

# **MORTALITY FROM SMOKING IN DEVELOPED COUNTRIES 1950–2020**

(see also [www.deathsfromsmoking.net](http://www.deathsfromsmoking.net))

**Richard Peto, Alan D Lopez, Hongchao Pan  
Jillian Boreham and Michael Thun**

## **UNITED STATES**

**Raw data** (pages 476–77)

**Analyses** (pages 478–79, 480–81, 482–83)

**Appendix** (pages 484–85)

(revised September 2015)





<b>UNITED STATES: 2010</b>
----------------------------

**Relative importance of deaths in MIDDLE age (35–69) in the year 2010**

Age range (years)	Deaths attributed to SMOKING /total deaths (thousands)		Mean years lost PER DEATH FROM SMOKING
	Male	Female	
0–34	– / 73	– / 37	–
35–69	124 / 452	82 / 298	24 years
70+	161 / 701	212 / 899	7 years
<b>All ages</b>	<b>285 / 1226</b>	<b>294 / 1234</b>	<b>13 years</b>

**Deaths, by cause, attributed to SMOKING / total deaths (thousands) in the year 2010**

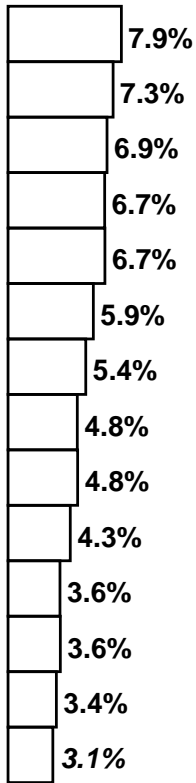
Cause	Male (by age)				Female (by age)			
	0–34	35–69	70+	All	0–34	35–69	70+	All
Lung Cancer	–/0.1	35/40	43/48	78/88	–/0.1	23/29	36/42	60/70
All Cancer	–/3.5	48/128 (38%)	60/166 (36%)	108/298	–/3.1	27/111 (25%)	45/158 (29%)	73/272
Vascular	–/4.2	43/131	44/252	87/387	–/2.4	25/66	76/338	101/406
Respiratory	–/1.7	15/28	40/86	55/116	–/1.3	15/25	55/99	70/125
All Other	–/63	17/165	16/197	34/425	–/30	15/97	36/305	51/432
<b>All Causes</b>	<b>–/73</b>	<b>124/452 (27%)</b>	<b>161/701 (23%)</b>	<b>285/1226</b>	<b>–/37</b>	<b>82/298 (27%)</b>	<b>212/899 (24%)</b>	<b>294/1234</b>

**Cancer deaths, and all deaths,  
attributed to SMOKING / total deaths (thousands) in the year 2010**

Cause	Male	Female	Male + Female
All Cancer	108 / 298 (36%)	73 / 272 (27%)	181 / 569 (32%)
All Causes	285 / 1226 (23%)	294 / 1234 (24%)	578 / 2460 (24%)

