

Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: Jemal A, Miller KD, Ma J, et al. Higher lung cancer incidence in young women than young men in the United States. *N Engl J Med* 2018;378:1999-2009. DOI: [10.1056/NEJMoa1715907](https://doi.org/10.1056/NEJMoa1715907)

Higher Lung Cancer Incidence in Young Women Than Young Men in the U.S.

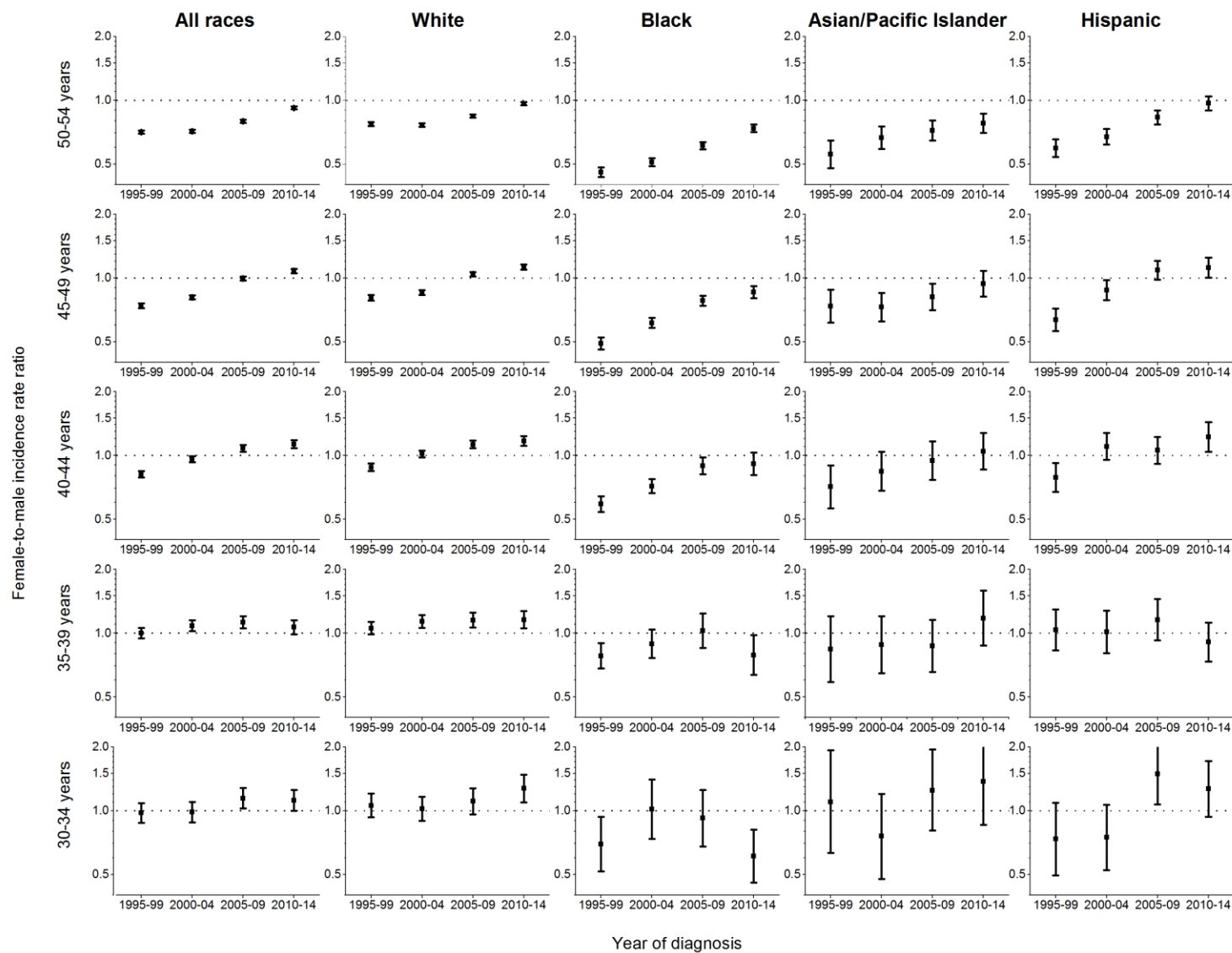
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SUPPLEMENTARY APPENDIX

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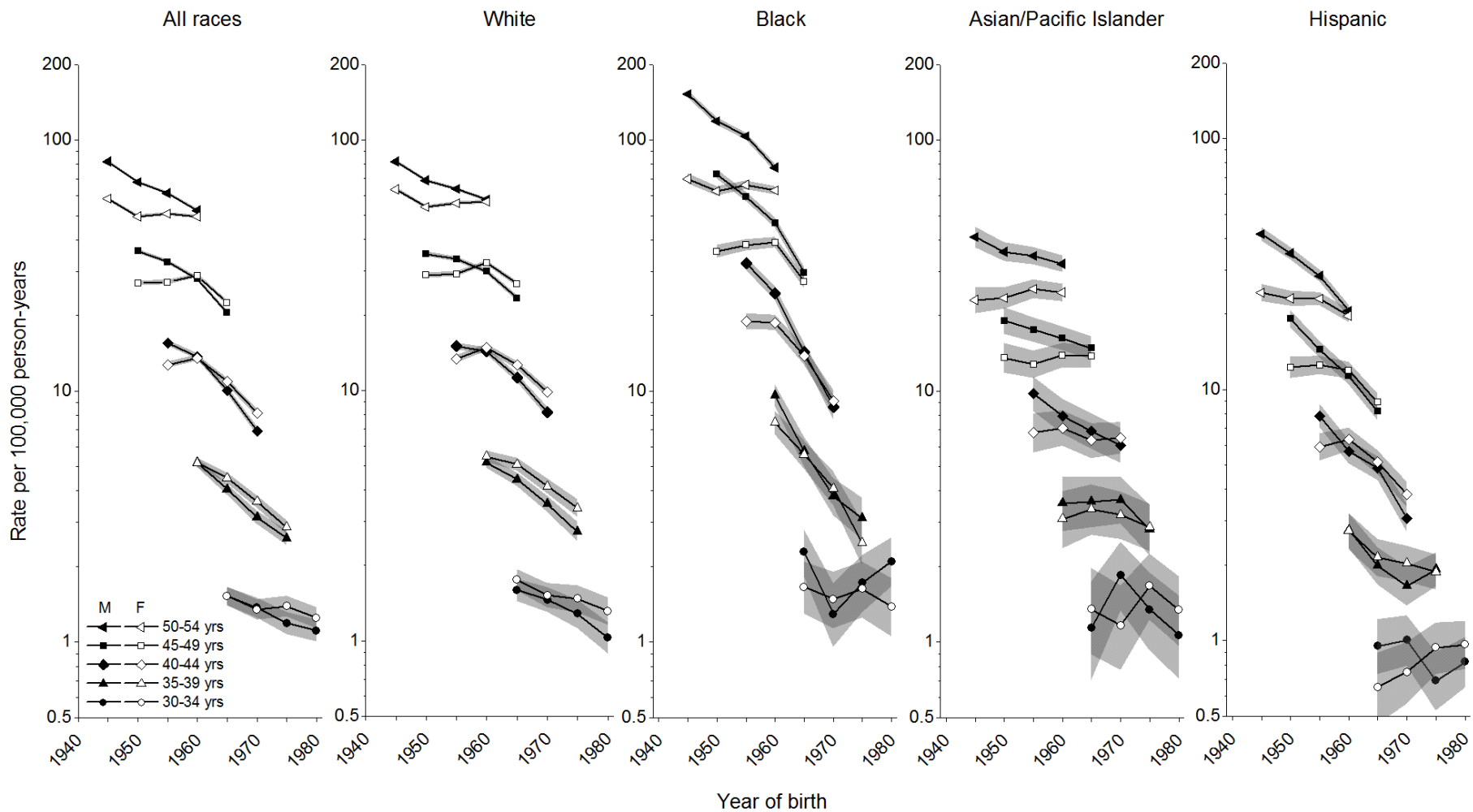
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Figure S1. Age-specific lung cancer female-to-male incidence rate ratios (IRRs) by calendar period and race/ethnicity, 1995-2014 (reference group = males)



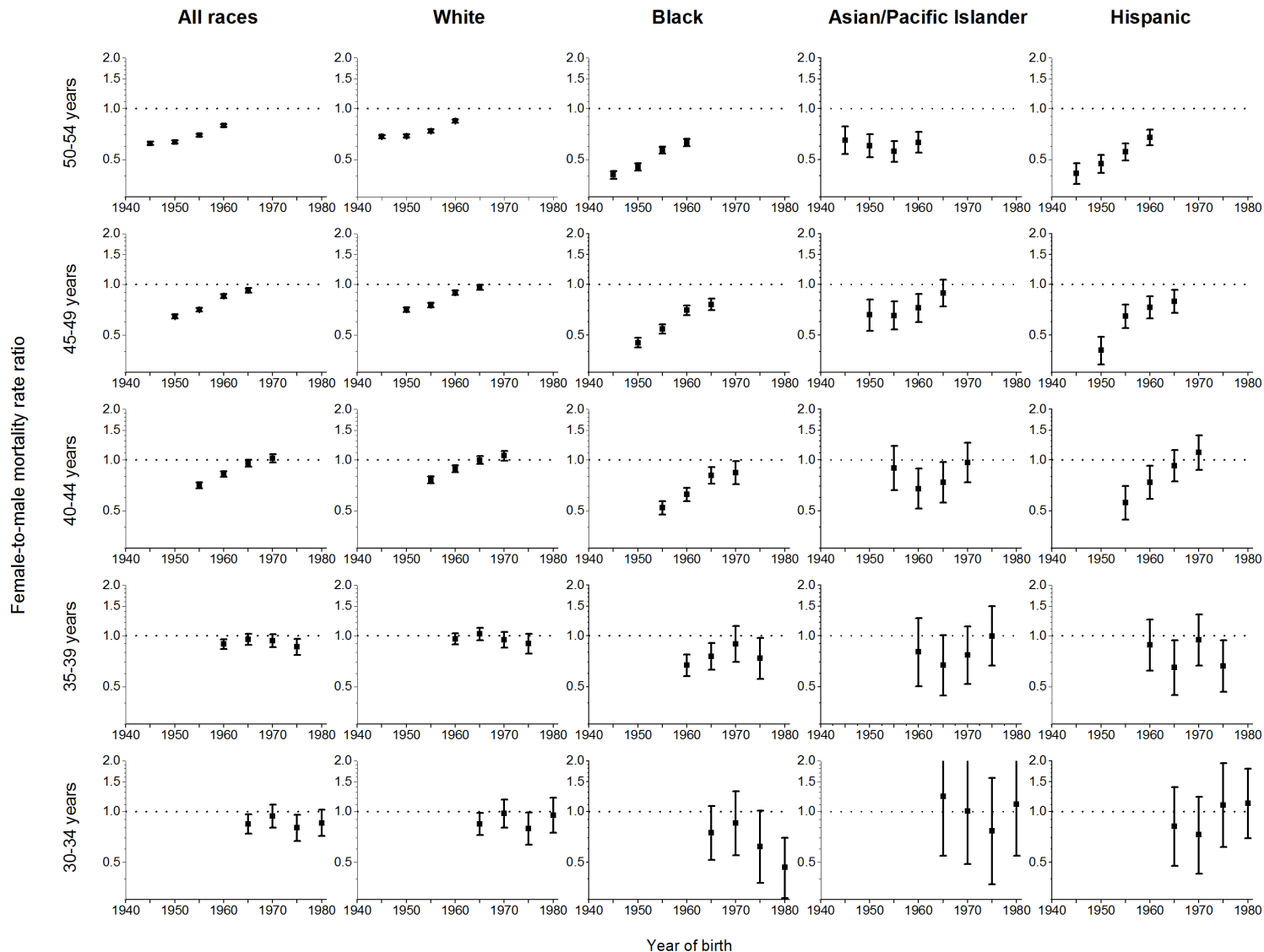
White, black, and Asian/Pacific Islander race exclude persons of Hispanic ethnicity. IRRs are based on unrounded rates and are shown with 95% confidence interval error bars.

