Supplementary Appendix

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

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Supplementary narrative description of cohorts

Historical cohorts

Cancer Prevention Studies I (CPS-I) and II (CPS-II) have been used previously to measure the mortality risks associated with cigarette smoking in the 1960s and 1980s respectively.[1] [3,18,19] CPS-I was initiated by the American Cancer Society (ACS) in the fall of 1959, when 68,000 ACS volunteers recruited approximately one million subjects in 25 states to complete a four page questionnaire. Enrollment was by household; volunteers were instructed to recruit all household members 30 years of age or older if at least one family member was 45 years or older. The enrollment excluded people in military service, institutions and itinerants who would likely be difficult to trace[20]. A total of 1,051,042 individuals (456,491 men, 594,551 women) representing approximately 3% of the U.S. population age 45 and over[1] completed and mailed to ACS a four page questionnaire with information on smoking, medical and demographic characteristics. After exclusion of 149,828 men who reported ever smoking pipes or cigars, 23,965 subjects whose baseline smoking status was unspecified, and 336,267 men and women whose attained age was $\leq$55, a total of 515,982 subjects (183,060 men and 335,922 women) were retained in the CPS-I analyses (Table 1).

CPS-II enrollment began in the fall of 1982, when 77,000 ACS volunteers recruited nearly 1.2 million participants using the same approach as in CPS-I but expanding coverage to all 50 states, the District of Columbia, Puerto Rico and Guam. A total of 1,184,418 individuals (508,237 men, 676,181women) completed and mailed to ACS a four page questionnaire with information on smoking, medical and demographic characteristics. After exclusion of 101,572 men who reported ever smoking pipes or cigars, 71,063 subjects whose baseline smoking status was unspecified, and 265,298 men and women whose attained age was $\leq$55, a total of 746,485 (293,592 men, 452,893 women were retained in the CPS-II analyses (Table 1).

Follow-up was restricted to the first six years after enrollment when the follow-up methods were identical in CPS-I (1959-1965) and CPS-II (1982-88). Vital status was determined through personal contact by the volunteers who enrolled subjects. Persons lost to follow-up were considered alive until the last date of follow-up. Death certificates were obtained for deceased subjects. Underlying cause of death was coded according to an abbreviated version of the Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, seventh (ICD-7)[World Health Organization 1957] in CPS-I and ninth revision (ICD-9)[World Health Organization 1977] in CPS-II.

The definition of ever smoking varied slightly in CPS-I (and in the enrollment questionnaire of the NHS- see below) from that in cohorts initiated later. CPS-I defined current smoking at baseline by asking "Do you now smoke?" and former smoking by asking "If you do not smoke cigarettes now, did you ever smoke cigarettes regularly (regularly not defined)?" CPS-II (1982) defined regular smoking by the criterion used in the British Doctors' Study[31] of at least "one a day for one year's time". No updated information on smoking was obtained in CPS-II. Although updated information on smoking was obtained in CPS-I (annually for the first six years of follow-up and twice thereafter) only the baseline information on smoking was used in the main analyses. Sensitivity analyses were conducted to assess how using the updated information on smoking would influence the results.

Description of contemporary cohorts

The **NIH-AARP Diet and Health cohort (NIH-AARP)** is the largest of the five contemporary cohorts in our analysis. It was established in 1995/1996 when 567,000 AARP members, ages 50 to 71 years, returned questionnaire responses about their demographic, medical and behavioral characteristics[11,32]. Enrollment was restricted to six U.S. states and two metropolitan areas with high quality cancer registries. After exclusion of 21,799 participants (13,601 men, 8,198 women) with indeterminate smoking status at

baseline and 19,451 subjects (13,520 men, 5,931 women) who died or were censored before January, 2000, a total of 525,149 subjects (312,546 men, 212,603 women remained in the analysis (Table S1).

The vital status of NIH-AARP participants was determined from enrollment through 31 December 2008 through annual linkage to the Social Security Administration Death Master File[33]. Persons identified as deceased were further linked to the National Death Index Plus to obtain information on the underlying cause of death. Person-years at risk accumulated from January 1, 2000 until death or the end of follow-up, whichever came first.

Information on smoking status and the number of cigarettes smoked per day was collected at enrollment (1995/1996)[27] and again in 2004-2006. Ever smoking was defined as having smoked "100 or more cigarettes during your entire life". Both questionnaires asked, "Do you currently smoke cigarettes?" Categorical information was collected on the number of cigarettes smoked per day at various ages. The information collected in 1995/96 was used to define exposure from the beginning of follow-up in our study (1 Jan 2000) to the return of the 2004-2006 questionnaire, whereupon smoking was reclassified by status, number of cigarettes smoked and duration among current smokers, and by time since quitting among former smokers[26]. The NIH-AARP Diet and Health study was reviewed and approved by the Special Studies Institutional Review Board of the U.S. National Cancer Institute (NCI).

The **CPS-II Nutrition Cohort** was established by the American Cancer Society in 1992/93 as a subset of the original (1982) CPS-II mortality study[12]. Questionnaires were mailed to CPS-II participants between the ages of 50-74 years in 1992 who lived in 21 states with high quality population-based cancer registries. A total of 184,187 individuals (86,404 men and 97,785 women) completed a ten page questionnaire on smoking, diet, medical and demographic characteristics. Follow-up questionnaires were mailed biennially to surviving cohort members beginning in 1997. A $\geq$90% response rate has been achieved for each follow-up questionnaire. Our analyses are based on 165,742 subjects (75,162 men and 90,580 women) who

completed the 1999 questionnaire. We excluded 2,483 subjects (856 men, 1627 women) whose smoking status was undefined and 15,962 (10,384 men, 5,578 women) who died before January 1, 2000. The vital status of cohort members was determined through 31 December 2008 through linkage with the National Death Index. For deceased persons the underlying cause of death was obtained from NDI Plus. Person-years at risk accumulated from January 1, 2000 until death or the end of follow-up, whichever came first.

The CPS-II Nutrition Cohort used the same criterion for "ever" smoking as the US National Health Interview (NHIS) Survey[34]: "Have you smoked at least one hundred cigarettes in your entire life"?[34] For subjects who answered "yes" to this question, current and former smoking were defined based on the follow-up question, "Do you smoke cigarettes now?" Smoking status on Jan 1, 2000 was based on responses to the 2000 questionnaire and was updated with each biennial follow-up questionnaire through 2005. The Emory University School of Medicine Institutional Review Board approved all aspects of the CPS-II Nutrition cohort.

Nurses' Health Study (NHS): The Harvard NHS was established in 1976 when 121,700 female registered nurses from 11 U.S. states completed a mailed questionnaire about medical history and potential risk factors for cancer and other chronic diseases[15]. Deaths have been identified by family members and through linkage with the National Death Index[35] through at least 31 May 2010, which constituted the end of follow-up in our analyses. Information on smoking was collected at enrollment in 1976 and every two years thereafter. As in CPS-I, current and former smoking were initially defined by responses to the questions "Do you now smoke?" and "If you do not smoke cigarettes now, did you ever smoke cigarettes regularly (regularly not defined)?" Our analyses are based on 75,170 female nurses who completed the 2000 survey. We updated the information on smoking status (never, current or former), quantity of cigarettes smoked and duration among current smokers, and time since quitting among former smokers[26] at the start of each 2-year interval. Person-years of follow-up accumulate from January 1st, 2000 until either the date of death or the end of follow-up (May 31, 2010).

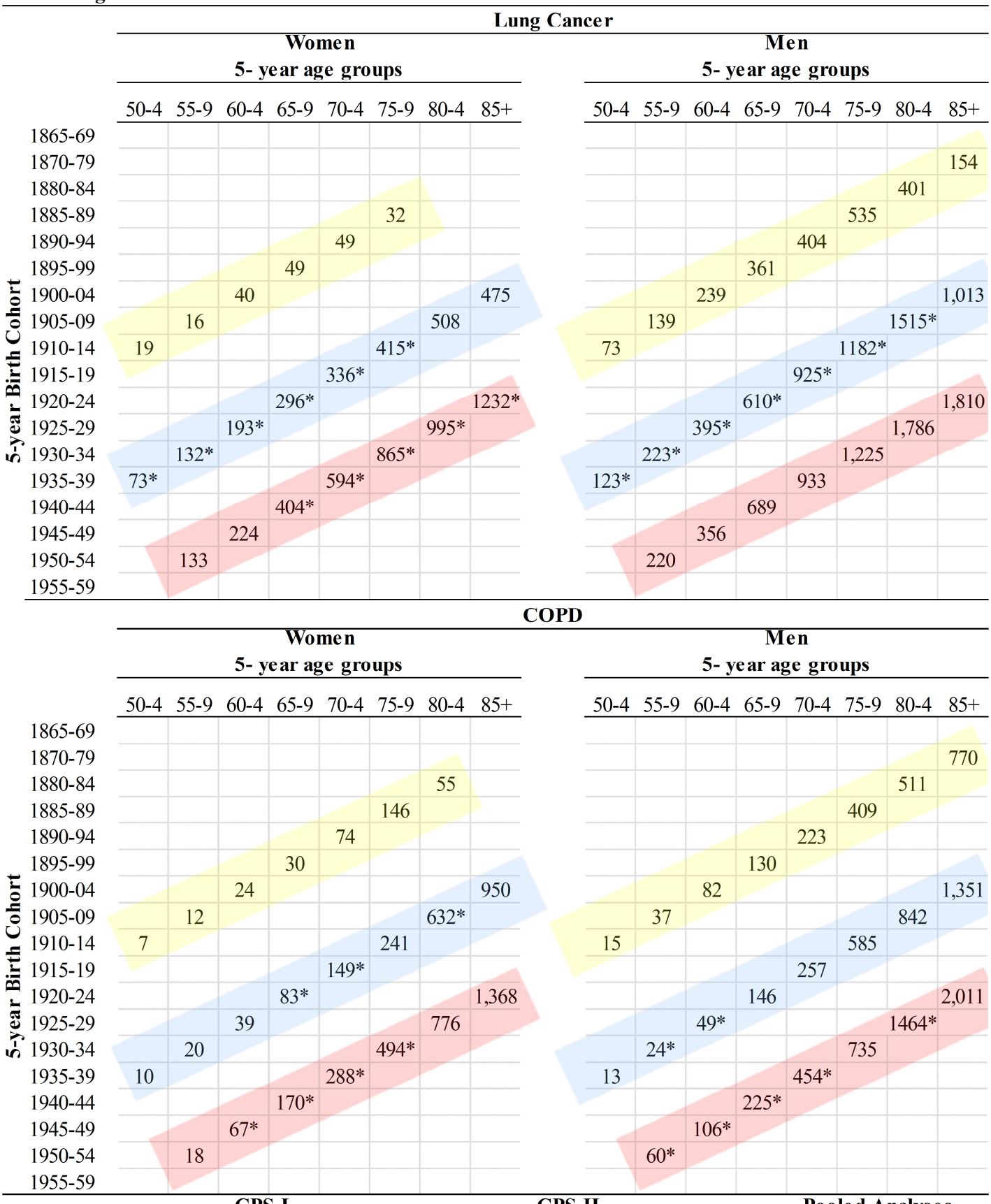
Health Professionals Follow-up Study (HPFS): The Harvard HPFS is the male counterpart to the NHS, begun in 1986 when 51,529 male health professionals (dentists, optometrists, pharmacists, podiatrists and veterinarians, age 40 to 75 years answered a similar mailed questionnaire[16]. As in the NHS, participants complete biennial follow-up questionnaires and provide information on new medical diagnoses and to update information on lifestyle factors (response rate 96%)[36]. Deaths have been identified by family members and through linkage with the National Death Index[35]. Our analyses included 33,994 men who completed the 2000 survey. Person-years of follow-up began at January 1st, 2000 and ended at death or the end of follow-up (30 December, 2009), whichever came first.

