Supplemental Table 1. Histopathology of lung cancer among never smokers

Study	Design/population	Histology	Number of Cases among Never Smokers	Percent of Total Lung Cancer Cases among Never Smokers
Lam *et al.* (1987) (S1)	Case-control: 202 female lung cancer cases (never smokers) Study location: Hong Kong Study years: 1983-1986	Adenocarcinoma	131	65%
		Large cell	9	4%
		Small cell	9	4%
		Squamous cell	28	14%
		Others and unclassified	25	12%
Anton-Culver *et al.* (1988) (S2)	Cross-sectional: 919 male and female lung cancer cases (59 never smokers) Study location: USA (CA) Study year: 1984	*Males (23 cases):*		
		Adenocarcinoma	2	9%
		Large cell	1	4%
		Small cell	6	26%
		Squamous cell	6	26%
		Other	0	0
		Carcinoma or neoplasm not otherwise specified	8	35%
		Females (36 cases):		
		Adenocarcinoma	18	50%
		Large cell	3	8%
		Small cell	1	3%
		Squamous cell	5	14%
		Other	0	0
		Carcinoma not otherwise specified	9	25%
Lam *et al.* (2001) (S3)	Cross-sectional: 243 male and female adenocarcinoma and squamous cell lung cancer cases (70 never smokers) Study location: Hong Kong Study years: 1995-1997	Adenocarcinoma	51	73%
		Squamous cell	19	27%
Radzikowska *et al.* (2002) (S4)	Cross-sectional: 20561 male and female lung cancer cases (738 never smokers) Study location: Poland Study years: 1995-1998	*Males (229 cases):*		
		Adenocarcinoma	64	30%
		Small cell	36	16%
		Squamous cell	129	56%
		Females (205 cases):		
		Adenocarcinoma	89	43%
		Small cell	45	22%
		Squamous cell	71	35%
Yun *et al.* (2005) (S5)	Cohort study: 437976 men enrolled in the National Health Insurance Cooperation (99477 never smokers) 1357 lung cancer cases (110 never smokers) Study location: Korea Study years: 1996-2002	Adenocarcinoma	69	63%
		Small cell	4	4%
		Squamous cell	16	15%
		Other	21	19%

Liam *et al.* (2006) (S6)	Cross-sectional: 861 male and female lung cancer cases (195 never smokers) Study location: Malaysia Study years: 1967-1976; 1991-1999	*Males 1967-1976 (22 cases):*		
		Adenocarcinoma	11	50%
		Large cell	4	18%
		Small cell	1	5%
		Squamous cell	6	27%
		Males 1991-1999 (28 cases):		
		Adenocarcinoma	22	79%
		Large cell	1	4%
		Small cell	1	4%
		Squamous cell	4	14%
		Females 1967-1976 (31 cases):		
		Adenocarcinoma	16	52%
		Large cell	5	16%
		Small cell	2	6%
		Squamous cell	8	26%
		Females 1991-1999 (77 cases):		
		Adenocarcinoma	67	87%
		Large cell	2	3%
		Small cell	0	0
		Squamous cell	8	10%

Supplemental Table 2: Results of studies on exposure to smoke from coal and biomass and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Coal:						
Lan *et al.* (1993) (S7)	Case-control: 139 female lung cancer cases (nonsmokers) 139 female population controls (nonsmokers) Study location: China (Xuanwei) Study years: 1988-1990	Ever used smoky coal	vs.	Never used smoky coal	7.53 (3.31-17.17)	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
		Lifetime use of smoky coal	vs.	Never used smoky coal	9.89 (3.95-24.75)	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
		Use <3 tons of smoky coal per year	vs.	Never used smoky coal	8.24 (2.33-29.17)	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
		Use >3 tons of smoky coal per year	vs.	Never used smoky coal	7.53 (3.03-18.72) $P_{trend} < 0.001$	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
		Used smoky coal after 20 years old	vs.	Never used smoky coal	1.84 (0.56-6.05)	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
		Used smoky coal before 20 years old	vs.	Never used smoky coal	5.10 (0.97-26.81)	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
Dai *et al.* (1996) (S8)	Case-control: 120 female adenocarcinoma cases (never smokers) 120 female population controls (never smokers) Study location: China (Harbin) Study years: 1992-1993	1-19 years coal stove use in bedroom	vs.	Never used coal stove in bedroom	4.46 (1.61-12.33)	age, income, size of residence, coal heating, exposure to coal dust, fried cooking, carrot consumption, family history of cancer
		≥30 (sic) years coal stove use in bedroom	vs.	Never used coal stove in bedroom	18.75 (3.94-29.32)	age, income, size of residence, coal heating, exposure to coal dust, fried cooking, carrot consumption, family history of cancer
		1-24 years coal heating	vs.	Never used coal heating	5.81 (1.67-20.22)	age, income, size of residence, coal stove in bedroom, exposure to coal dust, fried cooking, carrot consumption, family history of

						cancer
		25-34 years coal heating	vs.	Never used coal heating	4.70 (1.28-17.18)	age, income, size of residence, coal stove in bedroom, exposure to coal dust, fried cooking, carrot consumption, family history of cancer
		≥10 years exposure to coal dust	vs.	<10 years exposure to coal dust	2.66 (1.09-6.52)	age, income, size of residence, coal stove in bedroom, coal heating, fried cooking, carrot consumption, family history of cancer
Wang *et al.* (1996) (S9)	Case-control: 135 female lung cancer cases (never smokers) 135 female hosptial controls (never smokers) Study location: China (Shenyang) Study years: 1992-1994	Exposure to coal smoke during cooking	vs.	No exposure to coal smoke	not statistically significant (value not stated)	age, other variables in multivariate analysis not stated
Ko *et al.* (1997) (S10)	Case-control: 105 female lung cancer cases (never smokers) 105 female hospital controls (never smokers) Study location: Taiwan Study years: 1992-1993	Coal or anthracite cooking fuel before 20 years old	vs.	No cooking or gas cooking before 20 years old	0.5 (0.2-1.6)	age, SES, residential area, education
		Coal or anthracite cooking fuel when 20-40 years old	vs.	No cooking or gas cooking when 20-40 years old	1.1 (0.4-3.0)	age, SES, residential area, education
		Coal or anthracite cooking fuel when 20-40 years old	vs.	No cooking or gas cooking when 20-40 years old	1.3 (0.3-5.8)	age, SES, residential area, education, living near industrial district, tuberculosis, fume extractor use, vegetable consumption
		Coal or anthracite cooking fuel after 40 years old	vs.	No cooking or gas cooking after 40 years old	1.1 (0.1-8.0)	age, SES, residential area, education
Shen *et al.* (1998) (S11)	Case-control: 70 female adenocarcinoma cases (never smokers)	Coal stove used for heating	vs.	Coal stove not used for heating	1.78 (0.79-4.02)	Neighborhood, age, occupation

	70 female population controls (never smokers) Study location: China (Nanjing) Study year: 1993	Coal stove used for heating	vs.	Coal stove not used for heating	not statistically significant (value not stated)	Neighborhood, age, occupation, SHS exposure, chronic lung disease, size of residence, gas fuel in home, cooking fumes, participation in cooking, family history of cancer
Zhong *et al.* (1999) (S12)	Case-control: 504 female lung cancer cases (never smokers) 601 female population controls (never smokers) Study location: China (Shanghai) Study years: 1992-1994	Coal and gas used for cooking (all histological types)	vs.	Only coal used for cooking (all histological types)	0.92 (0.63-1.35)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
		Coal and gas used for cooking (adenocarcinoma cases)	vs.	Only coal used for cooking (adenocarcinoma cases)	1.16 (0.74-1.81)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
		Coal and gas used for cooking (nonadenocarcinoma cases)	vs.	Only coal used for cooking (nonadenocarcinoma cases)	0.71 (0.34-1.49)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
		Coal and gas used for cooking (cases of unknown cell types)	vs.	Only coal used for cooking (cases of unknown cell types)	0.64 (0.31-1.33)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Lissowska et al. (2005) (S13)	Case-control: 223 male and female lung cancer cases (never smokers) 1039 male and female population controls (never smokers) Study location: Czech Republic, Hungary, Poland, Russia, United Kingdom Study years: 1998-2001	Solid fuels (coal and biomass) used for cooking >0 to 25% of the time	vs.	Never use solid fuels (coal and biomass) for cooking	1.04 (0.61-1.75)	age, gender, education, study center
		Solid fuels (coal and biomass) used for cooking >25 to 50% of the time	vs.	Never use solid fuels (coal and biomass) for cooking	0.93 (0.60-1.45)	age, gender, education, study center
		Solid fuels (coal and biomass) used for cooking >50% of the time	vs.	Never use solid fuels (coal and biomass) for cooking	1.06 (0.64-1.76)	age, gender, education, study center

Pisani et al. (2006) (S14)	Case-control: 15 male and female lung cancer cases (never smokers) 40 hospital and 33 population controls (never smokers) Study location: Thailand Study years: 1993-1995	Cumulative index of exposure to domestic fumes (years spent using coal or wood adjusted for indoor/outdoor cooking) ≥15	vs.	Cumulative index of exposure to domestic fumes <15	0.4 (0.1-2.0)	age, gender
Sapkota et al. (2008) (S15)	Case-control: 177 male and female lung cancer cases (never smokers) 457 male and female hopital (pateints and visitors) controls (never smokers) Study location: India Study years: 2001-2004	Coal used as cooking fuel for more than half of lifetime	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.40 (0.07-2.13)	age, gender, center, SES, use of non-cigarette tobacco products
		Only coal used as cooking fuel throughout life	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	7.46 (2.15-25.94)	age, gender, center, SES, use of non-cigarette tobacco products
		Coal used as cooking fuel for >0 to 30 years	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	1.22 (0.42-3.49)	age, gender, center, SES, use of non-cigarette tobacco products
		Coal used as cooking fuel for >30 to 50 years	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	1.99 (0.90-4.43)	age, gender, center, SES, use of non-cigarette tobacco products
		Coal used as cooking fuel for >50 years	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	3.81 (1.16-12.46) $P_{trend} < 0.01$	age, gender, center, SES, use of non-cigarette tobacco products
Biomass Fuel:						
Sobue (1990) (S16)	Case-control: 144 female lung cancer cases (nonsmokers) 731 female hospital controls (nonsmokers) Study location: Japan (Osaka) Study years: 1986-1988	Wood or straw used as cooking fuels at 15 years old	vs.	Wood or straw not used as cooking fuels at 15 years old	1.24 (0.86-1.81)	age, education
		Wood or straw used as cooking fuels at 30 years old	vs.	Wood or straw not used as cooking fuels at 30 years old	1.89 (1.16-3.06)	age, education
		Wood or straw used as cooking fuels at 30 years old	vs.	Wood or straw not used as cooking fuels at 30 years old	1.77 (1.08-2.91)	age, education, SHS exposure

Ko et al. (1997)(S10)	Case-control: 105 female lung cancer cases (never smokers) 105 female hospital controls (never smokers) Study location: Taiwan Study years: 1992-1993	Wood or charcoal cooking fuel before 20 years old	vs.	No cooking or gas cooking before 20 years old	2.5 (1.3-5.1)	age, SES, residential area, education
		Wood or charcoal cooking fuel when 20-40 years old	vs.	No cooking or gas cooking when 20-40 years old	2.5 (1.1-5.7)	age, SES, residential area, education
		Wood or charcoal cooking fuel when 20-40 years old	vs.	No cooking or gas cooking when 20-40 years old	2.7 (0.9-8.9)	age, SES, residential area, education, living near industrial district, tuberculosis, fume extractor use, vegetable consumption
		Wood or charcoal cooking fuel after 40 years old	vs.	No cooking or gas cooking after 40 years old	1.0 (0.2-3.9)	age, SES, residential area, education
Hernández-Garduño et al. (2004)(S61)	113 female adenocarcinoma cases (never smokers) 273 female hospital controls (never smokers) Study location: Mexico (Mexico City) Study years: 1986-1994	1-20 years cooking with wood	vs.	Never cooked with wood	0.6 (0.3-1.2)	age, SHS exposure, education, SES
		21-50 years cooking with wood	vs.	Never cooked with wood	0.6 (0.3-1.3)	age, SHS exposure, education, SES
		>50 years cooking with wood	vs.	Never cooked with wood	1.9 (1.1-3.5)	age, SHS exposure, education, SES
Behera and Balamugesh (2005) (S62)	Case-control: 25 female lung cancer cases (nonsmokers) 43 female hospital controls (nonsmokers) Study location: India (Chandigarh) Study years: 1999-2002	Use of biomass fuels (wood, cow-dung cake, agricultural waste, coal) for cooking	vs.	Use of liquified petroleum gas for cooking	5.33 (1.7-16.7)	none stated
Sapkota et al. (2008) (S15)	Case-control: 177 male and female lung cancer cases (never smokers) 457 male and female hopital (pateints and visitors) controls (never smokers) Study location: India Study years: 2001-2004	Ever used solid cooking fuels (wood, crop residue, animal dung, coal)	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.84 (0.55-1.29)	age, gender, center, SES, use of non-cigarette tobacco products
		Solid fuels used for cooking for less than half of lifetime	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.47 (0.20-1.13)	age, gender, center, SES, use of non-cigarette tobacco products

	Solid fuels used for cooking for more than half of lifetime	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.94 (0.44-2.02)	age, gender, center, SES, use of non-cigarette tobacco products
	Only solid fuels used for cooking throughout life	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.95 (0.59-1.54)	age, gender, center, SES, use of non-cigarette tobacco products
	Wood used as cooking fuel for more than half of lifetime	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	1.23 (0.55-2.74)	age, gender, center, SES, use of non-cigarette tobacco products
	Only wood used as cooking fuel throughout life	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.75 (0.45-1.24)	age, gender, center, SES, use of non-cigarette tobacco products
	Wood used as cooking fuel for >0 to 30 years	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.49 (0.29-0.83)	age, gender, center, SES, use of non-cigarette tobacco products
	Wood used as cooking fuel for >30 to 50 years	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	1.27 (0.87-1.85)	age, gender, center, SES, use of non-cigarette tobacco products
	Wood used as cooking fuel for >50 years	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.95 (0.65-1.37) $P_{trend} = 0.86$	age, gender, center, SES, use of non-cigarette tobacco products
	Mixed wood/coal/other solid fuels used for cooking	vs.	Only used modern cooking fuels (gas, electricity, or kerosene)	0.52 (0.22-1.22)	age, gender, center, SES, use of non-cigarette tobacco products

Abbreviations:

CI: confidence interval

SES: socioeconomic status

SHS: secondhand smoke

Supplemental Table 3: Results of studies on exposure to smoke from cooking oil, high-temperature cooking and other cooking practices and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Lan *et al.* (1993) (S7)	Case-control: 139 female lung cancer cases (nonsmokers) 139 female population controls (nonsmokers) Study location: China (Xuanwei) Study years: 1988-1990	Occasional use of rapeseed oil	vs.	Never use rapeseed oil	1.26 (0.68-2.63)	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
		Often use of rapeseed oil	vs.	Never use rapeseed oil	4.58 (0.56-37.08)	age, menstrual cycle length, age of menopause, family history of lung cancer, history of chronic bronchitis
Dai *et al.* (1996) (S8)	Case-control: 120 female adenocarcinoma cases (never smokers) 120 female population controls (never smokers) Study location: China (Harbin) Study years: 1992-1993	Fried and deep fried cooking >5 times per month	vs.	Fried or deep fried cooking ≤ 5 times per month	9.20 (1.54-55.28)	age, income, size of residence, coal heating, exposure to coal dust, coal stove in bedroom, carrot consumption, family history of cancer
Wang *et al.* (1996) (S9)	Case-control: 135 female lung cancer cases (never smokers) 135 female hospital controls (never smokers) Study location: China (Shenyang) Study years: 1992-1994	Exposure to cooking fumes	vs.	No exposure to cooking fumes	4.02 (2.38-6.78)	age, other variables in multivariate analysis not stated
Ko *et al.* (1997) (S10)	Case-control: 105 female lung cancer cases (never smokers) 105 female hospital controls (never smokers) Study location: Taiwan Study years: 1992-1993	No fume extractor in kitchen before 20 years old	vs.	Fume extractor in kitchen before 20 years old	5.3 (1.1-25.6)	age, SES, residential area, education
		No fume extractor in kitchen when 20-40 years old	vs.	Fume extractor in kitchen when 20-40 years old	6.4 (2.9-14.1)	age, SES, residential area, education
		No cooking or gas cooking when 20-40 years old	vs.	Fume extractor in kitchen when 20-40 years old	8.3 (3.1-22.7)	age, SES, residential area, education, living near industrial district, tuberculosis, fume extractor use, vegetable consumption
		No fume extractor in kitchen after 40 years old	vs.	Fume extractor in kitchen after 40 years old	2.3 (1.1-5.1)	age, SES, residential area, education
		Stir frying 0-4 times/week (no fume extractor in kitchen)	vs.	Stir-frying 0-4 times/week (fume extractor in kitchen)	8.6 (1.2-61.3)	age, SES, residential area, education