Figure S2. Age-specific lung cancer incidence rates by race/ethnicity, sex, and cohort year of birth, 25 states



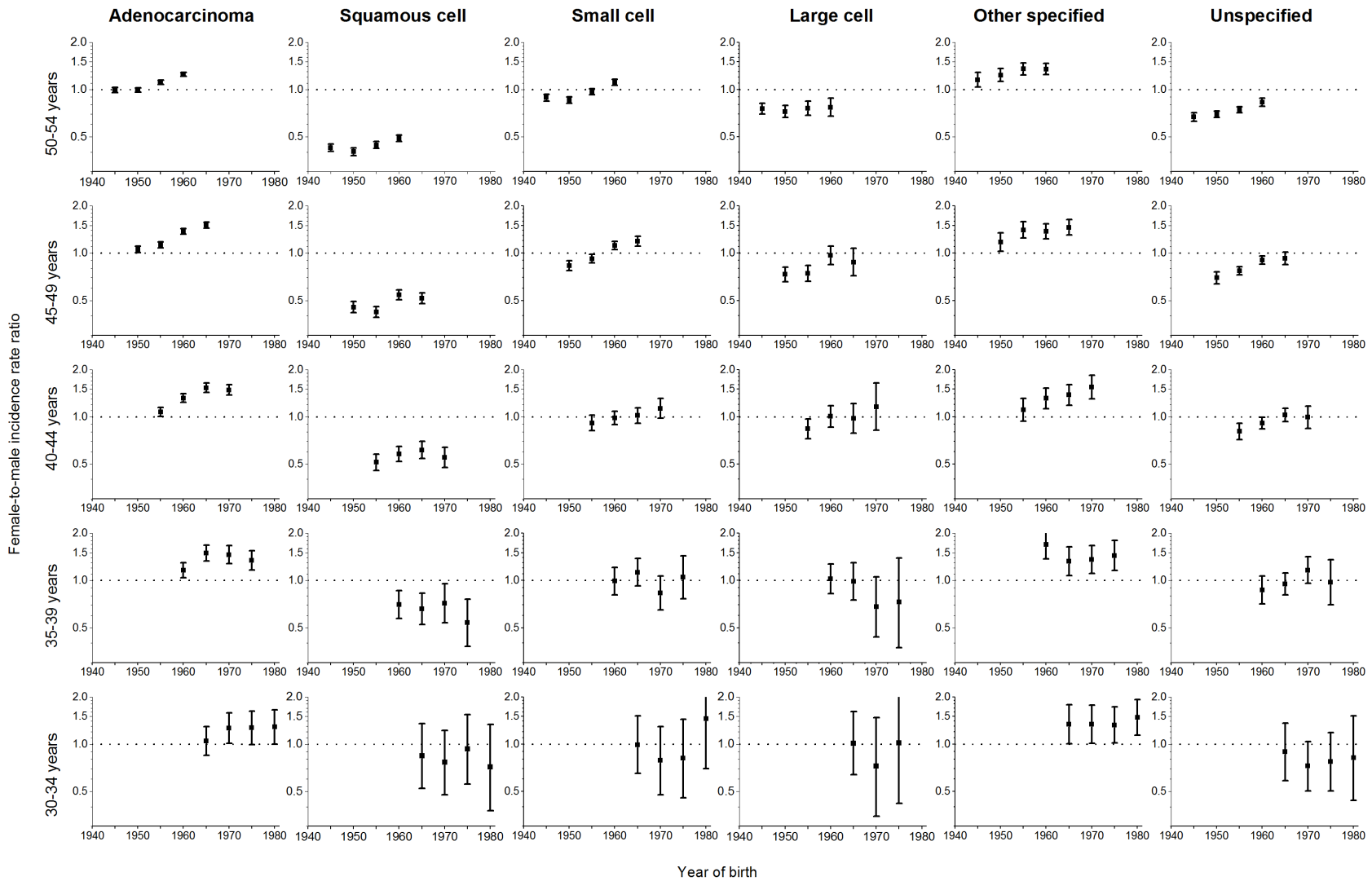
Abbreviations: F, female; M, male. White, black, and Asian/Pacific Islander race exclude persons of Hispanic ethnicity. Incidence rates are shown with 95% confidence intervals (shaded bands).

Figure S3. Age-specific lung cancer female-to-male mortality rate ratios (MRRs) by race/ethnicity and cohort year of birth (reference group = males)



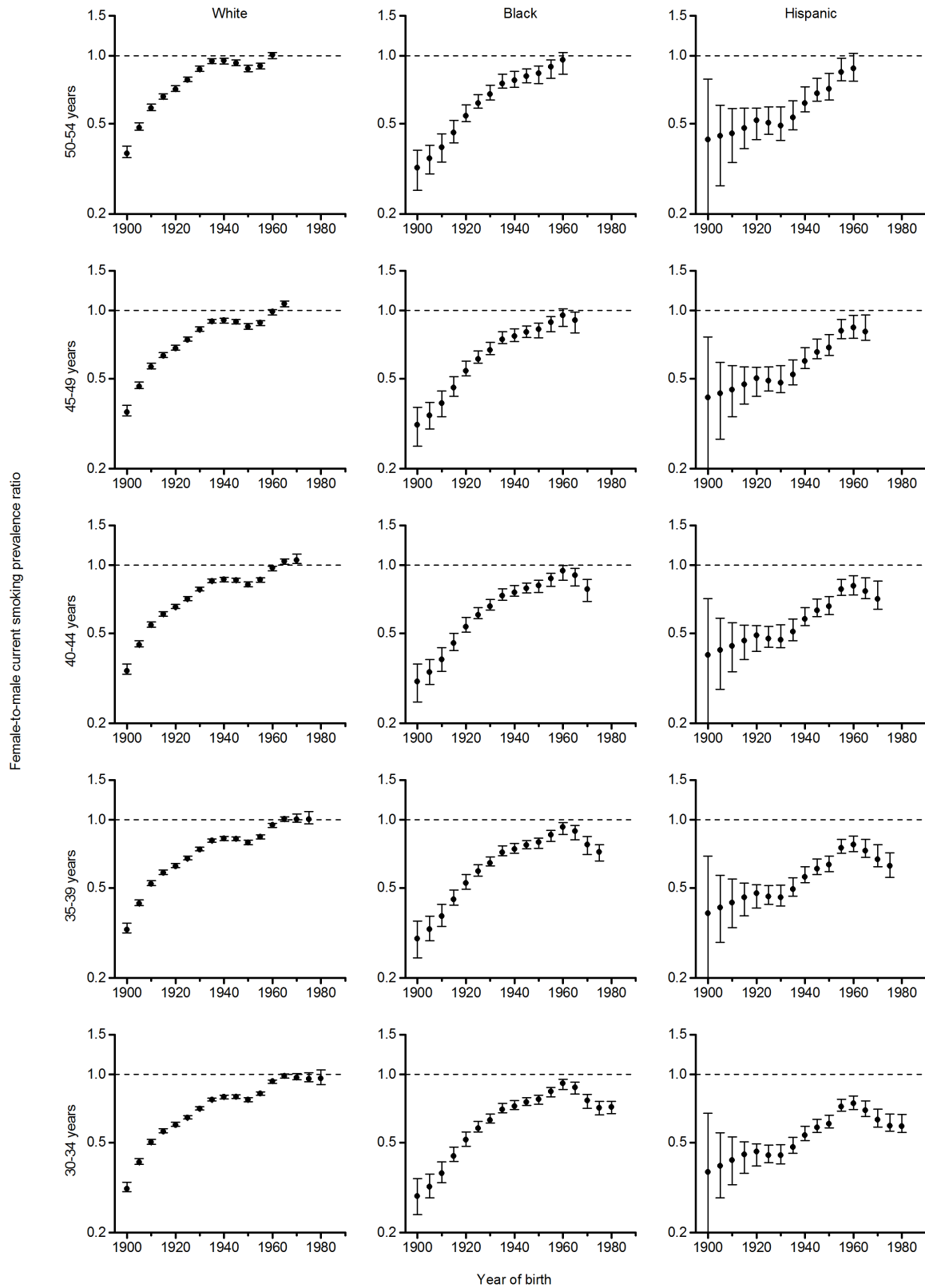
White, black, and Asian/Pacific Islander race exclude persons of Hispanic ethnicity. MRRs are based on unrounded rates and are shown with 95% confidence interval error bars. MRRs for 1995-1999 by race/ethnicity exclude data for Oklahoma. Underlying mortality data provided by the National Center for Health Statistics, Centers for Disease Control and Prevention, 2017; available through SEER*Stat software (v. 8.3.4).¹

Figure S4. Age-specific lung cancer female-to-male incidence rate ratios (IRRs) among whites by histologic type and cohort year of birth (reference group = males)



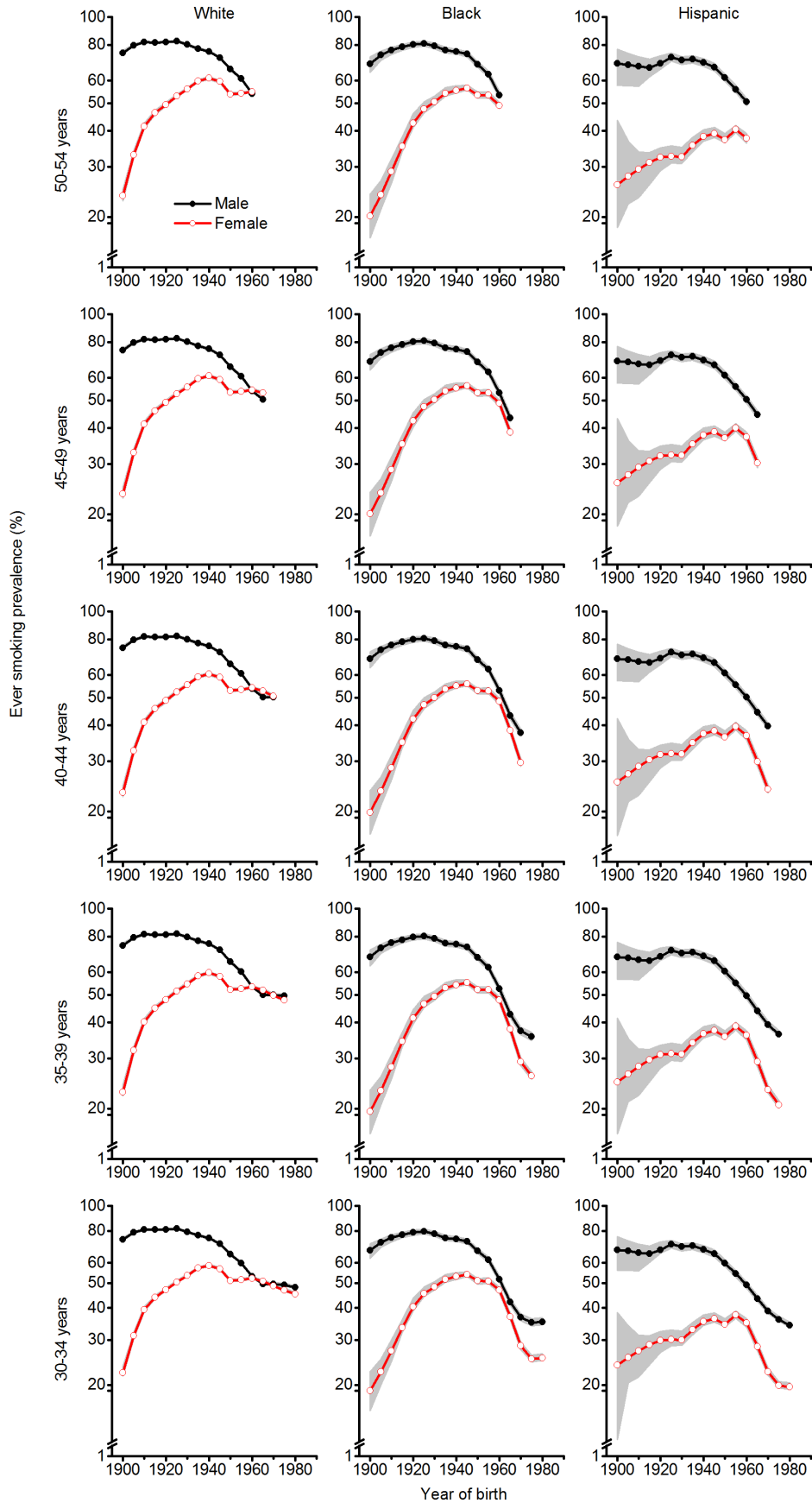
IRRs are based on unrounded rates and are shown with 95% confidence interval error bars. Persons of Hispanic ethnicity were excluded. The rate ratio for large cell lung carcinoma among 30-34 year-olds born circa 1980 could not be calculated due to sparse data among males (<6 cases).