HPFS assessed current smoking status and cigarettes smoked per day every two years, beginning in 1986. The initial questionnaire also inquired about past smoking, time since quitting, and the average number of cigarettes smoked per day within seven age categories[36]. Ever smoking was initially defined as "twenty packs or more in your lifetime". On each subsequent questionnaire, participants reported whether they currently smoked cigarettes. At the start of each two-year interval we reclassified smoking status (never, current or former), number of cigarettes smoked per day and duration among current smokers, and time since quitting among former smokers[26]. The HPFS was approved by the Institutional Review Board of the Harvard School of Public Health. Participants provide implied consent by virtue of returning their questionnaires and written informed consent for medical reviews.

Women's Health Initiative (WHI): The WHI was established by the National Institutes of Health in 1991 to address the most common causes of death, disability and impaired quality of life in postmenopausal women. Components of the WHI that contributed data to our analyses were the observational study (N=93,676) and three overlapping randomized clinical trials (N=68,132). The observational study was designed to obtain detailed information on a range of lifestyle factors and medical history from postmenopausal women. The clinical trials were designed to test the effects of various nutritional and hormonal interventions on cancer, heart disease and fractures. In total, the WHI studies enrolled 161,808 women, ages 50-79 years between 1993 and 1998 at 40 clinical centers throughout the U.S. Participants

were ages 50 to 79 years at enrollment. Information on year of enrollment was provided to us within two-year time intervals out of concern for confidentiality. Information on ever smoking (at least 100 cigarettes), age at starting to smoke regularly (nine categories), current smoking (yes/no), and age at quitting (former smoker nine categories) was collected at the time of initial enrollment. This information was supplemented with a second survey administered in 2000 but not updated during subsequent follow-up. Our analyses include 156,701 women who were alive and provided updated information on smoking in 2000. Deaths were identified through 9/30/2010 for participants who, in 2005, consented to active follow-up by the WHI and through 12/31/2008 for participants followed only through NDI.

Figure S1. Age-specific death rates (per 100,000) for lung cancer and COPD for male and female smokers in CPS-I, 1959-1965, CPS-II 1982-1988, and the 2000-2010 pooled analyses, by 5-year birth cohort and attained age.



* Age-specific death rates are statistically significantly higher than in the earlier period.

Table S1. Baseline characteristics of the contemporary cohorts.

	CPS-II Nutrition Cohort		Harvard Cohorts		NIH-AARP		WHI
	Men	Women	HPFS	NHS	Men	Women	Women
Total included in analysis	75,162	90,580	33,994	75,170	312,546	212,603	156,701
Year(s) of enrollment	1992		1986	1976	1995-1996		1993-1998
Years of follow-up in analysis	2000-2008		2000-2010		2000-2008		2000-2010
Number of Deaths							
All Causes	19,511	13,458	5,663	7,555	48,626	23,112	18,831
Lung Cancer	1,378	862	310	609	4,947	2,489	831
COPD	889	611	147	161	2,442	1,558	704
Ischemic Heart Disease	4,021	1,806	1,231	505	9,501	3,022	2,536
Other Heart Disease	1,593	1,114	306	302	3,362	1,697	1,528
Total Stroke	1,125	1,024	316	453	1,990	1,189	1,439
Mean age (st dev) ¥	71.3 (5.9)	69.5 (6.4)	66.2 (9.2)	65.3 (7.0)	65.7 (5.3)	65.4 (5.4)	66.8 (7.1)
Education (%) ±							
High school or less	26.6	21.0	-	-	21.9	31.4	16.1
Some college	25.6	29.1	-	-	31.3	35.4	32.9
College education or more	47.1	49.3	100.0	100.0	44.4	30.0	50.6
Race (%)							
White	97.4	97.3	94.7	97.5	92.8	89.8	83.1
Black	1.2	1.5	0.8	1.4	2.7	5.4	8.9
Other/Missing	1.4	1.2	4.6	1.1	4.5	4.8	8.1
Ethnicity (%)							
Non-Hispanic	99.3	99.4	-	99.1	97.2	96.8	96.4
Hispanic	0.4	0.4	-	0.9	1.9	1.8	3.6
Marital Status at enrollment (%)							
Married	94.0	83.7	91.1	100.0	85.8	44.4	62.4
Smoking Status (%)† **							
Never	37.5	53.6	50.3	46.5	31.1	45.4	51.5
Current	7.3	6.6	4.3	9.4	11.6	15.4	5.8
Former	55.2	39.8	45.4	44.1	57.3	39.2	42.7
Cigarettes smoked per day (%) ** ††							
<10	36.2	41.9	46.3	46.9	20.5	30.1	74.7
10-19	33.8	29.9	31.6	39.2	37.5	42.3	17.3
20-39	17.9	15.5	20.2	11.7	37.0	25.7	6.7
40+	1.2	0.6	1.7	0.6	5.1	2.0	0.4
Mean years (st dev) of smoking by age†† ‡¥**							
50-59	37.1 (8.7)	34.8 (8.8)	34.7 (7.6)	36.7 (5.9)	39.2 (7.1)	37.4 (7.5)	32.8 (10.5)
60-69	43.9 (9.2)	41.9 (9.6)	44.0 (7.8)	44.7 (5.9)	45.3 (8.0)	43.4 (8.8)	38.9 (11.6)
70-79	50.8 (10.6)	47.9 (11.4)	53.0 (9.0)	52.6 (6.4)	51.3 (8.4)	47.3 (11.4)	44.6 (11.8)
80+	56.5 (15.6)	52.4 (12.4)	55.6 (15.4)	-	-	-	45.1 (14.0)
Age at initiation (%) **†† ‡							
<15	12.6	8.8	12.6	3.5	34.3	17.4	8.4
15-19	67.8	56.3	38.9	55.8	40.8	43.3	45.6
20-29	17.1	28.3	41.8	38.0	22.2	33.9	36.6
30+	2.3	6.5	4.6	2.1	2.6	5.4	9.2

NHS enrolled in 1976, HPFS in 1986, CPS-II Nutrition Cohort in 1992, NIH-AARP in 1995-1996, and WHI in 1993-1998

** Age-adjusted to the 2000 US population standard

¥ Age at beginning of follow-up

± For women, spouse's education is used if greater

† Smoking status as of 1959 for CPS-I, 1982 for CPS-II, 1999 for CPS-II Nutrition Cohort, 2000 for HPFS and NHS, 1996 for NIH-AARP, and 1995-2001 for WHI.

†† Only in Current Smokers

‡ For NIH-AARP, Age of Initiation is only available for those who completed the 2004 survey

Table S2. Pooled age-specific mortality rates per 100,000 and relative risks (RR) in never and current smokers for lung cancer, COPD, ischemic heart disease, other heart diseases, total stroke, and all causes for men and women of CPS-II Nutrition Cohort, HPFS, NHS, NIH-AARP, and WHI, 2000-2010.

	Lung cancer				COPD				Ischemic Heart Disease				All Stroke				Other Heart Diseases				All Causes			
	Deaths	Rate	RR	95% CI	Deaths	Rate	RR	95% CI	Deaths	Rate	RR	95% CI	Deaths	Rate	RR	95% CI	Deaths	Rate	RR	95% CI	Deaths	Rate	RR	95% CI
Men																								
Never Smokers																								
55-59	8	12			0	0			37	54			6	9			8	12			207	299		
60-64	26	14			2	1			179	97			34	19			50	27			975	530		
65-69	43	16			21	8			411	154			84	31			172	64			2,207	826		
70-74	103	33			40	13			833	268			220	71			325	104			4,221	1,356		
75-79	104	49			59	28			1,020	479			299	141			372	175			4,944	2,323		
80-84	49	74			45	68			633	954			195	294			260	392			2,881	4,340		
85+	24	125			16	83			469	2,435			163	846			213	1,106			2,027	10,522		
Current Smokers																								
55-59	51	220	19.0	(9.0, 40.0)	14	60			40	172	3.2	(2.1, 5.0)	4	17	2.0	(0.6, 7.0)	8	34	3.0	(1.1, 7.9)	256	1,102	3.7	(3.1, 4.4)
60-64	181	356	25.1	(16.7, 37.9)	54	106	97.5	(23.8, 399.9)	195	383	3.9	(3.2, 4.8)	24	47	2.5	(1.5, 4.3)	50	98	3.6	(2.4, 5.3)	914	1,795	3.4	(3.1, 3.7)
65-69	395	689	42.8	(31.2, 58.6)	129	225	28.6	(18.0, 45.4)	298	520	3.4	(2.9, 3.9)	51	89	2.8	(2.0, 4.0)	97	169	2.6	(2.0, 3.4)	1,652	2,880	3.5	(3.3, 3.7)
70-74	493	933	28.2	(22.8, 34.9)	240	454	35.3	(25.3, 49.4)	436	825	3.1	(2.7, 3.5)	86	163	2.3	(1.8, 3.0)	139	263	2.5	(2.1, 3.1)	2,339	4,424	3.3	(3.1, 3.4)
75-79	265	1,225	25.1	(20.0, 31.5)	159	735	26.5	(19.7, 35.7)	237	1,096	2.3	(2.0, 2.6)	51	236	1.7	(1.2, 2.3)	81	374	2.1	(1.7, 2.7)	1,315	6,078	2.6	(2.5, 2.8)
80-84	61	1,786	24.2	(16.6, 35.2)	50	1,464	21.6	(14.4, 32.3)	60	1,757	1.8	(1.4, 2.4)	14	410	1.4	(0.8, 2.4)	21	615	1.6	(1.0, 2.4)	351	10,278	2.4	(2.1, 2.6)
85+	9	1,810	14.5	(6.8, 31.2)	10	2,011	24.2	(11.0, 53.3)	20	4,021	1.7	(1.1, 2.6)	6	1,206	1.4	(0.6, 3.2)	7	1,407	1.3	(0.6, 2.7)	93	18,698	1.8	(1.4, 2.2)
Women																								
Never Smokers																								
55-59	7	6			0	0			24	20			11	9			16	13			326	265		
60-64	34	10			12	4			111	32			34	10			93	27			1,253	361		
65-69	77	15			22	4			303	59			136	27			189	37			2,948	577		
70-74	123	21			45	8			623	107			352	61			399	69			5,301	913		
75-79	160	35			110	24			931	203			605	132			594	129			7,133	1,552		
80-84	70	34			78	38			832	404			569	276			539	262			5,974	2,902		
85+	42	81			53	102			525	1,015			308	595			382	738			3,247	6,274		
Current Smokers																								
55-59	45	133	23.3	(10.5, 51.7)	6	18	-	-	22	65	3.3	(1.9, 5.9)	7	21	2.3	(0.9, 6.0)	10	30	2.3	(1.0, 5.0)	239	705	2.7	(2.2, 3.1)
60-64	168	224	22.9	(15.8, 33.0)	50	67	19.3	(10.3, 36.2)	91	121	3.8	(2.9, 5.0)	28	37	3.8	(2.3, 6.3)	38	51	1.9	(1.3, 2.8)	803	1,069	3.0	(2.7, 3.2)
65-69	352	404	26.8	(20.9, 34.3)	148	170	39.4	(25.2, 61.7)	198	227	3.8	(3.2, 4.6)	61	70	2.6	(1.9, 3.6)	75	86	2.3	(1.8, 3.0)	1,568	1,799	3.1	(2.9, 3.3)
70-74	468	594	28.1	(23.0, 34.2)	227	288	37.2	(27.0, 51.2)	300	381	3.6	(3.1, 4.1)	112	142	2.3	(1.9, 2.9)	107	136	2.0	(1.6, 2.4)	2,196	2,789	3.1	(2.9, 3.2)
75-79	334	865	24.9	(20.6, 30.0)	191	495	20.7	(16.4, 26.1)	188	487	2.4	(2.1, 2.8)	89	231	1.8	(1.4, 2.2)	86	223	1.7	(1.4, 2.2)	1,590	4,119	2.7	(2.5, 2.8)
80-84	100	995	29.3	(21.6, 39.7)	78	776	20.5	(15.0, 28.0)	87	866	2.1	(1.7, 2.7)	41	408	1.5	(1.1, 2.0)	43	428	1.6	(1.2, 2.2)	666	6,629	2.3	(2.1, 2.5)
85+	18	1,232	15.2	(8.7, 26.4)	20	1,368	13.4	(8.0, 22.3)	21	1,437	1.4	(0.9, 2.2)	20	1,368	2.3	(1.5, 3.6)	15	1,026	1.4	(0.8, 2.3)	178	12,178	1.9	(1.7, 2.3)

