Table 2.17 Case−control studies on cancer of the larynx 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
Restrepo et al. (1989) Medellin, Columbia 1978–1980 Case-control	Cases: 137; cases identified from the Social Security Cancer Registry, 2 general hospitals and several private physicians Controls: 249; controls matched to cases on sex, age (within 2 years), and SES. One control selected from same hospital or clinic as the case from patients with conditions unrelated to smoking and no history of cancer, CVD, chronic respiratory diseases, gastric ulcer or duodenal ulcers. A 2nd control group was chosen from the same neighbourhood or workplace. Exposure assessment method: Questionnaire; Personal interviews by a trained nurse	Larynx: incidence	Coffee (daily consumption) 0 1–3 4–6 > = 7 Trend-test p-value: 0.01	 0 0 0 0	 1 0.93 1 2.87	Age, sex, smoking, alcohol consumption, socioeconomic level	* Strong evidence of an exposure-response was seen in analyses that did not control for smoking and alcohol. Strengths: heavy consumption of coffee. Limitations: possible incomplete control for smoking since did not include duration of smoking or smoking status. Alcohol data lacking for 11.3% of cases and 12.7% of controls. A matched analysis was not performed and they did not control for all the matching variables
La Vecchia et al. (1990) Greater Milan, Italy January 1987 to April 1989 Case-control	Cases: 110; male incident cases under the age of 75 yr who had been admitted for histologically confirmed laryngeal cancer to the National Cancer Institute and the Ospedale Maggiore of Milan Controls: 843; men below age 75, admitted to the same network of hospitals for acute conditions other than neoplastic, respiratory, or diseases related to alcohol or tobacco	Larynx: incidence	Coffee cups per week Low Intermediate High Trend-test p-value: 0.65	 33 33 44	 1 1.4 1.4	Age	Strengths: complete information on smoking Limitations: multivariable models controlling for smoking and alcohol were not presented

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	consumption. Exposure assessment method: questionnaire; trained interviews using a structured questionnaire						
Pintos et al. (1994) Southern Brazil 1987 to 1989 Case-control	Cases: 378; newly diagnosed cases referred to the only regional specialized cancer centre Controls: 756; randomly selected patients from the same hospital or another nearby hospital. Matched to cases on sex, 5-year age group and trimester of hospital admission Exposure assessment method: questionnaire; standardized interviews by trained nurses	Larynx: incidence	Cups per day Never < = 1 2 > = 3 Trend-test p-value: 0.009	 41 17 19 20	 1 1.3 (0.5–3.3) 4.29 (1.4–12.9) 2.87 (1–1.83)	Age, sex, admission period, tobacco, alcohol consumption, 10 dietary variables	Strengths: adjusted for alcohol and tobacco use Limitations: controls were other cancers some of which might be associated with coffee use
Bosetti et al. (2002) Northern Italy and Swiss Canton of Vaud 1992 to 2002 Case-control	Cases: 527; incident histologically confirmed cases of squamous cell carcinoma recruited from major teaching and general hospitals in the areas. Age range 30–79, 478 men and 49 women. Controls:	Larynx: squamous cell carcinoma	Average weekly intake 0–7.4 7.5–14.4 14.5–20.4 20.5–26.9	 NR NR NR NR	 1 0.76 (0.52–1.11) 0.81 (0.52–1.31) 0.92 (0.63–1.34)	Sex age centre education tobacco smoking alcohol drinking non-alcohol energy intake	Strengths: large data set. Tightly controlled for tobacco and alcohol consumption. Reportably high participation rate although data not shown.

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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
	1297; frequency-matched with cases by 5-year age groups, sex and area of residence, selected among patients admitted to the same hospitals as cases for a wide spectrum of acute, non neoplastic conditions, not related to smoking, alcohol consumption and long-term modification of diet Exposure assessment method: questionnaire; study subjects were interviewed regarding their diet 2 years before cancer diagnosis or hospital admission using a structured questionnaire that included 78 food items and beverages		Trend-test p-value: 0.68				Limitations: small number of female cases. Possible recall bias
Zvrko et al. (2008) Montenegro January 2001 to June 2003 Case-control	Cases: 108; histologically confirmed cases treated at a Otorhinolaryngology and Maxillofacial Surgery in the Clinical Center of Montenegro Controls: 108; patients admitted to different Center clinics for a wide spectrum of acute, non-malignant conditions, unrelated to smoking and alcohol consumption. Exposure assessment method: questionnaire; interviewed using a structured questionnaire by one doctor	Larynx	More than 5 drinks/day Drinking more than 5 cups/day	 0	 4.52 (1.01–20.12)	Hard liquor consumption (yes/no), drinking more than 2 alcoholic drinks/day, smoking for more than 40 years, smoking more than 30 cigarettes/day, soft drink consumption	Strengths: high response rate for cases and controls. Limitations: Small sample size. Smoking variables used were very crude (Smoking more than 40 years and smoking more than 30 cigarettes per day). Alcohol variables used were also crude. Thus this study has a high potential for residual confounding from smoking and alcohol

Table 2.17 Case−control studies on cancer of the larynx 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
Galeone et al. (2010) Italy, France, Switzerland, USA, Puerto Rico 1984 to 2004 (varied by study) Case-control	Cases: 1224; pooled analysis of incident cases of laryngeal cancer from 7 studies Controls: 7239; patients in hospital for acute, non neoplastic diseases, not related to tobacco smoking and alcohol drinking in 7 studies or population controls in rest. Exposure assessment method: questionnaire; face to face questionnaires	Larynx: incidence	Non-drinkers of caffeinated coffee	144	1	Age, sex, race/ethnicity, education, study, cigarette smoking (pack-years), duration of cigar smoking, duration of pipe smoking, alcohol intake, weight, vegetable and fruit intake	Strengths: large sample size. Presentation of results for caffeinated and decaffeinated coffee. Limitations: quality of coffee data varied by study. Two studies only had an open ended question
			Drank caffeinated coffee/day	1034	1.04 (0.8–1.36)		
			> 0 to < 3 Caffeinated cups/day	568	1.08 (1.12–0.96)		
			3 to 4 caffeinated cups/day	335	1.12 (0.81–1.55)		
			> 4 caffeinated cups/day	131	0.96 (0.64–1.45)		
			For an increment of one cup/day	1224	0.99		
			Non drinkers Decaffeinated coffee	945	1		
			Drank Decaffeinated coffee	78	0.96 (0.41–2.22)		
			> 0 to < 1 Decaffeinated cups/day	40	1.6 (0.37–6.85)		
			> = 1 Decaffeinated cups/day	47	0.84 (0.34–2.06)		

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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
Vassileiou et al. (2012) Greece Not reported Case-control	Cases: 70; incident histologically confirmed cases of squamous cell laryngeal cancer identified from two ENT departments. Controls: 70; selected from "same-period" from in-patients having non-neoplastic conditions not related to diet smoking or alcohol consumption matched to cases by sex and age. Exposure assessment method: questionnaire; interviewed by first author using a structured questionnaire	Larynx	Cups per day Greek/Turkish Coffee Consumption	NR	1.78 (1.24–2.55)	Alcohol (yes/no), Smoking (yes/no), Exposure to toxic agents (yes/no)	It is not very clear what variables were controlled for in this study. Strengths: analysis stratified by type of coffee consumption Limitations: small sample size, potential observer bias since interviews done by investigator who know their case/control status. Smoking and alcohol consumption were only crudely controlled for (yes/no) and there is a strong possibility of residual confounding by these factors

CI, confidence interval; NR, not reported

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