Figure S5. Female-to-male ratio of current smoking prevalence by race/ethnicity, age, and birth cohort (reference group = males)



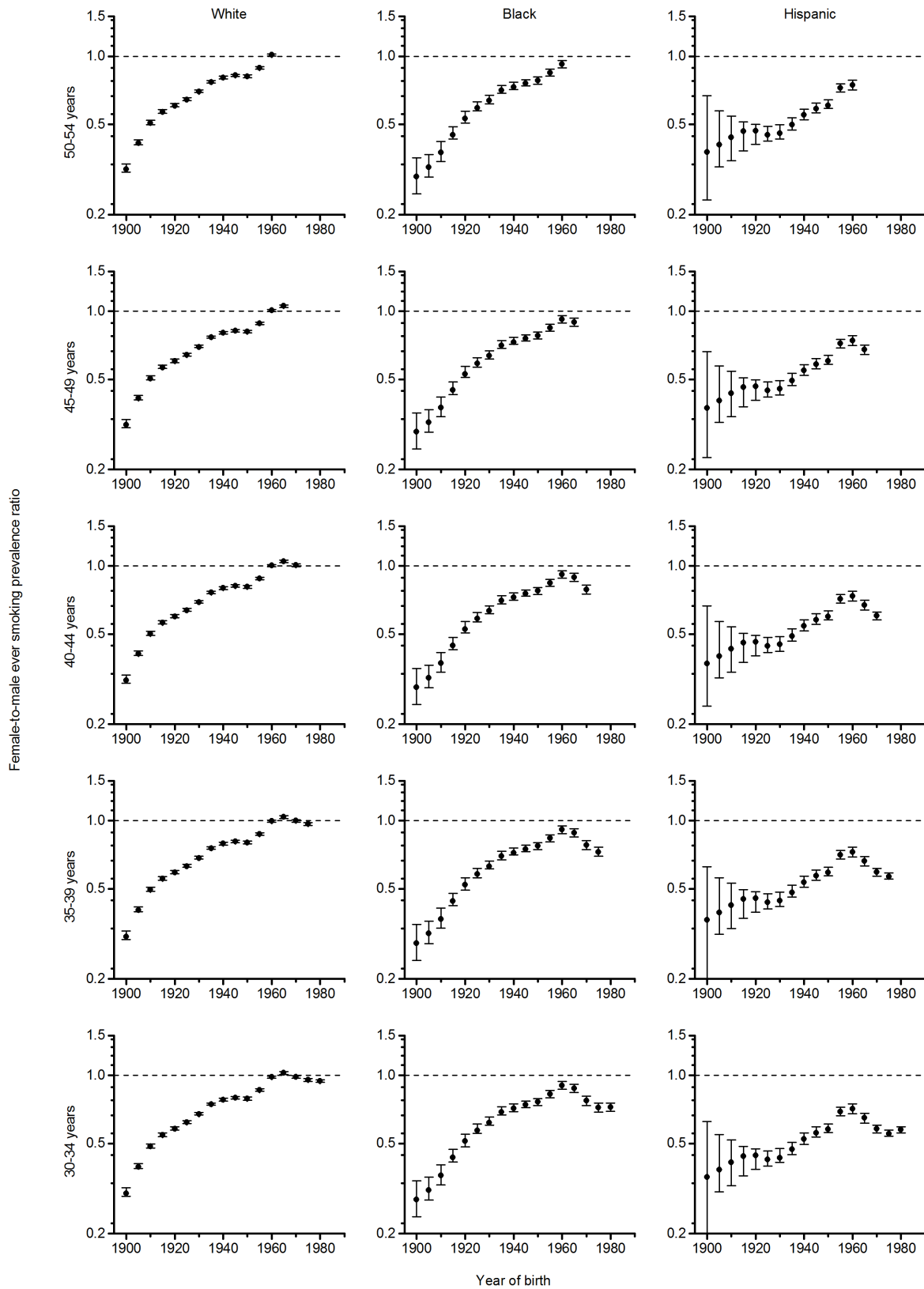
Error bars indicate 95% confidence intervals. White and black race excludes persons of Hispanic ethnicity.

Figure S6. Ever smoking prevalence by race/ethnicity, age, sex, and birth cohort



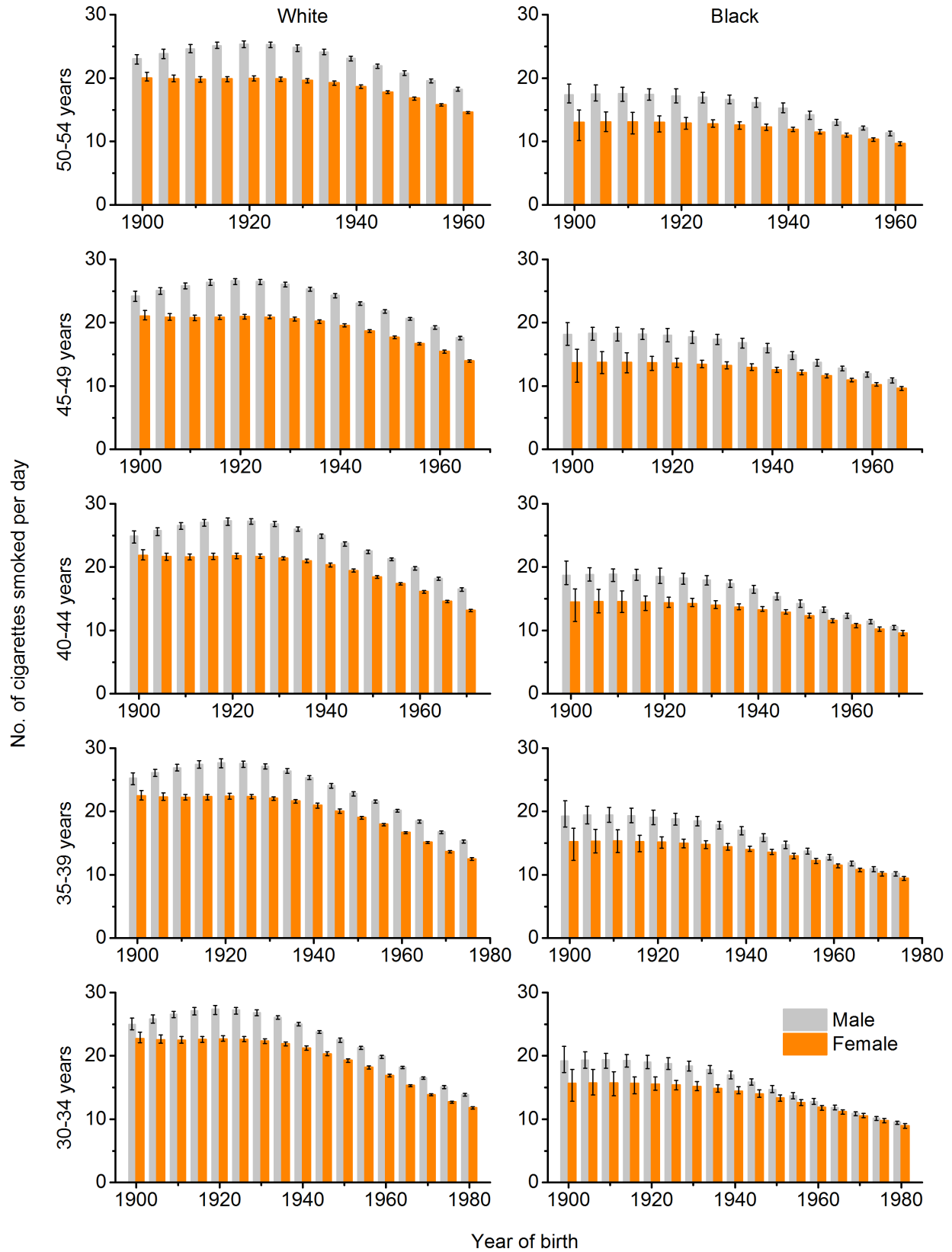
Shaded bands indicate 95% confidence intervals. White and black race excludes persons of Hispanic ethnicity.

Figure S7. Female-to-male ratio of ever smoking prevalence by race/ethnicity, age, and birth cohort (reference group = males)



Error bars indicate 95% confidence intervals. White and black race excludes persons of Hispanic ethnicity.

Figure S8. Average cigarettes smoked per day by age, sex, and birth cohort among whites and blacks



Error bars indicate 95% confidence intervals. White and black race excludes persons of Hispanic ethnicity.

Table S1. International Classification of Diseases for Oncology, 3rd edition (ICD-O-3) morphology codes for lung cancer histologic types.

	ICD-O-3 morphology codes
Adenocarcinoma	8015, 8050, 8140-1, 8143-5, 8147, 8190, 8201, 8211, 8250-5, 8260, 8290, 8310, 8320, 8323, 8333, 8401, 8440, 8470-1, 8480-1, 8490, 8503, 8507, 8550, 8570-2, 8574, 8576
Squamous cell carcinoma	8051-2, 8070-6, 8078, 8083-4, 8090, 8094, 8120, 8123
Large cell carcinoma	8012-4, 8021, 8034, 8082
Small cell carcinoma	8002, 8041-5
Other specified carcinoma	8003-4, 8022, 8030-3, 8035, 8200, 8240-1, 8243-6, 8249, 8430, 8525, 8560, 8562, 8575
Unspecified carcinoma*	8000-1, 8010-1, 8020, 8046, 8230

Non-carcinomas were excluded from type-specific analyses. *Cases coded to histologic type non-small cell carcinoma (8046) were classified as unspecified carcinoma

Table S2. Age-specific lung cancer incidence rates and rate ratios (IRRs) by sex and calendar period, 1995-2014