Table S3. Relative risks* of mortality in current vs. never smokers by cigarettes per day and years smoked: men and women in contemporary cohorts†.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Cigarettes per Day												
<10	2.21	(2.09, 2.33)	15.83	(13.45, 18.65)	19.70	(15.79, 24.58)	1.54	(1.18, 2.02)	1.99	(1.76, 2.25)	2.10	(1.73, 2.55)
10-19	2.60	(2.48, 2.71)	23.61	(20.58, 27.09)	22.59	(18.49, 27.61)	1.85	(1.47, 2.33)	2.45	(2.22, 2.70)	1.72	(1.42, 2.08)
20-39	3.33	(3.19, 3.48)	32.42	(28.33, 37.11)	32.29	(26.51, 39.32)	2.08	(1.62, 2.66)	2.73	(2.47, 3.03)	2.72	(2.29, 3.23)
40+	4.08	(3.68, 4.52)	41.72	(33.18, 52.46)	33.40	(22.77, 49.00)	2.88	(1.63, 5.10)	3.62	(2.85, 4.59)	2.34	(1.43, 3.84)
P trend	<.0001		<.0001		<.0001		0.0885		<.0001		0.0279	
Duration (years)†												
<30	1.49	(1.18, 1.86)	3.17	(1.01, 9.99)	5.04	(1.23, 20.66)	1.48	(0.61, 3.63)	1.59	(0.98, 2.57)	1.73	(0.81, 3.66)
30-39	2.69	(2.19, 3.29)	9.58	(4.66, 19.69)	15.86	(6.21, 40.51)	2.10	(0.78, 5.67)	2.81	(1.80, 4.37)	2.89	(1.37, 6.12)
40-49	2.67	(2.36, 3.01)	20.06	(14.40, 27.94)	29.46	(18.17, 47.76)	2.03	(1.13, 3.65)	2.68	(2.05, 3.49)	2.36	(1.45, 3.84)
50+	2.64	(2.45, 2.84)	29.40	(23.29, 37.12)	35.07	(25.44, 48.34)	1.76	(1.24, 2.50)	1.99	(1.66, 2.38)	1.81	(1.32, 2.48)
P trend	<.0001		<.0001		<.0001		0.2037		0.7719		0.9748	
Women												
Cigarettes per Day												
<10	2.27	(2.19, 2.36)	16.69	(14.68, 18.98)	19.30	(16.40, 22.71)	1.79	(1.52, 2.11)	2.47	(2.22, 2.75)	1.91	(1.65, 2.22)
10-19	2.69	(2.58, 2.80)	24.19	(21.38, 27.37)	19.81	(16.66, 23.57)	2.14	(1.77, 2.59)	3.04	(2.70, 3.42)	1.56	(1.28, 1.91)
20-39	3.48	(3.30, 3.67)	36.13	(31.58, 41.33)	30.93	(25.63, 37.32)	2.25	(1.71, 2.95)	3.42	(2.93, 3.99)	2.03	(1.58, 2.61)
40+	4.41	(3.70, 5.25)	59.46	(43.62, 81.05)	39.99	(24.16, 66.21)	6.13	(3.29, 11.42)	2.88	(1.55, 5.36)	1.37	(0.44, 4.27)
P trend	<.0001		<.0001		<.0001		0.0047		0.0031		0.6594	
Duration (years)†												
<30	1.81	(1.61, 2.03)	9.64	(6.47, 14.35)	9.85	(5.89, 16.46)	2.25	(1.52, 3.33)	2.00	(1.45, 2.75)	1.97	(1.32, 2.93)
30-39	2.46	(2.25, 2.69)	18.26	(13.98, 23.83)	17.40	(11.94, 25.36)	2.08	(1.40, 3.07)	2.82	(2.18, 3.64)	2.18	(1.52, 3.12)
40-49	2.87	(2.70, 3.05)	26.58	(22.23, 31.78)	28.52	(22.50, 36.16)	2.01	(1.53, 2.66)	2.66	(2.20, 3.21)	2.27	(1.75, 2.95)
50+	2.77	(2.62, 2.92)	28.73	(24.21, 34.09)	27.48	(22.02, 34.30)	2.32	(1.89, 2.85)	2.59	(2.19, 3.05)	1.91	(1.50, 2.42)
P trend	<.0001		<.0001		<.0001		0.5893		0.0388		0.1754	

* Based on multivariable models of pooled data adjusting for exact age, race, education, and cohort.

† For men this included NIH-AARP, CPS-II Nutrition Cohort and HPFS for cigarettes per day, and CPS-II Nutrition Cohort and HPFS for duration; for women this included NIH-AARP, CPS-II Nutrition Cohort, NHS, and WHI for cigarettes per day, and CPS-II Nutrition Cohort, NHS, and WHI for duration.

Table S4. Relative risks* of mortality in current vs. never smokers by cigarettes per day and years smoked: men and women in CPS-II Mortality Cohort.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Cigarettes per Day												
<10	1.91	(1.79, 2.03)	13.88	(10.81, 17.83)	7.54	(5.28, 10.77)	2.01	(1.57, 2.57)	1.55	(1.37, 1.76)	1.74	(1.42, 2.13)
10-19	2.05	(1.94, 2.16)	15.64	(12.54, 19.50)	8.62	(6.37, 11.67)	1.72	(1.38, 2.16)	1.66	(1.50, 1.83)	1.55	(1.29, 1.85)
20-39	2.42	(2.34, 2.51)	25.45	(21.10, 30.69)	10.56	(8.29, 13.45)	2.04	(1.75, 2.38)	1.87	(1.75, 2.00)	2.00	(1.78, 2.24)
40+	2.79	(2.66, 2.93)	37.34	(30.61, 45.55)	12.77	(9.47, 17.23)	2.09	(1.63, 2.67)	1.80	(1.62, 1.99)	2.13	(1.80, 2.53)
P trend	<.0001		<.0001		0.0017		0.9990		0.1888		0.0566	
Duration (years)												
<30	1.60	(1.36, 1.89)	7.13	(4.01, 12.68)	2.51	(0.61, 10.21)	3.22	(1.84, 5.63)	1.73	(1.30, 2.30)	1.21	(0.66, 2.20)
30-39	2.11	(2.00, 2.24)	17.01	(13.65, 21.18)	4.23	(2.74, 6.52)	2.16	(1.62, 2.89)	1.79	(1.61, 1.99)	1.98	(1.64, 2.38)
40-49	2.40	(2.31, 2.50)	22.89	(18.88, 27.75)	9.01	(6.91, 11.76)	2.27	(1.89, 2.73)	1.82	(1.69, 1.96)	1.92	(1.68, 2.19)
50+	2.33	(2.24, 2.43)	27.78	(22.83, 33.80)	11.57	(9.08, 14.75)	1.74	(1.48, 2.04)	1.73	(1.60, 1.86)	1.79	(1.57, 2.04)
P trend	<.0001		<.0001		<.0001		0.5042		0.0001		0.0002	
Women												
Cigarettes per Day												
<10	1.47	(1.37, 1.57)	4.40	(3.33, 5.81)	5.86	(4.08, 8.43)	1.29	(0.98, 1.70)	1.47	(1.26, 1.71)	1.65	(1.34, 2.02)
10-19	1.87	(1.77, 1.97)	8.91	(7.43, 10.68)	7.13	(5.35, 9.50)	2.11	(1.74, 2.56)	1.95	(1.74, 2.18)	1.76	(1.48, 2.09)
20-39	2.36	(2.28, 2.45)	16.63	(14.49, 19.08)	12.93	(10.49, 15.95)	2.70	(2.33, 3.12)	2.29	(2.10, 2.50)	2.03	(1.77, 2.32)
40+	2.92	(2.71, 3.15)	23.15	(19.02, 28.16)	17.41	(12.34, 24.56)	2.57	(1.83, 3.63)	2.42	(1.99, 2.94)	2.67	(2.03, 3.49)
P trend	<.0001		<.0001		<.0001		0.0002		<.0001		0.0067	
Duration (years)												
<30	1.52	(1.38, 1.67)	3.58	(2.47, 5.19)	2.18	(1.02, 4.66)	2.08	(1.48, 2.94)	1.77	(1.44, 2.18)	1.31	(0.93, 1.85)
30-39	2.07	(1.97, 2.17)	11.67	(9.90, 13.76)	7.51	(5.58, 10.10)	2.58	(2.10, 3.16)	2.27	(2.01, 2.56)	1.85	(1.54, 2.23)
40-49	2.20	(2.11, 2.29)	14.50	(12.52, 16.79)	9.07	(7.18, 11.45)	2.29	(1.94, 2.71)	2.06	(1.88, 2.27)	2.19	(1.91, 2.53)
50+	2.12	(2.02, 2.24)	14.44	(12.03, 17.33)	15.52	(12.40, 19.42)	1.89	(1.58, 2.27)	1.87	(1.68, 2.08)	1.69	(1.43, 2.01)
P trend	<.0001		<.0001		<.0001		0.4769		0.0209		0.0010	

