

Table 2.5. Case-control studies of second-hand tobacco smoke and breast cancer

Reference, location, name of study	Cases description	Control description	Second-hand tobacco smoke exposure assessment	Comment
Zhao <i>et al.</i> (1999) Chengdu, China	265 cases with breast cancer			Case control study not included in Monograph 83 Article in chinese
Liu <i>et al.</i> (2000) Chongqing, China	186 breast cancer cases among women aged 24 to 55 years (diagnosed by the Teaching Hospital of Chongqing) from 1994 to 1996	186 controls were selected randomly from women who visited the Departments of Women's Health Care and Breast Surgery over the same time period, but who were proved histologically to be free of cancer. Controls were individually matched to cases based on the date of diagnosis (within 6 months), age at diagnosis (within 2 years), marital status and never smoking.	Standardized questionnaire was used for individual face-to-face interviews. The first period termed as "childhood" was defined as age < 10. The second period defined as "youth" was age 10-16 years old. The main study variables were five: (1) Passive smoking. (2) Body weight. (3) Height. (4) History of diseases leading to hospitalization. (5) Family economic situation. These variables were reviewed, and classified by using categorical groups.	Case control study not included in Monograph 83
Lash & Aschengrau (2002)	305 cases (among never-active smokers) diagnosed 1987-93 reported to Massachusetts Cancer Registry	249 age-matched controls (among never-active smokers) resident in Cape Cod identified by random digit dialing.	History of exposure to second-hand tobacco smoke in the residence	
Alberg <i>et al.</i> (2004), Washington	115 breast cancer cases from Washington County Hospital, 1990-95, 90% response rate	Individually matched on age (1 year), race, menopausal status, day of menstrual cycle for premenopausal women and date of blood donation, 90% response rate	Spouse's smoking status	NAT2 genotype
Gammon <i>et al.</i> (2004), Long Island Breast Cancer Study Project, US	1356 cases, aged 24-98 years, response rate 89% under and 72% over 65 years	1383 healthy controls identified by random digit dialing. Response rate 76% under and 43% over 65 years	Passive smoker was defined as either a current of former smoker or nonsmoker who reported ever living with an active smoker.	

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Shrubsole <i>et al.</i> (2004), Shanghai Breast Cancer Study	1459 breast cancer cases identified through Shanghai Cancer Registry, aged 25-64 years, 91.1% response rate	1556 population-based controls, frequency-matched to cases by 5-year age band, 90.3% response rate	Interview questions on (1) whether husband ever smoked at home, number of cigarettes he smoked per day at home and number of years she was exposed to this smoke and (2) hours woman exposed to smoke at the workplace over the past 5 years.	Analysis restricted to never-active smokers, 1013 cases and 1117 controls
Bonner <i>et al.</i> (2005), Western New York Exposures and Breast Cancer Study	1166 cases, aged 35-79 years. 71% response rate	2105 population-based controls, frequency matched by age, race, county. 62% response rate	Exposure to second-hand tobacco smoke from other household residents and co-workers at ages <21, 21-30, 31-40, 41-50, 51-60, 61-70 and >70 years	All never smokers
Sillanpää <i>et al.</i> (2005), Finland, Kuopio Breast Cancer Study	483 Cases diagnosed 1990-95 at Kuopio University Hospital, 84% response rate, aged 44-92 years (mean 59)	514 healthy (unmatched) controls from Finnish National Population Register, 72% response rate, age 38-77 years (mean 54)	Questionnaire-interview by nurse, including question on 'exposure to passive smoking (in years) at work and/or at home'	Stratified by rapid/slow NAT2 genotype
Lissowska <i>et al.</i> (2006), Poland	2386 cases diagnosed 2000-03 in Warsaw and Lodz, Poland. 79% eligible cases interviewed	2502 population-based controls, matched on city and 5-year age. 69% of eligible controls interviewed.	<i>At home:</i> number of smoking relatives living in the household at different times, when smoking began, number cigarettes smoked per day, years of exposure and no. hours and days each relative smoked in the presence of subject. <i>At work,</i> separately for each job held for at least 6 months: No. hours per day or week spent with smokers at work, no. smokers at work, light/moderate/intense intensity of exposure. Second-hand tobacco smoke exposed were considered as those exposed at home or work for at least 1 hour per day for at least 1 year	NAT2 acetylation genotype and ER and PR status

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Mechanic <i>et al.</i> (2006), Caroline Breast Cancer Study	2311 women with invasive and in-situ breast cancer, 89% response rate	2022 population-based controls, 90% response rate	Defined as 'living with a smoker after the age of 18'.	Stratified by NER gene polymorphisms
Roddam <i>et al.</i> (2007), UK	639 cases diagnosed in Thames, Oxford and Yorkshire UK regions between 1987-90. Aged 36-45 years. 77% response rate	640 age and GP matched controls. 91% response rate.	Participants asked to report for each year from age 16 years if they were married to or living with a boyfriend [who smoked], and if yes how many cigarettes per day he smoked at home.	
Rollison <i>et al.</i> (2008), Delaware US.	287 women diagnosed in 2000-02 with primary invasive breast cancer identified through Delaware Cancer Registry, aged 40-79 years. 72% response rate	Age frequency-matched controls identified using drivers' licenses and health care finance administration records. 46% response rate.	Enumeration of smokers living in the participant's household in childhood and in adulthood, and for each smoker, number of packs, cigars or pipefuls smoked per day.	
Slattery <i>et al.</i> (2008), Southwest US, 4-Corners Breast Cancer Study	1527 Non-Hispanic white, 798 Hispanic/American Indian women, aged 25-79 years, diagnosed with breast cancer in southwest US. 68% response rate	1601 Non-Hispanic White and 924 Hispanic/American Indian randomly selected from commercial mailing lists and drivers license lists. Matched on ethnicity and 5-years age group. 42% response rate.	Interview-administered questionnaire. Number of hours per week exposed to second-hand tobacco smoke both in and out of the house during referent year and at ages 15, 30, and 50.	Stratified by ethnicity, IL6 G/A genotype and menopausal status
Ahern <i>et al.</i> (2009), Massachusetts	Massachusetts cases of a four-state cancer incidence study, diagnosed 1989-91, aged < 75 years. 9.8% physician refusal, 7.2% participant refusal.	Controls identified using driver's license and Medicare rosters 18% refusal rate.	Exposure to smoking of parents, other people in their adult life, including at home and work, and exposure intensity at each locale (never/occasional/regular)	
Young <i>et al.</i> (2009), Ontario Women's Health Study, and Ontario Women's Diet and Health Study, Canada	6235 cases from Ontario Cancer Registry, aged 25-74 years	6533 frequency matched population-based controls	Second-hand tobacco smoke exposure defined as being exposed to the tobacco smoke of others for at least 2 hours a day on average, ascertained in childhood and 2 years prior to interview	