	30-34 years			35-39 years			40-44 years			45-49 years			50-54 years		
	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)
	Female	Male		Female	Male		Female	Male		Female	Male		Female	Male	
ALL RACES															
1995-99	1.6	1.6	0.98 (0.87-1.09)	5.3	5.3	1.00 (0.94-1.06)	12.9	15.8	0.82 (0.79-0.85)	27.0	36.5	0.74 (0.72-0.76)	58.9	83.3	0.71 (0.69-0.72)
2000-04	1.4	1.4	0.98 (0.88-1.10)	4.7	4.4	1.08 (1.02-1.15)	14.2	14.8	0.96 (0.93-0.99)	28.2	34.8	0.81 (0.79-0.83)	51.4	72.1	0.71 (0.70-0.73)
2005-09	1.5	1.3	1.15 (1.02-1.28)	3.8	3.4	1.13 (1.05-1.20)	12.0	11.1	1.08 (1.04-1.12)	31.0	31.2	0.99 (0.97-1.01)	53.3	67.0	0.80 (0.78-0.81)
2010-14	1.3	1.2	1.12 (1.00-1.25)	3.0	2.8	1.07 (0.99-1.15)	8.8	7.8	1.13 (1.08-1.18)	24.9	23.1	1.08 (1.05-1.11)	54.1	58.8	0.92 (0.91-0.94)
2010-14/1995-99 IRR (95% CI)															
Male			0.73 (0.65-0.81)			0.53 (0.50-0.57)			0.49 (0.47-0.51)			0.63 (0.62-0.65)			0.71 (0.69-0.72)
Female			0.83 (0.75-0.93)			0.57 (0.53-0.61)			0.69 (0.66-0.71)			0.92 (0.90-0.95)			0.92 (0.90-0.94)
WHITE															
1995-99	1.8	1.7	1.06 (0.93-1.20)	5.5	5.2	1.06 (0.99-1.13)	13.4	15.2	0.88 (0.84-0.92)	28.5	35.3	0.81 (0.78-0.83)	63.5	82.4	0.77 (0.75-0.79)
2000-04	1.5	1.5	1.02 (0.89-1.16)	5.3	4.7	1.14 (1.06-1.22)	15.3	15.1	1.02 (0.98-1.05)	29.8	34.9	0.85 (0.83-0.88)	54.9	72.1	0.76 (0.75-0.78)
2005-09	1.6	1.4	1.11 (0.96-1.27)	4.3	3.7	1.15 (1.06-1.25)	13.7	12.2	1.13 (1.08-1.18)	34.1	32.7	1.04 (1.02-1.07)	57.6	68.4	0.84 (0.83-0.86)
2010-14	1.4	1.1	1.27 (1.09-1.48)	3.5	3.0	1.16 (1.05-1.27)	10.5	9.0	1.17 (1.11-1.23)	29.0	25.7	1.13 (1.09-1.16)	60.6	62.8	0.97 (0.95-0.98)
2010-14/1995-99 IRR (95% CI)															
Male			0.66 (0.57-0.76)			0.58 (0.53-0.63)			0.59 (0.56-0.62)			0.73 (0.71-0.75)			0.76 (0.75-0.78)
Female			0.79 (0.69-0.90)			0.63 (0.59-0.69)			0.79 (0.75-0.82)			1.02 (0.99-1.05)			0.95 (0.93-0.97)
BLACK															
1995-99	1.6	2.3	0.70 (0.52-0.94)	7.4	9.5	0.78 (0.68-0.90)	18.3	31	0.59 (0.54-0.64)	35.4	72.1	0.49 (0.46-0.52)	68.9	150.6	0.46 (0.43-0.48)
2000-04	1.4	1.4	1.01 (0.74-1.40)	5.3	5.9	0.89 (0.76-1.04)	18.2	25.5	0.72 (0.66-0.77)	37.2	60.6	0.61 (0.58-0.65)	61.7	120.9	0.51 (0.49-0.53)
2005-09	1.4	1.6	0.92 (0.68-1.26)	3.8	3.7	1.03 (0.85-1.24)	13.5	15.1	0.89 (0.81-0.98)	38.5	49.3	0.78 (0.74-0.82)	64.8	106.2	0.61 (0.59-0.64)
2010-14	1.2	2.0	0.61 (0.46-0.81)	2.6	3.2	0.79 (0.63-0.98)	8.3	9.1	0.91 (0.81-1.03)	26.6	31.0	0.86 (0.80-0.92)	62.6	84.9	0.74 (0.71-0.77)
2010-14/1995-99 IRR (95% CI)															
Male			0.90 (0.69-1.17)			0.34 (0.29-0.41)			0.29 (0.26-0.32)			0.43 (0.41-0.46)			0.56 (0.54-0.59)
Female			0.79 (0.57-1.08)			0.35 (0.29-0.42)			0.45 (0.41-0.50)			0.75 (0.70-0.81)			0.91 (0.86-0.96)

ASIAN/PACIFIC ISLANDER															
1995-99	1.4	1.3	1.10 (0.63-1.93)	3.0	3.5	0.84 (0.59-1.20)	6.9	9.6	0.71 (0.56-0.90)	13.6	18.5	0.74 (0.62-0.88)	23.0	41.3	0.56 (0.48-0.64)
2000-04	1.3	1.7	0.76 (0.47-1.20)	3.3	3.7	0.88 (0.65-1.20)	7.1	8.4	0.84 (0.68-1.04)	13.0	17.9	0.73 (0.62-0.85)	24.0	36.1	0.67 (0.59-0.75)
2005-09	1.6	1.3	1.25 (0.81-1.95)	3.1	3.6	0.87 (0.66-1.15)	6.6	7.0	0.95 (0.77-1.17)	13.7	16.9	0.81 (0.70-0.94)	24.8	34.4	0.72 (0.65-0.80)
2010-14	1.3	0.9	1.37 (0.86-2.23)	3.0	2.5	1.18 (0.87-1.59)	6.3	6.1	1.05 (0.86-1.28)	13.9	14.8	0.94 (0.82-1.08)	24.7	31.7	0.78 (0.70-0.86)
2010-14/1995-99 IRR (95% CI)															
Male			0.73 (0.42-1.28)			0.72 (0.51-1.00)			0.63 (0.51-0.78)			0.80 (0.68-0.93)			0.77 (0.68-0.86)
Female			0.91 (0.57-1.48)			1.00 (0.73-1.39)			0.93 (0.74-1.16)			1.02 (0.87-1.20)			1.07 (0.94-1.24)
HISPANIC															
1995-99	0.7	1.0	0.74 (0.49-1.09)	2.8	2.7	1.04 (0.83-1.30)	6.1	7.8	0.79 (0.67-0.92)	12.2	19.2	0.64 (0.56-0.72)	25.1	42.3	0.59 (0.54-0.65)
2000-04	0.7	0.9	0.75 (0.52-1.07)	2.1	2.0	1.01 (0.80-1.28)	6.3	5.7	1.10 (0.96-1.28)	12.4	14.2	0.87 (0.78-0.98)	23.4	34.8	0.67 (0.62-0.73)
2005-09	1.0	0.7	1.49 (1.07-2.08)	2.0	1.7	1.16 (0.92-1.45)	5.1	4.8	1.06 (0.91-1.22)	12.2	11.2	1.09 (0.98-1.20)	23.5	28.3	0.83 (0.77-0.90)
2010-14	1.0	0.8	1.27 (0.94-1.72)	1.8	2.0	0.91 (0.74-1.12)	3.8	3.1	1.22 (1.04-1.44)	9.3	8.4	1.12 (1.00-1.25)	20.3	21.0	0.97 (0.90-1.04)
2010-14/1995-99 IRR (95% CI)															
Male			0.82 (0.59-1.15)			0.74 (0.60-0.91)			0.40 (0.34-0.47)			0.43 (0.39-0.48)			0.50 (0.46-0.54)
Female			1.14 (0.98-2.06)			0.65 (0.52-0.81)			0.63 (0.53-0.74)			0.76 (0.68-0.86)			0.81 (0.74-0.89)

White, black, and Asian/Pacific Islander race exclude persons of Hispanic ethnicity. Reference group is males for female-to-male IRRs and diagnosis years 1995-99 for 2010-14/1995-99 IRRs. IRRs were calculated using unrounded rates. Bold indicates the IRR is significantly different from 1.00 ($p < 0.05$). Rates are per 100,000 person-years.

Table S3. Age-specific lung cancer incidence rates and rate ratios (IRRs) by sex and cohort year of birth

	30-34 years			35-39 years			40-44 years			45-49 years			50-54 years		
	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)	Rate		Female-to-male IRR (95% CI)
	Female	Male		Female	Male		Female	Male		Female	Male		Female	Male	
A. RACE/ETHNICITY															
ALL RACES															
1945													58.9	83.3	0.71 (0.69-0.72)
1950										27.0	36.5	0.74 (0.72-0.76)	51.4	72.1	0.71 (0.70-0.73)
1955							12.9	15.8	0.82 (0.79-0.85)	28.2	34.8	0.81 (0.79-0.83)	53.3	67.0	0.80 (0.78-0.81)
1960				5.3	5.3	1.00 (0.94-1.06)	14.2	14.8	0.96 (0.93-0.99)	31.0	31.2	0.99 (0.97-1.01)	54.1	58.8	0.92 (0.91-0.94)
1965	1.6	1.6	0.98 (0.87-1.09)	4.7	4.4	1.08 (1.02-1.15)	12.0	11.1	1.08 (1.04-1.12)	24.9	23.1	1.08 (1.05-1.11)			
1970	1.4	1.4	0.98 (0.88-1.10)	3.8	3.4	1.13 (1.05-1.20)	8.8	7.8	1.13 (1.08-1.18)						
1975	1.5	1.3	1.15 (1.02-1.28)	3.0	2.8	1.07 (0.99-1.15)									
1980	1.3	1.2	1.12 (1.00-1.25)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.73 (0.65-0.81)			0.53 (0.50-0.57)			0.49 (0.47-0.51)			0.63 (0.62-0.65)			0.71 (0.69-0.72)
Female			0.83 (0.75-0.93)			0.57 (0.53-0.61)			0.69 (0.66-0.71)			0.92 (0.90-0.95)			0.92 (0.90-0.94)
WHITE															
1945													63.5	82.4	0.77 (0.75-0.79)
1950										28.5	35.3	0.81 (0.78-0.83)	54.9	72.1	0.76 (0.75-0.78)
1955							13.4	15.2	0.88 (0.84-0.92)	29.8	34.9	0.85 (0.83-0.88)	57.6	68.4	0.84 (0.83-0.86)
1960				5.5	5.2	1.06 (0.99-1.13)	15.3	15.1	1.02 (0.98-1.05)	34.1	32.7	1.04 (1.02-1.07)	60.6	62.8	0.97 (0.95-0.98)
1965	1.8	1.7	1.06 (0.93-1.20)	5.3	4.7	1.14 (1.06-1.22)	13.7	12.2	1.13 (1.08-1.18)	29.0	25.7	1.13 (1.09-1.16)			
1970	1.5	1.5	1.02 (0.89-1.16)	4.3	3.7	1.15 (1.06-1.25)	10.5	9.0	1.17 (1.11-1.23)						
1975	1.6	1.4	1.11 (0.96-1.27)	3.5	3.0	1.16 (1.05-1.27)									
1980	1.4	1.1	1.27 (1.09-1.48)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.66 (0.57-0.76)			0.58 (0.53-0.63)			0.59 (0.56-0.62)			0.73 (0.71-0.75)			0.76 (0.75-0.78)
Female			0.79 (0.69-0.90)			0.63 (0.59-0.69)			0.79 (0.75-0.82)			1.02 (0.99-1.05)			0.95 (0.93-0.97)
BLACK															
1945													68.9	150.6	0.46 (0.43-0.48)
1950										35.4	72.1	0.49 (0.46-0.52)	61.7	120.9	0.51 (0.49-0.53)