* Multivariable models adjust for race, education

Table S5. Relative risks* of mortality in current vs. never smokers by cigarettes per day and years smoked: men and women in CPS-I.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Cigarettes per Day												
<10	1.38	(1.30, 1.47)	3.86	(2.56, 5.83)	4.83	(3.32, 7.02)	1.22	(1.02, 1.47)	1.34	(1.22, 1.48)	1.40	(1.12, 1.75)
10-19	1.70	(1.62, 1.78)	8.93	(6.69, 11.90)	5.21	(3.79, 7.16)	1.32	(1.13, 1.54)	1.70	(1.59, 1.83)	1.55	(1.29, 1.85)
20-39	1.83	(1.77, 1.90)	14.81	(11.53, 19.02)	5.70	(4.35, 7.47)	1.45	(1.29, 1.63)	1.73	(1.64, 1.83)	1.51	(1.31, 1.74)
40+	2.24	(2.11, 2.39)	22.16	(16.55, 29.67)	6.80	(4.51, 10.25)	1.55	(1.21, 1.99)	2.05	(1.86, 2.25)	1.50	(1.12, 2.02)
P trend	<.0001		<.0001		0.1572		0.2796		<.0001		0.793	
Duration (years)												
<30	1.28	(1.17, 1.40)	3.81	(2.38, 6.10)	1.20	(0.48, 2.99)	1.25	(0.93, 1.68)	1.34	(1.18, 1.53)	1.47	(1.06, 2.02)
30-39	1.72	(1.64, 1.81)	8.15	(6.16, 10.80)	4.72	(3.35, 6.65)	1.49	(1.25, 1.78)	1.84	(1.71, 1.97)	1.33	(1.09, 1.63)
40-49	1.85	(1.78, 1.93)	13.19	(10.19, 17.09)	5.50	(4.12, 7.34)	1.46	(1.27, 1.67)	1.74	(1.64, 1.85)	1.40	(1.18, 1.66)
50+	1.78	(1.69, 1.86)	17.82	(13.33, 23.81)	7.02	(5.17, 9.53)	1.24	(1.07, 1.44)	1.61	(1.49, 1.74)	1.67	(1.40, 2.00)
P trend	<.0001		<.0001		<.0001		0.5960		<.0001		0.0881	
Women												
Cigarettes per Day												
<10	1.04	(0.97, 1.12)	1.11	(0.58, 2.10)	2.14	(1.18, 3.88)	1.01	(0.83, 1.24)	1.04	(0.91, 1.18)	1.09	(0.87, 1.36)
10-19	1.40	(1.32, 1.50)	2.34	(1.48, 3.71)	4.15	(2.58, 6.66)	1.70	(1.42, 2.02)	1.72	(1.54, 1.93)	1.27	(1.02, 1.59)
20-39	1.59	(1.50, 1.69)	4.49	(3.18, 6.35)	5.44	(3.56, 8.30)	1.98	(1.68, 2.34)	1.97	(1.78, 2.19)	1.22	(0.97, 1.53)
40+	1.91	(1.57, 2.32)	5.54	(2.04, 15.02)	10.57	(3.86, 28.95)	1.41	(0.67, 2.97)	2.46	(1.74, 3.49)	1.63	(0.77, 3.42)
P trend	<.0001		<.0001		0.003		0.0001		<.0001		0.3473	
Duration (years)												
<30	1.26	(1.20, 1.34)	2.15	(1.45, 3.20)	2.53	(1.57, 4.08)	1.43	(1.22, 1.69)	1.61	(1.46, 1.77)	1.06	(0.87, 1.30)
30-39	1.44	(1.35, 1.52)	3.40	(2.34, 4.93)	4.68	(3.06, 7.17)	1.67	(1.41, 1.97)	1.58	(1.42, 1.77)	1.42	(1.16, 1.73)
40-49	1.45	(1.30, 1.61)	4.53	(2.45, 8.37)	8.36	(4.70, 14.86)	1.48	(1.10, 1.98)	1.42	(1.17, 1.73)	0.92	(0.60, 1.42)
50+	1.46	(1.19, 1.79)	-	-	2.38	(0.33, 17.11)	1.09	(0.60, 1.97)	1.75	(1.27, 2.42)	2.12	(1.28, 3.53)
P trend	<.0001		0.0021		0.0005		0.0053		0.0158		0.0011	

* Multivariable models adjust for race, education

Table S6. Relative risks* of mortality in former† smokers compared to both never and current smokers by age at cessation: men and women in the contemporary cohorts‡

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Age quit (vs never smokers)												
<40	1.05	(1.01, 1.10)	2.35	(1.87, 2.95)	2.04	(1.47, 2.85)	0.94	(0.80, 1.10)	0.99	(0.91, 1.08)	1.02	(0.89, 1.17)
40-49	1.28	(1.23, 1.33)	4.70	(3.79, 5.84)	3.88	(2.84, 5.29)	1.16	(0.99, 1.37)	1.28	(1.17, 1.39)	1.16	(1.00, 1.34)
50-59	1.58	(1.53, 1.65)	8.74	(7.13, 10.72)	9.52	(7.19, 12.60)	1.12	(0.95, 1.31)	1.57	(1.44, 1.70)	1.38	(1.20, 1.58)
60-69	1.92	(1.84, 2.01)	15.27	(12.41, 18.79)	21.84	(16.59, 28.77)	1.31	(1.08, 1.59)	1.65	(1.50, 1.82)	1.42	(1.20, 1.67)
70+	2.14	(1.99, 2.29)	19.44	(14.97, 25.25)	31.17	(22.98, 42.28)	1.18	(0.85, 1.63)	1.88	(1.61, 2.18)	1.69	(1.32, 2.16)
P trend	<.0001		<.0001		<.0001		0.0036		<.0001		<.0001	
Age quit (vs current smokers)												
<40	0.42	(0.40, 0.45)	0.11	(0.09, 0.13)	0.07	(0.05, 0.09)	0.53	(0.40, 0.72)	0.47	(0.40, 0.54)	0.51	(0.40, 0.66)
40-49	0.51	(0.48, 0.55)	0.21	(0.18, 0.25)	0.14	(0.10, 0.18)	0.66	(0.49, 0.89)	0.60	(0.52, 0.70)	0.58	(0.45, 0.75)
50-59	0.64	(0.60, 0.68)	0.39	(0.33, 0.46)	0.33	(0.27, 0.41)	0.63	(0.47, 0.85)	0.74	(0.64, 0.85)	0.69	(0.54, 0.89)
60-69	0.77	(0.72, 0.82)	0.69	(0.58, 0.82)	0.76	(0.61, 0.95)	0.74	(0.54, 1.02)	0.78	(0.66, 0.91)	0.71	(0.54, 0.93)
70+	0.86	(0.79, 0.93)	0.88	(0.69, 1.11)	1.09	(0.84, 1.41)	0.67	(0.44, 1.01)	0.88	(0.73, 1.07)	0.85	(0.61, 1.18)
P trend	<.0001		<.0001		<.0001		0.0036		<.0001		<.0001	
Women												
Age quit (vs never smokers)												
<40	1.02	(0.99, 1.05)	1.99	(1.65, 2.40)	1.84	(1.44, 2.36)	0.92	(0.82, 1.04)	0.94	(0.86, 1.04)	1.02	(0.91, 1.14)
40-49	1.25	(1.21, 1.30)	5.25	(4.44, 6.21)	3.81	(3.02, 4.79)	1.03	(0.90, 1.18)	1.26	(1.13, 1.39)	1.07	(0.93, 1.22)
50-59	1.58	(1.53, 1.63)	8.80	(7.59, 10.19)	10.18	(8.54, 12.14)	1.29	(1.15, 1.45)	1.74	(1.60, 1.09)	1.28	(1.13, 1.44)
60-69	2.04	(1.97, 2.12)	14.97	(12.85, 17.44)	16.98	(14.15, 20.38)	1.41	(1.22, 1.64)	1.78	(1.60, 1.99)	1.61	(1.40, 1.86)
70+	2.16	(2.03, 2.30)	18.92	(15.14, 23.63)	24.43	(19.38, 30.80)	1.36	(1.06, 1.73)	1.80	(1.50, 2.16)	1.73	(1.38, 2.16)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	
Age quit (vs current smokers)												
<40	0.39	(0.37, 0.41)	0.08	(0.07, 0.10)	0.08	(0.06, 0.10)	0.42	(0.35, 0.50)	0.37	(0.32, 0.42)	0.50	(0.42, 0.59)
40-49	0.48	(0.46, 0.50)	0.22	(0.19, 0.25)	0.16	(0.13, 0.20)	0.47	(0.39, 0.57)	0.49	(0.43, 0.57)	0.52	(0.43, 0.63)
50-59	0.60	(0.58, 0.63)	0.37	(0.32, 0.42)	0.43	(0.37, 0.50)	0.59	(0.50, 0.70)	0.68	(0.60, 0.78)	0.62	(0.52, 0.75)
60-69	0.78	(0.74, 0.82)	0.62	(0.55, 0.71)	0.71	(0.61, 0.84)	0.65	(0.53, 0.79)	0.70	(0.60, 0.81)	0.79	(0.65, 0.96)
70+	0.82	(0.77, 0.88)	0.79	(0.64, 0.97)	1.03	(0.82, 1.28)	0.62	(0.47, 0.82)	0.71	(0.58, 0.87)	0.84	(0.65, 1.10)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	

* Based on multivariable models of pooled data adjusting for exact age, race, education, and cohort.

† Former smokers who quit ≥2 years prior to survey date

‡ For men this included CPS-II Nutrition Cohort and HPFS; for women this included CPS-II Nutrition Cohort, NHS, and WHI.

