases/controls	Study type	Study location	Years of diagnosis	Food item; comparison	Covariates considered	OR/RR (95% CI)
Armstrong <i>et al.</i> , 1983 (25)	100/100	Case-control	Malaysian	NR	Processed meat; < daily vs. never, daily vs. never	Age since, sex, exposure category, and occupational exposure to smoke and dust	2.49 (0.84, 7.36); 12.13 (2.41, 61.20)
Yu <i>et al.</i> , 1986 (8)	250/250	Case-control	Hong Kong	NR	Processed meat; Q1–3 vs. <Q1; ≥Q4 vs. <Q1	Age, sex, dietary habits, occupational exposure to smoke, dust, or fumes, exposure to incense, antimosquito coils	2.32 (1.56, 2.45); 3.30 (1.84, 5.91)
Yu <i>et al.</i> , 1988 (21)	128/174	Case-control	China	NR	Processed meat; Q1–3 vs. <Q1; ≥Q4 vs. <Q1	Age, sex, occupation, level of education, date, place of birth, and ethnic origin of both parents	1.58 (0.91, 2.76); 1.53 (0.52, 4.52)
Yu <i>et al.</i> , 1989 (9)	110/139	Case-control	China	Between March 1, 1983 and August 31, 1985	Salted fish	NR	Hong Kong: 7.5 (3.9, 14.8); Guangzhou: 2.1 (1.2, 3.6)
Ning <i>et al.</i> , 1990 (10)	100/300	Case-control	China	1985–1986	Processed meat; ever exposed vs. never exposed	The dietary risk factors had little effect on these occupational variables	2.2 (1.3, 3.7)
Jeannel <i>et al.</i> , 1990 (22)	80/160	Case-control	Tunisia	Between November 1986 and November 1987	Processed meat; ever vs. never; ever vs. never (servings/week)	Age, sex, place of residence, and lifestyle	1.75 (0.79, 3.84); 2.41 (0.89, 2.50)
Sriamporn <i>et al.</i> , 1992 (11)	120/120	Case-control	Thailand	NR	Processed meat; at least once a week vs. never	NR	2.5 (1.2, 5.2)
West <i>et al.</i> , 1993 (34)	104/205	Case-control	USA	NR	Salted fish; processed meats; mid tertile vs. low tertile; high tertile vs. low tertile	NR	Salted fish: 1.1 [0.57, 2.3]; 1.3 [0.69, 2.6]; processed meats: 0.41 [0.21, 0.80]; 0.33 [0.17, 0.66]
Lee <i>et al.</i> , 1994 (23)	200/406	Case-control	UK	Between March 1988 and December 1990	Salted fish; >3/week vs. nil	Confounding variables	0.8 (0.2, 2.9)
Zheng <i>et al.</i> , 1994 (12)	88/176	Case-control	China	From 1 January 1986	Salted fish; monthly vs. rarely	Socioeconomic variables	3.8 (1.5, 9.8)
Armstrong <i>et al.</i> , 1998 (13)	282/282	Case-control	China	NR	Processed meat; ≥Q3–4 vs. <Q1 (servings/month)	Age, sex, residence history, education, and social class	4.22 (2.23, 7.99)
Farrow <i>et al.</i> , 1998 (24)	133/212	Case-control	USA	NR	Preserved meat; highest quartile vs. lowest quartile	Age, alcohol consumption, cigarette smoking, total caloric intake	1.54 (0.71, 3.33)
Ward <i>et al.</i> , 2000 (33)	375/327	Case-control	USA	From July 15, 1991 through December 31, 1994	Salted fish; >0 vs. 0	Age, gender, and ethnicity	1.5 (0.8, 2.8)
Yuan <i>et al.</i> , 2000 (36)	935/1,032	Case-control	China	Between January 1987 and September 1991	Salted fish; salted seafood pastes; preserved meats; preserved eggs; weekly or more vs. less than monthly	Age, gender (for “total” only), level of education, cigarette smoking, exposure to smoke from heated rapeseed oil and burning coal during cooking, occupational exposure to chemical fumes and history of chronic ear and nose condition	1.82 (0.86, 3.88); 1.44 (0.97, 2.15); 1.77 (1.12, 2.79); 1.17 (0.88, 1.55)
Chelleng <i>et al.</i> , 2000 (14)	47/47	Case-control	India	NR	Processed meat; frequently vs. never/rarely	Age, sex, occupation, economic status, and history of smoking	11.50 (3.40, 38.50)
Zou <i>et al.</i> , 2000 (15)	97/192	Case-control	China	1987–1995	Processed meat; 3 times every 10 days vs. less than 3 times every 10 days	Homemade pickles, and fermented soy beans, education levels, the history of chronic rhinitis, and the family history of NPC	3.2 (1.7, 6.1)