1955							18.3	31.0	0.59 (0.54-0.64)	37.2	60.6	0.61 (0.58-0.65)	64.8	106.2	0.61 (0.59-0.64)
1960				7.4	9.5	0.78 (0.68-0.90)	18.2	25.5	0.72 (0.66-0.77)	38.5	49.3	0.78 (0.74-0.82)	62.6	84.9	0.74 (0.71-0.77)
1965	1.6	2.3	0.70 (0.52-0.94)	5.3	5.9	0.89 (0.76-1.04)	13.5	15.1	0.89 (0.81-0.98)	26.6	31.0	0.86 (0.80-0.92)			
1970	1.4	1.4	1.01 (0.74-1.40)	3.8	3.7	1.03 (0.85-1.24)	8.3	9.1	0.91 (0.81-1.03)						
1975	1.4	1.6	0.92 (0.68-1.26)	2.6	3.2	0.79 (0.63-0.98)									
1980	1.2	2.0	0.61 (0.46-0.81)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.90 (0.69-1.17)			0.34 (0.29-0.41)			0.29 (0.26-0.32)			0.43 (0.41-0.46)			0.56 (0.54-0.59)
Female			0.79 (0.57-1.08)			0.35 (0.29-0.42)			0.45 (0.41-0.50)			0.75 (0.70-0.81)			0.91 (0.86-0.96)
ASIAN/PACIFIC ISLANDER															
1945													23.0	41.3	0.56 (0.48-0.64)
1950										13.6	18.5	0.74 (0.62-0.88)	24.0	36.1	0.67 (0.59-0.75)
1955							6.9	9.6	0.71 (0.56-0.90)	13.0	17.9	0.73 (0.62-0.85)	24.8	34.4	0.72 (0.65-0.80)
1960				3.0	3.5	0.84 (0.59-1.20)	7.1	8.4	0.84 (0.68-1.04)	13.7	16.9	0.81 (0.70-0.94)	24.7	31.7	0.78 (0.70-0.86)
1965	1.4	1.3	1.10 (0.63-1.93)	3.3	3.7	0.88 (0.65-1.20)	6.6	7.0	0.95 (0.77-1.17)	13.9	14.8	0.94 (0.82-1.08)			
1970	1.3	1.7	0.76 (0.47-1.20)	3.1	3.6	0.87 (0.66-1.15)	6.3	6.1	1.05 (0.86-1.28)						
1975	1.6	1.3	1.25 (0.81-1.95)	3.0	2.5	1.18 (0.87-1.59)									
1980	1.3	0.9	1.37 (0.86-2.23)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.73 (0.42-1.28)			0.72 (0.51-1.00)			0.63 (0.51-0.78)			0.80 (0.68-0.93)			0.77 (0.68-0.86)
Female			0.91 (0.57-1.48)			1.00 (0.73-1.39)			0.93 (0.74-1.16)			1.02 (0.87-1.20)			1.07 (0.94-1.24)
HISPANIC															
1945													25.1	42.3	0.59 (0.54-0.65)
1950										12.2	19.2	0.64 (0.56-0.72)	23.4	34.8	0.67 (0.62-0.73)
1955							6.1	7.8	0.79 (0.67-0.92)	12.4	14.2	0.87 (0.78-0.98)	23.5	28.3	0.83 (0.77-0.90)
1960				2.8	2.7	1.04 (0.83-1.30)	6.3	5.7	1.10 (0.96-1.28)	12.2	11.2	1.09 (0.98-1.20)	20.3	21.0	0.97 (0.90-1.04)
1965	0.7	1.0	0.74 (0.49-1.09)	2.1	2.0	1.01 (0.80-1.28)	5.1	4.8	1.06 (0.91-1.22)	9.3	8.4	1.12 (1.00-1.25)			
1970	0.7	0.9	0.75 (0.52-1.07)	2.0	1.7	1.16 (0.92-1.45)	3.8	3.1	1.22 (1.04-1.44)						
1975	1.0	0.7	1.49 (1.07-2.08)	1.8	2.0	0.91 (0.74-1.12)									
1980	1.0	0.8	1.27 (0.94-1.72)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.82 (0.59-1.15)			0.74 (0.60-0.91)			0.40 (0.34-0.47)			0.43 (0.39-0.48)			0.50 (0.46-0.54)

Female			1.14 (0.98-2.06)			0.65 (0.52-0.81)			0.63 (0.53-0.74)			0.76 (0.68-0.86)			0.81 (0.74-0.89)
B. HISTOLOGY TYPE (WHITES)															
ADENOCARCINOMA															
1945													25.8	26.0	0.99 (0.96-1.03)
1950										12.6	11.9	1.06 (1.01-1.11)	21.2	21.3	0.99 (0.96-1.03)
1955							5.8	5.4	1.07 (1.00-1.15)	12.0	10.6	1.13 (1.08-1.18)	23.6	21.2	1.11 (1.08-1.15)
1960				2.2	1.9	1.16 (1.04-1.30)	6.4	4.9	1.32 (1.24-1.40)	14.8	10.7	1.38 (1.32-1.44)	30.1	24.1	1.25 (1.21-1.28)
1965	0.6	0.6	1.05 (0.85-1.30)	2.2	1.5	1.49 (1.33-1.68)	6.1	4.0	1.53 (1.43-1.64)	15.0	9.9	1.51 (1.45-1.58)			
1970	0.6	0.5	1.27 (1.01-1.59)	1.9	1.3	1.46 (1.28-1.67)	5.6	3.8	1.48 (1.38-1.60)						
1975	0.6	0.4	1.27 (0.99-1.63)	1.7	1.3	1.34 (1.17-1.54)									
1980	0.5	0.4	1.29 (1.00-1.66)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.66 (0.52-0.84)			0.67 (0.59-0.77)			0.71 (0.66-0.76)			0.83 (0.79-0.87)			0.93 (0.90-0.96)
Female			0.81 (0.65-1.01)			0.78 (0.69-0.87)			0.98 (0.91-1.04)			1.19 (1.14-1.24)			1.17 (1.13-1.20)
SQUAMOUS CELL CARCINOMA															
1945													7.5	17.7	0.43 (0.40-0.45)
1950										3.1	6.8	0.45 (0.42-0.49)	5.7	14.2	0.40 (0.38-0.42)
1955							1.3	2.6	0.51 (0.45-0.58)	2.6	6.3	0.42 (0.39-0.46)	6.1	13.9	0.44 (0.42-0.47)
1960				0.5	0.7	0.70 (0.57-0.86)	1.3	2.3	0.58 (0.52-0.65)	3.2	5.8	0.54 (0.51-0.58)	6.9	14.2	0.49 (0.47-0.51)
1965	0.1	0.1	0.85 (0.52-1.36)	0.4	0.6	0.66 (0.52-0.83)	1.2	2.0	0.62 (0.54-0.70)	2.8	5.4	0.52 (0.48-0.56)			
1970	0.1	0.1	0.77 (0.48-1.22)	0.3	0.4	0.72 (0.54-0.95)	0.9	1.6	0.55 (0.47-0.64)						
1975	0.1	0.1	0.93 (0.56-1.55)	0.2	0.4	0.54 (0.38-0.76)									
1980	0.1	0.1	0.71 (0.38-1.33)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.64 (0.38-1.07)			0.50 (0.39-0.64)			0.62 (0.55-0.69)			0.79 (0.74-0.85)			0.80 (0.77-0.84)
Female			0.54 (0.29-0.98)			0.39 (0.28-0.53)			0.67 (0.57-0.78)			0.90 (0.82-0.99)			0.92 (0.87-0.98)
SMALL CELL CARCINOMA															
1945													12.2	13.8	0.89 (0.84-0.93)
1950										4.8	5.7	0.83 (0.77-0.90)	10.2	12.0	0.85 (0.82-0.90)
1955							2.0	2.2	0.91 (0.82-1.02)	5.2	5.7	0.92 (0.87-0.98)	10.8	11.2	0.97 (0.92-1.01)
1960				0.6	0.6	0.99 (0.81-1.21)	2.2	2.3	0.98 (0.89-1.09)	5.8	5.2	1.12 (1.05-1.19)	10.9	9.8	1.11 (1.06-1.16)
1965	0.2	0.2	0.99 (0.65-1.52)	0.6	0.6	1.13 (0.92-1.38)	1.8	1.7	1.02 (0.91-1.14)	4.7	3.9	1.19 (1.11-1.28)			

1970	0.1	0.1	0.79 (0.48-1.29)	0.4	0.5	0.83 (0.65-1.07)	1.3	1.2	1.13 (0.98-1.31)						
1975	0.1	0.1	0.81 (0.46-1.44)	0.3	0.3	1.05 (0.77-1.44)									
1980	0.1	<0.1	1.45 (0.70-3.11)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.29 (0.15-0.54)			0.47 (0.36-0.61)			0.54 (0.48-0.62)			0.69 (0.64-0.74)			0.71 (0.68-0.74)
Female			0.43 (0.24-0.73)			0.50 (0.38-0.65)			0.67 (0.59-0.76)			0.99 (0.92-1.06)			0.89 (0.85-0.93)
LARGE CELL CARCINOMA															
1945													4.9	6.4	0.76 (0.70-0.82)
1950										2.1	2.9	0.73 (0.66-0.82)	2.7	3.8	0.72 (0.66-0.79)
1955							1.1	1.4	0.84 (0.73-0.97)	1.4	1.9	0.74 (0.66-0.84)	1.8	2.4	0.76 (0.69-0.84)
1960				0.5	0.5	1.02 (0.82-1.27)	0.9	0.9	1.01 (0.86-1.18)	1.1	1.2	0.97 (0.85-1.11)	1.1	1.4	0.77 (0.67-0.88)
1965	0.1	0.1	1.01 (0.64-1.61)	0.3	0.3	0.99 (0.75-1.30)	0.5	0.5	0.98 (0.79-1.22)	0.6	0.6	0.88 (0.72-1.07)			
1970	0.1	0.1	0.73 (0.35-1.48)	0.1	0.2	0.68 (0.44-1.05)	0.2	0.2	1.16 (0.82-1.65)						
1975	<0.1	<0.1	1.02 (0.42-2.48)	0.1	0.1	0.73 (0.37-1.39)									
1980	<0.1	--	--												
Youngest/oldest cohort IRR (95% CI)															
Male			--			0.17 (0.11-0.26)			0.16 (0.12-0.20)			0.22 (0.19-0.26)			0.22 (0.20-0.24)
Female			0.18 (0.07-0.40)			0.12 (0.07-0.20)			0.22 (0.17-0.28)			0.26 (0.22-0.31)			0.22 (0.20-0.25)
OTHER SPECIFIED CARCINOMAS															
1945													3.2	2.8	1.15 (1.04-1.28)
1950										1.7	1.4	1.18 (1.03-1.35)	3.0	2.4	1.24 (1.12-1.36)
1955							1.0	0.9	1.11 (0.94-1.31)	1.9	1.4	1.41 (1.25-1.59)	3.3	2.5	1.35 (1.24-1.48)
1960				0.8	0.5	1.69 (1.37-2.09)	1.1	0.8	1.31 (1.13-1.52)	2.1	1.5	1.38 (1.24-1.54)	3.8	2.8	1.35 (1.24-1.46)
1965	0.4	0.3	1.34 (1.00-1.78)	0.6	0.5	1.33 (1.08-1.64)	1.2	0.9	1.38 (1.18-1.61)	2.2	1.5	1.46 (1.30-1.64)			
1970	0.4	0.3	1.34 (1.01-1.77)	0.7	0.5	1.36 (1.11-1.67)	1.1	0.7	1.55 (1.31-1.84)						
1975	0.5	0.4	1.32 (1.02-1.72)	0.7	0.5	1.44 (1.16-1.80)									
1980	0.5	0.4	1.48 (1.14-1.92)												
Youngest/oldest cohort IRR (95% CI)															
Male			1.17 (0.87-1.58)			1.14 (0.90-1.45)			0.83 (0.69-0.99)			1.06 (0.92-1.21)			1.01 (0.91-1.11)
Female			1.30 (1.01-1.67)			0.97 (0.80-1.18)			1.16 (0.99-1.36)			1.31 (1.16-1.47)			1.18 (1.08-1.29)
UNSPECIFIED CARCINOMAS															
1945													6.9	10.3	0.67 (0.63-0.71)

1950										3.1	4.4	0.70 (0.64-0.76)	9.6	13.9	0.70 (0.66-0.73)
1955							1.7	2.1	0.81 (0.72-0.91)	5.6	7.2	0.77 (0.73-0.82)	9.6	12.9	0.74 (0.71-0.78)
1960				0.6	0.6	0.87 (0.71-1.07)	2.9	3.1	0.91 (0.84-0.99)	5.8	6.4	0.90 (0.85-0.96)	5.2	6.3	0.83 (0.78-0.88)
1965	0.2	0.2	0.89 (0.59-1.36)	0.9	1.0	0.95 (0.81-1.11)	2.5	2.4	1.03 (0.94-1.14)	2.7	2.9	0.93 (0.85-1.02)			
1970	0.2	0.3	0.73 (0.50-1.04)	0.7	0.6	1.17 (0.96-1.42)	1.0	1.0	0.99 (0.84-1.17)						
1975	0.2	0.2	0.77 (0.50-1.18)	0.3	0.3	0.97 (0.70-1.35)									
1980	0.1	0.1	0.82 (0.44-1.52)												
Youngest/oldest cohort IRR (95% CI)															
Male			0.51 (0.31-0.83)			0.44 (0.33-0.57)			0.47 (0.41-0.54)			0.65 (0.60-0.71)			0.61 (0.58-0.65)
Female			0.47 (0.26-0.80)			0.49 (0.37-0.65)			0.58 (0.50-0.67)			0.87 (0.79-0.95)			0.76 (0.71-0.81)

White, black, and Asian/Pacific Islander race exclude persons of Hispanic ethnicity. Reference group is males for female-to-male IRRs. For birth cohort comparisons, the reference group is the oldest birth cohort by age (e.g., those born circa 1945 for 50-54 year-olds). IRRs were calculated using unrounded rates. Bold indicates the IRR is significantly different from 1.00 ($p < 0.05$). Rates are per 100,000 person-years. The male rate for large cell carcinoma among 30-34 year-olds born circa 1980 and the corresponding rate ratio are suppressed due to sparse data (<6 cases).