		Stir-frying ≥ 5 times/week (fume extractor in kitchen)	vs.	Stir-frying 0-4 times/week (fume extractor in kitchen)	2.2 (0.7-7.6)	age, SES, residential area, education
		Stir-frying ≥ 5 times/week (no fume extractor in kitchen)	vs.	Stir-frying 0-4 times/week (fume extractor in kitchen)	13.3 (3.4-53.4)	age, SES, residential area, education
		Frying 0-4 times/week (no fume extractor in kitchen)	vs.	Frying 0-4 times/week (fume extractor in kitchen)	9.8 (1.9-49.3)	age, SES, residential area, education
		Frying ≥ 5 times/week (fume extractor in kitchen)	vs.	Frying 0-4 times/week (fume extractor in kitchen)	1.8 (0.5-6.5)	age, SES, residential area, education
		Frying ≥ 5 times/week (no fume extractor in kitchen)	vs.	Frying 0-4 times/week (fume extractor in kitchen)	9.2 (2.8-29.9)	age, SES, residential area, education
		Deep frying 0-4 times/week (no fume extractor in kitchen)	vs.	Deep frying 0-4 times/week (fume extractor in kitchen)	5.9 (2.6-13.4)	age, SES, residential area, education
		Deep frying ≥ 5 times/week (fume extractor in kitchen)	vs.	Deep frying 0-4 times/week (fume extractor in kitchen)	0.5 (0.1-2.3)	age, SES, residential area, education
		Deep frying ≥ 5 times/week (no fume extractor in kitchen)	vs.	Deep frying 0-4 times/week (fume extractor in kitchen)	5.9 (1.9-18.2)	age, SES, residential area, education
Shen *et al.* (1998) (S11)	Case-control: 70 female adenocarcinoma cases (never smokers) 70 female population controls (never smokers) Study location: China (Nanjing) Study year: 1993	Kitchen cooking fume pollution	vs.	No kitchen cooking fume pollution	2.45 (1.06-5.66)	age, occupation, neighborhood, chronic lung disease, family history of cancer
Zhong *et al.* (1999) (S12)	Case-control: 504 female lung cancer cases (never smokers) 601 female population controls (never smokers) Study location: China (Shanghai) Study years: 1992-1994	<u>*All histologic types:*</u>				
		High temperature cooking with visible fumes	vs.	No high temperature cooking with visible fumes	1.64 (1.24-2.17)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
		Somewhat smoky in kitchen during cooking	vs.	No smoke or slightly smoky	1.67 (1.25-2.21)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures

Considerably smoky in kitchen during kitchen	vs.	No smoke or slightly smoky	2.38 (1.58-3.57)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Rarely have eye irritation while cooking	vs.	Never have eye irritation while cooking	1.49 (0.91-2.43)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Sometimes have eye irritation while cooking	vs.	Never have eye irritation while cooking	1.75 (1.16-2.62)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Frequently have eye irritation while cooking	vs.	Never have eye irritation while cooking	1.68 (1.02-2.78)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Most often use rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	1.84 (1.12-3.02)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Use soybean and rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	0.92 (0.37-2.28)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Stir-frying 7 times/week	vs.	Stir-frying <7 times/week	0.38 (0.19-0.75)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Stir-frying >7 times/week	vs.	Stir-frying <7 times/week	2.33 (0.68-7.95)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Frying >1 time/week	vs.	Frying ≤ 1 time/week	2.09 (1.14-3.84)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures

Deep-frying >1 time/week	vs.	Deep-frying ≤ 1 time/week	1.88 (1.06-3.32)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Adenocarcinoma cases:				
High temperature cooking with visible fumes	vs.	No high temperature cooking with visible fumes	1.67 (1.19-2.34)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Somewhat smoky in kitchen during cooking	vs.	No smoke or slightly smoky	1.76 (1.25-2.46)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Considerably smoky in kitchen during kitchen	vs.	No smoke or slightly smoky	2.12 (1.29-3.48)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Rarely have eye irritation while cooking	vs.	Never have eye irritation while cooking	1.08 (0.59-1.99)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Sometimes have eye irritation while cooking	vs.	Never have eye irritation while cooking	1.46 (0.90-2.37)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Frequently have eye irritation while cooking	vs.	Never have eye irritation while cooking	1.22 (0.71-2.48)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Most often use rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	1.88 (1.07-3.32)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Use soybean and rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	0.41 (0.12-1.43)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures

Stir-frying 7 times/week	vs.	Stir-frying <7 times/week	0.50 (0.23-1.11)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Stir-frying >7 times/week	vs.	Stir-frying <7 times/week	2.81 (0.68-11.41)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Frying >1 time/week	vs.	Frying ≤ 1 time/week	1.79 (0.88-3.66)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Deep-frying >1 time/week	vs.	Deep-frying ≤ 1 time/week	1.15 (0.55-2.42)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Nonadenocarcinoma cases:				
High temperature cooking with visible fumes	vs.	No high temperature cooking with visible fumes	2.22 (1.34-3.67)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Somewhat smoky in kitchen during cooking	vs.	No smoke or slightly smoky	1.60 (0.94-2.74)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Considerably smoky in kitchen during kitchen	vs.	No smoke or slightly smoky	2.68 (1.34-5.33)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Rarely have eye irritation while cooking	vs.	Never have eye irritation while cooking	2.32 (1.06-5.05)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Sometimes have eye irritation while cooking	vs.	Never have eye irritation while cooking	1.69 (0.82-3.53)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures

Frequently have eye irritation while cooking	vs.	Never have eye irritation while cooking	2.28 (0.99-5.25)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Most often use rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	1.49 (0.60-3.68)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Use soybean and rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	1.43 (0.35-5.82)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Stir-frying 7 times/week	vs.	Stir-frying <7 times/week	0.27 (0.10-0.77)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Stir-frying >7 times/week	vs.	Stir-frying <7 times/week	2.72 (0.47-15.27)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Frying >1 time/week	vs.	Frying ≤ 1 time/week	2.95 (1.11-7.81)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Deep-frying >1 time/week	vs.	Deep-frying ≤ 1 time/week	3.37 (1.42-8.01)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Cases of unknown cell types:				
High temperature cooking with visible fumes	vs.	No high temperature cooking with visible fumes	1.54 (0.96-2.49)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Somewhat smoky in kitchen during cooking	vs.	No smoke or slightly smoky	1.57 (0.96-2.56)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures

Considerably smoky in kitchen during kitchen	vs.	No smoke or slightly smoky	3.20 (1.69-6.04)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Rarely have eye irritation while cooking	vs.	Never have eye irritation while cooking	2.31 (1.09-4.87)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Sometimes have eye irritation while cooking	vs.	Never have eye irritation while cooking	2.48 (1.30-4.74)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Frequently have eye irritation while cooking	vs.	Never have eye irritation while cooking	2.39 (1.09-5.23)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Most often use rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	1.71 (0.73-3.99)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Use soybean and rapeseed oil for cooking	vs.	Most often use soybean oil for cooking	1.08 (0.24-4.95)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Stir-frying 7 times/week	vs.	Stir-frying <7 times/week	0.22 (0.08-0.58)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Stir-frying >7 times/week	vs.	Stir-frying <7 times/week	2.35 (0.46-11.77)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Frying >1 time/week	vs.	Frying ≤ 1 time/week	2.72 (1.05-7.04)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures

		Deep-frying >1 time/week	vs.	Deep-frying ≤ 1 time/week	3.56 (1.63-7.76)	age, education, income, vitamin C intake, respondant status, SHS exposure, family history of lung cancer, occupational exposures
Ko *et al.* (2000) (S19)	Case-control: 131 female lung cancer cases (never smokers) 252 female hospital controls and 262 population controls (never smokers) Study location: Taiwan Study years: 1993-1996	<u>*Hospital controls:*</u>				
		Cooks daily	vs.	Does not cook daily	1.9 (0.2-18.1)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		>20 years old when started cooking	vs.	≤20 years old when started cooking	1.0 (0.6-1.7)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		21-40 years spent cooking at home	vs.	1-20 years spent cooking at home	1.0 (0.5-1.8)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		>40 years spent cooking at home	vs.	1-20 years spent cooking at home	1.2 (0.4-3.4)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		Cooks 2 meals per day	vs.	Cooks 1 meal per day	1.9 (0.9-4.0)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		Cooks 3 meals per day	vs.	Cooks 1 meal per day	2.8 (1.2-6.3)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		≥2 windows in kitchen	vs.	<2 windows in kitchen	0.9 (0.5-1.3)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		Large openings to the outside in kitchen	vs.	Small or moderate openings to the outside in kitchen	1.1 (0.6-2.0)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		Good ventilation in kitchen	vs.	Poor ventilation in kitchen	0.9 (0.6-1.4)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		No fume extractor in kitchen before 20 years old	vs.	Fume extractor in kitchen before 20 years old	2.3 (1.1-5.0)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
		No fume extractor in kitchen when 20-40 years old	vs.	Fume extractor in kitchen when 20-40 years old	5.4 (2.7-10.8)	age, geographic area, occupation, history of lung disease, SHS exposure, SES

No fume extractor in kitchen after 40 years old	vs.	Fume extractor in kitchen after 40 years old	1.8 (0.7-4.7)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Frequently have eye irritation while cooking	vs.	Rarely have eye irritation while cooking	2.2 (1.3-3.8)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Frequently smokiness when cooking	vs.	Rarely smokiness when cooking	1.7 (1.0-2.9)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Stir frying (fume extractor in kitchen)	vs.	No stir frying (fume extractor in kitchen)	2.2 (1.1-4.1)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Stir frying (no fume extractor in kitchen)	vs.	No stir frying (fume extractor in kitchen)	12.2 (4.5-33.1)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
No stir frying (no fume extractor in kitchen	vs.	No stir frying (fume extractor in kitchen)	5.9 (1.5-23.3)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Frying (fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	1.8 (0.9-3.7)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Frying (no fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	10.5 (3.9-28.4)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
No frying (no fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	3.5 (0.8-16.2)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Deep frying (fume extractor in kitchen)	vs.	No deep frying (fume extractor in kitchen)	2.1 (1.2-3.9)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Deep frying (no fume extractor in kitchen)	vs.	No deep frying (fume extractor in kitchen)	9.5 (3.9-23.3)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
No deep frying (no fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	7.6 (2.1-26.9)	age, geographic area, occupation, history of lung disease, SHS exposure, SES
Population controls:				
Cooks daily	vs.	Does not cook daily	5.9 (0.7-53.6)	age, occupation, history of lung disease, SHS exposure, SES

>20 years old when started cooking	vs.	≤20 years old when started cooking	1.5 (0.9-2.4)	age, occupation, history of lung disease, SHS exposure, SES
21-40 years spent cooking at home	vs.	1-20 years spent cooking at home	1.3 (0.6-2.6)	age, occupation, history of lung disease, SHS exposure, SES
>40 years spent cooking at home	vs.	1-20 years spent cooking at home	1.0 (0.4-2.9)	age, occupation, history of lung disease, SHS exposure, SES
Cooks 2 meals per day	vs.	Cooks 1 meal per day	3.1 (1.6-6.2)	age, occupation, history of lung disease, SHS exposure, SES
Cooks 3 meals per day	vs.	Cooks 1 meal per day	3.4 (1.6-7.0)	age, occupation, history of lung disease, SHS exposure, SES
≥2 windows in kitchen	vs.	<2 windows in kitchen	1.3 (0.8-2.1)	age, occupation, history of lung disease, SHS exposure, SES
Large openings to the outside in kitchen	vs.	Small or moderate openings to the outside in kitchen	0.9 (0.5-1.5)	age, occupation, history of lung disease, SHS exposure, SES
Good ventilation in kitchen	vs.	Poor ventilation in kitchen	0.9 (0.6-1.4)	age, occupation, history of lung disease, SHS exposure, SES
No fume extractor in kitchen before 20 years old	vs.	Fume extractor in kitchen before 20 years old	0.9 (0.4-2.0)	age, occupation, history of lung disease, SHS exposure, SES
No fume extractor in kitchen when 20-40 years old	vs.	Fume extractor in kitchen when 20-40 years old	2.2 (1.3-3.8)	age, occupation, history of lung disease, SHS exposure, SES
No fume extractor in kitchen after 40 years old	vs.	Fume extractor in kitchen after 40 years old	1.3 (0.6-2.8)	age, occupation, history of lung disease, SHS exposure, SES
Frequently have eye irritation while cooking	vs.	Rarely have eye irritation while cooking	2.1 (1.3-3.5)	age, occupation, history of lung disease, SHS exposure, SES
Frequently smokiness when cooking	vs.	Rarely smokiness when cooking	2.5 (1.4-4.3)	age, occupation, history of lung disease, SHS exposure, SES
Stir frying (fume extractor in kitchen)	vs.	No stir frying (fume extractor in kitchen)	2.5 (1.3-4.9)	age, occupation, history of lung disease, SHS exposure, SES
Stir frying (no fume extractor in kitchen)	vs.	No stir frying (fume extractor in kitchen)	5.0 (2.2-11.0)	age, occupation, history of lung disease, SHS exposure, SES
No stir frying (no fume extractor in kitchen	vs.	No stir frying (fume extractor in kitchen)	2.8 (0.8-10.0)	age, occupation, history of lung disease, SHS exposure, SES
Frying (fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	2.7 (1.3-5.5)	age, occupation, history of lung disease, SHS exposure, SES
Frying (no fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	5.3 (2.2-12.3)	age, occupation, history of lung disease, SHS exposure, SES

		No frying (no fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	3.1 (0.8-13.2)	age, occupation, history of lung disease, SHS exposure, SES
		Deep frying (fume extractor in kitchen)	vs.	No deep frying (fume extractor in kitchen)	1.6 (0.9-3.1)	age, occupation, history of lung disease, SHS exposure, SES
		Deep frying (no fume extractor in kitchen)	vs.	No deep frying (fume extractor in kitchen)	3.2 (1.4-7.3)	age, occupation, history of lung disease, SHS exposure, SES
		No deep frying (no fume extractor in kitchen)	vs.	No frying (fume extractor in kitchen)	2.7 (0.9-8.5)	age, occupation, history of lung disease, SHS exposure, SES
Seow *et al.* (2000) (S20)	Case-control: 176 female lung cancer cases (never smokers) 663 female hospital controls (never smokers) Study location: Singapore Study years: 1996-1998	Stir frying daily	vs.	Stir frying less than daily	1.0 (0.7-1.5)	age, education, birth place, fruit and vegetable consumption
		Stir frying daily, less than daily with meat	vs.	Stir frying less than daily	0.9 (0.6-1.5)	age, education, birth place, fruit and vegetable consumption
		Stir frying daily with meat	vs.	Stir frying less than daily	0.9 (0.6-1.4)	age, education, birth place, fruit and vegetable consumption
		Stir frying daily with meat	vs.	Stir frying meat less than daily	1.0 (0.7-1.4)	age, education, birth place, fruit and vegetable consumption
		Stir frying daily with meat, fume filled kitchen less than daily	vs.	Stir frying meat less than daily	1.1 (0.7-1.7)	age, education, birth place, fruit and vegetable consumption
		Stir frying daily with meat with daily fume-filled kitchen	vs.	Stir frying meat less than daily	1.0 (0.6-1.4)	age, education, birth place, fruit and vegetable consumption
		Stir frying daily with meat, primarily with unsaturated oil	vs.	Stir frying meat less than daily	1.4 (0.8-2.4)	age, education, birth place, fruit and vegetable consumption
		Stir frying daily with meat, primarily with saturated oil or saturated and unsaturated equally	vs.	Stir frying meat less than daily	0.9 (0.6-1.3)	age, education, birth place, fruit and vegetable consumption
Yu *et al.* (2006) (S21)	Case-control: 200 female lung cancer cases (nonsmokers) 285 female population controls (nonsmokers) Study location: Hong Kong	51-100 cooking dish-years (one dish year equals on dish cooked daily for one year)	vs.	≤50 cooking dish-years	1.31 (0.73-2.33)	age, education, employment status, history of lung disease, family history of lung cancer, radon exposure, SHS exposure, kerosene use, firewood use, incense burning, mosquito coil use, diet, coffee and tea consumption