Table S7. Relative risks* of mortality in former† smokers compared to both never and current smokers by age at cessation: men and women in the CPS-II Mortality Cohort

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Age quit (vs never smokers)												
<40	0.95	(0.90, 0.99)	1.73	(1.29, 2.31)	1.49	(1.02, 2.19)	0.68	(0.55, 0.86)	0.91	(0.84, 0.99)	0.84	(0.73, 0.98)
40-49	1.21	(1.16, 1.26)	4.50	(3.60, 5.61)	2.86	(2.13, 3.84)	0.95	(0.79, 1.14)	1.18	(1.10, 1.26)	1.03	(0.90, 1.17)
50-59	1.63	(1.57, 1.69)	9.78	(8.01, 11.96)	7.91	(6.23, 10.04)	1.15	(0.97, 1.36)	1.43	(1.34, 1.53)	1.24	(1.09, 1.40)
60-69	1.91	(1.83, 2.00)	16.84	(13.71, 20.69)	13.42	(10.59, 17.02)	1.43	(1.20, 1.70)	1.56	(1.44, 1.69)	1.73	(1.52, 1.98)
70+	2.08	(1.92, 2.25)	21.80	(16.16, 29.42)	20.44	(15.14, 27.59)	1.18	(0.85, 1.64)	1.76	(1.52, 2.04)	1.48	(1.14, 1.92)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	
Age quit (vs current smokers)												
<40	0.41	(0.40, 0.43)	0.08	(0.06, 0.10)	0.16	(0.12, 0.23)	0.35	(0.28, 0.44)	0.52	(0.48, 0.56)	0.46	(0.39, 0.53)
40-49	0.53	(0.51, 0.55)	0.20	(0.17, 0.23)	0.31	(0.24, 0.39)	0.49	(0.41, 0.59)	0.67	(0.63, 0.72)	0.55	(0.48, 0.63)
50-59	0.71	(0.69, 0.74)	0.43	(0.38, 0.48)	0.85	(0.73, 1.00)	0.59	(0.50, 0.70)	0.82	(0.76, 0.88)	0.67	(0.59, 0.76)
60-69	0.83	(0.80, 0.87)	0.74	(0.65, 0.83)	1.45	(1.23, 1.70)	0.73	(0.61, 0.88)	0.89	(0.82, 0.97)	0.93	(0.81, 1.07)
70+	0.91	(0.84, 0.98)	0.95	(0.74, 1.22)	2.20	(1.71, 2.83)	0.60	(0.43, 0.85)	1.00	(0.86, 1.17)	0.80	(0.61, 1.04)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	
Women												
Age quit (vs never smokers)												
<40	1.01	(0.95, 1.07)	1.18	(0.84, 1.66)	1.60	(0.99, 2.57)	0.97	(0.75, 1.25)	0.83	(0.71, 0.97)	0.77	(0.61, 0.97)
40-49	1.20	(1.13, 1.27)	3.45	(2.74, 4.36)	3.95	(2.82, 5.52)	0.88	(0.67, 1.16)	1.09	(0.94, 1.25)	1.15	(0.94, 1.40)
50-59	1.45	(1.37, 1.52)	4.60	(3.71, 5.69)	5.32	(3.99, 7.09)	1.42	(1.15, 1.74)	1.43	(1.27, 1.61)	1.34	(1.12, 1.60)
60-69	1.72	(1.62, 1.83)	8.28	(6.63, 10.35)	13.18	(10.38, 16.73)	1.31	(1.04, 1.65)	1.61	(1.43, 1.82)	1.56	(1.29, 1.89)
70+	1.62	(1.46, 1.80)	9.85	(6.44, 15.07)	13.02	(8.89, 19.09)	1.15	(0.80, 1.65)	1.55	(1.28, 1.89)	1.42	(1.05, 1.92)
P trend	<.0001		<.0001		<.0001		0.0312		<.0001		<.0001	
Age quit (vs current smokers)												
<40	0.49	(0.46, 0.52)	0.10	(0.07, 0.13)	0.17	(0.11, 0.27)	0.44	(0.34, 0.58)	0.42	(0.35, 0.49)	0.41	(0.32, 0.52)
40-49	0.58	(0.55, 0.62)	0.28	(0.23, 0.35)	0.41	(0.30, 0.57)	0.40	(0.30, 0.53)	0.54	(0.47, 0.63)	0.61	(0.49, 0.75)
50-59	0.70	(0.66, 0.74)	0.37	(0.31, 0.45)	0.56	(0.43, 0.73)	0.64	(0.52, 0.80)	0.71	(0.63, 0.81)	0.71	(0.58, 0.86)
60-69	0.83	(0.78, 0.89)	0.67	(0.54, 0.83)	1.39	(1.11, 1.74)	0.60	(0.47, 0.76)	0.80	(0.70, 0.92)	0.82	(0.67, 1.01)
70+	0.78	(0.70, 0.87)	0.80	(0.52, 1.22)	1.38	(0.94, 2.02)	0.52	(0.36, 0.76)	0.77	(0.63, 0.95)	0.75	(0.55, 1.03)
P trend	<.0001		<.0001		<.0001		0.0312		<.0001		<.0001	

* Multivariable models adjust for race, and education.

† Former smokers who quit ≥2 years prior to survey date

Table S8. Relative risks* of mortality in former† smokers compared to both never and current smokers by age at cessation: men and women in the CPS-I.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Age quit (vs never smokers)												
<40	0.94	(0.82, 1.08)	-	-	1.00	(0.24, 4.11)	1.21	(0.75, 1.95)	0.82	(0.66, 1.02)	1.36	(0.84, 2.20)
40-49	1.10	(1.02, 1.18)	1.53	(0.86, 2.71)	1.82	(1.03, 3.23)	0.91	(0.69, 1.19)	1.16	(1.04, 1.29)	1.31	(0.99, 1.73)
50-59	1.36	(1.28, 1.45)	4.26	(2.92, 6.22)	6.35	(4.56, 8.84)	0.96	(0.77, 1.18)	1.38	(1.26, 1.51)	1.13	(0.89, 1.45)
60-69	1.46	(1.35, 1.57)	8.06	(5.29, 12.26)	9.39	(6.58, 13.40)	0.98	(0.77, 1.26)	1.37	(1.21, 1.55)	1.19	(0.88, 1.61)
70+	1.47	(1.26, 1.72)	6.18	(1.91, 19.99)	10.51	(5.11, 21.63)	0.56	(0.32, 0.99)	1.59	(1.25, 2.01)	2.33	(1.56, 3.48)
P trend	<.0001		<.0001		<.0001		0.5055		<.0001		0.0098	
Age quit (vs current smokers)												
<40	0.54	(0.47, 0.62)	-	-	0.19	(0.05, 0.78)	0.87	(0.54, 1.40)	0.49	(0.40, 0.61)	0.91	(0.57, 1.47)
40-49	0.63	(0.58, 0.68)	0.13	(0.08, 0.22)	0.35	(0.20, 0.60)	0.66	(0.50, 0.86)	0.69	(0.62, 0.77)	0.88	(0.67, 1.15)
50-59	0.78	(0.74, 0.83)	0.36	(0.26, 0.49)	1.22	(0.93, 1.60)	0.69	(0.56, 0.86)	0.82	(0.75, 0.90)	0.76	(0.60, 0.97)
60-69	0.84	(0.77, 0.90)	0.68	(0.47, 0.98)	1.81	(1.32, 2.47)	0.71	(0.55, 0.91)	0.82	(0.72, 0.92)	0.80	(0.59, 1.09)
70+	0.85	(0.73, 0.99)	0.52	(0.16, 1.66)	2.02	(0.99, 4.11)	0.40	(0.23, 0.72)	0.95	(0.75, 1.20)	1.57	(1.04, 2.37)
P trend	<.0001		<.0001		<.0001		0.5055		<.0001		0.0098	
Women												
Age quit (vs never smokers)												
<40	1.25	(0.97, 1.62)	1.35	(0.19, 9.77)	2.76	(0.38, 20.13)	1.74	(0.77, 3.90)	2.12	(1.33, 3.39)	0.90	(0.29, 2.80)
40-49	1.26	(1.06, 1.49)	-	-	1.33	(0.18, 9.58)	1.17	(0.64, 2.11)	0.79	(0.51, 1.23)	2.11	(1.32, 3.37)
50-59	1.31	(1.14, 1.49)	1.47	(0.47, 4.61)	2.55	(0.81, 8.04)	1.58	(1.10, 2.29)	1.42	(1.12, 1.80)	1.64	(1.09, 2.45)
60-69	1.39	(1.19, 1.62)	1.14	(0.16, 8.18)	2.40	(0.59, 9.76)	1.45	(0.99, 2.14)	1.60	(1.26, 2.05)	1.32	(0.82, 2.14)
70+	1.45	(1.15, 1.84)	4.00	(0.55, 29.02)	3.73	(0.51, 27.02)	1.60	(0.96, 2.66)	1.51	(1.02, 2.24)	0.49	(0.16, 1.54)
P trend	0.1074		0.4649		0.7153		0.4722		0.0197		0.6075	
Age quit (vs current smokers)												
<40	0.93	(0.72, 1.21)	0.50	(0.07, 3.60)	0.70	(0.10, 5.09)	1.15	(0.51, 2.58)	1.36	(0.85, 2.18)	0.75	(0.24, 2.34)
40-49	0.93	(0.79, 1.11)	-	-	0.34	(0.05, 2.43)	0.77	(0.42, 1.41)	0.51	(0.33, 0.79)	1.76	(1.09, 2.84)
50-59	0.97	(0.85, 1.11)	0.54	(0.17, 1.72)	0.65	(0.20, 2.06)	1.05	(0.72, 1.53)	0.91	(0.71, 1.16)	1.36	(0.90, 2.08)
60-69	1.03	(0.88, 1.21)	0.42	(0.06, 3.05)	0.61	(0.15, 2.52)	0.96	(0.65, 1.43)	1.03	(0.80, 1.32)	1.10	(0.67, 1.81)
70+	1.08	(0.85, 1.37)	1.47	(0.20, 10.85)	0.95	(0.13, 6.98)	1.06	(0.63, 1.78)	0.97	(0.65, 1.44)	0.41	(0.13, 1.29)
P trend	0.1074		0.4649		0.7153		0.4722		0.0197		0.6075	

* Multivariable models adjust for race, and education.

