Table 2.15 Case−control studies (population-based) on cancer of the lung and coffee drinking (web only)

Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/deaths	Risk estimate (95% CI)	Covariates controlled	Comments
Axelsson et al. (1996) Sweden 1989–1993 (interview) Case-control	Cases: 308; male lung cancer cases from pulmonary units at central hospitals, Controls: 504; The next person in the respective county who was of the same sex as the patients and closest to the patient in the order of the personal identification number. Exposure assessment method: Questionnaire; In person Interview	Lung	Coffee intake frequency < 1–2 times/week Daily/almost daily 7–25 times/week > 25 times/week	 13 26 134 135	 1 0.94 (0.38–2.29) 1.16 (0.53–2.52) 1.6 (0.72–3.54)	Number of cigarettes/day, number of years smoked, marital status, socioeconomic job classification, vegetable class and 'other fruit or berries'	Strengths: population-based control In person direct interviews of cases and controls Limitations: case-control design
Nyberg et al. (1998) Sweden 1989–1995 Case-control	Cases: 124 (35 male, 89 female); lung cancer cases in 3 major county hospitals responsible for diagnosis and treatment of lung cancer. Controls: 235 (72 male, 163 female); Stockholm county population register Frequency matched 2:1 to cases, in strata defined by sex, age (30–49, 50–69, 70+), and 3 hospital catchment areas. Exposure assessment method: Questionnaire; Interview by telephone or in-person	Lung	Coffee intake frequency Less than daily Daily or almost daily 3 cups or more daily Trend-test p-value: 0.33	 18 51 55	 1 0.57 (0.27–1.22) 0.5 (0.24–1.06)	Sex, age (5 strata), catchment area (3 strata), degree of urban residence, year of exposure to risk occupations, ever-exposure status, years since last exposure and hour-years of exposure to environmental tobacco smoke, carrot consumption, and “other fruit consumption”	Strengths: 96% of cases were with histological or cytological confirmation for diagnosis. Population-based Never smokers only Limitations: Case-control design

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Hu et al. (2002) Canada 1994–1997 Case-control	Cases: 161; Histologically confirmed lung cancer cases Identified by Provincial Cancer Registry Controls: 483; Data from the National Enhanced Cancer Surveillance System (NECSS) were frequency matched to the overall collection of cases for 18 types of cases. Among those who completed the questionnaire (n = 2531), 483 were randomly selected to achieve 1–3 case-control ratio frequency matched by 5-year age group and province. Exposure assessment method: Questionnaire	Lung	Coffee intake (cups/week) ≤ 1 2–7 8–17.5 > 17.5 Trend-test p-value: 0.67	 43 41 57 14	 1 0.9 (0.5–1.6) 0.9 (0.5–1.6) 0.8 (0.4–1.8)	10-year age groups, province, education and social class	Strengths: population-based restricted to never-smoking women Limitations: Case-control design Misclassification of exposure variables and covariates Less case-response rate (61.6%) small sample size
Chiu et al. (2010) Hong Kong Special Administrative Region, China 2002–2004 Case-control	Cases: 279; Female lung cancer cases in the largest oncology centre in Hong Kong Special Administrative Region. Controls: 322; Selected from the same residential areas, frequency-matched in 10-year age groups, no-history of physician-diagnosed cancer at any site. Exposure assessment method: Questionnaire; Diet History Questionnaire (DHQ designed by the NCI)	Lung	Cup-years Never 1–10 coffee years > 10 coffee years	 277 22 14	 1 0.41 (0.21–0.78) 1.3 (0.7–2.42)	Age, employment, years of education, total dish-years, smoking, family cancer history, radon index, intake of meat, pickled vegetables, dark green vegetables, yellow/orange vegetables, total fruit, supplemental multivitamins	Strengths: population-based Limitations: case-control Single centre coffee consumption low in this population

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Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/deaths	Risk estimate (95% CI)	Covariates controlled	Comments
Sanikini et al. (2015) France 2001–2007 Case-control	Cases: 2684 (2074 male, 610 female); Histologically confirmed primary lung cancer, aged ≤ 75 years old Controls: 3481 (2720 male, 761 female); selected from general population via random digital dialing and were frequency matched to the cases by age, sex and area of residence (department). Exposure assessment method: Questionnaire; face-to-face interview	Lung: men and women combined	Coffee consumption categories			Age (≤ 52, 52–60, 60–67, > 67), sex, area of residence (Bas Rhin, Calvados, Doubs/Territoire de Belfort, Haut Rhin, Herault, Isere, Loire Atlantique, Manche, Somme, and Vendee), CSI (continuous) and occupational history (yes/no)	Strengths: large-scale, multicentre, population-based Large sample size comprehensive information on coffee consumption and potential confounders. Careful adjustment for smoking. Analysis by histological type, sex, and smoking status. Limitations: Case-control Recall bias Non-differential misclassification of exposure
			Status	NR	-		
			Never	97	1		
			Ever	2562	1.08 (0.8–1.47)		
			Missing	25	-		
			Quantity (cups/day)	NR	-		
			Never	97	1		
			< 2	475	1.33 (0.96–1.86)		
			2–3	502	1.03 (0.74–1.44)		
			3–5	733	0.94 (0.68–1.31)		
			≥ 5	838	1.07 (0.77–1.48)		
			Missing	39	-		
			Duration (years)	NR	-		
			Never	97	1		
			< 30	430	0.97 (0.68–1.37)		
			30–40	730	1.17 (0.84–1.63)		
			40–49	694	1.12 (0.8–1.56)		