Study years: 2002-2004	101-150 cooking dish-years	vs.	≤50 cooking dish-years	4.12 (1.90-8.94)	age, education, employment status, history of lung disease, family history of lung cancer, radon exposure, SHS exposure, kerosene use, firewood use, incense burning, mosquito coil use, diet, coffee and tea consumption
	151-200 cooking dish-years	vs.	≤50 cooking dish-years	4.68 (1.80-12.18)	age, education, employment status, history of lung disease, family history of lung cancer, radon exposure, SHS exposure, kerosene use, firewood use, incense burning, mosquito coil use, diet, coffee and tea consumption
	>200 cooking dish-years	vs.	≤50 cooking dish-years	34 (7.16-161.39)	age, education, employment status, history of lung disease, family history of lung cancer, radon exposure, SHS exposure, kerosene use, firewood use, incense burning, mosquito coil use, diet, coffee and tea consumption
	Sometimes heat wok to high temperatures	vs.	Never/seldom heat wok to high temperature	1.02 (0.51-2.06)	age, family history of lung cancer, vegetable, meat, multivitamin, and coffee consumption, total cooking dish-years
	Always heat wok to high temperatures	vs.	Never/seldom heat wok to high temperature	1.97 (1.06-3.65	age, family history of lung cancer, vegetable, meat, multivitamin, and coffee consumption, total cooking dish-years
	Ever use fume extractor	vs.	Never use fume extractor	0.73 (0.29-1.87)	age, family history of lung cancer, vegetable, meat, multivitamin, and coffee consumption, total cooking dish-years
	Always use peanut oil	vs.	Seldom/sometimes use peanut oil	1.36 (0.87-2.15)	age, family history of lung cancer, vegetable, meat, multivitamin, and coffee consumption, total cooking dish-years
	Always use corn oil	vs.	Seldom/sometimes use corn oil	1.27 (0.76-2.10)	age, family history of lung cancer, vegetable, meat, multivitamin, and coffee consumption, total cooking dish-years
	Always use canola oil	vs.	Seldom/sometimes use canola oil	1.40 (0.59-3.30)	age, family history of lung cancer, vegetable, meat, multivitamin, and coffee consumption, total cooking dish-

						years
Sapkota *et al.* (2008) (S15)	Case-control: 177 male and female lung cancer cases (never smokers) 457 male and female hospital (patients and visitors) controls (never smokers) Study location: India Study years: 2001-2004	Some smokiness caused by cooking	vs.	No smokiness caused by cooking	1.06 (0.78-1.44)	age, gender, center, SES, use of non-cigarette tobacco products
		Much smokiness caused by cooking, but not enough to irritate eyes	vs.	No smokiness caused by cooking	1.92 (1.29-2.86)	
		Much smokiness caused by cooking, enough to irritate eyes	vs.	No smokiness caused by cooking	2.14 (1.28-3.56) $P_{\mathrm{trend}} < 0.01$	

Abbreviations:

CI confidence interval
SES socioeconomic status
SHS secondhand smoke

Supplemental Table 4: Results of studies on exposure to asbestos and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Community-based studies:						
Morabia *et al.* (1992) (S22)	Hospital-based case-control: 1793 total lung cancer cases 2226 total male hospital controls (number of never smokers not stated) Study location: USA (AL, CA, GA, IL, MI, NY, PA) Study years: 1980-1989	<10 years of asbestos exposure, any source	vs.	Never exposed to asbestos	3.8	age, race, location, questionnaire type
		≥10 years of asbestos exposure, any source	vs.	Never exposed to asbestos	4.9	age, race, location, questionnaire type
Bovenzi *et al.* (1993) (S23)	Case-control: 22 male deaths due to lung cancer (never smokers) 188 male controls (deaths due to other causes, never smokers) Study location: Italy Study years: 1979-1986	Possible occupational exposure to asbestos (4 cases, 26 controls)	vs.	No occupational exposure to lung carcinogens (10 cases, 103 controls)	1.58	age, date of death
		Definite occupational exposure to asbestos (4 cases, 19 controls)	vs.	No occupational exposure to lung carcinogens (10 cases, 103 controls)	2.17	age, date of death
Brownson *et al.* (1993) (S24)	Case-control: 294 female lung cancer cases ("lifetime nonsmokers") 1021 total female population controls (the number of lifetime nonsmokers was not stated) Study location: USA (MO) Study years: 1986-1991	Ever worked with asbestos	vs.	Never worked with asbestos	1.5 (0.4-6.2)	age, other lung diseases
Wu-Williams *et al.* (1993) (S25)	Case-control: 966 female lung cancer cases (number of nonsmokers not stated) 960 female population controls (number of nonsmokers not stated) Study location: China (Harbin and Shenyang) Study years: 1985-1987	Occupational exposure to asbestos dust (nonsmokers, 8 cases/3 controls)	vs.	No occupational exposure to asbestos dust (nonsmokers)	3.0	age, education, study area

Muscat *et al.* (1995) (S26)	Case-control:83 male lung cancer cases (never smokers)1260 male hospital controls (never smokers)Study location: USA (IL, MI, NY, PA)Study years: 1981-1991	Occupational exposure to asbestos	vs.	No occupational exposure to asbestos	2.0 (0.9-4.6)	age, hospital
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Occupational exposure to asbestos	vs.	No occupational exposure to asbestos	2.3 (0.6-8.6)	age, province, education, social class
<u>Industry-based studies:</u>						
Hammond *et al.* (1979) (S28)	Cohort: 12051 male asbestos workers (891 never smokers) 450 lung cancer deaths (5 never smokers) Study location: USA, Canada Study years: 1967-1976 (follow-up began after 20 years of asbestos exposure)	Observed number of lung cancer deaths among never-smoking male asbestos workers in cohort	vs.	Expected number of lung cancer deaths among all men in the cohort	0.14	age
		Observed number of lung cancer deaths among never-smoking male asbestos workers in cohort	vs.	Expected number of lung cancer deaths among never-smoking white men in a reference population (ACS study)	5.17	age
Selikoff *et al.* (1980) (S29)	Cohort: 582 male asbestos workers (78 never smokers) 60 lung cancer deaths (8 never smokers) Study location: USA (NJ) Study years: 1961-1977 (follow-up began after 20 years of asbestos exposure)	Observed number of lung cancer deaths among never-smoking male asbestos workers in cohort	vs.	Expected number of lung cancer deaths among never-smoking white men in a reference population (ACS study)	0.2	age

Berry *et al.* (1985) (S30)	Cohort:1253 male asbestos workers (74 never smokers) and 423 female asbestos workers (118 never smokers)64 male lung cancer deaths (1 never smoker) and 15 female lung cancer deaths (3 never smokers)Study location: UK (England)Study years: 1971-1980 (asbestos exposure initiated between 1933 and 1955)	Observed number of lung cancer deaths among never-smoking male asbestos workers in cohort	vs.	Expected number of lung cancer deaths for males in the general population of England and Wales	6.2	age
		Observed number of lung cancer deaths among never-smoking female asbestos workers in cohort	vs.	Expected number of lung cancer deaths for females in the general population of England and Wales	12.5	age
		Observed number of lung cancer deaths among never-smoking male and female asbestos workers in cohort	vs.	Expected number of lung cancer deaths for males and females in the general population of England and Wales	7.3	age, gender
Cheng and Kong (1992) (S31)	Cohort: 1172 male and female asbestos workers and 3219 workers not exposed to asbestos (number of never smokers not stated) 21 deaths due to lung cancer (number of never smokers not stated) Study location: China Study years: 1972-1987 (with asbestos exposure initiated between 1955 and 1967)	Lung cancer death rate among never-smoking asbestos workers	vs.	Lung cancer death rate among never-smoking workers not exposed to asbestos or to dust, fumes or vapor	5.44	age
McDonald *et al.* (1993) (S32)	Cohort: 10925 men (1010 never smokers) from the 1981-1920 birth cohort employed in chrysotile production for one month or more	Observed number of lung cancer deaths among never-smoking male asbestos workers in cohort	vs.	Expected number of lung cancer deaths for males in the general population of Quebec	0.48	not stated

	642 lung cancer deaths (22 never smokers) Study location: Canada (Quebec) Study years: 1976-1988	Observed number of lung cancer deaths among never-smoking males in cohort with <60 mpcf.y of asbestos exposure	vs.	Expected number of lung cancer deaths for males in the general population of Quebec	0.37	not stated
		Observed number of lung cancer deaths among never-smoking males in cohort with ≥60 mpcf.y of asbestos exposure	vs.	Expected number of lung cancer deaths for males in the general population of Quebec	0.61	not stated
		Lung cancer SMR among never-smoking males with ≥60 mpcf.y of asbestos exposure	vs.	Lung cancer SMR among never-smoking males with <60 mpcf.y of asbestos exposure	1.65	not stated
Zhu and Wang (1993) (S33)	Cohort: 5893 men and women employed in chryosotile asbestos factories (number nonsmokers not stated) 67 lung cancer deaths (number nonsmokers not stated) Study location: China Study years: 1982-1986	Asbestos exposure among nonsmokers	vs.	No asbestos exposure among nonsmokers	3.8	not stated
Meurman *et al.* (1994) (S34)	Cohort: 598 men employed in anthophyllite asbestos mines (191 nonsmokers) 55 lung cancer cases (2 nonsmokers) Study location: Finland Study years:1968-1991 (with employment in mines between 1953 and 1967)	Observed number of lung cancer deaths among all nonsmoking males in cohort	vs.	Expected number of lung cancer deaths for males in general population of eastern Finland	0.52 (0.06-1.88)	age
		Observed number of lung cancer deaths among males in cohort with moderate asbestos exposure	vs.	Expected number of lung cancer deaths for males in general population of eastern Finland	0.58 (0.01-3.21)	age

		Observed number of lung cancer deaths among males in cohort with heavy asbestos exposure	vs.	Expected number of lung cancer deaths for males in general population of eastern Finland	0.48 (0.01-2.64)	age
Liddell and Armstrong (2002) (S35)	Cohort:7279 men (number never smokers not stated) from the 1981-1920 birth cohort employed in chrysotile production for one month or more533 lung cancer deaths (44 never smokers)Study location: Canada (Quebec)Study years: 1950-1992	Observed number of lung cancer deaths among never-smoking males with >0 to ≤30 mpfc.y of asbestos exposure (accumulated by age 55)	vs.	Expected number of lung cancer deaths for males in the general population of Quebec	0.20	age
		Observed number of lung cancer deaths: >30 to ≤100 mpfc.y exposure	vs.	Expected number of lung cancer deaths: general population of Quebec	0.24	age
		Observed number of lung cancer deaths: >100 to ≤300 mpfc.y exposure	vs.	Expected number of lung cancer deaths: general population of Quebec	0.36	age
		Observed number of lung cancer deaths: >300 to ≤600 mpfc.y exposure	vs.	Expected number of lung cancer deaths: general population of Quebec	0.53	age
		Observed number of lung cancer deaths: >600 to ≤1000 mpfc.y exposure	vs.	Expected number of lung cancer deaths: general population of Quebec	0.76	age
		Lung cancer SMR among never-smoking males with 0 mpcf.y of asbestos exposure	vs.	Lung cancer SMR among never-smoking males with >100 to ≤300 mpcf.y of asbestos exposure	1.92	age
Review and pooled analyses:						

Berry et al. (1985) (S30)	Meta-analysis: 6 studies (5 cohort, 1 case-control) of male and female asbestos workers Study locations: Canada, UK, USA Publication dates: 1968-1983	Lung cancer SMR among never-smoking asbestos workers	vs.	Lung cancer SMR among ever-smoking asbestos workers	1.8 (1.1-2.8)	not stated
Liddell (2001) Liddell FDK (S36)	Meta-analysis: 13 cohort studies of asbestos workersStudy locations: Asia, Europe, North AmericaPublication dates: 1972-1993	Lung cancer SMR among nonsmoking asbestos workers	vs.	Lung cancer SMR among asbestos workers that smoke	2.04 (1.28-3.25)	not stated

Abbreviations:
ACS: American Cancer Society
CI: confidence interval
mpcf.y: million particles per cubic foot × years
SMR: standardized mortality ratio

Supplemental Table 5: Results of studies on occupational exposure to arsenic and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Pinto *et al.* (1978) (S37)	Cohort: 377 retired male copper smelters (119 never smokers) 21 deaths due to respiratory cancers, ICD-7 codes 160-164 (3 never smokers) Study location: USA (WA) Study years: 1961-1973 (with occupational arsenic exposure between 1910 and 1973)	Observed number of deaths due to respiratory cancers among never-smoking men in the cohort	vs.	Expected number of deaths due to respiratory cancers among never-smoking men in the general Washington state population	506.5	age
Higgins *et al.* (1981) (S38)	Cohort: 300 male smelter workers (40 nonsmokers) 14 deaths due to lung cancer (1 nonsmoker) Study location: USA (MT) Study years: 1938-1977 (with occupational arsenic exposure before 1957)	Observed number of deaths due to lung cancer among nonsmoking men with heavy arsenic exposure in the cohort	vs.	Expected number of deaths due to lung cancer among nonsmoking men in the general Montana state population	330	age
Pershagen *et al.* (1981) (S39)	Case-control: *From a cohort of 3958 smelter workers:* 76 male smelter workers with death due to lung cancer (8 nonsmokers) 152 deceased male smelter workers (52 nonsmokers) Study location: Sweden Study years: 1928-1977 (with occupational arsenic exposure from 1928 to 1967)	Occupational arsenic exposure (nonsmokers)	vs.	No occupational arsenic exposure	2.6 (0.29-23 [calculated based on raw data]	age
		High sulfur dioxide exposure	vs.	No occupational arsenic exposure	1.8	age
		High arsenic exposure	vs.	No occupational arsenic exposure	1.2	age
		Roaster worker	vs.	No occupational arsenic exposure	4.4	age

Welch *et al.* (1982) (S40)	Cohort: 1800 male smelter workers (240 nonsmokers) 80 deaths due to respiratory cancer, ICD-8 codes 160-163 (8 nonsmokers) Study location: USA (MT) Study years: 1938-1978 (with occupational arsenic exposure before 1957)	Observed number of deaths due to respiratory cancers among non-smoking men in cohort with low arsenic exposure intensity (<1 mg/m^3)	vs.	Expected number of deaths due to lung cancer among nonsmoking men in the general Montana state population	95	age
		Observed number of deaths due to respiratory cancers among non-smoking men in cohort with medium arsenic exposure intensity (1-4.99 mg/m^3)	vs.	Expected number of deaths due to lung cancer among nonsmoking men in the general Montana state population	89	age
		Observed number of deaths due to respiratory cancers among non-smoking men in cohort with high arsenic exposure intensity (5-49.99 mg/m^3)	vs.	Expected number of deaths due to lung cancer among nonsmoking men in the general Montana state population	286	age
		Observed number of deaths due to respiratory cancers among non-smoking men in cohort with very high arsenic exposure intensity (≥50 mg/m^3)	vs.	Expected number of deaths due to lung cancer among nonsmoking men in the general Montana state population	620	age
Tsuda *et al.* (1990) (S41)	Cohort: 141 men and women who applied for compensation for chronic arsenic poisoning (80 nonsmokers) 8 deaths due to lung cancer (1 nonsmoker) Study location: Japan Study years: 1972-1989	Observed number of deaths due to lung cancer among nonsmoking men and women in cohort who worked at a mine/refinery	vs.	Expected number of lung cancer deaths in the general Japanese population	264 (13-1519)	age, gender, calendar period
Jarup and Peragen, (1991) (S42)	Case-control: *From a cohort of 3916 smelter workers:*	Cumulative arsenic exposure 0.25 to <15 mg/m^3*years (nonsmokers)	vs.	Cumulative arsenic exposure <0.25 mg/m^3*years (nonsmokers)	1.4 (0.1-18.4)	age
	107 male smelter workers with lung cancer, all but 4 were deaths (11 nonsmokers)	Cumulative arsenic exposure ≥15 mg/m^3*years (nonsmokers)	vs.	Cumulative arsenic exposure <0.25 mg/m^3*years (nonsmokers)	5.6 (0.6-53.8)	age