† Former smokers who quit ≥2 years prior to survey date

Table S9. Relative risks* of mortality in former smokers compared to both never and current smokers by years since cessation: men in the contemporary cohorts†.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Years since quitting (vs never smokers)												
<2	2.77	(2.48, 3.10)	27.37	(20.23, 37.03)	38.06	(25.18, 57.55)	2.41	(1.50, 3.87)	2.59	(2.02, 3.31)	1.78	(1.08, 2.93)
2-4	2.65	(2.43, 2.89)	22.17	(16.91, 29.06)	43.81	(31.3, 61.31)	2.34	(1.64, 3.34)	2.09	(1.70, 2.57)	1.80	(1.25, 2.58)
5-9	2.16	(2.02, 2.32)	16.83	(13.20, 21.46)	27.50	(20.11, 37.60)	0.97	(0.66, 1.42)	1.87	(1.60, 2.19)	1.60	(1.22, 2.10)
10-19	1.99	(1.91, 2.08)	13.11	(10.70, 16.05)	19.49	(14.78, 25.70)	1.30	(1.07, 1.58)	1.88	(1.72, 2.07)	1.81	(1.55, 2.12)
20-29	1.40	(1.35, 1.46)	5.94	(4.83, 7.29)	7.43	(5.59, 9.87)	1.19	(1.03, 1.39)	1.40	(1.29, 1.51)	1.22	(1.06, 1.40)
30-39	1.22	(1.17, 1.27)	3.88	(3.09, 4.88)	3.62	(2.63, 4.99)	0.96	(0.80, 1.14)	1.18	(1.07, 1.29)	1.03	(0.89, 1.20)
40-49	1.10	(1.04, 1.15)	2.61	(1.99, 3.42)	2.40	(1.65, 3.49)	1.03	(0.85, 1.24)	1.06	(0.95, 1.18)	1.06	(0.90, 1.25)
50+	1.01	(0.95, 1.07)	1.36	(0.89, 2.08)	2.22	(1.42, 3.45)	0.86	(0.67, 1.11)	0.89	(0.77, 1.03)	1.05	(0.86, 1.28)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	
Years since quitting (vs current smokers)												
<2	1.07	(0.95, 1.21)	1.12	(0.85, 1.47)	1.14	(0.79, 1.66)	1.34	(0.79, 2.29)	1.17	(0.89, 1.54)	0.87	(0.51, 1.49)
2-4	1.02	(0.93, 1.13)	0.90	(0.71, 1.15)	1.32	(0.99, 1.75)	1.31	(0.85, 2.01)	0.95	(0.75, 1.20)	0.88	(0.58, 1.34)
5-9	0.83	(0.77, 0.91)	0.69	(0.56, 0.85)	0.83	(0.64, 1.07)	0.54	(0.34, 0.85)	0.85	(0.70, 1.03)	0.78	(0.55, 1.10)
10-19	0.77	(0.72, 0.82)	0.53	(0.45, 0.63)	0.59	(0.47, 0.72)	0.72	(0.53, 0.99)	0.85	(0.73, 0.99)	0.89	(0.68, 1.15)
20-29	0.54	(0.51, 0.58)	0.24	(0.20, 0.29)	0.22	(0.18, 0.28)	0.67	(0.50, 0.89)	0.63	(0.55, 0.73)	0.60	(0.46, 0.77)
30-39	0.47	(0.44, 0.5)	0.16	(0.13, 0.19)	0.11	(0.08, 0.14)	0.53	(0.39, 0.73)	0.53	(0.46, 0.62)	0.51	(0.39, 0.66)
40-49	0.42	(0.39, 0.45)	0.11	(0.08, 0.14)	0.07	(0.05, 0.10)	0.57	(0.42, 0.79)	0.48	(0.41, 0.57)	0.52	(0.40, 0.68)
50+	0.39	(0.36, 0.42)	0.06	(0.04, 0.08)	0.07	(0.04, 0.10)	0.48	(0.34, 0.69)	0.40	(0.34, 0.49)	0.51	(0.38, 0.69)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	

* Based on multivariable models of pooled data adjusting for exact age, race, education, and cohort.
†CPS-II Nutrition Cohort and HPFS.

Table S10. Relative risks* of mortality in former smokers compared to both never and current smokers by years since cessation: women in the contemporary cohorts†.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Women												
Years since quitting (vs never smokers)												
<2	2.34	(2.19, 2.51)	25.42	(20.91, 30.92)	19.40	(14.77, 25.48)	1.73	(1.31, 2.28)	2.06	(1.68, 2.52)	1.56	(1.17, 2.08)
2-4	2.02	(1.90, 2.13)	15.03	(12.34, 18.31)	22.11	(17.68, 27.64)	1.45	(1.14, 1.84)	1.66	(1.38, 1.98)	1.52	(1.21, 1.92)
5-9	2.25	(2.13, 2.36)	15.97	(13.40, 19.03)	21.72	(17.48, 26.98)	1.79	(1.45, 2.21)	2.17	(1.86, 2.54)	1.65	(1.33, 2.06)
10-19	1.78	(1.72, 1.83)	10.84	(9.39, 12.51)	13.76	(11.57, 16.36)	1.32	(1.16, 1.49)	1.87	(1.71, 2.04)	1.58	(1.41, 1.78)
20-29	1.31	(1.27, 1.36)	5.36	(4.53, 6.34)	5.07	(4.10, 6.27)	1.03	(0.90, 1.18)	1.34	(1.21, 1.47)	1.08	(0.94, 1.23)
30-39	1.10	(1.06, 1.14)	2.87	(2.36, 3.50)	2.93	(2.28, 3.77)	0.96	(0.83, 1.10)	1.07	(0.96, 1.19)	0.99	(0.86, 1.14)
40-49	1.03	(0.98, 1.07)	1.82	(1.38, 2.40)	2.07	(1.49, 2.87)	1.03	(0.88, 1.21)	0.98	(0.86, 1.12)	1.07	(0.91, 1.25)
50+	1.00	(0.94, 1.07)	1.85	(1.22, 2.80)	1.43	(0.85, 2.43)	0.98	(0.79, 1.22)	1.01	(0.84, 1.21)	1.02	(0.82, 1.27)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	
Years since quitting (vs current smokers)												
<2	0.87	(0.81, 0.94)	0.98	(0.82, 1.17)	0.73	(0.56, 0.95)	0.78	(0.58, 1.06)	0.79	(0.63, 0.98)	0.75	(0.54, 1.03)
2-4	0.75	(0.70, 0.80)	0.58	(0.49, 0.70)	0.83	(0.68, 1.03)	0.65	(0.50, 0.86)	0.63	(0.52, 0.78)	0.73	(0.56, 0.96)
5-9	0.84	(0.79, 0.89)	0.62	(0.53, 0.72)	0.82	(0.67, 1.00)	0.81	(0.63, 1.03)	0.83	(0.69, 1.00)	0.79	(0.61, 1.02)
10-19	0.66	(0.63, 0.69)	0.42	(0.37, 0.47)	0.52	(0.45, 0.60)	0.59	(0.50, 0.71)	0.72	(0.63, 0.81)	0.76	(0.63, 0.91)
20-29	0.49	(0.47, 0.51)	0.21	(0.18, 0.24)	0.19	(0.16, 0.23)	0.47	(0.39, 0.56)	0.51	(0.45, 0.59)	0.52	(0.43, 0.62)
30-39	0.41	(0.39, 0.43)	0.11	(0.09, 0.13)	0.11	(0.09, 0.14)	0.43	(0.36, 0.52)	0.41	(0.35, 0.47)	0.47	(0.39, 0.57)
40-49	0.38	(0.36, 0.40)	0.07	(0.05, 0.09)	0.08	(0.06, 0.11)	0.47	(0.38, 0.57)	0.38	(0.32, 0.44)	0.51	(0.41, 0.63)
50+	0.37	(0.35, 0.40)	0.07	(0.05, 0.11)	0.05	(0.03, 0.09)	0.44	(0.34, 0.57)	0.39	(0.31, 0.48)	0.49	(0.38, 0.64)
P trend	<.0001		<.0001		<.0001		<.0001		<.0001		<.0001	

* Based on multivariable models of pooled data adjusting for exact age, race, education, and cohort.

† CPS-II Nutrition Cohort, NHS, and WHI.

Table S11. Relative risks* of mortality in former smokers compared to both never and current smokers by years since cessation: men in the CPS-II Mortality Cohort.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Years since quitting (vs never smokers)												
<2	2.53	(2.37, 2.69)	31.32	(25.23, 38.88)	20.64	(15.49, 27.51)	1.76	(1.30, 2.38)	1.77	(1.56, 2.00)	2.13	(1.74, 2.62)
2-4	2.35	(2.23, 2.48)	21.54	(17.39, 26.68)	18.70	(14.35, 24.38)	1.25	(0.94, 1.66)	1.97	(1.79, 2.17)	1.82	(1.52, 2.18)
5-9	1.90	(1.81, 1.99)	12.69	(10.23, 15.74)	15.07	(11.73, 19.35)	1.35	(1.08, 1.68)	1.66	(1.53, 1.81)	1.55	(1.33, 1.81)
10-19	1.49	(1.44, 1.55)	8.04	(6.58, 9.83)	8.38	(6.62, 10.61)	1.23	(1.05, 1.43)	1.29	(1.21, 1.38)	1.20	(1.06, 1.35)
20-29	1.17	(1.12, 1.22)	3.90	(3.07, 4.95)	3.53	(2.65, 4.71)	0.99	(0.82, 1.19)	1.10	(1.02, 1.19)	1.03	(0.90, 1.18)
30-39	0.98	(0.92, 1.03)	1.96	(1.39, 2.77)	1.53	(1.00, 2.35)	0.70	(0.54, 0.89)	0.93	(0.84, 1.02)	0.88	(0.74, 1.05)
40-49	1.06	(0.97, 1.16)	1.48	(0.78, 2.82)	1.19	(0.58, 2.45)	0.90	(0.64, 1.27)	1.17	(1.01, 1.36)	1.13	(0.88, 1.46)
50+	1.00	(0.87, 1.16)	1.86	(0.69, 5.06)	1.43	(0.52, 3.90)	0.77	(0.45, 1.31)	0.85	(0.64, 1.11)	0.95	(0.62, 1.44)
P trend	<0.0001		<0.0001		<0.0001		<0.0001		<0.0001		<0.0001	
Years since quitting (vs current smokers)												
<2	1.07	(1.01, 1.14)	1.28	(1.12, 1.46)	1.95	(1.57, 2.44)	0.88	(0.65, 1.19)	0.98	(0.87, 1.11)	1.12	(0.92, 1.38)
2-4	0.99	(0.94, 1.05)	0.88	(0.77, 1.00)	1.77	(1.46, 2.14)	0.63	(0.47, 0.83)	1.09	(0.99, 1.21)	0.96	(0.80, 1.15)
5-9	0.80	(0.77, 0.84)	0.52	(0.45, 0.59)	1.43	(1.20, 1.69)	0.68	(0.54, 0.84)	0.92	(0.85, 1.01)	0.82	(0.70, 0.95)
10-19	0.63	(0.61, 0.65)	0.33	(0.30, 0.37)	0.79	(0.68, 0.92)	0.61	(0.52, 0.72)	0.72	(0.67, 0.77)	0.63	(0.56, 0.71)
20-29	0.49	(0.47, 0.52)	0.16	(0.13, 0.19)	0.33	(0.27, 0.42)	0.50	(0.41, 0.60)	0.61	(0.57, 0.66)	0.54	(0.47, 0.62)
30-39	0.41	(0.39, 0.44)	0.08	(0.06, 0.11)	0.15	(0.10, 0.21)	0.35	(0.27, 0.45)	0.51	(0.47, 0.57)	0.46	(0.39, 0.56)
40-49	0.45	(0.41, 0.49)	0.06	(0.03, 0.11)	0.11	(0.06, 0.23)	0.45	(0.32, 0.64)	0.65	(0.56, 0.76)	0.59	(0.46, 0.77)
50+	0.42	(0.37, 0.49)	0.08	(0.03, 0.20)	0.14	(0.05, 0.36)	0.38	(0.22, 0.66)	0.47	(0.36, 0.62)	0.50	(0.33, 0.76)
P trend	<0.0001		<0.0001		<0.0001		<0.0001		<0.0001		<0.0001	

* Based on multivariable models of pooled data adjusting for exact age, race, education, and cohort.

