

Table 2.6. Meta-analysis/pooled studies of tobacco smoke and lung cancer focused on ethnic/racial disparities in susceptibility

Reference, study location, period	Organ-site (ICD code)	Material	Number of study subjects	Exposure assessment	Exposure categories	Relative risk (95% CI)	Adjustment for potential confounders	Comments
Epplein et al. (2005) 1991-2001	Lung	Lung cancer data from 3 NCI SEER sites: Los Angeles County, San Francisco Metropolitan Area, and Seattle-Puget sound for adults over 50 years old	Lung cancer cases: non-Hispanic whites (n=18493), Chinese (n=853), Filipino (n=615) or Japanese (n=282)	The sex-specific observed number of lung cancers among each Asian sub-group was compared to expected numbers based on age, sex geographic area-adjusted incidence rates current smoking	Asian-subgroup versus White	Among women-Chinese RR=4.0 (3.2-5.1); Filipino RR=2.0 (1.6-2.6); Japanese RR=0.9 (0.7-1.1) Among men-Chinese RR=0.8 (0.7-0.9); Filipino RR=1.3 (1.1-1.5); Japanese RR=0.8 (0.6-1.0)	Age, smoking frequency by Asian Subgroup	
Pinsky (2006) US census data. 1992-1993, 1995-1996, 1998-1999	Lung	Survey data from US Census	77806 non-Hispanic white men, 107952 white women; 6318 non-Hispanic black men, 10822 non-Hispanic black women; 3556 Hispanic men, 5043 Hispanic women; 1844 Asian/Pacific men, 2221 Asian Pacific women; 604 American Indian men, 901 American Indian women	Survey rates of smoking intensity, duration, quit smoking	Ethnic/racial groups: white, black, Hispanic, Asian/PI, American Indian	Black men had slightly lower predicted rates of lung cancer based on smoking rates than white men, but had 35-47% higher observed rates Differences in smoking pattern largely explains lower lung cancer rates in Asian/Pacific islanders relative to whites. Decreased rates in American Indians are not explained by differences in smoking.	Smoking duration, intensity (cig/day) years since quitting	

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Thun et al. (2006) CPS-I and CPS-II Lung cancer occurrence in never smokers.	Lung	Two large cohort studies	940000 adults with no history of smoking	Self-administered questionnaire	Self identified race and gender	Non-smoking African Americans women had higher death rates than white women HR=1.43 (1.11-1.85)	Age	
Wakai et al. (2006) Japanese meta-analysis 1958-2000	Lung	8 cohort studies and 14 case-control studies Both incident cases and death	Cohort studies: 351838 men/ 323936 women Population based Case-control studies: 5368 male cases/5741 male controls Hospital based	Self-administered questionnaire and in-person interview	Ever versus never smoker	Relative risk 4.39 (3.92-4.92) for men and 2.79 (2.44-3.20) for women; Relative risk 11.7 and 2.30 for squamous cell carcinoma and adenocarcinoma in men and 11.3 and 1.37 in women respectively.	Age	
Huxley et al. (2007) Australia, new Zealand and Asia	Lung	Multicenter study, including 31 studies in the Asian Cohort Studies Collaboration	480125		Current smoking, Ethnic/racial group	Asian men HR=2.48 (1.98-3.11); European ancestry men HR=9.87 (6.04-16.12) Asian women HR=2.35 (1.29-4.28); European ancestry women HR=19.33 (10.0-37.3)	Age	

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Thun et al. (2008) Lung cancer occurrence in never smokers 1983-1987 Pooled analysis	Lung	13 large cohort studies and 22 cancer registries	630000 adults for a lung cancer incidence analysis and 1.8 million for lung cancer mortality analysis. Reported no history of smoking	Self-administered questionnaire	Self identified race and gender	African Americans and Asians living in Korea and Japan (but not in the US) had had higher death rates than individuals of European descent.	Age	
Haiman et al. (2006) Multiethnic Cohort Study California & Hawaii 1993-2001	Prospective cohort of 183813 African-American, Japanese-American, Latino, Native Hawaiian, and white men and women.		Male lung cancer cases: 1135 (AA 304; NH 103; L 142; JA 301; W 285) Female lung cancer cases: 844 (AA 299; NH 63; L 84; JA 129; W269)	Self-administered questionnaire	≤10 cig/day, 11-20 cig/day, 21-30 cig/day,	<p>≤ 10 cig/day (AA) RR=1 (NA)RR=0.88 (0.60-1.29) (L)RR=0.21 (0.14-0.31) (JA)RR=0.25 (0.18-0.36) (W)RR=0.45 (0.34-0.60)</p> <p>11-20 cig/day (AA) RR=1 (NA)RR=0.90 (0.74-1.12) (L)RR=0.36 (0.29-0.44) (JA)RR=0.39 (0.32-0.47) (W)RR=0.57 (0.49-0.68)</p> <p>21-30 cig/day (AA) RR=1 (NA)RR=0.93 (0.72-1.21) (L)RR=0.61</p>	Duration of smoking, sex, time since quitting, occupation, education, diet	African Americans and Native Hawaiians are more susceptible to lung cancer than whites, Japanese Americans and Latinos

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					>30cig/day	(0.46-0.79) (JA)RR=0.61 (0.49-0.74) (W)RR=0.73 (0.61-0.88) <u>≥30cig/day</u> (AA) RR=1 (NA)RR=0.95 (0.66-1.35) (L)RR=0.79 (0.55-1.33) (JA)RR=0.75 (0.57-1.00) (W)RR=0.82 (0.64-1.05)		

African-American=AA; Native Hawaiians=NH; Latino=L; Japanese American=JA; White=W