	214 deceased male smelter workers (42 nonsmokers) Study location: Sweden Study years: 1928-1981 (with occupational arsenic exposure from 1928 to 1967)	Average intensity of arsenic exposure 0.1 to <0.3 mg/m^3 (nonsmokers)	vs.	Average intensity of arsenic exposure <0.1 mg/m^3 (nonsmokers)	2.0 (0.1-38.1)	age
		Average intensity of arsenic exposure ≥0.3 mg/m^3 (nonsmokers)	vs.	Average intensity of arsenic exposure <0.1 mg/m^3 (nonsmokers)	4.1 (0.5-35.7)	age
		10-29 years of arsenic exposure	vs.	<10 years of arsenic exposure	0.5 (0.1-2.7)	age
		≥30 years of arsenic exposure	vs.	<10 years of arsenic exposure	1.0 (0.2-5.4)	age
Brownson *et al.* (1993) (S24)	Case-control: 294 female lung cancer cases ("lifetime nonsmokers") 1021 total female population controls (the number of lifetime nonsmokers was not stated) Study location: USA (MO) Study years: 1986-1991	Ever worked with arsenic	vs.	Never worked with arsenic	1.1 (0.2-5.8)	age, other lung diseases
Hazelton et al. (2001) (S43)	Cohort: 12011 male tin miners (2262 never smokers) 842 deaths due to lung cancer (359 never smokers) Study location: China (Yunnan) Study years: 1976-1988	Observed number of lung cancer deaths among never-smoking men in the cohort with no cumulative arsenic exposure	vs.	Expected number of lung cancer deaths (reference population unclear)	11.19	not stated
		Observed number of lung cancer deaths among never-smoking men in the cohort with cumulative arsenic exposure 0.01-0.10 mg/m^3*years	vs.	Expected number of lung cancer deaths (reference population unclear)	1.59	not stated
		Observed number of lung cancer deaths among never-smoking men in the cohort with cumulative arsenic exposure 0.10-0.61 mg/m^3*years	vs.	Expected number of lung cancer deaths (reference population unclear)	13.83	not stated

		Observed number of lung cancer deaths among never-smoking men in the cohort with cumulative arsenic exposure 0.61-2.99 mg/m^3*years	vs.	Expected number of lung cancer deaths (reference population unclear)	61.89	not stated
		Observed number of lung cancer deaths among never-smoking men in the cohort with cumulative arsenic exposure 2.99-20.1 mg/m^3*years	vs.	Expected number of lung cancer deaths (reference population unclear)	232.39	not stated
Bessö *et al.*(2003) (S44)	Case-control: 316 male and female deaths due to bronchus or lung cancer (77 never smokers) 727 male and female deceased population controls (401 never smokers) [Miners and smelter workers were excluded from the study] Study location: Sweden Study years: 1961-1990	Men that ever lived in the 2 parishes near a smelter (never-smokers: 5 cases and 31 controls)	vs.	Men that never lived in the 2 parishes near a smelter (never-smokers: 17 cases and 211 controls)	2.03 (0.68-6.09)	age, gender, occupation, recruitment period
		Women that ever lived in the 2 parishes near a smelter (never-smokers: 12 cases and 31 controls)	vs.	Women that never lived in the 2 parishes near a smelter (never-smokers: 43 cases and 218 controls)	1.03 (0.48-2.20)	age, gender, occupation

Abbreviations:

CI: confidence interval

Supplemental Table 6: Results of studies on occupational exposure to silica and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Occupational silica exposure:						
Forastiere *et al.* (1986) (S45)	Case-control: 72 male deaths due to cancer of the lung, bronchus, or trachea (10 nonsmokers) 319 deceased male population controls (85 nonsmokers) Study location: Italy (Civitacastellana) Study years: 1968-1984	Ceramic worker or quarryman (all ages)	vs.	Not a ceramic worker or quarryman (all ages)	1.22	none
		Ceramic workers (all ages)	vs.	Not a ceramic worker or quarryman (all ages)	1.33	none
		Ceramic workers that did not make compensation claims for silicosis (all ages)	vs.	Not a ceramic worker or quarryman (all ages)	1.95	none
		Ceramic worker or quarryman (<65 years old)	vs.	Not a ceramic worker or quarryman (<65 years old)	0.72	none
		Ceramic workers (<65 years old)	vs.	Not a ceramic worker or quarryman (<65 years old)	0.81	none
		Ceramic workers that did not make compensation claims for silicosis (<65 years old)	vs.	Not a ceramic worker or quarryman (<65 years old)	1.30	none
		Ceramic worker or quarryman (≥65 years old)	vs.	Not a ceramic worker or quarryman (≥65 years old)	1.73	none
		Ceramic workers (≥65 years old)	vs.	Not a ceramic worker or quarryman (≥65 years old)	1.86	none
		Ceramic workers that did not make compensation claims for silicosis (≥65 years old)	vs.	Not a ceramic worker or quarryman (≥65 years old)	2.60	none
Mastrangelo *et al.* (1988) (S46)	Case-control: 309 male lung cancer cases (6 never smokers) 309 male hospital controls (44 never smokers) Study location: Italy (Belluno) Study years: 1973-1980	Exposed to silica, not compensated for silicosis (never smokers)	vs.	Not exposed to silica (never smokers)	1.3 (0.0-13.8)	age, residence location, admission date
		Exposed to silica, compensated for silicosis (never smokers)	vs.	Not exposed to silica (never smokers)	5.3 (0.5-43.5)	age, residence location, admission date
Siemiatycki *et al.* (1990) (S47)	Case-control: 5 male non-adenocarcinoma lung cancer cases (never smokers) 1523 male hospital controls (number of never smokers not stated)	Substantial silica exposure (cumulative silica exposure greater than the mean cumulative exposure among the exposed, never smokers)	vs.	Not exposed to silica (never smokers)	2.6	age, SES, occupational exposures, education, marital status, asbestos

	Study location: Canada (Montreal) Study years: 1979-1985	Less than substantial silica exposure (never smokers)	vs.	Not exposed to silica (never smokers)	2.0	age, SES, occupational exposures, education, marital status, asbestos
Wu-Williams *et al.* (1993) (S25)	Case-control: 966 female lung cancer cases (number of nonsmokers not stated) 960 female population controls (number of nonsmokers not stated) Study location: China (Harbin and Shenyang) Study years: 1985-1987	Occupational exposure to silica dust (nonsmokers, 43 cases/71 controls)	vs.	No occupational exposure to silica dust (nonsmokers)	0.9	age, education, study area
Zeka *et al.* (2006) (S48)	Case-control: 223 male and female lung cancer cases (never-smokers) 1039 male and female hospital and population controls (never smokers) Study location: Czech Republic, Hungary, Poland, Romania, Russia, Slovakia, UK Study years: 1998-2002	Ever occupational exposure to silica	vs.	Never occupational exposure to silica	1.76 (0.97-3.21)	age, gender, study center
		>0 to 8 years of occupational exposure to silica	vs.	Never occupational exposure to silica	1.20 (0.49-2.92)	age, gender, study center, SHS exposure
		>8 years of occupational exposure to silica	vs.	Never occupational exposure to silica	2.39 (1.11-5.15)	age, gender, study center, SHS exposure
		>0 to 42.1 cumulative exposure index (intensity-frequency-years) of occupational silica exposure	vs.	Never occupational exposure to silica	1.11 (1.43-2.88)	age, gender, study center, SHS exposure
		>42.1 cumulative index of occupational silica exposure	vs.	Never occupational exposure to silica	2.45 (1.15-5.20)	age, gender, study center, SHS exposure
<u>*Studies of silicotics:*</u>						
Zambon *et al.* (1987) (S49)	Cohort: 1313 male workers compensated for silicosis during the period 1959-1963 (161 never smokers) 70 lung cancer deaths (8 never smokers) Study location: Italy (Veneto) Study years: 1959-1984	Observed number of lung cancer deaths of men in cohort with 10-19 years of silicotics exposure	vs.	Expected number of male lung cancer deaths in the Veneto region of Italy	52 (1-292)	age, calendar period
		Observed number of lung cancer deaths of men in cohort with ≥20 years of silicotics exposure	vs.	Expected number of male lung cancer deaths in the Veneto region of Italy	338 (70-987)	age, calendar period
		Observed number of lung cancer deaths of men in cohort with any duration of silicotics exposure	vs.	Expected number of male lung cancer deaths in the Veneto region of Italy	79 (21-201)	age, calendar period

Chiyotani et al. (1990) (S50)	Cohort: 3335 men with pneumoconiosis (number of never smokers not stated) 60 lung cancer deaths (4 never smokers) Study location: Japan Study years: 1979-1983	Observed number of lung cancer deaths among men in cohort (never smokers)	vs.	Expected number of male lung cancer deaths among the general Japanese population	2.22 (0.73-3.71)	age
Hessel *et al.* (1990) (S51)	Case-control: 231 white gold miners with lung cancer (gender and number of nonsmokers not stated) 318 white gold miner controls (gender and number of nonsmokers not stated) Study location: South Africa Study years: >1983 (specific dates not stated)	Silicosis of the hilar glands (nonsmokers)	vs.	No silicosis of the hilar glands (nonsmokers)	1.12	age, age at death
		Silicosis of the parenchyma (nonsmokers)	vs.	No silicosis of the parenchyma (nonsmokers)	1.62	age, age at death
		Silicosis of the pleura (nonsmokers)	vs.	No silicosis of the pleura (nonsmokers)	1.37	age, age at death
Amandus and Costello (1991) (S52)	Cohort: 9912 male metal miners (1802 never smokers) 132 lung cancer deaths (6 never smokers) Study location: USA Study years: 1959-1975	Observed number of lung cancer deaths among silicotic men in cohort (never smokers)	vs.	Expected number of male lung cancer deaths in the general U.S. population	0.53 (0.01-2.95)	age, calendar period, race
		Rate of lung cancer death among silicotic cohort members (never smokers)	vs.	Rate of lung cancer death among nonsilicotic cohort members (never smokers)	3.77 (1.03-13.78)	age
Amandus *et al.* (1991) (S53)	Cohort: 760 males diagnosed with silicosis (137 never smokers) 34 deaths due to cancer of the lung, trachea, or bronchus (5 never smokers) Study location: USA (NC) Study years: 1940-1983	Observed number of lung cancer deaths among men in cohort with silicosis diagnosed while employed in a dusty trade (mining, foundries, quarrying, stone crushing, asbestos and silica manufacturing, construction), never smokers	vs.	Expected number lung cancer deaths in the general U.S. population	2.0 (0.6-4.6)	age, calendar period
Carta *et al.* (1991) (S54)	Cohort: 724 males diagnosed with silicosis between 1964 and 1970 (number of never smokers not stated) 22 lung cancer deaths (4 never smokers) Study location: Italy (Sardinia) Study years: 1964-1987	Observed number of deaths due to lung cancer among men in cohort (never smokers)	vs.	Expected number of male lung cancer deaths in the Sardinian region or Italy	0.69 (0.3-1.8)	age, calendar period

Chia *et al.* (1991) (S55)	Cohort: 159 males diagnosed with silicosis (26 never smokers) 9 cases of lung cancer (1 never smoker) Study location: Singapore Study years: 1970-1984	Observed incidence of lung cancer among men in cohort (never smokers)	vs.	Expected incidence of lung cancer among Chinese males in Singapore	1.30 (0.03-7.22)	age, calendar period
Partanen *et al.* (1994) Finland (S56)	Cohort: 811 males diagnosed with silicosis between 1936 and 1977 (number of never smokers not stated) 41 cases of lung cancer (1 never smoker) Study location: Finland Study years: 1983-1991	Observed incidence of lung cancer among men in cohort (never smokers)	vs.	Expected incidence of lung cancer among men in the general Finnish population	0.44 (0.01-2.43)	age, calendar period
Dong *et al.*(1995) (S57)	Cohort: 6266 male silica and clay brick workers employed before 1962 (number of nonsmokers not stated) 65 deaths due to lung cancer (19 nonsmokers) Study location: China Study years: 1963-1985	Observed number of lung cancer deaths among men in cohort (nonsmokers)	vs.	Expected number of lung cancer deaths among 11470 male steel workers (nonsmokers)	1.37	age
		Observed number of lung cancer deaths among men in cohort diagnosed with silicosis (nonsmokers)	vs.	Expected number of lung cancer deaths among 11470 male steel workers (nonsmokers)	2.13	age
		Observed number of lung cancer deaths among men in cohort not diagnosed with silicosis (nonsmokers)	vs.	Expected number of lung cancer deaths among 11470 male steel workers (nonsmokers)	0.85	age
Wang *et al.*(1996) (S58)	Cohort: 4372 males employed in metallurgical mines or plants before 1980 (number of nonsmokers not stated) 104 lung cancer deaths (32 nonsmokers) Study location: China Study years: 1980-1989	Observed number of lung cancer deaths among me in cohort (nonsmokers)	vs.	Expected number of lung cancer deaths in the general population (not further defined)	209	age

Abbreviations:

CI confidence interval

SHS secondhand smoke

SES socioeconomic status

Supplemental Table 7: Results of studies on exposure to known (list A) or suspected (list B) occupational lung carcinogens and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Pohlabeln *et al.* (2000) (S59)	Case-control: 650 male and female lung cancer cases (all never smokers) 1542 male and female hospital and population controls (all never smokers) Study location: France, Germany, Italy Portugal, Spain, Sweden, UK Study years: 1988-1994	<u>*Males:*</u>				
		Ever worked in a List A or List B occupation (40 cases/165 controls)	vs.	Never worked in a List A or List B occupation (101 cases/366 controls)	1.20 (0.76-1.92)	age, study center
		Ever worked in a List A occupation (17 cases/58 controls)	vs.	Never worked in a List A or List B occupation (101 cases/366 controls)	1.52 (0.78-2.97)	age, study center
		Ever worked in a List B and never worked in a List A occupation (23 cases/107 controls)	vs.	Never worked in a List A or List B occupation (101 cases/366 controls)	1.05 (0.60-1.83)	age, study center
		<u>*Females:*</u>				
		Ever worked in a List A or List B occupation (46 cases/69 controls)	vs.	Never worked in a List A or List B occupation (463 cases/942 controls)	1.67 (1.10-2.52)	age, study center
		Ever worked in a List A occupation (5 cases/10 controls)	vs.	Never worked in a List A or List B occupation (463 cases/942 controls)	1.50 (0.49-4.53)	age, study center
		Ever worked in a List B and never worked in a List A occupation (41 cases/59 controls)	vs.	Never worked in a List A or List B occupation (463 cases/942 controls)	1.69 (1.09-2.63)	age, study center
Kreuzer *et al.* (2001) (S60)	Case-control: 58 male lung cancer cases (never smokers) 803 male population controls (never smokers) Study location: Germany Study years: 1990-1996	Ever worked in a List A occupation (8 cases/56 controls)	vs.	Never worked in a List A occupation (50 cases/747 controls)	2.2 (1.00-4.98)	age, region
		Worked in a List A occupation <10 years (3 cases/36 controls)	vs.	Never worked in a List A occupation (50 cases/747 controls)	1.3 (0.40-4.55)	age, region
		Worked in a List A occupation ≥10 years (5 cases/20 controls)	vs.	Never worked in a List A occupation (50 cases/747 controls)	3.7 (1.33-10.4)	age, region