Table S12. Relative risks* of mortality in former smokers compared to both never and current smokers by years since cessation: women in the CPS-II Mortality Cohort.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Women												
Years since quitting (vs never smokers)												
<2	2.26	(2.06, 2.47)	13.43	(10.42, 17.31)	22.60	(16.47, 31.01)	1.81	(1.21, 2.72)	1.84	(1.47, 2.30)	1.88	(1.35, 2.62)
2-4	2.22	(2.07, 2.39)	12.31	(9.88, 15.34)	21.44	(16.42, 27.99)	1.46	(1.03, 2.06)	1.94	(1.63, 2.30)	2.29	(1.81, 2.90)
5-9	1.58	(1.48, 1.69)	6.13	(4.83, 7.78)	8.71	(6.4, 11.85)	1.45	(1.11, 1.90)	1.59	(1.37, 1.84)	1.36	(1.08, 1.73)
10-19	1.29	(1.23, 1.36)	3.51	(2.82, 4.36)	6.17	(4.74, 8.02)	1.10	(0.89, 1.37)	1.23	(1.09, 1.38)	1.25	(1.05, 1.48)
20-29	1.16	(1.09, 1.24)	1.92	(1.39, 2.65)	3.12	(2.12, 4.59)	1.04	(0.81, 1.33)	1.15	(1.01, 1.32)	1.03	(0.83, 1.27)
30-39	1.06	(0.98, 1.14)	1.72	(1.15, 2.59)	2.42	(1.45, 4.04)	1.13	(0.85, 1.51)	1.04	(0.87, 1.23)	0.90	(0.68, 1.18)
40-49	0.99	(0.88, 1.12)	0.89	(0.37, 2.16)	1.53	(0.63, 3.73)	0.83	(0.53, 1.31)	0.98	(0.76, 1.25)	0.80	(0.53, 1.20)
50+	1.18	(0.95, 1.46)	2.03	(0.51, 8.18)	3.72	(1.19, 11.65)	1.33	(0.71, 2.48)	1.07	(0.70, 1.65)	0.99	(0.51, 1.90)
P trend	<0.0001		<0.0001		<0.0001		0.0047		<0.0001		<0.0001	
Years since quitting (vs current smokers)												
<2	1.08	(0.99, 1.19)	1.05	(0.83, 1.33)	2.15	(1.60, 2.89)	0.83	(0.55, 1.25)	0.92	(0.73, 1.15)	1.00	(0.71, 1.39)
2-4	1.07	(0.99, 1.15)	0.97	(0.79, 1.18)	2.04	(1.60, 2.60)	0.66	(0.47, 0.95)	0.97	(0.81, 1.15)	1.22	(0.95, 1.55)
5-9	0.76	(0.71, 0.81)	0.48	(0.39, 0.60)	0.83	(0.62, 1.11)	0.66	(0.50, 0.88)	0.79	(0.68, 0.92)	0.72	(0.57, 0.92)
10-19	0.62	(0.59, 0.65)	0.28	(0.23, 0.34)	0.59	(0.46, 0.75)	0.50	(0.40, 0.63)	0.61	(0.54, 0.69)	0.66	(0.55, 0.79)
20-29	0.56	(0.52, 0.59)	0.15	(0.11, 0.21)	0.30	(0.20, 0.43)	0.47	(0.36, 0.61)	0.58	(0.50, 0.66)	0.54	(0.43, 0.68)
30-39	0.51	(0.47, 0.55)	0.14	(0.09, 0.20)	0.23	(0.14, 0.38)	0.52	(0.38, 0.69)	0.52	(0.43, 0.62)	0.48	(0.36, 0.63)
40-49	0.48	(0.42, 0.54)	0.07	(0.03, 0.17)	0.15	(0.06, 0.35)	0.38	(0.24, 0.60)	0.49	(0.38, 0.63)	0.42	(0.28, 0.64)
50+	0.56	(0.45, 0.70)	0.16	(0.04, 0.64)	0.35	(0.11, 1.11)	0.61	(0.32, 1.14)	0.54	(0.35, 0.83)	0.52	(0.27, 1.01)
P trend	<0.0001		<0.0001		<0.0001		0.0047		<0.0001		<0.0001	

* Based on multivariable models of pooled data adjusting for exact age, race, education, and cohort.

Table S13. Relative risks* of mortality in former smokers compared to both never and current smokers by years since cessation: men and women in CPS-I.

	All Causes		Lung Cancer		COPD		Total Stroke		Ischemic Heart Disease		Other Heart Diseases	
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)
Men												
Years since quitting (vs never smokers)												
<2	1.79	(1.65, 1.95)	14.43	(10.15, 20.53)	12.32	(8.45, 17.96)	1.01	(0.72, 1.41)	1.71	(1.50, 1.93)	1.60	(1.15, 2.24)
2-4	1.64	(1.52, 1.77)	8.82	(6.06, 12.84)	13.83	(9.93, 19.28)	0.96	(0.71, 1.29)	1.60	(1.43, 1.79)	1.51	(1.11, 2.04)
5-9	1.36	(1.27, 1.46)	4.52	(2.98, 6.87)	6.26	(4.28, 9.14)	0.98	(0.76, 1.25)	1.31	(1.18, 1.46)	1.53	(1.18, 1.98)
10-19	1.27	(1.18, 1.36)	1.98	(1.12, 3.51)	3.46	(2.17, 5.51)	0.98	(0.76, 1.25)	1.31	(1.18, 1.46)	1.22	(0.92, 1.61)
20+	0.98	(0.91, 1.06)	0.28	(0.07, 1.15)	1.79	(1.00, 3.22)	0.84	(0.66, 1.07)	0.98	(0.87, 1.10)	1.05	(0.79, 1.39)
P trend	<0.0001		<0.0001		<0.0001		0.5705		<0.0001		0.0231	
Years since quitting (vs current smokers)												
<2	1.02	(0.94, 1.10)	1.17	(0.89, 1.54)	2.21	(1.60, 3.05)	0.73	(0.52, 1.02)	1.01	(0.89, 1.14)	1.06	(0.76, 1.47)
2-4	0.93	(0.86, 1.00)	0.72	(0.53, 0.97)	2.48	(1.90, 3.24)	0.69	(0.52, 0.93)	0.95	(0.84, 1.06)	0.99	(0.74, 1.34)
5-9	0.77	(0.72, 0.83)	0.37	(0.26, 0.52)	1.12	(0.81, 1.55)	0.71	(0.55, 0.91)	0.77	(0.70, 0.86)	1.01	(0.78, 1.30)
10-19	0.72	(0.67, 0.77)	0.16	(0.09, 0.27)	0.62	(0.41, 0.95)	0.71	(0.55, 0.90)	0.78	(0.70, 0.86)	0.80	(0.61, 1.06)
20+	0.56	(0.52, 0.60)	0.02	(0.01, 0.09)	0.32	(0.18, 0.56)	0.61	(0.48, 0.78)	0.58	(0.52, 0.65)	0.69	(0.52, 0.92)
P trend	<0.0001		<0.0001		<0.0001		0.5705		<0.0001		0.0231	
Women												
Years since quitting (vs never smokers)												
<2	1.37	(1.18, 1.60)	2.88	(1.07, 7.79)	7.07	(3.11, 16.10)	1.12	(0.69, 1.83)	1.45	(1.10, 1.91)	1.34	(0.81, 2.23)
2-4	1.47	(1.27, 1.70)	1.37	(0.34, 5.53)	4.41	(1.63, 11.96)	1.69	(1.15, 2.49)	1.85	(1.46, 2.34)	1.09	(0.63, 1.88)
5-9	1.29	(1.11, 1.50)	1.37	(0.34, 5.52)	2.15	(0.53, 8.71)	1.76	(1.20, 2.57)	1.39	(1.06, 1.83)	1.42	(0.88, 2.29)
10-19	1.34	(1.16, 1.55)	0.65	(0.09, 4.63)	1.03	(0.14, 7.36)	1.40	(0.93, 2.12)	1.01	(0.74, 1.38)	1.80	(1.19, 2.71)
20+	1.15	(0.95, 1.39)	1.02	(0.14, 7.32)	1.73	(0.24, 12.42)	0.98	(0.54, 1.76)	1.44	(1.03, 1.99)	1.36	(0.77, 2.40)
P trend	0.1468		0.1688		0.0244		0.7897		0.1845		0.2536	
Years since quitting (vs current smokers)												
<2	1.02	(0.87, 1.19)	1.06	(0.39, 2.88)	1.79	(0.78, 4.13)	0.74	(0.45, 1.22)	0.93	(0.70, 1.23)	1.12	(0.67, 1.89)
2-4	1.09	(0.94, 1.26)	0.50	(0.12, 2.04)	1.12	(0.41, 3.07)	1.12	(0.75, 1.66)	1.18	(0.93, 1.51)	0.91	(0.52, 1.59)
5-9	0.96	(0.82, 1.12)	0.50	(0.12, 2.04)	0.54	(0.13, 2.23)	1.16	(0.79, 1.71)	0.89	(0.68, 1.18)	1.19	(0.73, 1.94)
10-19	1.00	(0.86, 1.15)	0.24	(0.03, 1.70)	0.26	(0.04, 1.88)	0.93	(0.61, 1.41)	0.65	(0.47, 0.89)	1.50	(0.98, 2.30)
20+	0.85	(0.70, 1.04)	0.38	(0.05, 2.70)	0.44	(0.06, 3.16)	0.64	(0.35, 1.17)	0.92	(0.66, 1.28)	1.14	(0.64, 2.03)
P trend	0.1468		0.1688		0.0244		0.7897		0.1845		0.2536	

* Multivariable models adjust for race, education

Table S14. Pooled interaction models of the relative risk of mortality associated with current and former‡ smoking compared to never smoking by education attainment in women and men in the CPS-II Nutrition Cohort, HPFS, NHS, NIH-AARP, and WHI.