Table 2.15 Case−control studies (population-based) on cancer of the lung and coffee drinking (web only)

Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			≥ 49	656	1.02 (0.72–1.43)		
			Missing	77	-		
			Lifetime cumulative (cup-years)	NR	-		
			Never	97	1		
			< 62	500	1.27 (0.91–1.77)		
			62–112	540	1.03 (0.74–1.44)		
			112–184	601	0.96 (0.69–1.34)		
			≥ 184	858	0.96 (0.69–1.34)		
			Missing	88	-		
		Lung: men	Coffee consumption categories			Age (≤ 52, 52–60, 60–67, > 67), area of residence (Bas Rhin, Calvados, Doubs/Territoire de Belfort, Haut Rhin, Herault, Isere, Loire Atlantique, Manche, Somme, and Vendee), CSI (continuous) and occupational history (yes/no)	
			Status	NR	-		
			Never	55	1		
			Ever	2000	1.09 (0.72–1.65)		
			Missing	19	-		
			Quantity (cups/day)	NR	-		
			Never	55	1		
			< 2	355	1.3 (0.83–2.04)		

Table 2.15 Case−control studies (population-based) on cancer of the lung and coffee drinking (web only)

Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			2–3	396	1.07 (0.69–1.67)		
			3–5	578	0.95 (0.61–1.46)		
			≥ 5	662	1.11 (0.72–1.72)		
			Missing	28	-		
			Duration (years)	NR	-		
			Never	55	1		
			< 30	280	0.93 (0.58–1.48)		
			30–40	568	1.16 (0.75–1.81)		
			40–49	576	1.17 (0.76–1.82)		
			≥ 49	537	1.02 (0.65–1.61)		
			Missing	58	-		
			Lifetime cumulative (cup-years)	NR	-		
			Never	55	1		
			< 62	357	1.24 (0.79–1.93)		
			62–112	419	1.1 (0.71–1.71)		
			112–184	484	0.98 (0.63–1.52)		
			≥ 184	694	1.06 (0.68–1.64)		
			Missing	65	-		

Table 2.15 Case−control studies (population-based) on cancer of the lung and coffee drinking (web only)

Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/deaths	Risk estimate (95% CI)	Covariates controlled	Comments
		Lung: women	Coffee consumption categories			Age (≤ 52, 52–60, 60–67, > 67), area of residence (Bas Rhin, Calvados, Doubs/Territoire de Belfort, Haut Rhin, Herault, Isere, Loire Atlantique, Manche, Somme, and Vendee), CSI (continuous) and occupational history (yes/no)	
			Status	NR	-		
			Never	42	1		
			Ever	562	1.25 (0.79–1.97)		
			Missing	6	-		
			Quantity (cups/day)	NR	-		
			Never	42	1		
			< 2	120	1.61 (0.97–2.67)		
			2–3	106	1.08 (0.64–1.83)		
			3–5	155	1.13 (0.68–1.88)		
			≥ 5	76	1.15 (0.69–1.94)		
			Missing	11	-		
			Duration (years)	NR	-		
			Never	42	1		
			< 30	150	1.25 (0.73–2.13)		
			30–40	162	1.47 (0.88–2.47)		
			40–49	118	1.09 (0.63–1.87)		
			≥ 49	119	1.05 (0.61–1.83)		

Table 2.15 Case−control studies (population-based) on cancer of the lung and coffee drinking (web only)

Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			Missing	19	-		
			Lifetime cumulative (cup-years)	NR	-		
			Never	42	1		
			< 62	143	1.53 (0.93–2.52)		
			62–112	121	1.03 (0.61–1.73)		
			112–184	117	1.13 (0.67–1.92)		
			≥ 184	164	1.09 (0.64–1.83)		
			Missing	23	-		
		Lung: subanalysis by histological subtype	Coffee consumption categories			Age (≤ 52, 52–60, 60–67, > 67), sex, area of residence (Bas Rhin, Calvados, Doubs/Territoire de Belfort, Haut Rhin, Herault, Isere, Loire Atlantique, Manche, Somme, and Vendee), CSI (continuous) and occupational history (yes/no)	
			Never consumer	NR	1		
			≥ 5 (cups/day)	NR	-		
			Adenocarcinoma	NR	1.09 (0.73–1.64)		
			Squamous-cell carcinoma	NR	1.04 (0.63–1.72)		
			Large-cell carcinoma	NR	1.22 (0.56–2.66)		
			Small-cell carcinoma	NR	0.75 (0.42–1.35)		

Table 2.15 Case−control studies (population-based) on cancer of the lung and coffee drinking (web only)

Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/deaths	Risk estimate (95% CI)	Covariates controlled	Comments
		Lung: subanalysis by smoking status	Coffee consumption categories			Age (≤ 52, 52–60, 60–67, > 67), sex, area of residence (Bas Rhin, Calvados, Doubs/Territoire de Belfort, Haut Rhin, Herault, Isere, Loire Atlantique, Manche, Somme, and Vendee), CSI (continuous) and occupational history (yes/no)	
			Never consumer	NR	1		
			≥ 5 (cups/day)	NR	-		
			Never smokers	NR	1.03 (0.54–1.94)		
			Former smokers	NR	1.47 (0.8–2.7)		
			Current smokers	NR	0.77 (0.42–1.44)		

CI, confidence interval; NR, not reported

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