		Ever worked in a List B and never worked in a List A occupation (12 cases/134 controls)	vs.	Never worked in a List A or List B occupation (38 cases/613 controls)	1.4 (0.71-2.79)	age, region
		Ever worked in a List A occupation (8 cases/56 controls)	vs.	Never worked in a List A or List B occupation (38 cases/613 controls)	2.4 (1.06-5.43)	age, region
		Worked in a List A or List B occupation <10 years (6 cases/68 controls)	vs.	Never worked in a List A or List B occupation (38 cases/613 controls)	1.5 (0.59-3.57)	age, region
		Worked in a List A or List B occupation ≥10 years (14 cases/122 controls)	vs.	Never worked in a List A or List B occupation (38 cases/613 controls)	1.8 (0.96-3.43)	age, region
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Ever worked in List A or List B occupation (25 cases/43 controls)	vs.	Never worked in a List A or List B occupation (209 cases/492 controls)	1.32 (0.78-2.23)	age, region
		Ever worked in a List B and never worked in a List A occupation (21 cases/32 controls)	vs.	Never worked in a List A or List B occupation (209 cases/492 controls)	1.51 (0.84-2.71)	age, region
		Ever worked in a List A occupation (4 cases/11 controls)	vs.	Never worked in a List A or List B occupation (209 cases/492 controls)	0.77 (0.29-2.50)	age, region
		Worked in a List A or List B occupation <10 years (9 cases/24 controls)	vs.	Never worked in a List A or List B occupation (209 cases/492 controls)	0.81 (0.37-1.80)	age, region
		Worked in a List A or List B occupation ≥10 years (16 cases/19 controls)	vs.	Never worked in a List A or List B occupation (209 cases/492 controls)	1.99 (0.99-4.00)	age, region
Zeka *et al.* (2006) (S48)	Case-control: 223 male and female lung cancer cases (never-smokers) 1039 male and female hospital and population controls (never smokers) Study location: Czech Republic, Hungary, Poland, Romania, Russia, Slovakia, UK Study years: 1998-2002	*<u>Males:</u>*				
		Ever worked in a List A occupation (2 cases/37 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	0.43 (0.09-2.06)	age, study center
		Ever worked in a List B occupation and never worked in a List A occupation (8 cases/85 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	0.85 (0.37-1.98)	age, study center

Ever worked in a List A or List B occupation (10 cases/122 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	0.74 (0.34-1.61)	age, study center
Worked in a List A occupation 9.1-45 years (2 cases/19 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	0.82 (0.16-4.32)	age, study center
Worked in a List B occupation 0.1-24.0 years (7 cases/42 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	1.81 (0.70-4.68)	age, study center
Worked in a List B occupation 24.1-47 years (1 case/43 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	0.18 (0.02-1.41)	age, study center
Worked in a List A or List B occupation 0.1-21.0 years (7 cases/59 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	1.18 (0.47-2.98)	age, study center
Worked in a List A or List B occupation 21.1-47 years (3 cases/63 controls)	vs.	Never worked in a List A or List B occupation (38 cases/412 controls)	0.40 (0.12-1.38)	age, study center
Females:				
Ever worked in a List A occupation (6 cases/16 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	0.72 (0.26-2.01)	age, study center
Ever worked in a List B occupation and never worked in a List A occupation (14 cases/27 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	1.37 (0.66-2.84)	age, study center
Ever worked in a List A or List B occupation (20 cases/43 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	1.09 (0.60-2.01)	age, study center
Worked in a List A occupation 0.1-11.0 years (2 cases/9 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	0.42 (0.08-2.12)	age, study center
Worked in a List A occupation 11.1-47 years (4 cases/7 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	1.11 (0.29-4.27)	age, study center
Worked in a List B occupation 0.1-12.0 years (7 cases/14 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	1.09 (0.40-2.97)	age, study center

	Worked in a List B occupation 12.1-39 years (7 cases/13 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	1.75 (0.63-4.85)	age, study center
	Worked in a List A or List B occupation 0.1-12.0 years (10 cases/22 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	0.92 (0.40-2.12)	age, study center
	Worked in a List A or List B occupation 12.1-47 years (10 cases/21 controls)	vs.	Never worked in a List A or List B occupation (155 cases/462 controls)	1.31 (0.57-3.03)	age, study center

Abbreviations:

CI confidence interval
List A occupations and industries known to be associated with lung cancer
List B occupations and industries suspected to be associated with lung cancer

Supplemental Table 8. Lung cancer among never smokers according to employment in specific occupations or industries

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Hrubec *et al.* (1992) (S62)	Cohort: 55,049 male and female U.S. veterans (never smokers) with government life insurance policies 251 deaths due to respiratory system cancers (ICD-7 codes 162-163) (never smokers) Study location: USA Study years: 1953-1980 (with active military service during 1917-1940) **NOTE:** 90% confidence intervals are provided for all risk estimates	Occupation at baseline: Baker	vs.	All other occupations	6.7 (2.08-21.50)	age, calendar period
		Occupation at baseline: Locomotive engineer	vs.	All other occupations	3.2 (1.00-10.32)	age, calendar period
		Occupation at baseline: Agent	vs.	All other occupations	3.3 (1.28-8.65)	age, calendar period
		Occupation at baseline: Salesman or sales clerk	vs.	All other occupations	1.6 (0.99-2.20)	age, calendar period
		Occupation at baseline: Operative, kindred worker	vs.	All other occupations	1.7 (0.95-3.11)	age, calendar period
		Occupation at baseline: Accountant or auditor	vs.	All other occupations	0.9 (0.45-1.60)	age, calendar period
		Occupation at baseline: Lawyer or judge	vs.	All other occupations	1.2 (0.74-1.97)	age, calendar period
		Occupation at baseline: Manager, official, or proprietor	vs.	All other occupations	1.2 (0.91-1.55)	age, calendar period
		Occupation at baseline: Farmer	vs.	All other occupations	0.9 (0.61-1.19)	age, calendar period
		Occupation at baseline: Chemical, industrial, metallic or mining engineer	vs.	All other occupations	0.9 (0.43-1.69)	age, calendar period
		Occupation at baseline: Farm and home management advisor	vs.	All other occupations	4.0 (1.26-13.00)	age, calendar period
		Occupation at baseline: physician or surgeon	vs.	All other occupations	0.9 (0.53-1.61)	age, calendar period
		Occupation at baseline: Therapist or healer	vs.	All other occupations	6.1 (1.18-31.92)	age, calendar period
		Occupation at baseline: Farmer	vs.	All other occupations	0.9 (0.61-1.19)	age, calendar period
		Occupation at baseline: Building manager or superintendent	vs.	All other occupations	9.4 (1.81-48.80)	age, calendar period

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Occupation at baseline: Bookbinder	vs.	All other occupations	11.4 (2.19-59.21)	age, calendar period
		Occupation at baseline: decorator or window dresser	vs.	All other occupations	21.9 (4.22-113.9)	age, calendar period
		Occupation at baseline: painter	vs.	All other occupations	9.6 (1.83-49.60)	age, calendar period
Brownson *et al.* (1993) (S24)	Case-control: 294 female lung cancer cases (never smokers) 1021 total female population controls (the number of never smokers was not stated) Study location: USA (MO) Study years: 1986-1991	Ever worked in shoemaking industry	vs.	Never worked in shoemaking industry	1.3 (0.8-1.9)	age, other lung diseases
		Ever worked in shipbuilding industry	vs.	Never worked in shipbuilding industry	1.2 (0.2-6.1)	age, other lung diseases
		Ever worked in a foundry	vs.	Never worked in a foundry	1.9 (0.3-11.5)	age, other lung diseases
		Ever worked in an iron or steel plant	vs.	Never worked in an iron or steel plant	0.6 (0.1-2.7)	age, other lung diseases
		Ever worked in rubber industry	vs.	Never worked in rubber industry	2.0 (0.3-12.2)	age, other lung diseases
		Ever worked in housing construction	vs.	Never worked in housing construction	1.8 (0.6-5.7)	age, other lung diseases
		Ever worked in textile production	vs.	Never worked in textile production	1.1 (0.6-2.0)	age, other lung diseases
		Ever worked with textile dyes	vs.	Never worked with textile dyes	1.2 (0.7-2.0)	age, other lung diseases
		Ever worked in printing industry	vs.	Never worked in printing industry	0.8 (0.3-2.0)	age, other lung diseases
		Ever worked as a butcher or meat cutter	vs.	Never worked as a butcher or meat cutter	1.0 (0.4-2.4)	age, other lung diseases
		Ever worked in dry cleaning	vs.	Never worked in dry cleaning	2.1 (1.2-3.7)	age, other lung diseases
		Ever worked in photography	vs.	Never worked in photography	0.5 (0.1-4.4)	age, other lung diseases
		Ever worked in leather industry	vs.	Never worked in leather industry	0.7 (0.2-2.1)	age, other lung diseases
		Ever worked as a beautician	vs.	Never worked as a beautician	1.2 (0.5-2.6)	age, other lung diseases

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Ever worked with pesticides	vs.	Never worked with pesticides	3.1 (1.3-7.5)	age, other lung diseases
-	-	Ever worked with formaldehyde	vs.	Never worked with formaldehyde	0.9 (0.2-3.3)	age, other lung diseases
Keller and Howe (1993) (S63)	Case-control: 897 male and female lung cancer cases (all never smokers) 3226 male and female colon cancer cases as controls (all never smokers) Study location: USA (IL) Study years: 1985-1987	*White males:*				
		Currently works in bus service and urban transit	vs.	Doesn't currently work in bus service and urban transit	2.64 (1.01-6.89)	age
		Currently works in agricultural production and crops	vs.	Doesn't currently work in agricultural production and crops	0.59 (0.48-1.74)	age
		Currently works in construction	vs.	Doesn't currently work in construction	1.27 (1.00-2.60)	age
		Currently works in general government	vs.	Doesn't currently work in general government	2.19 (1.10-4.36)	age
		Currently works as motor vehicle driver	vs.	Doesn't currently work as motor vehicle driver	0.13	age
		Currently works in a foundry	vs.	Doesn't currently work in a foundry	1.22	age
		Currently works in rubber industry	vs.	Doesn't currently work in rubber industry	9.16	age
		Currently works with aluminum	vs.	Doesn't currently work with aluminum	15.33	age
		Currently works in an occupation known to be associated with lung cancer (motor vehicle driver, foundry, rubber, or aluminum worker)	vs.	Doesn't currently work in an occupation known to be associated with lung cancer	0.95	age
		Longest lifetime occupation in trucking service	vs.	Longest lifetime occupation not in trucking service	2.12 (1.26-3.56)	age
		Longest lifetime occupation in blast furnaces, steelworks, rolling and finishing mills	vs.	Longest lifetime occupation not in blast furnaces, steelworks, rolling and finishing mills	1.90 (1.00-3.60)	age

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Longest lifetime occupation in construction	vs.	Longest lifetime occupation not in construction	1.63 (1.15-2.29)	age
		Longest lifetime occupation in agricultural production and crops	vs.	Longest lifetime occupation not in agricultural production and crops	0.52 (0.41-0.67)	age
		Longest lifetime occupation as motor vehicle driver	vs.	Longest lifetime occupation not as motor vehicle driver	1.22	age
		Longest lifetime occupation as foundry worker	vs.	Longest lifetime occupation not as foundry worker	5.85	age
		Longest lifetime occupation as rubber industry worker	vs.	Longest lifetime occupation not as rubber industry worker	8.73	age
		Longest lifetime occupation in an industry known to be associated with lung cancer	vs.	Longest lifetime occupation not in an industry known to be associated with lung cancer	1.95	age
		Nonwhite males:				
		Longest lifetime occupation in justice, public order, and safety	vs.	Longest lifetime occupation not in justice, public order, and safety	0.26 (0.07-0.92)	age
		White females:				
		Currently works in agricultural production and crops	vs.	Doesn't currently work in agricultural production and crops	0.08 (0.01-0.62)	age
		Currently works in elementary and secondary schools	vs.	Doesn't currently work in elementary and secondary schools	0.39 (0.17-0.88)	age
		Currently works in eating and drinking places	vs.	Doesn't currently work in eating and drinking places	1.92 (1.21-3.07)	age
		Longest lifetime occupation as a registered nurse	vs.	Longest lifetime occupation not as a registered nurse	1.87 (1.00-3.51)	age
Wu-Williams *et al.* (1993) (S25)	Case-control: 966 female lung cancer cases (number of nonsmokers not stated)	Works as professional or technician (nonsmokers, 59 cases/98 controls)	vs.	Doesn't work as professional or technician (nonsmokers)	0.7	age, education, study area

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
	960 female population controls (number of nonsmokers not stated) Study location: China (Harbin and Shenyang) Study years: 1985-1987	Works as leader of state, party, or mass organizations or enterprise units (nonsmokers, 17 cases/34 controls)	vs.	Doesn't work as leader of state, party, or mass organizations or enterprise units (nonsmokers)	0.7	age, education, study area
		Works as office or related personnel (nonsmokers, 23 cases/37 controls)	vs.	Doesn't work as office or related personnel (nonsmokers)	0.9	age, education, study area
		Works as commercial worker (nonsmokers, 24 cases/34 controls)	vs.	Doesn't work as commercial worker (nonsmokers)	1.0	age, education, study area
		Works as service worker (nonsmokers, 67 cases/115 controls)	vs.	Doesn't work as service worker (nonsmokers)	0.9	age, education, study area
		Works in agriculture, forestry, animal husbandry, or fishing (nonsmokers, 17 cases/20 controls)	vs.	Doesn't work in agriculture, forestry, animal husbandry, or fishing (nonsmokers)	1.1	age, education, study area
		Works in production, transportation, or related work (nonsmokers, 218 cases/309 controls)	vs.	Doesn't work in production, transportation, or related work (nonsmokers)	1.0	age, education, study area
		Works in metal smelting and treatment (nonsmokers, 35 cases/37 controls)	vs.	Doesn't work in metal smelting and treatment (nonsmokers)	1.4	age, education, study area
		Works in gold refining (nonsmokers, 3 cases/3 controls)	vs.	Doesn't work in gold refining (nonsmokers)	1.3	age, education, study area
		Works in a foundry (nonsmokers, 12 cases/18 controls)	vs.	Doesn't work in a foundry (nonsmokers)	0.9	age, education, study area
		Works with metal heaters (nonsmokers, 4 cases/2 controls)	vs.	Doesn't work with metal heaters (nonsmokers)	2.7	age, education, study area

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Works with metal pressers (nonsmokers, 4 cases/9 controls)	vs.	Doesn't work with metal pressers (nonsmokers)	0.6	age, education, study area
		Works with metal surfacers (nonsmokers, 11 cases/4 controls)	vs.	Doesn't work with metal surfacers (nonsmokers)	4.2	age, education, study area
		Works in chemical industry (nonsmokers, 9 cases/12 controls)	vs.	Doesn't work in chemical industry (nonsmokers)	1.2	age, education, study area
		Works in rubber and plastic industry (nonsmokers, 14 cases/20 controls)	vs.	Doesn't work in rubber and plastic industry (nonsmokers)	1.1	age, education, study area
		Works in textile, knitting, printing, or dying industry (nonsmokers, 30 cases/36 controls)	vs.	Doesn't work in textile, knitting, printing, or dying industry (nonsmokers)	0.5	age, education, study area
		Works in food and beverage manufacturing (nonsmokers, 7 cases/14 controls)	vs.	Doesn't work in food and beverage manufacturing (nonsmokers)	0.7	age, education, study area
		Works in timber processing (nonsmokers, 14 cases/13 controls)	vs.	Doesn't work in timber processing (nonsmokers)	1.5	age, education, study area
		Works as metal forger or tool maker (nonsmokers, 19 cases/43 controls)	vs.	Doesn't work as metal forger or tool maker (nonsmokers)	0.6	age, education, study area
		Works as machinery or precision instrument assembler (nonsmokers, 12 cases/12 controls)	vs.	Doesn't work as machinery or precision instrument assembler (nonsmokers)	1.5	age, education, study area
		Works in electrical or electrical equipment (nonsmokers, 8 cases/9 controls)	vs.	Doesn't work in electrical or electrical equipment (nonsmokers)	1.5	age, education, study area