Table S4. Age-specific current smoking prevalence and female-to-male prevalence ratios (PRs) by race/ethnicity and cohort year of birth

	25-29 years			30-34 years			35-39 years			40-44 years			45-49 years			50-54 years		
	Prevalence (%) (95% CI)		PR (95% CI)	Prevalence (%) (95% CI)		PR (95% CI)	Prevalence (%) (95% CI)		PR (95% CI)	Prevalence (%) (95% CI)		PR (95% CI)	Prevalence (%) (95% CI)		PR (95% CI)	Prevalence (%) (95% CI)		PR (95% CI)
	F	M		F	M		F	M		F	M		F	M		F	M	
WHITE																		
1900	20.4 (19.6-21.6)	68.2 (67.5-69.7)	0.30 (0.29-0.32)	20.7 (19.9-22.0)	66.2 (65.3-67.7)	0.31 (0.30-0.33)	20.8 (19.9-22.1)	63.6 (62.8-65.2)	0.33 (0.32-0.35)	20.6 (19.9-22.1)	60.5 (59.4-62.2)	0.34 (0.33-0.37)	20.3 (19.3-21.6)	57.1 (56.0-58.9)	0.35 (0.34-0.38)	19.7 (19.1-21.4)	53.4 (52.5-55.5)	0.37 (0.35-0.40)
1905	28.4 (27.7-29.3)	72.5 (72.0-73.4)	0.39 (0.38-0.41)	28.7 (28.1-29.7)	70.2 (69.7-71.1)	0.41 (0.40-0.42)	28.7 (28.1-29.8)	67.2 (66.7-68.2)	0.43 (0.42-0.44)	28.4 (27.8-29.5)	63.8 (63.3-64.8)	0.44 (0.44-0.46)	27.8 (27.2-28.9)	60.1 (59.5-61.2)	0.46 (0.45-0.48)	26.9 (26.4-28.2)	56.0 (55.4-57.2)	0.48 (0.47-0.50)
1910	35.6 (35.0-36.6)	74.1 (73.3-74.7)	0.48 (0.47-0.49)	35.8 (35.2-36.9)	71.5 (70.7-72.1)	0.50 (0.49-0.52)	35.6 (35.0-36.7)	68.2 (67.4-68.9)	0.52 (0.51-0.54)	35.0 (34.4-36.2)	64.5 (63.7-65.3)	0.54 (0.53-0.56)	34.1 (33.5-35.3)	60.4 (59.5-61.3)	0.56 (0.55-0.59)	32.9 (32.3-34.1)	56.0 (55.1-57.0)	0.59 (0.57-0.61)
1915	39.4 (39.0-40.3)	73.2 (72.5-73.7)	0.54 (0.53-0.55)	39.4 (38.9-40.3)	70.3 (69.5-70.9)	0.56 (0.55-0.57)	38.9 (38.3-39.8)	66.7 (65.9-67.3)	0.58 (0.57-0.60)	38.1 (37.5-39.0)	62.7 (61.9-63.3)	0.61 (0.60-0.62)	36.8 (36.1-37.7)	58.3 (57.5-59.0)	0.63 (0.62-0.65)	35.2 (34.7-36.2)	53.6 (52.7-54.3)	0.66 (0.64-0.68)
1920	41.7 (41.0-42.5)	72.5 (71.7-72.9)	0.57 (0.57-0.59)	41.4 (40.9-42.3)	69.1 (68.3-69.6)	0.60 (0.59-0.62)	40.6 (40.1-41.6)	65.1 (64.3-65.6)	0.62 (0.61-0.64)	39.5 (38.9-40.4)	60.6 (59.8-61.2)	0.65 (0.64-0.67)	37.9 (37.2-38.9)	55.7 (54.9-56.4)	0.68 (0.67-0.70)	36.0 (35.4-37.1)	50.7 (49.8-51.4)	0.71 (0.70-0.74)
1925	44.4 (44.0-45.2)	72.0 (71.3-72.5)	0.62 (0.61-0.63)	43.9 (43.5-44.7)	68.1 (67.5-68.7)	0.64 (0.64-0.66)	42.9 (42.4-43.7)	63.6 (62.9-64.2)	0.67 (0.67-0.69)	41.5 (41.0-42.3)	58.6 (57.9-59.2)	0.71 (0.70-0.73)	39.6 (39.2-40.5)	53.3 (52.6-54.0)	0.74 (0.73-0.76)	37.4 (37.0-38.3)	47.8 (47.1-48.5)	0.78 (0.77-0.81)
1930	46.6 (46.2-47.4)	69.2 (68.5-69.8)	0.67 (0.67-0.69)	45.9 (45.5-46.7)	65.1 (64.4-65.7)	0.70 (0.70-0.72)	44.6 (44.2-45.4)	60.4 (59.6-61.0)	0.74 (0.73-0.76)	43.0 (42.5-43.8)	55.2 (54.4-55.8)	0.78 (0.77-0.80)	40.9 (40.4-41.7)	49.7 (48.9-50.4)	0.82 (0.81-0.85)	38.4 (37.9-39.2)	44.1 (43.3-44.9)	0.87 (0.85-0.90)
1935	49.3 (48.8-49.9)	66.4 (65.7-67.0)	0.74 (0.73-0.76)	48.2 (47.7-48.8)	62.3 (61.6-63.0)	0.77 (0.76-0.79)	46.6 (46.0-47.2)	57.6 (56.8-58.2)	0.81 (0.80-0.82)	44.5 (44.0-45.1)	52.4 (51.6-53.1)	0.85 (0.84-0.87)	42.0 (41.5-42.6)	47.0 (46.2-47.7)	0.90 (0.88-0.92)	39.1 (38.6-39.8)	41.4 (40.7-42.2)	0.94 (0.92-0.97)
1940	49.6 (48.9-50.2)	64.6 (63.9-65.2)	0.77 (0.75-0.78)	48.1 (47.4-48.7)	60.4 (59.8-61.1)	0.80 (0.78-0.81)	46.0 (45.3-46.7)	55.6 (54.9-56.4)	0.83 (0.81-0.84)	43.6 (42.9-44.4)	50.4 (49.7-51.2)	0.87 (0.84-0.88)	40.8 (40.0-41.5)	45.0 (44.3-45.8)	0.91 (0.88-0.93)	37.5 (36.7-38.3)	39.6 (38.8-40.4)	0.95 (0.92-0.98)
1945	47.1 (46.5-47.7)	60.9 (60.2-61.4)	0.77 (0.76-0.79)	45.3 (44.7-45.9)	56.8 (56.1-57.4)	0.80 (0.78-0.81)	43.0 (42.3-43.6)	52.1 (51.4-52.7)	0.82 (0.81-0.84)	40.3 (39.7-41.0)	47.0 (46.3-47.7)	0.86 (0.84-0.88)	37.3 (36.6-37.9)	41.8 (41.0-42.4)	0.89 (0.87-0.92)	33.9 (33.2-34.5)	36.5 (35.7-37.1)	0.93 (0.90-0.96)
1950	41.5 (41.0-42.2)	55.1 (54.4-55.6)	0.75 (0.74-0.77)	39.7 (39.1-40.4)	51.4 (50.7-52.0)	0.77 (0.76-0.79)	37.4 (36.8-38.1)	47.1 (46.3-47.7)	0.79 (0.78-0.81)	34.9 (34.2-35.6)	42.5 (41.6-43.1)	0.82 (0.80-0.84)	31.9 (31.3-32.7)	37.6 (36.8-38.3)	0.85 (0.83-0.88)	28.7 (28.0-29.4)	32.8 (31.9-33.4)	0.87 (0.85-0.91)
1955	41.5 (41.0-42.0)	51.1 (50.7-51.7)	0.81 (0.80-0.82)	39.5 (39.0-40.0)	47.9 (47.4-48.5)	0.82 (0.81-0.84)	37.0 (36.5-37.7)	44.0 (43.5-44.7)	0.84 (0.82-0.86)	34.3 (33.8-35.0)	39.8 (39.3-40.5)	0.86 (0.84-0.88)	31.3 (30.7-31.9)	35.4 (34.9-36.1)	0.88 (0.86-0.90)	27.9 (27.4-28.5)	31.0 (30.5-31.7)	0.90 (0.87-0.93)
1960	41.7 (41.2-42.2)	45.2 (44.8-45.8)	0.92 (0.90-0.93)	39.5 (39.1-40.1)	42.3 (41.8-43.0)	0.93 (0.91-0.95)	37.0 (36.5-37.6)	38.9 (38.4-39.6)	0.95 (0.93-0.96)	34.1 (33.6-34.8)	35.2 (34.8-36.0)	0.97 (0.94-0.99)	31.0 (30.4-31.6)	31.3 (30.7-32.1)	0.99 (0.96-1.01)	27.5 (27.0-28.2)	27.3 (26.8-28.2)	1.01 (0.97-1.03)
1965	40.1 (39.7-40.7)	41.4 (41.0-42.1)	0.97 (0.95-0.98)	37.8 (37.4-38.6)	38.4 (38.1-39.1)	0.99 (0.97-1.00)	35.2 (34.7-36.0)	34.9 (34.5-35.6)	1.01 (0.99-1.03)	32.3 (31.8-33.1)	31.1 (30.7-31.8)	1.04 (1.01-1.07)	29.1 (28.6-30.0)	27.2 (26.8-27.9)	1.07 (1.04-1.10)			