	High School Education or Less*		Some College or Vocational School*		College Degree or More		$P_{interaction}$
	RR	(95% CI)	RR	(95% CI)	RR	(95% CI)	
Women							
All causes							
Current Smokers	2.78	(2.64, 2.92)	2.77	(2.64, 2.90)	2.60	(2.49, 2.72)	p= 0.082
Former Smokers	1.56	(1.51, 1.62)	1.48	(1.44, 1.53)	1.36	(1.33, 1.39)	p< 0.001
Lung Cancer							
Current Smokers	27.71	(22.55, 34.05)	23.77	(19.71, 28.65)	20.83	(17.79, 24.39)	p= 0.087
Former Smokers	8.87	(7.31, 10.76)	6.87	(5.78, 8.17)	5.33	(4.63, 6.13)	p< 0.001
COPD							
Current Smokers	23.07	(18.21, 29.24)	24.11	(19.1, 30.44)	23.78	(18.61, 30.39)	p= 0.964
Former Smokers	9.01	(7.32, 11.08)	8.17	(6.65, 10.03)	7.10	(5.77, 8.74)	p= 0.281
Ischemic Heart Disease							
Current Smokers	2.97	(2.61, 3.39)	2.76	(2.43, 3.14)	2.74	(2.39, 3.14)	p= 0.629
Former Smokers	1.55	(1.42, 1.69)	1.43	(1.32, 1.55)	1.35	(1.25, 1.46)	p= 0.082
Other Heart Diseases							
Current Smokers	1.81	(1.48, 2.21)	1.92	(1.59, 2.33)	1.82	(1.50, 2.22)	p= 0.888
Former Smokers	1.36	(1.21, 1.52)	1.25	(1.12, 1.39)	1.16	(1.05, 1.28)	p= 0.117
Total Stroke							
Current Smokers	2.08	(1.65, 2.62)	2.19	(1.79, 2.68)	2.09	(1.74, 2.50)	p= 0.927
Former Smokers	1.23	(1.07, 1.41)	1.22	(1.08, 1.37)	1.07	(0.97, 1.17)	p= 0.124
Men							
All causes							
Current Smokers	2.70	(2.55, 2.85)	2.89	(2.74, 3.05)	2.81	(2.68, 2.95)	p= 0.179
Former Smokers	1.51	(1.46, 1.57)	1.52	(1.46, 1.57)	1.42	(1.39, 1.46)	p= 0.002
Lung Cancer							
Current Smokers	27.27	(21.14, 35.17)	27.10	(21.23, 34.58)	23.56	(19.83, 27.98)	p= 0.511
Former Smokers	8.12	(6.39, 10.33)	7.69	(6.12, 9.67)	5.87	(5.07, 6.80)	p= 0.029
COPD							
Current Smokers	21.62	(15.96, 29.28)	28.58	(20.47, 39.90)	29.60	(22.45, 39.03)	p= 0.272
Former Smokers	6.31	(4.80, 8.28)	7.72	(5.68, 10.49)	7.43	(5.88, 9.38)	p= 0.566
Ischemic Heart Disease							
Current Smokers	2.23	(1.97, 2.53)	2.38	(2.11, 2.68)	2.99	(2.68, 3.33)	p= 0.001
Former Smokers	1.41	(1.31, 1.53)	1.36	(1.26, 1.47)	1.45	(1.37, 1.53)	p= 0.434
Other Heart Diseases							
Current Smokers	1.66	(1.32, 2.08)	2.42	(1.99, 2.94)	2.44	(2.02, 2.96)	p= 0.013
Former Smokers	1.22	(1.08, 1.39)	1.24	(1.10, 1.40)	1.27	(1.16, 1.39)	p= 0.871
Total Stroke							
Current Smokers	1.50	(1.13, 1.99)	2.20	(1.68, 2.88)	2.00	(1.59, 2.53)	p= 0.118
Former Smokers	1.05	(0.90, 1.22)	1.32	(1.13, 1.55)	1.13	(1.02, 1.25)	p= 0.109

* Does not include the Harvard professional cohorts

‡ Former smokers who quit >2 years prior to survey date

Table S15. Age-standardized rates per 100,000, and age-adjusted Cox Proportional Hazard Ratios for women of CPS-II Nutrition Cohort using time dependent, baseline only, or smoking status ~ 2-years prior to endpoint.

	Never Smoker			Current Smoker			Former Smoker*		
	Updated Status	Baseline-only Status	Status 2-years before End	Updated Status	Baseline-only Status	Status 2-years before End	Updated Status	Baseline-only Status	Status 2-years before End
Person years	420,780	421,381	420,585	29,052	33,360	28,201	300,432	293,183	302,045
All-Causes									
Deaths (n)	6,720	6,732	6,724	742	972	859	5,996	5,687	5,874
Rate per 100,000	1,140.94	1,141.14	1,141.99	2,296.42	2,567.95	2,704.31	1,492.63	1,450.93	1,459.43
Age-Adj RR	1.00	1.00	1.00	2.31	2.56	2.68	1.37	1.33	1.34
(95% CI)	-	-	-	(2.14, 2.49)	(2.39, 2.74)	(2.50, 2.88)	(1.33, 1.42)	(1.29, 1.38)	(1.30, 1.39)
Lung Cancer									
Deaths (n)	121	121	121	163	221	202	578	523	549
Rate per 100,000	24.54	24.50	24.55	502.90	580.80	652.36	147.06	137.97	140.05
Age-Adj RR	1.00	1.00	1.00	23.90	27.83	30.19	7.00	6.52	6.64
(95% CI)	-	-	-	(18.86, 30.30)	(22.26, 34.80)	(24.06, 37.88)	(5.76, 8.52)	(5.35, 7.94)	(5.45, 8.08)
COPD									
Deaths (n)	84	84	84	90	115	95	437	385	419
Rate per 100,000	14.16	14.14	14.17	276.09	306.75	292.76	104.75	94.16	99.38
Age-Adj RR	1.00	1.00	1.00	23.27	25.00	24.65	8.08	7.30	7.74
(95% CI)	-	-	-	(17.24, 31.42)	(18.83, 33.20)	(18.33, 33.13)	(6.39, 10.20)	(5.77, 9.25)	(6.12, 9.78)
Ischemic Heart									
Deaths (n)	933	935	935	90	115	101	783	751	769
Rate per 100,000	151.78	151.87	152.13	270.92	294.40	301.56	182.58	179.40	179.19
Age-Adj RR	1.00	1.00	1.00	2.29	2.46	2.57	1.34	1.31	1.31
(95% CI)	-	-	-	(1.84, 2.84)	(2.03, 2.99)	(2.09, 3.16)	(1.22, 1.47)	(1.19, 1.44)	(1.19, 1.44)
Other Heart									
Deaths (n)	627	628	627	39	50	45	448	438	444
Rate per 100,000	99.36	99.36	99.39	121.77	131.15	142.79	107.53	107.70	106.41
Age-Adj RR	1.00	1.00	1.00	1.49	1.59	1.70	1.13	1.13	1.12
(95% CI)	-	-	-	(1.08, 2.06)	(1.19, 2.12)	(1.26, 2.30)	(1.00, 1.27)	(1.00, 1.27)	(0.99, 1.26)
Total Stroke									
Deaths (n)	568	568	568	54	57	52	402	393	398
Rate per 100,000	86.86	86.73	86.88	167.82	149.55	162.00	93.05	93.17	92.06
Age-Adj RR	1.00	1.00	1.00	2.29	2.04	2.20	1.13	1.13	1.12
(95% CI)	-	-	-	(1.73, 3.03)	(1.55, 2.68)	(1.66, 2.93)	(1.00, 1.29)	(1.00, 1.29)	(0.99, 1.27)

*Former smokers who quit >2 years prior to survey date

Table S16. Age-standardized rates per 100,000, and age-adjusted Cox Proportional Hazard Ratios for men of CPS-II Nutrition Cohort using time dependent, baseline only, or smoking status ~ 2-years prior to endpoint.

	Never Smoker			Current Smoker			Former Smoker*		
	Updated Status	Baseline-only Status	Status 2-years before End	Updated Status	Baseline-only Status	Status 2-years before End	Updated Status	Baseline-only Status	Status 2-years before End
Person years	201,782	202,112	201,672	20,360	23,510	19,549	362,920	356,998	364,307
All-Causes									
Deaths (n)	5,203	5,220	5,206	940	1,159	1,076	13,368	13,026	13,252
Rate per 100,000	1,714.64	1,717.12	1,716.38	3,917.68	4,033.57	4,548.39	2,453.54	2,431.16	2,420.57
Age-Adj RR	1.00	1.00	1.00	2.61	2.72	3.06	1.44	1.42	1.42
(95% CI)	-	-	-	(2.44, 2.80)	(2.56, 2.91)	(2.86, 3.27)	(1.39, 1.48)	(1.37, 1.46)	(1.38, 1.47)
Lung Cancer									
Deaths (n)	83	83	83	184	237	221	1,111	1,044	1,087
Rate per 100,000	28.35	28.31	28.37	779.24	833.94	945.40	199.57	191.53	194.90
Age-Adj RR	1.00	1.00	1.00	27.17	29.85	33.43	7.33	6.99	7.15
(95% CI)	-	-	-	(20.93, 35.26)	(23.21, 38.38)	(25.94, 43.09)	(5.86, 9.16)	(5.59, 8.74)	(5.72, 8.94)
COPD									
Deaths (n)	55	55	55	102	136	115	732	682	704
Rate per 100,000	15.75	15.73	15.75	395.66	443.61	451.34	117.40	111.07	112.78
Age-Adj RR	1.00	1.00	1.00	29.43	33.10	33.70	7.41	7.00	7.12
(95% CI)	-	-	-	(21.14, 40.95)	(24.14, 45.39)	(24.38, 46.60)	(5.63, 9.74)	(5.32, 9.22)	(5.41, 9.37)
Ischemic Heart									
Deaths (n)	1,123	1,127	1,123	185	220	206	2,713	2,653	2,706
Rate per 100,000	366.91	367.48	367.08	776.71	780.99	896.31	513.24	511.11	509.40
Age-Adj RR	1.00	1.00	1.00	2.39	2.43	2.75	1.35	1.34	1.35
(95% CI)	-	-	-	(2.05, 2.80)	(2.10, 2.81)	(2.36, 3.19)	(1.26, 1.45)	(1.25, 1.43)	(1.26, 1.45)
Other Heart									
Deaths (n)	478	480	478	60	70	65	1,055	1,043	1,053
Rate per 100,000	142.77	143.16	142.80	252.56	247.34	276.70	185.43	186.29	184.34
Age-Adj RR	1.00	1.00	1.00	2.01	1.97	2.23	1.25	1.25	1.25
(95% CI)	-	-	-	(1.54, 2.64)	(1.53, 2.54)	(1.71, 2.89)	(1.12, 1.39)	(1.12, 1.39)	(1.12, 1.39)
Total Stroke									
Deaths (n)	375	376	376	36	55	48	714	698	706
Rate per 100,000	120.56	120.66	120.89	139.37	182.85	191.12	115.48	114.58	113.92
Age-Adj RR	1.00	1.00	1.00	1.52	1.97	2.07	1.08	1.06	1.06
(95% CI)	-	-	-	(1.07, 2.14)	(1.48, 2.62)	(1.53, 2.80)	(0.95, 1.22)	(0.94, 1.21)	(0.93, 1.20)

*Former smokers who quit >2 years prior to survey date