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Works as pipe fitter, welder, coldworker, or metal component installer (nonsmokers, 13 cases/10 controls)	vs.	Doesn't work as pipe fitter, welder, coldworker, or metal component installer (nonsmokers)	1.6	age, education, study area
		Works as a welder (nonsmokers, 5 cases/1 control)	vs.	Doesn't work as a welder (nonsmokers)	5.8	age, education, study area
		Works as a puncher or cutter (nonsmokers, 8 cases/7 controls)	vs.	Doesn't work as a puncher of cutter (nonsmokers)	1.5	age, education, study area
		Works as a painter (nonsmokers, 15 cases/17 controls)	vs.	Doesn't work as a painter (nonsmokers)	1.3	age, education, study area
		Works in construction (nonsmokers, 8 cases/22 controls)	vs.	Doesn't work in construction (nonsmokers)	0.5	age, education, study area
		Works in machine loading or other relating equipment operation (nonsmokers, 8 cases/11 controls)	vs.	Doesn't work in machine loading or other related equipment operation (nonsmokers)	1.1	age, education, study area
		Works in inspection (nonsmokers, 16 cases/23 controls)	vs.	Doesn't work in inspection (nonsmokers)	0.8	age, education, study area
		Works as personnel in other production, transportation, or related work (nonsmokers, 23 cases/38 controls)	vs.	Doesn't work as personnel in other production, transportation, or related work (nonsmokers)	0.8	age, education, study area
		Occupational exposure to wood dust (nonsmokers, 30 cases/30 controls)	vs.	No occupational exposure to wood dust (nonsmokers)	1.3	age, education, study area
		Occupational exposure to coal dust (nonsmokers, 43 cases/48 controls)	vs.	No occupational exposure to coal dust (nonsmokers)	1.4	age, education, study area

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Occupational exposure to textile fiber (nonsmokers, 37 cases/60 controls)	vs.	No occupational exposure to textile fiber (nonsmokers)	0.9	age, education, study area
		Occupational exposure to oxides (nonsmokers, 34 cases/56 controls)	vs.	No occupational exposure to oxides (nonsmokers)	0.9	age, education, study area
		Occupational exposure to metal dust (nonsmokers, 20 cases/40 controls)	vs.	No occupational exposure to metal dust (nonsmokers)	0.7	age, education, study area
		Occupational exposure to unknown dust (nonsmokers, 27 cases/39 controls)	vs.	No occupational exposure to unknown dust (nonsmokers)	1.1	age, education, study area
		Occupational exposure to other dust (nonsmokers, 58 cases/62 controls)	vs.	No occupational exposure to other dust (nonsmokers)	1.4	age, education, study area
		Occupational exposure to smoke from burning fuel (nonsmokers, 47 cases/43 controls)	vs.	No occupational exposure to smoke from burning fuel (nonsmokers)	1.6	age, education, study area
		Occupational exposure to chemical fumes (nonsmokers, 79 cases/87 controls)	vs.	No occupational exposure to chemical fumes (nonsmokers)	1.4	age, education, study area
		Occupational exposure to coke oven emissions (nonsmokers, 20 cases/19 controls)	vs.	No occupational exposure to coke oven emissions (nonsmokers)	1.5	age, education, study area
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Occupational exposure to mineral, cutting, or lubricating oil	vs.	No occupational exposure to mineral, cutting, or lubricating oil	0.5 (0.1-4.5)	age, province, education, social class
		Occupational exposure to pesticides	vs.	No occupational exposure to pesticides	1.7 (0.7-3.7)	age, province, education, social class
		Occupational exposure to herbicides	vs.	No occupational exposure to herbicides	1.7 (0.7-4.1)	age, province, education, social class

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Occupational exposure to wood dust	vs.	No occupational exposure to wood dust	0.7 (0.3-1.8)	age, province, education, social class
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Ever worked in copper smelting, zinc smelting, cadmium alloy production, aluminum production, etc.	vs.	Never worked in an occupation/ industry known or suspected to be associated with lung cancer (i.e., List A or List B occupations)	0.55 (0.12-2.66)	age, region
		Ever worked as a painter	vs.	Never worked in an occupation/ industry known or suspected to be associated with lung cancer	1.19 (0.20-7.22)	age, region
		Ever worked as a butcher or meat cutter	vs.	Never worked in an occupation/ industry known or suspected to be associated with lung cancer	1.14 (0.27-4.73)	age, region
		Ever worked in the wood industry as a carpenter or joiner	vs.	Never worked in an occupation/ industry known or suspected to be associated with lung cancer	13.35 (1.59-112.2)	age, region
		Ever worked in printing industry		Never worked in an occupation/ industry known or suspected to be associated with lung cancer	4.60 (0.73-28.95)	age, region
		Ever worked in rubber industry	vs.	Never worked in an occupation/ industry known or suspected to be associated with lung cancer	0.83 (0.16-4.34)	age, region
		Ever worked in ceramics, pottery, or glass industries	vs.	Never worked in an occupation/ industry known or suspected to be associated with lung cancer	1.57 (0.44-5.65)	age, region
		Ever worked in laundry or dry cleaning	vs.	Never worked in an occupation/ industry known or suspected to be associated with lung cancer	0.69 (0.22-2.19)	age, region

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Zeka *et al.* (2006) (S48)	Case-control: 223 male and female lung cancer cases (never-smokers) 1039 male and female hospital and population controls (never smokers) Study location: Czech Republic, Hungary, Poland, Romania, Russia, Slovakia, UK Study years: 1998-2002	Occupational exposure to mineral fibers	vs.	No occupational exposure to mineral fibers	1.39 (0.75-2.57)	age, gender, study center
		Occupational exposure to nonferrous metal dust and fumes	vs.	No occupational exposure to nonferrous metal dust and fumes	1.73 (1.02-2.92)	age, gender, study center
		>0 to 25 years of occupational exposure to nonferrous metal dust and fumes	vs.	No occupational exposure to nonferrous metal dust and fumes	1.19 (0.58-2.46)	age, gender, study center, SHS exposure
		>25 years of occupational exposure to nonferrous metal dust and fumes	vs.	No occupational exposure to nonferrous metal dust and fumes	2.52 (1.28-4.95)	age, gender, study center, SHS exposure
		>0 to 4405.0 cumulative exposure index (intensity-frequency-years) of occupational exposure to nonferrous metal dust and fumes	vs.	No occupational exposure to nonferrous metal dust and fumes	1.29 (0.62-2.69)	age, gender, study center, SHS exposure
		>4405.0 cumulative exposure index of occupational exposure to nonferrous metal dust and fumes	vs.	No occupational exposure to nonferrous metal dust and fumes	2.25 (1.16-4.37)	age, gender, study center, SHS exposure
		Occupational exposure to ferrous metals	vs.	No occupational exposure to ferrous metals	0.88 (0.55-1.40)	age, gender, study center
		Occupational exposure to combustion fumes	vs.	No occupational exposure to combustion fumes	1.26 (0.67-2.37)	age, gender, study center
		Occupational exposure to engine emissions	vs.	No occupational exposure to engine emissions	0.91 (0.55-1.51)	age, gender, study center
		Occupational exposure to diesel/petroleum fuel	vs.	No occupational exposure to diesel/petroleum fuel	1.35 (0.86-2.09)	age, gender, study center
		Occupational exposure to welding fumes	vs.	No occupational exposure to welding fumes	0.97 (0.54-1.75)	age, gender, study center
		Occupational exposure to metal working fluids	vs.	No occupational exposure to metal working fluids	0.88 (0.58-1.32)	age, gender, study center

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
		Occupational exposure to polycyclic aromatic hydrocarbons	vs.	No occupational exposure to polycyclic aromatic hydrocarbons	0.80 (0.52-1.23)	age, gender, study center
		Occupational exposure to organic solvents	vs.	No occupational exposure to organic solvents	1.46 (0.94-2.24)	age, gender, study center
		>0 to 16 years of occupational exposure to organic solvents	vs.	No occupational exposure to organic solvents	1.22 (0.68-2.17)	age, gender, study center, SHS exposure
		>16 years of occupational exposure to organic solvents	vs.	No occupational exposure to organic solvents	1.64 (0.91-2.93)	age, gender, study center, SHS exposure
		>0 to 6125.0 cumulative exposure index (intensity-frequency-years) of occupational exposure to organic solvents	vs.	No occupational exposure to organic solvents	1.18 (0.64-2.17)	age, gender, study center, SHS exposure
		>6125.0 cumulative exposure index of occupational exposure to organic solvents	vs.	No occupational exposure to organic solvents	1.75 (1.01-3.03)	age, gender, study center, SHS exposure
		Occupational exposure to plastic pyrolysis products	vs.	No occupational exposure to plastic pyrolysis products	1.18 (0.59-2.38)	age, gender, study center

Supplemental Table 9. Results of studies on exposure to air pollutants and risk of lung cancer among never-smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Nyberg *et al.* (2000) (S64)	Case-control: 36 male lung cancer cases (never smokers) 705 male population controls (never smokers) Study location: Sweden (Stockholm) Study years: 1985-1990 for case and control selection; 1994-1996 for collection of exposure information, with air pollution exposure occurring from 1950-1990	Exposure to >29.3µg/m^3 NO_2 from road traffic	vs.	Exposure to ≤29.3µg/m^3 NO_2 from road traffic	1.68 (0.67-4.19)	age, calendar year, radon, SES, occupational exposures, high-risk occupation
Pope *et al.* (2002) (S)	Cohort study: 359,000 male and female CPS-II cohort members (number of never smokers not stated) Number of lung cancer cases not stated Study location: USA (51 cities) Study years: 1979-1983	Per 10µg/m^3 increase in $PM_{2.5}$ concentration	vs.	Not exposed to $PM_{2.5}$ (not defined)	1.14 (0.94-1.39)	age, gender, education

CI confidence interval

NO2 nitrogen dioxide

SES socioeconomic status

PM2.5 particulate matter <2.5µm in diameter

Supplemental Table 10: Results of studies on diet and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Fruit:						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of fruit consumption	vs.	Lowest tertile of fruit consumption	0.4 (0.19-0.92) P_{trend} = 0.002	age, number of live births, schooling
Kalandidi *et al.* (1990) (S67)	Case-control: 91 female lung cancer cases (nonsmokers) 120 female hospital controls (nonsmokers) Study location: Greece Study years: 1987-1989	Highest quartile of fruit consumption	vs.	Lowest quartile of fruit consumption	0.3 (0.10-0.74)	age, education, interviewer, total energy intake, SHS exposure
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of fruit consumption	vs.	Lowest quartile of fruit consumption	0.6 (0.30-1.10) P_{trend} = 0.04	age, education, energy intake
Steinmetz *et al.* (1993) (S69)	Case-control: *From a cohort of 41,837 women* 19 female lung cancer cases (never smokers) 1804 female cohort controls (never smokers) Study location: USA (IA) Study years: 1986-1989	Highest quartile of fruit consumption	vs.	Lowest quartile of fruit consumption	1.45 (0.33-6.30) P_{trend} = 0.03	age, energy intake
Hu *et al.* (1997) (S70)	Case-control: 81 male and female lung cancer cases (never smokers) 115 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1985-1987	Highest quartile of fruit consumption	vs.	Lowest quartile of fruit consumption	0.6 (0.3-1.2)	age, gender, family income

Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	High fruit index consumption	vs.	Low fruit index consumption	0.67 (0.33-1.36)	age, gender, catchment area, carrot and other fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of fruit consumption	vs.	Lowest tertile of fruit consumption	1.0 (0.6-1.5)	age, gender, study center
Mulder *et al.* (2000) (S73)	Ecological: 12763 men from 16 cohorts (2822 never smokers) 24 male lung cancer deaths (never smokers) Study location: Croatia, Finland, Greece, Italy, Japan, the Netherlands, Serbia, USA Study years: 1958-1987	Per 13g increase in fruit consumption	vs.	No fruit consumption	0.99 (0.93-1.04)	average age and energy intake
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of fruit consumption	vs.	Lowest quartile of fruit consumption	1.1 (0.6-2.0)	age, province, education, social class, energy intake
Seow *et al.* (2002) (S74)	Case-Control: 176 female lung cancer cases (never smokers) 663 female hosptial controls (never smokers) Study location: Singapore Study years: 1996-1998	≥9.7 servings of fruit per week	vs.	<3.8 servings of fruit per week	0.69 (0.43-1.10)	age, birthplace, family history of cancer, soy consumption, number of live births, lengh of menstrual cycle

Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily fruit consumption	vs.	Weekly or less fruit consumption	0.66 (0.37-1.19)	age, region
Liu *et al.* (2004) (S75)	Cohort: 93339 men and women (55968 never smokers) 106 male and female lung cancer cases (never smokers) Study location: Japan Study years: 1990-1999	High fruit consumption	vs.	Low fruit consumption	2.09 (0.56-7.83)	age, gender, area, sports, alcohol consumption, BMI, vitamin consumption, salted fish and meat consumption, pickled vegetable consumption
Galeone *et al.* (2007) (S76)	Case-control: 61 male and female lung cancer cases (never smokers) 217 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1987-1990	Low fruit consumption	vs.	High fruit consumption	1.25 (0.70-2.26)	age, gender, income, urban/rural residence, family history of cancer, coal heating or cooking
Fruits (non-citrus):						
Nyberg et al. (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Daily or almost daily non-citrus fruit consumption	vs.	Once weekly or less non-citrus fruit consumption	0.49 (0.25-0.94) $P_{trend} = 0.03$	age, gender, catchment area, carrot and other fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Citrus fruit (oranges):						
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of citrus fruit consumption	vs.	Lowest quartile of citrus fruit consumption	0.6 (0.30-1.10)	age, education, energy intake

Nyberg et al. (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Daily or almost daily citrus fruit and juice consumption	vs.	Once weekly or less citrus fruit and juice consumption	1.52 (0.82-2.81)	age, gender, catchment area, carrot and other fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Ozasa *et al.* (2001) (S77)	Cohort: 51588 women (never smokers) 101 female deaths due to lung cancer (never smokers) Study location: Japan Study years: 1988-1997	3-4 oranges per week	vs.	≤1-2 oranges per month	1.18 (0.54-2.57)	age, family history of lung cancer
Tomatoes:						
Nyberg et al. (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Daily or almost daily tomato consumption	vs.	Once weekly or less tomato consumption	0.79 (0.43-1.46)	age, gender, catchment area, carrot and other fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of tomato consumption	vs.	Lowest tertile of tomato consumption	0.5 (0.4-0.6) $P_{trend} = 0.01$	age, gender, study center
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of tomato consumption	vs.	Lowest quartile of tomato consumption	0.7 (0.3-1.4)	age, province, education, social class, energy intake
Vegetables:						

Kalandidi *et al.* (1990) (S67)	Case-control: 91 female lung cancer cases (nonsmokers) 120 female hospital controls (nonsmokers) Study location: Greece Study years: 1987-1989	Highest quartile of vegetable consumption	vs.	Lowest quartile of vegetable consumption	1.1 (0.44-2.68)	age, education, interviewer, total energy intake
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of vegetable consumption	vs.	Lowest quartile of vegetable consumption	0.2 (0.10-0.50) P_{trend} = <0.001	age, education, energy intake, fruit consumption
Steinmetz *et al.* (1993) (S69)	Case-control: *From a cohort of 41,837 women* 19 female lung cancer cases (never smokers) 1804 female cohort controls (never smokers) Study location: USA (IA) Study years: 1986-1989	Highest quartile of vegetable consumption	vs.	Lowest quartile of vegetable consumption	1.08 (0.27-4.39)	age, energy intake
Hu *et al.* (1997) (S70)	Case-control: 81 male and female lung cancer cases (never smokers) 115 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1985-1987	Highest quartile of fresh vegetable consumption	vs.	Lowest quartile of fresh vegetable consumption	0.6 (0.3-1.5)	age, gender, family income
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	High vegetable index consumption	vs.	Low vegetable index consumption	0.57 (0.29-1.13)	age, gender, catchment area, fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure

Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of fresh vegetable consumption	vs.	Lowest tertile of fresh vegetable consumption	0.7 (0.5-1.0)	age, gender, study center
Mulder *et al.* (2000) (S73)	Ecological: 12763 men from 16 cohorts (2822 never smokers) 24 male lung cancer deaths (never smokers) Study location: Croatia, Finland, Greece, Italy, Japan, the Netherlands, Serbia, USA Study years: 1958-1987	Per 18g increase in vegetable consumption	vs.	No vegetable consumption	0.86 (0.67-1.08)	average age and energy intake
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of vegetable consumption	vs.	Lowest quartile of vegetable consumption	1.4 (0.7-3.0)	age, province, education, social class, energy intake
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily consumption of fresh vegetables	vs.	Weekly or less consumption of fresh vegetables	0.45 (0.25-0.82) $P_{trend} = 0.03$	age, region
Seow *et al.* (2002) (S20)	Case-Control: 176 female lung cancer cases (never smokers) 663 female hosptial controls (never smokers) Study location: Singapore Study years: 1996-1998	≥26.4 servings of vegetables per week	vs.	<14.3 servings of vegetables per week	0.78 (0.51-1.20)	age, birthplace, family history of cancer, soy consumption, number of live births, lengh of menstrual cycle