Table S1 (continued)

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Yang <i>et al.</i> , 2005 (35)	502/1,942	Case-control	USA	Initiated in 1996	Guangdong salted fish; ≥ 1 /week vs. never	Age, sex, cigarette smoking, betel nut consumption, wood and formaldehyde exposure, and Guangdong and other salted fish consumption during childhood	1.78 (0.82, 3.89)
Feng <i>et al.</i> , 2007 (16)	636/614	Case-control	African (multicenter)	2002–2005	Preserved meat; ≥ 3 vs. < 1 (servings/week); ≥ 1 vs. < 1 (servings/month)	Age, sex, occupation, education, household type, exposure to chemicals, smokes, alcohol, and tobacco consumption	3.20 (1.70, 5.90); 1.95 (1.30, 2.94)
Guo <i>et al.</i> , 2009 (29)	1,049/785	Case-control	China	2004–2005	Salty fish; preserved meat; 3 times/month vs. never	All environmental exposures	1.9 (1.05, 3.47); 1.03 (0.51, 2.05)
Jia <i>et al.</i> , 2010 (17)	1,387/1,459	Case-control	China	Between October 2005 and October 2007	Processed meat; ≥ 4 vs. < 1 ; ≥ 1 vs. < 1 (servings/month)	Age, sex, education, dialect, and habitation household type	2.09 (1.22, 3.60); 1.67 (1.09, 2.54)
Ekburanawat <i>et al.</i> , 2010 (27)	327/327	Case-control	Thailand	NR	Salted fish	NR	1.38 (0.84, 2.25)
Ren <i>et al.</i> , 2010 (18)	1,845/2,275	Case-control	China	Between October 2005 and October 2007	Sal-preserved fish consumption; ever vs. never or rarely	Age, gender, education, smoking, consumption of alcohol, salted fish consumption, number of siblings, and number of children	2.62 (2.24, 3.07)
Turkoz <i>et al.</i> , 2011 (32)	183/183	Case-control	Turkey	NR	Processed meat; > 4 vs. never (servings/week) 1–2 vs. never	Age, sex, lifestyles, smoking habits, alcohol consumption, household type, occupation, and socioeconomic status	1.83 (1.16, 2.87); 1.05 (0.57, 1.93)
Polesel <i>et al.</i> , 2011 (31)	198/594	Case-control	Italy	NR	Processed meat; third vs. first quartile (servings/week); fourth vs. first quartile	Age, sex, place of living, year of interview, education, tobacco smoking, alcohol drinking, and nonalcohol energy	1.28 (0.74, 2.23); 1.40 (0.85, 2.29)
Hsu <i>et al.</i> , 2012 (30)	375/327	Case-control	Taiwan, China	Between July 1991 and December 1994	Salted, smoked, and barbecued meat; > 0.7 vs. ≤ 0.25	Age, gender, ethnicity, educational level, NPC family history, total calories intake, years of cigarette smoking, and exposures to formaldehyde and wood dust	0.89 (0.59, 1.35)
Fachiroh <i>et al.</i> , 2012 (28)	681/1,078	Case-control	Indonesia	NR	Salted fish; weekly or more vs. never to rarely	Gender and age	0.92 (0.68, 1.25)
Ruan <i>et al.</i> , 2013 (19)	1,387/1,459	Case-control	China	Between October 2005 and October 2007	Salted fish; \geq weekly vs. $<$ monthly	Age, sex, education level, dialect, rural or urban household type, and all other variables	1.55 (1.25, 1.92)
Lourebam <i>et al.</i> , 2015 (20)	105/115	Case-control	India	NR	Processed meat; ever vs. never < 1 vs. never; > 1 vs. never (servings/month)	Age, sex, and ethnicity matched	7.95 (4.31, 14.66)
Barrett <i>et al.</i> , 2019 (26)	2,554/2,648	Case-control	China	Between 2010 and 2013	Total Chinese-style salted fish; > 1.64 in male and ≥ 1.36 in female vs. 0	Sex, age, residential area, education level, current housing type, current occupation, first-degree family history of NPC, cigarette smoking, adult daily energy intake (log transformed), energy-adjusted intake of other foods, and childhood frequency of intake of total preserved foods	0.93 (0.78, 1.10)

