

Table 2.2. Case-control studies of second-hand tobacco smoke and lung cancer

Reference, study location, period	Organ-site (ICD code)	Characteristics of cases	Characteristics of controls	Exposure assessment	Exposure categories	Relative risk (95% CI)	Adjustment for potential confounders	Comments
Asomaning <i>et al.</i> (2008) Massachusetts General Hospital (MGH) 1992-2006	Lung cancer	1669 lung cancer cases from MGH	1263 controls were friends, non-blood relative of patient or spouses of cancer patient	Interviewer-administered questionnaire Second-hand tobacco smoke was assessed from self-reports from three different sources (leisure, work, home) at various ages.	Second-hand tobacco smoke at both work and leisure over lifetime (yrs) 0-25 >25	1.30 (1.08-1.57) 0.66 (0.21-1.57)	Age, gender and active smoking variables	Over all individuals exposed to second-hand tobacco smoke have a higher risk of lung cancer than those that don't. The study suggests that subjects first exposed before the age of 25 have a higher risk compared to those for whom first exposure occurred after 25 years.
Tse <i>et al.</i> (2009) Hong Kong, 2004-2006	Lung cancer	132 lifetime non-smoking Chinese males aged from 35-79 years with newly diagnosed primary carcinomas of the lung	536 lifetime non-smoking Chinese men randomly selected from residential telephone directory. Free of all physician diagnosed cancers.	Structured personal interviewer conducted by a trained interviewer	Household/work second-hand tobacco smoke exposure since childhood..	<i>All lung cancers</i> 1.11 (0.74-1.67) ^a <i>ADC</i> 1.68 (1.00-2.38) ^a . 1.62 (0.91-2.88) ^b	^a Residential radon, indoor air pollution, incense burning, education ^b Family history of cancer, past-history of lung disease, dietary habits, alcohol intake, occupational lung cancer exposures.	

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Bonner <i>et al.</i> (2006) Pooled analysis of three population based case-control studies.	Lung	157 life-time non-smokers or long-term (>10 years) nonsmokers. Lung cancer cases identified from the Missouri and Iowa population-based cancer registries were pooled. Cases ranged from 30-84. Genotyped for GSTM1	No controls	In-person interview (pack/year of second-hand tobacco smoke). Genetic polymorphism	Second-hand tobacco smoke at home/GSTM1 (null vs. positive)	2.28 (1.15-4.51)	Age, Radon exposure	Excess lung cancer risk was observed among those with GSTM1 null genotype and second-hand tobacco smoke exposure. The study needs to be replicated in a study with larger numbers of cases.
Wenzlaff <i>et al.</i> (2005) Metropolitan Detroit, Michigan, USA 1984-1987, 1990-2004	Lung	166 life-time nonsmoking cases identified through two population-based case-control studies in Detroit, Michigan. First study ages 40-84. Second study cases under 50.	181 life-time never smokers matched to cases on race, sex, 5-year age groups, and county of residence.	In-person interview Genetic polymorphism	<i>Carriers of CYP1B1 Leu⁴³² Val and NQ01 polymorphisms: Second-hand tobacco smoke exps</i> No Yes	1.80 (0.43-7.53) 7.68 (1.97-29.92)	Race, sex, 5-year age groups and county of residence.	Additional studies will be required to further validate these findings among never smokers.