1970	37.7 (37.1-38.8)	40.0 (39.6-40.8)	0.94 (0.92-0.97)	35.3 (34.6-36.6)	36.4 (35.9-37.3)	0.97 (0.95-1.01)	32.6 (31.5-34.0)	32.4 (31.9-33.3)	1.00 (0.98-1.06)	29.6 (28.8-31.5)	28.2 (27.6-29.2)	1.05 (1.02-1.12)						
1975	35.5 (34.8-37.1)	38.4 (37.8-39.3)	0.92 (0.90-0.97)	32.9 (31.8-34.9)	34.4 (33.6-35.4)	0.96 (0.93-1.02)	30.1 (28.7-32.3)	30.0 (29.2-31.1)	1.00 (0.96-1.09)									
1980	33.5 (32.2-35.9)	36.4 (35.6-37.6)	0.92 (0.89-0.99)	30.8 (29.2-34.0)	32.1 (31.3-33.8)	0.96 (0.90-1.05)												
1985	31.6 (29.6-34.8)	34.4 (33.4-36.4)	0.92 (0.88-1.02)															
BLACK																		
1900	17.8 (14.9-21.2)	64.2 (59.7-68.5)	0.28 (0.23-0.33)	18.8 (15.7-22.3)	64.9 (60.4-69.4)	0.29 (0.24-0.35)	19.3 (15.9-23.0)	64.7 (60.3-69.5)	0.30 (0.24-0.36)	19.6 (16.0-23.3)	64.0 (59.7-69.3)	0.31 (0.25-0.37)	19.7 (16.1-23.4)	62.9 (58.5-68.8)	0.31 (0.25-0.37)	19.7 (15.9-23.5)	61.6 (57.4-68.2)	0.32 (0.25-0.38)
1905	21.0 (18.8-23.6)	68.8 (66.0-71.5)	0.30 (0.27-0.35)	22.0 (19.7-24.9)	69.1 (66.4-72.0)	0.32 (0.28-0.36)	22.5 (20.2-25.4)	68.4 (66.0-71.6)	0.33 (0.29-0.37)	22.6 (20.3-25.6)	67.1 (64.8-70.8)	0.34 (0.30-0.38)	22.5 (20.0-25.6)	65.3 (63.2-69.7)	0.34 (0.30-0.39)	22.3 (19.6-25.6)	63.5 (60.5-68.2)	0.35 (0.30-0.40)
1910	25.0 (22.8-27.8)	71.1 (68.7-73.5)	0.35 (0.32-0.39)	26.0 (23.8-29.1)	70.9 (68.7-73.7)	0.37 (0.33-0.41)	26.2 (23.9-29.4)	69.7 (67.5-72.9)	0.38 (0.34-0.42)	26.0 (23.7-29.5)	67.8 (65.7-71.7)	0.38 (0.34-0.43)	25.4 (23.1-29.3)	65.4 (62.8-69.9)	0.39 (0.34-0.44)	24.8 (22.4-28.8)	63.0 (59.5-67.8)	0.39 (0.34-0.45)
1915	30.4 (29.0-33.1)	72.6 (70.7-74.7)	0.42 (0.40-0.46)	31.3 (30.0-34.2)	72.0 (70.2-74.5)	0.43 (0.41-0.48)	31.3 (29.5-34.2)	70.3 (68.5-73.3)	0.44 (0.42-0.49)	30.7 (28.5-33.7)	67.9 (66.2-71.7)	0.45 (0.42-0.50)	29.7 (27.9-33.2)	65.1 (62.1-69.1)	0.46 (0.42-0.51)	28.4 (26.0-32.1)	62.1 (58.9-66.8)	0.46 (0.41-0.52)
1920	36.6 (35.1-39.7)	73.7 (72.0-75.7)	0.50 (0.47-0.54)	37.5 (35.5-40.4)	72.8 (71.3-75.1)	0.51 (0.48-0.56)	37.2 (35.4-40.5)	70.7 (69.3-73.4)	0.53 (0.49-0.57)	36.2 (34.9-39.8)	67.8 (65.7-71.0)	0.53 (0.51-0.59)	34.8 (32.8-38.0)	64.5 (62.7-68.6)	0.54 (0.51-0.60)	33.2 (31.6-36.9)	61.1 (59.2-65.7)	0.54 (0.51-0.61)
1925	41.1 (39.3-43.6)	73.7 (72.2-75.7)	0.56 (0.54-0.60)	41.8 (40.4-44.7)	72.3 (70.9-74.6)	0.58 (0.56-0.62)	41.2 (39.9-44.3)	69.7 (68.4-72.4)	0.59 (0.56-0.63)	40.0 (38.8-43.2)	66.3 (64.9-69.3)	0.60 (0.58-0.65)	38.2 (36.9-41.5)	62.5 (60.6-66.0)	0.61 (0.59-0.66)	36.1 (34.5-39.4)	58.6 (56.8-62.8)	0.62 (0.59-0.67)
1930	43.3 (42.3-45.8)	71.4 (69.9-73.6)	0.61 (0.59-0.64)	43.8 (42.8-46.4)	69.8 (68.2-72.1)	0.63 (0.61-0.67)	43.0 (41.8-45.7)	66.8 (65.2-69.5)	0.64 (0.63-0.69)	41.5 (39.7-43.9)	63.0 (61.6-66.3)	0.66 (0.63-0.71)	39.3 (37.9-42.1)	58.9 (56.4-62.3)	0.67 (0.64-0.72)	36.9 (35.4-39.9)	54.6 (52.1-58.6)	0.68 (0.64-0.74)
1935	46.3 (45.3-48.9)	68.4 (66.7-70.3)	0.68 (0.66-0.72)	46.7 (45.4-49.2)	66.7 (65.0-68.8)	0.70 (0.68-0.74)	45.6 (44.6-48.4)	63.6 (61.9-66.0)	0.72 (0.69-0.77)	43.8 (42.6-46.7)	59.8 (57.9-62.5)	0.73 (0.70-0.79)	41.3 (40.2-44.5)	55.6 (53.7-58.7)	0.74 (0.72-0.81)	38.6 (36.9-41.6)	51.2 (49.5-54.9)	0.75 (0.72-0.83)
1940	47.4 (46.4-49.7)	67.5 (65.8-69.3)	0.70 (0.68-0.74)	47.7 (46.6-50.1)	65.8 (64.2-67.8)	0.73 (0.70-0.77)	46.5 (45.2-49.0)	62.6 (61.0-64.9)	0.74 (0.71-0.79)	44.5 (43.0-47.1)	58.7 (57.0-61.1)	0.76 (0.73-0.81)	42.0 (40.1-44.7)	54.5 (52.7-57.3)	0.77 (0.73-0.83)	39.0 (37.5-42.5)	50.1 (48.4-53.3)	0.78 (0.73-0.85)
1945	48.2 (47.4-49.7)	65.8 (64.4-67.7)	0.73 (0.71-0.76)	48.3 (47.3-49.9)	64.1 (62.7-66.2)	0.75 (0.73-0.79)	47.1 (46.0-48.8)	61.0 (59.7-63.4)	0.77 (0.74-0.81)	45.0 (43.8-46.9)	57.0 (55.7-59.7)	0.79 (0.76-0.83)	42.3 (41.1-44.5)	52.8 (51.4-56.0)	0.80 (0.76-0.85)	39.3 (38.1-42.0)	48.4 (46.9-52.0)	0.81 (0.76-0.87)
1950	45.4 (44.1-46.8)	60.1 (58.8-62.3)	0.75 (0.72-0.78)	45.6 (44.3-47.2)	58.6 (57.3-61.1)	0.78 (0.74-0.81)	44.4 (43.1-46.3)	55.8 (54.5-58.5)	0.80 (0.75-0.83)	42.4 (41.1-44.6)	52.2 (50.2-55.0)	0.81 (0.76-0.86)	39.9 (38.4-42.4)	48.2 (46.7-51.8)	0.83 (0.76-0.88)	36.9 (35.5-39.9)	44.2 (42.0-48.0)	0.84 (0.75-0.90)
1955	45.3 (44.0-46.7)	55.4 (54.3-57.5)	0.82 (0.78-0.85)	45.4 (44.2-47.1)	54.1 (52.9-56.6)	0.84 (0.80-0.88)	44.2 (43.0-46.1)	51.6 (49.5-54.2)	0.86 (0.80-0.90)	42.2 (40.9-44.3)	48.3 (46.3-51.4)	0.87 (0.81-0.92)	39.6 (38.2-42.0)	44.6 (42.0-48.2)	0.89 (0.81-0.94)	36.6 (35.3-39.4)	40.9 (38.0-45.1)	0.89 (0.80-0.96)
1960	41.3 (40.3-42.7)	46.4 (45.3-48.5)	0.89 (0.84-0.93)	41.4 (40.4-43.0)	45.4 (44.3-47.9)	0.91 (0.86-0.95)	40.2 (39.2-42.0)	43.3 (41.3-45.9)	0.93 (0.86-0.97)	38.2 (37.1-40.3)	40.5 (38.3-43.7)	0.94 (0.86-1.00)	35.7 (34.5-38.1)	37.4 (35.4-41.4)	0.95 (0.85-1.02)	32.8 (31.5-35.7)	34.3 (31.4-38.5)	0.96 (0.83-1.03)

1965	32.2 (31.4-33.4)	37.5 (36.6-39.4)	0.86 (0.81-0.90)	32.2 (31.4-33.7)	36.7 (35.6-38.9)	0.88 (0.82-0.92)	31.1 (30.0-32.9)	34.9 (33.5-37.4)	0.89 (0.82-0.95)	29.3 (28.1-31.5)	32.5 (30.7-35.5)	0.90 (0.81-0.97)	27.1 (25.5-29.5)	29.9 (28.1-33.6)	0.91 (0.80-0.98)			
1970	24.5 (23.9-25.9)	32.6 (31.5-34.3)	0.75 (0.70-0.79)	24.5 (23.4-26.1)	32.0 (31.0-34.5)	0.77 (0.71-0.82)	23.6 (22.3-25.6)	30.4 (29.1-33.6)	0.78 (0.70-0.84)	22.2 (20.9-24.7)	28.3 (26.9-32.3)	0.78 (0.69-0.87)						
1975	22.0 (21.1-23.2)	31.5 (30.5-33.3)	0.70 (0.66-0.74)	22.1 (21.5-23.9)	31.1 (29.7-33.2)	0.71 (0.66-0.76)	21.5 (20.5-23.6)	29.8 (28.6-32.9)	0.72 (0.66-0.78)									
1980	22.6 (21.9-23.7)	32.2 (31.1-34.0)	0.70 (0.66-0.74)	23.0 (22.1-24.4)	32.1 (31.1-34.7)	0.72 (0.67-0.76)												
1985	23.9 (23.1-25.2)	33.3 (32.1-35.5)	0.72 (0.68-0.77)															
HISPANIC																		
1900	22.6 (14.1-38.5)	64.3 (52.3-73.8)	0.35 (0.20-0.63)	23.8 (13.9-40.2)	64.4 (51.2-74.4)	0.37 (0.20-0.67)	24.7 (13.3-41.4)	63.9 (48.9-74.8)	0.39 (0.18-0.69)	25.3 (11.7-42.3)	63.2 (46.2-75.0)	0.40 (0.16-0.71)	25.6 (10.2-42.8)	62.0 (43.2-75.0)	0.41 (0.14-0.76)	25.9 (9.2-43.0)	60.7 (39.0-75.1)	0.43 (0.12-0.79)
1905	24.1 (18.4-32.2)	64.0 (54.3-70.6)	0.38 (0.28-0.53)	25.3 (19.1-33.8)	64.2 (54.9-71.2)	0.39 (0.29-0.55)	26.1 (19.4-34.9)	63.9 (54.6-71.5)	0.41 (0.29-0.57)	26.6 (19.1-35.5)	63.3 (54.3-71.8)	0.42 (0.28-0.58)	26.9 (18.2-35.9)	62.3 (53.6-71.8)	0.43 (0.27-0.59)	27.0 (17.5-36.1)	61.2 (52.7-71.6)	0.44 (0.27-0.60)
1910	25.2 (19.9-29.3)	62.8 (53.4-68.4)	0.40 (0.32-0.51)	26.3 (20.8-30.7)	63.0 (53.8-68.7)	0.42 (0.33-0.53)	26.9 (21.3-31.5)	62.5 (53.6-68.8)	0.43 (0.35-0.55)	27.1 (21.5-31.9)	61.8 (52.7-68.7)	0.44 (0.34-0.56)	27.1 (21.1-32.2)	60.7 (51.7-68.3)	0.45 (0.34-0.57)	26.9 (20.9-32.3)	59.4 (50.4-68.0)	0.45 (0.34-0.58)
1915	26.0 (22.1-28.8)	61.0 (56.7-66.6)	0.43 (0.35-0.48)	26.8 (23.0-30.0)	60.5 (56.2-66.7)	0.44 (0.37-0.50)	27.1 (23.4-30.7)	59.4 (54.9-66.4)	0.46 (0.38-0.52)	26.9 (23.5-31.0)	58.0 (53.1-66.2)	0.46 (0.38-0.54)	26.4 (23.2-31.1)	56.1 (50.8-65.7)	0.47 (0.39-0.56)	25.8 (22.9-31.0)	54.0 (48.2-65.3)	0.48 (0.39-0.59)
1920	26.6 (24.2-29.4)	61.2 (57.8-66.2)	0.44 (0.38-0.47)	27.2 (24.9-30.4)	59.7 (57.1-65.9)	0.46 (0.39-0.49)	27.2 (25.0-30.8)	57.4 (53.8-63.9)	0.47 (0.41-0.52)	26.8 (24.8-30.7)	54.8 (51.3-62.5)	0.49 (0.42-0.54)	26.0 (23.6-30.3)	51.7 (47.7-60.4)	0.50 (0.42-0.56)	25.0 (22.8-29.9)	48.3 (42.8-57.3)	0.52 (0.43-0.59)
1925	26.4 (24.8-29.3)	63.1 (61.2-66.8)	0.42 (0.39-0.46)	26.7 (24.7-29.7)	60.8 (58.9-65.3)	0.44 (0.41-0.49)	26.5 (24.3-29.8)	57.9 (55.6-63.2)	0.46 (0.42-0.51)	25.8 (23.9-29.9)	54.4 (51.0-60.1)	0.47 (0.43-0.54)	24.7 (22.7-29.3)	50.6 (47.9-58.1)	0.49 (0.44-0.56)	23.5 (20.9-28.1)	46.5 (43.4-55.2)	0.51 (0.45-0.59)
1930	25.8 (24.5-28.6)	61.4 (59.5-64.3)	0.42 (0.40-0.47)	26.0 (24.5-29.2)	59.2 (57.4-62.5)	0.44 (0.40-0.49)	25.6 (24.3-29.5)	56.2 (53.4-59.9)	0.45 (0.42-0.51)	24.7 (22.5-28.3)	52.7 (49.6-57.1)	0.47 (0.43-0.55)	23.4 (21.7-28.2)	48.9 (45.8-54.2)	0.48 (0.43-0.57)	22.0 (20.2-27.5)	44.8 (42.3-51.5)	0.49 (0.42-0.59)
1935	28.2 (26.7-30.8)	61.5 (59.6-64.1)	0.46 (0.44-0.50)	28.2 (26.8-31.2)	59.0 (57.3-62.2)	0.48 (0.45-0.53)	27.6 (26.0-30.9)	55.8 (54.2-59.5)	0.49 (0.46-0.55)	26.5 (24.8-30.3)	52.2 (50.3-56.4)	0.51 (0.46-0.58)	25.0 (22.6-28.7)	48.1 (45.3-52.7)	0.52 (0.47-0.60)	23.4 (21.0-27.9)	43.8 (40.1-48.7)	0.53 (0.47-0.63)
1940	30.3 (29.2-32.7)	58.9 (57.1-61.7)	0.51 (0.49-0.56)	30.3 (28.9-32.9)	56.3 (54.5-59.5)	0.54 (0.51-0.59)	29.6 (28.1-32.5)	52.9 (51.2-56.7)	0.56 (0.53-0.62)	28.4 (26.7-31.7)	49.1 (46.3-52.9)	0.58 (0.54-0.65)	26.8 (24.8-30.3)	44.9 (42.1-49.6)	0.60 (0.55-0.69)	25.0 (22.9-29.1)	40.5 (37.9-46.3)	0.62 (0.57-0.73)
1945	31.1 (29.7-33.0)	56.1 (54.2-58.7)	0.55 (0.53-0.60)	31.1 (29.9-33.4)	53.4 (51.5-56.2)	0.58 (0.55-0.63)	30.3 (28.8-32.8)	49.9 (48.1-53.0)	0.61 (0.57-0.67)	29.1 (27.8-32.0)	46.1 (44.3-49.6)	0.63 (0.59-0.71)	27.4 (25.7-30.5)	41.8 (40.0-45.9)	0.66 (0.61-0.75)	25.6 (23.7-29.2)	37.5 (34.5-41.7)	0.68 (0.63-0.80)
1950	29.4 (28.4-31.2)	51.0 (49.3-53.1)	0.58 (0.55-0.62)	29.3 (28.0-31.3)	48.4 (46.6-50.7)	0.61 (0.58-0.66)	28.5 (27.3-31.0)	45.1 (43.3-47.6)	0.63 (0.59-0.69)	27.3 (25.8-29.9)	41.4 (39.5-44.2)	0.66 (0.60-0.73)	25.6 (24.0-28.6)	37.4 (35.5-40.7)	0.68 (0.63-0.78)	23.7 (21.9-27.2)	33.3 (31.5-37.0)	0.71 (0.64-0.84)
1955	31.5 (30.7-33.2)	45.7 (44.3-47.7)	0.69 (0.66-0.73)	31.2 (29.9-33.0)	43.2 (41.7-45.3)	0.72 (0.69-0.78)	30.0 (29.0-32.3)	39.9 (38.4-42.3)	0.75 (0.71-0.82)	28.4 (27.1-30.9)	36.3 (34.7-38.9)	0.78 (0.73-0.87)	26.4 (24.5-29.0)	32.5 (31.0-35.4)	0.81 (0.75-0.91)	24.2 (22.2-27.5)	28.6 (26.6-31.8)	0.84 (0.78-0.98)