CI, confidence intervals; NPC, nasopharyngeal carcinoma; NR, not reported; OR, odds ratio; Q, quartile; RR, relative risk.

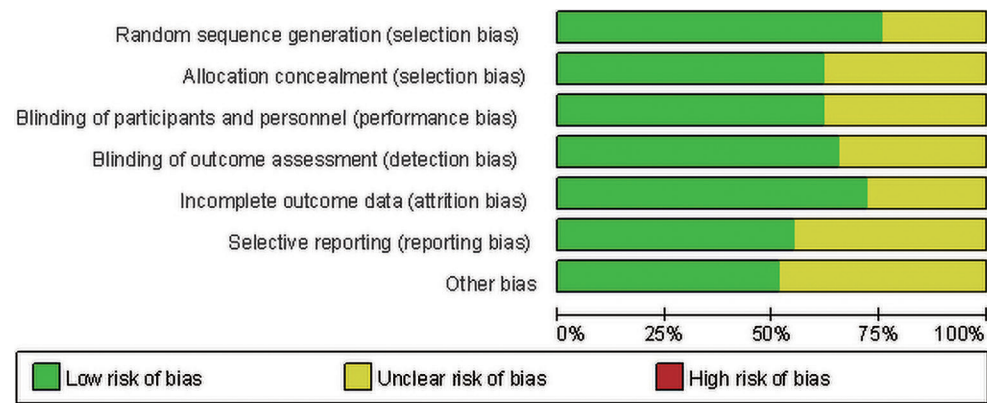


Figure S1 Risk of bias graph.

Author (Year)	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Armstrong et al. 1993	+	?	+	?	+	?	?
Armstrong et al. 1998	+	?	+	?	+	?	?
Barrett et al. 2019	+	?	+	?	+	?	?
Chelleng et al. 2000	+	+	+	+	+	+	+
Ekkuramawati et al. 2010	?	+	?	+	?	+	?
Fachiroh et al. 2012	+	+	+	?	+	?	?
Farrow et al. 1998	+	?	?	+	+	+	+
Feng et al. 2007	+	+	?	+	+	?	+
Guo et al. 2009	+	?	+	?	+	+	+
Hsu et al. 2012	+	+	?	+	+	+	+
Jeanmal et al. 1990	+	?	+	+	+	?	?
Jia et al. 2010	?	?	+	+	+	+	?
Lee et al. 1994	+	?	+	+	+	?	?
Lourenbam et al. 2015	?	+	+	+	+	?	?
Ning et al. 1990	+	+	+	?	+	+	+
Pjlesel et al. 2011	+	+	+	+	+	+	?
Ren et al. 2010	?	+	+	?	+	+	?
Ruan et al. 2013	?	+	+	?	?	+	?
Sriarpporn et al. 1992	+	+	?	+	?	+	+
Turkoz et al. 2011	+	+	+	?	?	+	+
Ward et al. 2000	+	+	?	?	?	+	+
West et al. 1993	+	+	?	+	+	+	?
Yang et al. 2005	+	+	?	+	+	+	+
Yuan et al. 2000	?	+	+	?	+	?	+
Yu et al. 1996	+	+	?	+	?	?	?
Yu et al. 1988	+	?	?	+	?	?	?
Yu et al. 1989	+	?	+	?	?	?	?
Zheng et al. 1994	+	+	+	+	?	?	?
Zou et al. 2000	+	?	+	+	?	?	?

Figure S2 Details of the risk of bias summary.