Liu *et al.* (2004) (S75)	Cohort: 93339 men and women (55968 never smokers) 106 male and female lung cancer cases (never smokers) Study location: Japan Study years: 1990-1999	High vegetable consumption	vs.	Low vegetable consumption	1.37 (0.79-2.37)	age, gender, area, sports, alcohol consumption, BMI, vitamin consumption, salted fish and meat consumption, pickled vegetable consumption
Galeone *et al.* (2007) (S76)	Case-control: 61 male and female lung cancer cases (never smokers) 217 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1987-1990	Low vegetable intake	vs.	High vegetable intake	1.72 (0.96-3.07)	age, gender, income, urban/rural residence, family history of cancer, coal heating or cooking
<u>Vegetables (cruciferous):</u>						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of cruciferous vegetable consumption	vs.	Lowest tertile of cruciferous vegetable consumption	0.96	age, number of live births, schooling
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	More than once weekly consumption of cruciferous vegetables	vs.	Less than weekly consumption of cruciferous vegetables	1.06 (0.58-1.92)	age, gender, catchment area, carrot and fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of cruciferous vegetable consumption	vs.	Lowest tertile of cruciferous vegetable consumption	1.1 (0.7-1.6)	age, gender, study center

Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of cruciferous vegetable consumption	vs.	Lowest quartile of cruciferous vegetable consumption	0.8 (0.4-1.4)	age, province, education, social class, energy intake
Seow *et al.* (2002) (S20)	Case-Control: 176 female lung cancer cases (never smokers) 663 female hosptial controls (never smokers) Study location: Singapore Study years: 1996-1998	≥14.3 servings of cruciferous vegetables per week	vs.	<7.5 servings of cruciferous vegetables per week	0.89 (0.59-1.35)	age, birthplace, family history of cancer, soy consumption, number of live births, lengh of menstrual cycle
Broccoli:						
Steinmetz et al. (1993) (S69)	Case-control: From a cohort of 41,837 women 19 female lung cancer cases (never smokers) 1804 female cohort controls (never smokers) Study location: USA (IA) Study years: 1986-1989	Highest quartile of broccoli consumption	vs.	Lowest quartile of broccoli consumption	2.01 (0.36-11.20)	age, energy intake
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of broccoli consumption	vs.	Lowest quartile of broccoli consumption	0.6 (0.2-1.8)	age, province, education, social class, energy intake
Vegetables (leafy green):						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of leafy green vegetable consumption	vs.	Lowest tertile of leafy green vegetable consumption	0.5	age, number of live births, schooling
Steinmetz et al. (1993) (S69)	Case-control: From a cohort of 41,837 women 19 female lung cancer cases (never smokers) 1804 female cohort controls (never smokers) Study location: USA (IA) Study years: 1986-1989	Highest quartile of leafy green vegetable consumption	vs.	Lowest quartile of leafy green vegetable consumption	0.84 (0.25-2.76)	age, energy intake

Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Daily or almost daily leafy green vegetable consumption	vs.	Once weekly or less leafy green vegetable consumption	1.09 (0.59-2.00)	age, gender, catchment area, carrot and fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Ozasa *et al.* (2001) (S77)	Cohort: 51588 women (never smokers) 101 female deaths due to lung cancer (never smokers) Study location: Japan Study years: 1988-1997	Leafy green vegetable consumption almost every day	vs.	Leafy green vegetable consumption 2 times per week or less	1.35 (0.79-2.30)	age, family history of lung cancer
Vegetables (green and yellow):						
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of green and yellow vegetable intake	vs.	Lowest quartile of green and yellow vegetable intake	0.4 (0.20-0.70) P_{trend} = <0.001	age, education, total energy intake, fruit consumption
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of green and yellow vegetable intake	vs.	Lowest quartile of green and yellow vegetable intake	1.1 (0.6-2.1)	age, province, education, social class, energy intake
Carrots:						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of carrot consumption	vs.	Lowest tertile of carrot consumption	0.5	age, number of live births, schooling

Steinmetz et al. (1993) (S69)	Case-control: From a cohort of 41,837 women 19 female lung cancer cases (never smokers) 1804 female cohort controls (never smokers) Study location: USA (IA) Study years: 1986-1989	Highest tertile of carrot consumption	vs.	Lowest tertile of carrot consumption	1.19 (0.43-3.28)	age, energy intake
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Daily or almost daily carrot consumption	vs.	Less than weekly carrot consumption	0.55 (0.27-1.11) $P_{trend} = 0.05$	age, gender, catchment area, fruit consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of carrot consumption	vs.	Lowest tertile of carrot consumption	0.8 (0.5-1.1)	age, gender, study center
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest tertile of carrot consumption	vs.	Lowest tertile of carrot consumption	0.6 (0.3-1.1)	age, province, education, social class, energy intake
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily or several times weekly consumption of raw carrots	vs.	Less than montly consumption of raw carrots	0.91 (0.55-1.48)	age, region
Lettuce:						

Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of lettuce consumption	vs.	Lowest tertile of lettuce consumption	0.6 (0.3-1.2) $P_{trend} = 0.02$	age, gender, study center
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily lettuce consumption	vs.	Less than weekly consumption of lettuce	1.23 (0.74-2.05)	age, region
<u>Beans/legumes:</u>						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of beans/legumes consumption	vs.	Lowest tertile of beans/legumes consumption	1.4	age, number of live births, schooling
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of legumes consumption	vs.	Lowest tertile of legumes consumption	1.1 (0.9-1.3)	age, gender, study center
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest tertile of lentils consumption	vs.	Lowest tertile of lentils consumption	0.7 (0.4-1.3)	age, province, education, social class, energy intake
<u>Vegetables and fruits:</u>						

Steinmetz et al. (1993) (S69)	Case-control: From a cohort of 41,837 women 19 female lung cancer cases (never smokers) 1804 female cohort controls (never smokers) Study location: USA (IA) Study years: 1986-1989	Highest quartile of fruit and vegetable consumption	vs.	Lowest quartile of fruit and vegetable consumption	0.76 (0.19-3.03)	age, energy intake
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of fruit and vegetable consumption	vs.	Lowest quartile of fruit and vegetable consumption	1.3 (0.6-2.6)	age, province, education, social class, energy intake
Liu *et al.* (2004) (S75)	Cohort: 93339 men and women (55968 never smokers) 106 male and female lung cancer cases (never smokers) Study location: Japan Study years: 1990-1999	High fruit and vegetable consumption	vs.	Low fruit and vegetable consumption	1.95 (0.84-4.52)	age, gender, area, sports, alcohol consumption, BMI, vitamin consumption, salted fish and meat consumption, pickled vegetable consumption
Galeone *et al.* (2007) (S76)	Case-control: 61 male and female lung cancer cases (never smokers) 217 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1987-1990	Low fruit and vegetable consumption	vs.	High fruit and vegetable consumption	1.56 (0.87-2.81)	age, gender, income, urban/rural residence, family history of cancer, coal heating or cooking
Meat:						
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of meat consumption	vs.	Lowest tertile of meat consumption	1.1 (0.8-1.6)	age, gender, study center

Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of meat consumption	vs.	Lowest quartile of meat consumption	1.9 (1.0-3.6) P_{trend} = 0.04	age, province, education, social class, energy intake
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily meat consumption	vs.	Weekly or less meat consumption	1.61 (0.90-2.89)	age, region
<u>Smoked Meat:</u>						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of smoked meat consumption	vs.	Lowest tertile of smoked meat consumption	0.9	age, number of live births, schooling
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest tertile of smoked meat consumption	vs.	Lowest tertile of smoked meat consumption	2.1 (1.1-4.0)	age, province, education, social class, energy intake
<u>Fish:</u>						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of fish consumption	vs.	Lowest tertile of fish consumption	0.4 (0.16-0.75) P_{trend} = 0.017	age, number of live births, schooling
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Weekly or more often consumption of fatty fish	vs.	Less than montly consumption of fatty fish	0.61 (0.32-1.19)	age, gender, catchment area, fruit and carrot consumption, occasional smoking, urban residence, occupational exposures, SHS exposure

Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of fish consumption	vs.	Lowest tertile of fish consumption	1.0 (0.9-1.2)	age, gender, study center
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Consumption of fish daily or several times weekly	vs.	Consumption of fish less than weekly	0.86 (0.52-1.42)	age, region
Ham and Sausages:						
Ozasa *et al.* (2001) (S77)	Cohort: 51588 women (never smokers) 101 female deaths due to lung cancer (never smokers) Study location: Japan Study years: 1988-1997	Ham and sausage consumption 3-4 times per week or more	vs.	Ham and sausage consumption less than twice per month	2.02 (1.15-3.53) $P_{trend} = 0.017$	age, family history of lung cancer
Sausages:						
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of sausage consumption	vs.	Lowest quartile of sausage consumption	0.7 (0.2-2.5)	age, province, education, social class, energy intake
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily sausage consumption	vs.	Weekly or less sausage consumption	0.99 (0.61-1.62)	age, region
Liver:						

Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Liver consumption monthly or more often	vs.	Never eat liver	1.18 (0.62-2.26)	age, gender, catchment area, fruit and carrot consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of liver consumptio	vs.	Lowest tertile of liver consumption	1.0 (0.8-1.3)	age, gender, study center
Ozasa *et al.* (2001) (S77)	Cohort: 51588 women (never smokers) 101 female deaths due to lung cancer (never smokers) Study location: Japan Study years: 1988-1997	Liver consumption 3-4 times per week or more	vs.	Liver consumption twice a month or less	2.29 (0.95-5.47)	age, family history of lung cancer
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Highest tertile of liver consumptio	vs.	Lowest tertile of liver consumption	0.80 (0.51-1.26)	age, region
Fat (cholesterol):						
Wu *et al.* (1994) (S78)	Cohort: 34,708 women (nonsmokers) 34 female lung cancer cases (nonsmokers) Study location: USA (IA) Study years: 1986-1991	Highest quartile of cholesterol consumption	vs.	Lowest quartile of cholesterol consumption	0.9 (0.30-2.50)	age, occupation, physical activity, energy intake

Mulder *et al.* (2000) (S73)	Ecological: 12763 men from 16 cohorts (2822 never smokers) 24 male lung cancer deaths (never smokers) Study location: Croatia, Finland, Greece, Italy, Japan, the Netherlands, Serbia, USA Study years: 1958-1987	Per 40mg increase in cholesterol consumption	vs.	No cholesterol consumption	0.99 (0.86-1.16)	average age and energy intake
<u>Total Fat:</u>						
Wu *et al.* (1994) (S78)	Cohort: 34,708 women (nonsmokers) 34 female lung cancer cases (nonsmokers) Study location: USA (IA) Study years: 1986-1991	Highest quartile of total fat consumption	vs.	Lowest quartile of total fat consumption	1.8 (0.70-4.30)	age, occupation, physical activity, energy intake
Mulder *et al.* (2000) (S73)	Ecological: 12763 men from 16 cohorts (2822 never smokers) 24 male lung cancer deaths (never smokers) Study location: Croatia, Finland, Greece, Italy, Japan, the Netherlands, Serbia, USA Study years: 1958-1987	Per 12g increase in total fat consumption	vs.	No fat consumption	0.96 (0.75-1.27)	average age and energy intake
<u>Fat (animal):</u>						
Wu *et al.* (1994) (S78)	Cohort: 34,708 women (nonsmokers) 34 female lung cancer cases (nonsmokers) Study location: USA (IA) Study years: 1986-1991	Highest quartile of animal fat consumption	vs.	Lowest quartile of animal fat consumption	1.3 (0.50-3.30)	age, occupation, physical activity, energy intake
<u>Butter:</u>						
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of butter consumption	vs.	Lowest tertile of butter consumption	1.3 (0.9-1.9)	age, gender, study center
<u>Fat (plant):</u>						

Wu *et al.* (1994) (S78)	Cohort: 34,708 women (nonsmokers) 34 female lung cancer cases (nonsmokers) Study location: USA (IA) Study years: 1986-1991	Highest quartile of plant fat consumption	vs.	Lowest tertile of plant fat consumption	1.2 (0.50-2.90)	age, occupation, physical activity, energy intake
Margarine:						
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of margarine consumption	vs.	Lowest tertile of margarine consumption	0.7 (0.6-0.8) $P_{trend} = 0.05$	age, gender, study center
Fat (monounsaturated):						
Mulder *et al.* (2000) (S73)	Ecological: 12763 men from 16 cohorts (2822 never smokers) 24 male lung cancer deaths (never smokers) Study location: Croatia, Finland, Greece, Italy, Japan, the Netherlands, Serbia, USA Study years: 1958-1987	Per 5.5g increase in monounsaturated fat consumption	vs.	No monounsaturated fat consumption	0.90 (0.74-1.08)	average age and energy intake
Fat (polyunsaturated):						
Mulder *et al.* (2000) (S73)	Ecological: 12763 men from 16 cohorts (2822 never smokers) 24 male lung cancer deaths (never smokers) Study location: Croatia, Finland, Greece, Italy, Japan, the Netherlands, Serbia, USA Study years: 1958-1987	Per 1.8g increase in polyunsaturated fat consumption	vs.	No polyunsaturated fat consumption	1.08 (0.91-1.31)	average age and energy intake
Fat (saturated):						
Mulder *et al.* (2000) (S73)	Ecological: 12763 men from 16 cohorts (2822 never smokers) 24 male lung cancer deaths (never smokers) Study location: Croatia, Finland, Greece, Italy, Japan, the Netherlands, Serbia, USA	Per 4.6g increase in saturated fat consumption	vs.	No saturated fat consumption	1.02 (0.89-1.17)	average age and energy intake

	Study years: 1958-1987					
Shorting (used in cooking):						
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Use shortning in cooking	vs.	Does not use shortning in cooking	2.4 (1.3-4.4) P = 0.04	age, province, education, social class, energy intake
Fried Food:						
Ozasa *et al.* (2001) (S77)	Cohort: 51588 women (never smokers) 101 female deaths due to lung cancer (never smokers) Study location: Japan Study years: 1988-1997	Fried food consumption 2-4 times per week or more	vs.	Fried food consumption twice per month or less	1.91 (0.98-3.72) $P_{trend} = 0.057$	age, family history of lung cancer
French fries or fried potatoes:						
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	>0.5 servings of french fries or fried potatoes per week	vs.	0 servings of french fries or fried potatoes per week	1.7 (1.0-3.0) $P_{trend} = 0.05$	age, province, education, social class, energy intake
Milk:						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of milk consumption	vs.	Lowest tertile of milk consumption	1.1	age, number of live births, schooling

Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	≥2 glasses of milk daily	vs.	Drink milk less than daily	1.24 (0.71-2.17)	age, gender, catchment area, fruit and carrot consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of milk consumption	vs.	Lowest tertile of milk consumption	0.8 (0.6-1.2)	age, gender, study center
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest quartile of mik consumption	vs.	Lowest quartile of milk consumption	1.0 (0.5-1.9)	age, province, education, social class, energy intake
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily milk consumption	vs.	Less than montly milk consumption	0.65 (0.44-0.95)	age, region
Cultured milk or yogurt:						
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Daily or almost daily cultured milk (sour milk, yogurt) consumption	vs.	Once weekly or less cultured milk consumption	1.61 (0.91-2.85)	age, gender, catchment area, fruit and carrot consumption, occasional smoking, urban residence, occupational exposures, SHS exposure

Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily curd/yogurt consumption	vs.	Weekly or less curd/yogurt consumption	0.53 (0.34-0.81)	age, region
Cheese:						
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	≥4 slices of cheese daily	vs.	Eat cheese less than daily	1.21 (0.61-2.39)	age, gender, catchment area, fruit and carrot consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of cheese consumption	vs.	Lowest tertile of cheese consumption	0.7 (0.5-1.0) $P_{trend} = 0.01$	age, gender, study center
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	>3 servings of cheese daily	vs.	1 serving of cheese daily	0.6 (0.3-1.2)	age, province, education, social class, energy intake
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily cheese consumption	vs.	Weekly or less cheese consumption	0.34 (0.21-0.55) $P_{trend} < 0.001$	age, region
Eggs:						

Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	More than once weekly consumption of eggs	vs.	Less than weekly consumption of eggs	1.22 (0.67-2.24)	age, gender, catchment area, fruit and carrot consumption, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of egg consumption	vs.	Lowest tertile of egg consumption	0.9 (0.8-1.1)	age, gender, study center
Hu *et al.* (2002) (S27)	Case-control: 161 female lung cancer cases (never smokers) 483 female population controls Study location: Canada Study years: 1994-1997	Highest tertile of egg consumption	vs.	Lowest tertile of egg consumption	1.8 (1.0-3.3) $P_{trend} = 0.04$	age, province, education, social class, energy intake
Kreuzer *et al.* (2002) (S61)	Case-control: 234 female lung cancer cases (never smokers) 535 female population controls (never smokers) Study location: Germany Study years: 1991-1996	Daily or several times weekly consumption of eggs	vs.	Less than weekly consumption of eggs	0.69 (0.46-1.05)	age, region
Cereal:						
Hu *et al.* (1997) (S70)	Case-control: 81 male and female lung cancer cases (never smokers) 115 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1985-1987	Highest quartile of cereal consumption	vs.	Lowest quartile of cereal consumption	1.4 (0.6-3.3)	age, gender, family income
Soy products/tofu:						

Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of soy intake	vs.	Lowest tertile of soy intake	0.7	age, number of live births, schooling
Ozasa *et al.* (2001) (S77)	Cohort: 51588 women (never smokers) 101 female deaths due to lung cancer (never smokers) Study location: Japan Study years: 1988-1997	Tofu consumption almost every day	vs.	Tofu consumption twich a week or less	0.90 (0.53-1.53)	age, family history of lung cancer
Seow *et al.* (2002) (S74)	Case-Control: 176 female lung cancer cases (never smokers) 663 female hosptial controls (never smokers) Study location: Singapore Study years: 1996-1998	≥5.4 servings of soy foods per week	vs.	<2.2 servings of soy foods per week	0.53 (0.34-0.81) $P_{trend} < 0.01$	age, birthplace, family history of cancer, soy consumption, number of live births, lengh of menstrual cycle
<u>Salt:</u>						
Hu *et al.* (1997) (S70)	Case-control: 81 male and female lung cancer cases (never smokers) 115 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1985-1987	Highest quartile of salt consumption	vs.	Lowest quartile of salt consumption	0.2 (0.1-0.5) $P_{trend} = 0.0003$	age, gender, family income
Micronutrients						
<u>Vitamin A:</u>						
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of vitamin A intake	vs.	Lowest quartile of vitamin A intake	0.4 (0.20-0.80) $P_{trend} = 0.008$	age, education, total calories

Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Highest quintile of vitamin A intake	vs.	Lowest quintile of vitamin A intake	0.95 (0.46-1.95)	age, gender, catchment area, occasional smoking, urban residence, occupational exposures, SHS exposure
Carotenoids:						
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of carotenoids intake	vs.	Lowest quartile of carotenoids intake	0.3 (0.10-0.60) P_{trend} = <0.001	age, education, total energy intake
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Highest quintile of carotenoids intake	vs.	Lowest quintile of carotenoids intake	0.43 (0.21-0.93) P_{trend} = 0.03	age, gender, catchment area, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of carotenoids intake	vs.	Lowest tertile of carotenoids intake	0.8 (0.6-1.0)	age, gender, study center
Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum carotenoids	vs.	Low serum carotenoids	1.09 (0.42-2.76)	age, date of blood sample collection, residence area
Alpha-carotene:						

Candelora *et al*. (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of alpha-carotene intake	vs.	Lowest quartile of alpha-carotene intake	0.2 (0.10-0.40) P_{trend} = <0.001	age, education, total energy intake
Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum alpha-carotene	vs.	Low serum alpha-carotene	0.77 (0.30-2.01)	age, date of blood sample collection, residence area
Beta-carotene:						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of beta-carotene intake	vs.	Lowest tertile of beta-carotene intake	0.7	age, number of live births, schooling
Kalandidi *et al.* (1990) (S67)	Case-control: 91 female lung cancer cases (nonsmokers) 120 female hospital controls (nonsmokers) Study location: Greece Study years: 1987-1989	Highest quartile of beta-carotene intake	vs.	Lowest quartile of beta-carotene intake	1.0 (0.64-1.59)	age, education, interviewer, total energy intake
Candelora *et al*. (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of beta-carotene intake	vs.	Lowest quartile of beta-carotene intake	0.5 (0.30-0.90) P_{trend} =	age, education, total energy intake, vitamin C intake
Steinmetz et al. (1993) (S69)	Case-control: From a cohort of 41,837 women 19 female lung cancer cases (never smokers) 1804 female cohort controls (never smokers) Study location: USA (IA) Study years: 1986-1989	Highest quartile of beta-carotene intake	vs.	Lowest quartile of beta-carotene intake	1.08 (0.30-3.93)	age, energy intake

Mayne *et al.* (1994) (S80)	Case-control: 182 male and female lung cancer cases (never smokers) 182 male and female population controls (never smokers) Study location: USA (NY) Study years: 1982-1985	1.19mg beta-carotene per day (IQR)			0.8 (0.47-1.24)	religion, BMI, income
Hu *et al.* (1997) (S70)	Case-control: 81 male and female lung cancer cases (never smokers) 115 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1985-1987	Highest quartile of beta-carotene intake	vs.	Lowest quartile of beta-carotene intake	1.2 (0.5-2.7)	age, gender, family income
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Highest quintile of beta-carotene intake	vs.	Lowest quintile of beta-carotene intake	0.57 (0.27-1.19)	age, gender, catchment area, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of beta-carotene intake	vs.	Lowest tertile of beta-carotene intake	0.8 (0.6-1.1)	age, gender, study center
Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum beta-carotene	vs.	Low serum beta-carotene	0.69 (0.26-1.79)	age, date of blood sample collection, residence area
Cryptoxanthin:						

Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of cryptoxanthin intake	vs.	Lowest quartile of cryptoxanthin intake	0.4 (0.20-0.80) $P_{trend} = 0.02$	age, education, total calories
Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum beta-cryptoxanthin	vs.	Low serum beta-cryptoxanthin	0.90 (0.31-2.60)	age, date of blood sample collection, residence area
Lutein:						
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of lutein intake	vs.	Lowest quartile of lutein intake	0.9 (0.50-1.70)	age, education, total calories
Lutein and zeaxanthin:						
Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum lutein/ zeaxanthin	vs.	Low serum lutein/ zeaxanthin	1.82 (0.71-4.65)	age, date of blood sample collection, residence area
Retinol:						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of retinol intake	vs.	Lowest tertile of retinol intake	0.4 (0.19-0.89) $P_{trend} = 0.023$	age, number of live births, education

Kalandidi *et al.* (1990) (S67)	Case-control: 91 female lung cancer cases (nonsmokers) 120 female hospital controls (nonsmokers) Study location: Greece Study years: 1987-1989	Highest quartile of retinol intake	vs.	Lowest quartile of retinol intake	1.3 (0.98-1.77)	age, education, interviewer, total energy intake
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of retinol intake	vs.	Lowest quartile of retinol intake	1.2 (0.60-2.40)	age, education, total calories
Mayne *et al.* (1994) (S80)	Case-control: 182 male and female lung cancer cases (never smokers) 182 male and female population controls (never smokers) Study location: USA (NY) Study years: 1982-1985	116 equivalents of retinol per day (IQR)			0.9 (0.66-1.19)	religion, BMI, income
Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Highest quintile of retinol intake	vs.	Lowest quintile of retinol intake	1.27 (0.62-1.61)	age, gender, catchment area, occasional smoking, urban residence, occupational exposures, SHS exposure
Brennan *et al.* (2000) (S72)	Case-control: 506 male and female lung cancer cases (nonsmokers) 1045 male and female hospital and population controls (nonsmokers) Study location: France, Germany, Italy, Spain, Sweden, United Kingdom Study years: not stated	Highest tertile of retinol intake	vs.	Lowest tertile of retinol intake	0.9 (0.7-1.1)	age, gender, study center

Yuan *et al.* (2001) (S80)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum retinol	vs.	Low serum retinol	0.75 (0.27-2.07)	age, date of blood sample collection, residence area
<u>Vitamin C:</u>						
Koo (1988) (S66)	Case-control: 88 female lung cancer cases (never smokers) 137 female population controls (never smokers) Study location: Hong Kong Study years: 1981-1983	Highest tertile of vitamin C intake	vs.	Lowest tertile of vitamin C intake	0.5 (0.22-0.98) P_{trend} = 0.015	age, number of live births, education
Kalandidi *et al.* (1990) (S67)	Case-control: 91 female lung cancer cases (nonsmokers) 120 female hospital controls (nonsmokers) Study location: Greece Study years: 1987-1989	Highest quartile of vitamin C intake	vs.	Lowest quartile of vitamin C intake	0.7 (0.42-1.05)	age, education, interviewer, total energy intake
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of vitamin C intake	vs.	Lowest quartile of vitamin C intake	0.5 (0.30-1.00) P_{trend} = 0.008	age, education, total calories
Hu *et al.* (1997) (S70)	Case-control: 81 male and female lung cancer cases (never smokers) 115 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1985-1987	Highest quartile of vitamin C intake	vs.	Lowest quartile of vitamin C intake	0.5 (0.2-1.2)	age, gender, family income

Nyberg *et al.* (1998) (S71)	Case-control: 124 male and female lung cancer cases (never smokers) 235 male and female population controls (never smokers) Study location: Sweden Study years: 1989-1995	Highest quintile of vitamin C intake	vs.	Lowest quintile of vitamin C intake	1.14 (0.53-2.45)	age, gender, catchment area, occasional smoking, urban residence, occupational exposures, SHS exposure
Vitamin E:						
Hu *et al.* (1997) (S70)	Case-control: 81 male and female lung cancer cases (never smokers) 115 male and female hospital controls (never smokers) Study location: China (Heilongjiang) Study years: 1985-1987	Highest quartile of vitamin E intake	vs.	Lowest quartile of vitamin E intake	0.9 (0.4-2.0)	age, gender, family income
Total tocopherols:						
Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum tocopherols	vs.	Low serum tocopherols	0.90 (0.36-2.25)	age, date of blood sample collection, residence area
Gamma-tocopherol:						
Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum gamma-tocopherol	vs.	Low serum gamma-tocopherol	1.42 (0.56-3.61)	age, date of blood sample collection, residence area
Lycopene:						
Candelora *et al.* (1992) (S68)	Case-control: 124 female lung cancer cases (never smokers) 263 female population controls (never smokers) Study location: USA (FL) Study years: 1987-not stated	Highest quartile of lycopene intake	vs.	Lowest quartile of lycopene intake	0.6 (0.30-1.20)	age, education, total calories

Yuan *et al.* (2001) (S79)	Case-control: *From a cohort of 18,244 men* 20 male lung cancer cases (never smokers) 287 male cohort controls (never smokers) Study location: China (Shanghai) Study years: 1986-1998	High serum lycopene	vs.	Low serum lycopene	0.65 (0.23-1.83)	age, date of blood sample collection, residence area

Abreviations

CI	confidence interval
SHS	secondhand smoke
BMI	body mass index
IQR	interquartile range

Supplemental Table 11: Results of studies on use of hormone replacement therapy and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Olsson *et al.* (2003) (S81)	Cohort: 8416 women who experienced a natural menopause (4052 never smokers) 8 trachea and lung cancer cases (number of never smokers not stated) Study location: Sweden Study years: 1990-1999	Incidence of lung cancer among never-smoking women in cohort who never used HRT	vs.	Incidence of lung cancer among never-smoking women in the general Swedish population	0.23 (0.08-0.55)	age, calendar period
		Incidence of lung cancer among never-smoking women in cohort who ever used HRT	vs.	Incidence of lung cancer among never-smoking women in the general Swedish population	0.21 (0.01-1.19)	age, calendar period
		SIR of lung cancer among never-smoking women in cohort who ever used HRT	vs.	SIR of lung cancer among never-smoking women in cohort who never used HRT	0.91	age, calendar period
Schabath *et al.* (2004) (S82)	Case-control: 86 female lung cancer cases (never smokers) 138 female hospital controls (never smokers) Study location: USA (TX) Study years: not stated	HRT use in the past 6 months	vs.	No HRT use in the past 6 months	0.72 (0.37-1.40)	age, BMI, education, ethnicity, menopausal status
Liu *et al.* (2005) (S83)	Cohort: 44677 never-smoking women (26197 post-menopausal) 153 lung cancer cases (83 post-menopausal) Study location: Japan Study years: 1990-2002	Women who experienced natural menopause and ever used HRT (all lung cancer types)	vs.	Women who experienced natural menopause and never used HRT (all lung cancer types)	1.19 (0.60-2.33)	age, SHS exposure, study center
		Women with induced menopause and ever used HRT (all lung cancer types)	vs.	Women who experienced natural menopause and never used HRT (all lung cancer types)	2.40 (1.07-5.40)	age, SHS exposure, study center
		Women who experienced natural menopause and ever used HRT (adenocarcinomas)	vs.	Women who experienced natural menopause and never used HRT (adenocarcinomas)	1.23 (0.59-2.58)	age, SHS exposure, study center
		Women with induced menopause and ever used HRT (adenocarcinomas)	vs.	Women who experienced natural menopause and never used HRT (adenocarcinomas)	2.71 (1.12-6.58)	age, SHS exposure, study center
		All post-menopausal women who ever used HRT	vs.	All post-menopausal women who never used HRT	1.45 (0.84-2.49)	age, SHS exposure, study center

Abbreviations:

CI confidence interval

HRT	hormone replacement therapy
BMI	body mass index
SHS	secondhand smoke

Supplemental Table 12: Results of studies on human papillomavirus (HPV) infection and risk of lung cancer among never smokers

Study	Design/population	Exposure Group		Reference Group	Risk Estimate (95% CI)	Adjustment Variables
Cheng *et al.* (2001) (S84)	Case-control: 78 male and female non-small cell lung cancer cases (never smokers) 48 male and female hospital controls (never smokers) Study location: Taiwan Study years: not stated	*Males:*				
		Lung tissues positive for HPV type 16	vs.	Lung tissues negative for HPV type 16	1.77 (0.48-6.50)	age, tumor type, tumor stage
		Lung tissues positive for HPV type 18	vs.	Lung tissues negative for HPV type 18	2.30 (0.61-8.68)	age, tumor type, tumor stage
		Females:				
		Lung tissues positive for HPV type 16	vs.	Lung tissues negative for HPV type 16	3.98 (1.13-13.98)	age, tumor type, tumor stage
		Lung tissues positive for HPV type 18	vs.	Lung tissues negative for HPV type 18	11.66 (2.94-46.27)	age, tumor type, tumor stage
Chiou *et al.* (2003) (S85)	Case-control: 74 male and female lung cancer cases (nonsmokers) 107 male and female hospital controls (nonsmokers) Study location: Taiwan Study years: not stated	*Males:*				
		Venous blood positive for HPV type 16	vs.	Venous blood negative for HPV type 16	4.0 (1.1-15.3)	age
		Venous blood positive for HPV type 18	vs.	Venous blood negative for HPV type 18	5.1 (1.2-20.6)	age
		Females:				
		Venous blood positive for HPV type 16	vs.	Venous blood negative for HPV type 16	13.6 (5.3-35.3)	age
		Venous blood positive for HPV type 18	vs.	Venous blood negative for HPV type 18	7.1 (1.9-26.5)	age
Cheng *et al.* (2004) (S86)	Case-control: 141 male and female non-small cell lung cancer cases (77 never smokers) 60 male and female hospital controls (number of never smokers not stated) Study location: Taiwan Study years: not stated	Males with lung tissues positive for HPV type 6 (never smokers)	vs.	Never-smoking females	3.93 (1.17-13.12)	age, tumor type, tumor stage

Abbreviations:

CI confidence interval

HPV human papillomavirus

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