1960	28.8 (27.8-30.5)	40.5 (39.3-42.6)	0.71 (0.67-0.76)	28.3 (27.3-30.3)	37.9 (36.7-40.4)	0.75 (0.70-0.80)	27.1 (26.0-29.4)	34.8 (33.5-37.5)	0.78 (0.72-0.85)	25.4 (24.2-28.1)	31.3 (29.6-34.2)	0.81 (0.74-0.90)	23.3 (21.6-26.3)	27.7 (25.6-30.7)	0.84 (0.75-0.95)	21.1 (19.0-24.4)	24.1 (22.2-27.7)	0.88 (0.77-1.02)
1965	23.1 (22.2-24.6)	35.3 (34.2-37.2)	0.66 (0.62-0.71)	22.8 (21.9-24.7)	32.8 (31.8-35.1)	0.69 (0.65-0.76)	21.8 (20.4-23.9)	29.9 (28.4-32.5)	0.73 (0.68-0.82)	20.4 (19.3-23.3)	26.6 (25.0-29.5)	0.77 (0.71-0.88)	18.8 (17.3-22.0)	23.3 (21.6-26.6)	0.81 (0.74-0.96)			
1970	18.5 (17.8-20.0)	31.2 (30.3-33.1)	0.59 (0.57-0.65)	18.2 (17.2-20.0)	28.9 (27.6-31.3)	0.63 (0.59-0.70)	17.5 (16.4-19.9)	26.2 (24.8-29.1)	0.67 (0.62-0.78)	16.4 (15.1-19.4)	23.2 (21.6-26.4)	0.71 (0.64-0.85)						
1975	16.1 (15.6-17.7)	28.8 (28.0-30.8)	0.56 (0.52-0.60)	15.8 (14.9-17.8)	26.7 (25.4-29.1)	0.59 (0.56-0.67)	15.1 (14.1-17.8)	24.2 (22.7-27.2)	0.62 (0.56-0.71)									
1980	15.6 (14.8-17.3)	27.5 (26.5-30.1)	0.57 (0.54-0.62)	15.1 (14.4-17.8)	25.6 (24.0-28.7)	0.59 (0.55-0.67)												
1985	15.3 (14.1-17.5)	26.8 (25.1-29.8)	0.57 (0.53-0.64)															

Abbreviations: F, female; CI, confidence interval; M, male. Reference group for PRs is males. White and black race exclude persons of Hispanic ethnicity.

Table S5. Age-specific lung cancer incidence rates, rate ratios (IRRs), and stage distribution among whites, by sex, stage, and calendar period

	Localized					Regional					Distant					Unknown				
	Rate		Female-to-male IRR (95% CI)	Percent of cases		Rate		Female-to-male IRR (95% CI)	Percent of cases		Rate		Female-to-male IRR (95% CI)	Percent of cases		Rate		Female-to-male IRR (95% CI)	Percent of cases	
	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		Female	Male	Female	Male		Female	Male
30-34 years																				
2001-04	0.4	0.2	1.83 (1.31-2.59)	31%	16%	0.4	0.3	1.18 (0.86-1.63)	27%	21%	0.6	0.7	0.79 (0.63-1.00)	42%	50%	0.1	0.2	0.55 (0.33-0.92)	8%	13%
2005-09	0.5	0.3	1.56 (1.19-2.06)	34%	23%	0.3	0.3	1.14 (0.82-1.59)	20%	19%	0.7	0.7	0.92 (0.75-1.13)	45%	52%	0.1	0.1	0.85 (0.44-1.60)	5%	6%
2010-14	0.4	0.3	1.71 (1.26-2.32)	32%	23%	0.3	0.3	1.15 (0.83-1.59)	22%	24%	0.6	0.5	1.12 (0.90-1.40)	46%	50%	<0.1	<0.1	1.42 (0.59-3.58)	4%	3%
35-39 years																				
2001-04	0.9	0.6	1.57 (1.27-1.94)	17%	12%	1.2	1.1	1.13 (0.96-1.33)	24%	23%	2.9	2.6	1.10 (0.99-1.22)	58%	56%	0.3	0.4	0.77 (0.57-1.04)	6%	9%
2005-09	0.9	0.5	1.69 (1.39-2.08)	21%	14%	0.9	0.8	1.13 (0.95-1.36)	22%	21%	2.3	2.2	1.06 (0.96-1.18)	57%	59%	0.2	0.3	0.91 (0.65-1.27)	6%	7%
2010-14	0.8	0.5	1.60 (1.28-2.01)	23%	16%	0.8	0.6	1.23 (1.00-1.51)	23%	21%	1.8	1.8	1.02 (0.89-1.15)	53%	58%	0.1	0.1	1.07 (0.67-1.71)	4%	5%
40-44 years																				
2001-04	2.4	1.6	1.49 (1.33-1.68)	17%	11%	3.9	3.6	1.08 (1.00-1.18)	27%	24%	8.2	8.6	0.95 (0.90-1.00)	56%	57%	1.0	1.2	0.82 (0.70-0.96)	7%	8%
2005-09	2.3	1.3	1.82 (1.61-2.05)	17%	10%	3.1	2.7	1.12 (1.03-1.23)	24%	23%	7.7	7.4	1.03 (0.98-1.09)	59%	61%	0.6	0.7	0.91 (0.75-1.10)	5%	6%
2010-14	1.8	1.0	1.82 (1.57-2.10)	18%	11%	2.3	1.9	1.19 (1.07-1.33)	23%	22%	6.0	5.6	1.07 (1.00-1.14)	59%	62%	0.4	0.5	0.91 (0.71-1.16)	4%	5%
45-49 years																				
2001-04	5.1	3.7	1.37 (1.27-1.49)	18%	11%	7.4	8.7	0.85 (0.80-0.90)	26%	25%	15.7	19.6	0.80 (0.77-0.84)	56%	56%	2.2	2.9	0.76 (0.68-0.84)	8%	8%
2005-09	5.6	3.3	1.68 (1.56-1.80)	17%	10%	8.1	7.6	1.07 (1.01-1.12)	25%	23%	18.8	19.7	0.95 (0.92-0.98)	58%	60%	1.6	2.1	0.77 (0.69-0.86)	5%	6%
2010-14	4.9	2.7	1.82 (1.67-1.97)	17%	10%	6.6	5.7	1.15 (1.08-1.22)	23%	22%	16.6	16.1	1.03 (0.99-1.07)	59%	63%	1.0	1.3	0.79 (0.68-0.92)	4%	5%
50-54 years																				
2001-04	9.1	8.6	1.06 (1.00-1.12)	18%	12%	13.7	18.1	0.75 (0.72-0.79)	27%	25%	27.0	38.7	0.70 (0.68-0.71)	54%	54%	4.2	6.3	0.66 (0.62-0.72)	8%	9%
2005-09	10.2	8.0	1.27 (1.21-1.34)	19%	12%	13.9	15.9	0.88 (0.84-0.91)	25%	23%	30.7	39.9	0.77 (0.75-0.79)	56%	58%	2.7	4.6	0.59 (0.55-0.64)	5%	7%
2010-14	10.5	7.1	1.47 (1.40-1.55)	18%	11%	14.0	14.4	0.98 (0.94-1.02)	24%	23%	33.8	37.8	0.89 (0.87-0.92)	58%	60%	2.2	3.5	0.65 (0.59-0.71)	4%	6%

Data are based on all registries with available data in the NAACCR public use database² from 2001-2014. Reference group for IRRs is males. Persons of Hispanic ethnicity were excluded. IRRs were calculated using unrounded rates. Bold indicates the IRR is significantly different from 1.00 (p < 0.05). Rates are per 100,000 person-years. Staging definitions are per SEER Summary. Data years 1995-2000 were excluded because staging data were not available.

SUPPLEMENTARY REFERENCES

1. SEER Program (<https://www.seer.cancer.gov>) SEER*Stat Database: Mortality — All COD, Aggregated With State, Total U.S. (1990–2015) <Katrina/Rita Population Adjustment>, National Cancer Institute, DCCPS, Surveillance Research Program, released December 2017. Underlying mortality data provided by NCHS (<https://www.cdc.gov/nchs>).
2. SEER*Stat database: NAACCR incidence data — CiNA Analytic File, Public Use (which includes data from CDC’s National Program of Cancer Registries (NPCR), CCCR’s Provincial and Territorial Registries, and the NCI’s Surveillance, Epidemiology and End Results (SEER) Registries), certified by the North American Association of Central Cancer Registries (NAACCR) as meeting high-quality incidence data standards for the specified time periods, submitted December 2016.