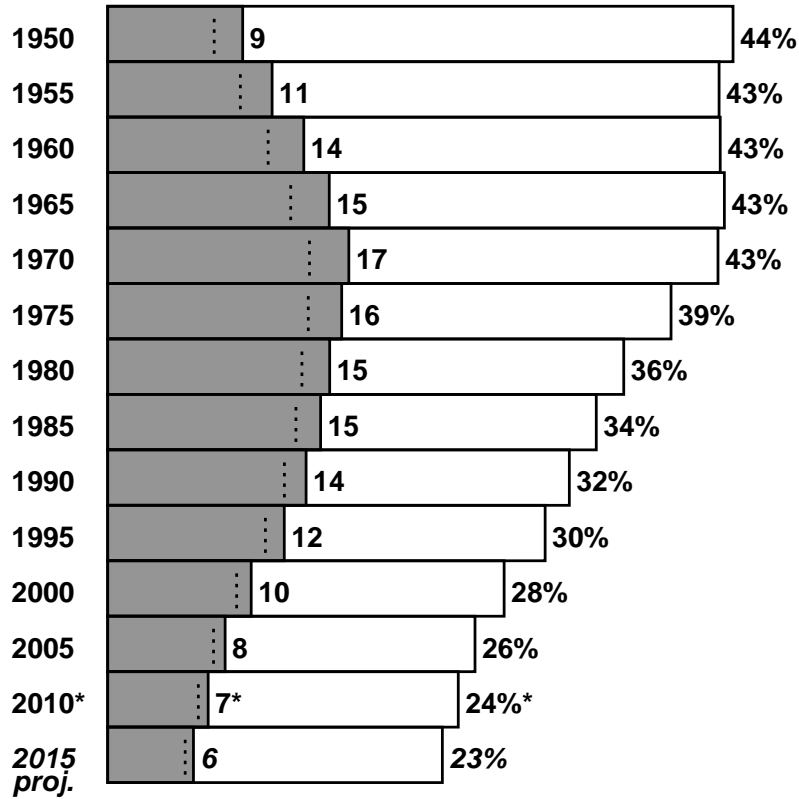
1950-2015: UNITED STATES

Population risk of dying at ages 0–34



Population risk of a 35-year-old dying at ages 35–69 from smoking (shaded) or from any cause (shaded and white)

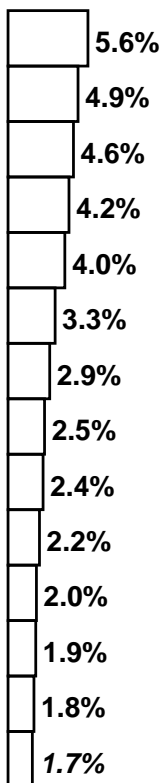
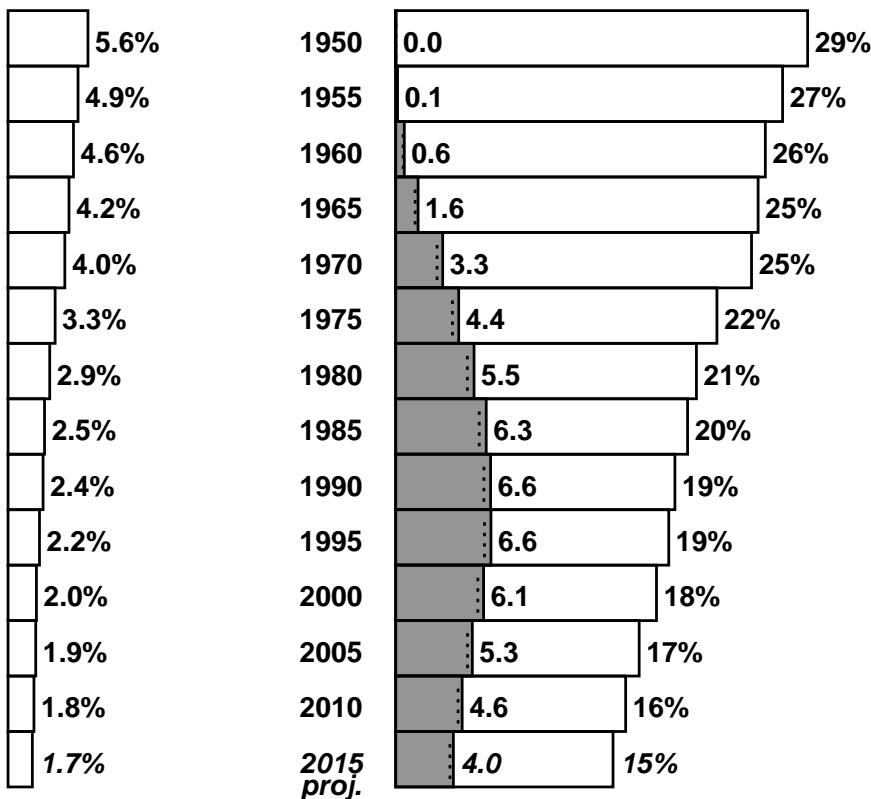
MALE



\*eg, at year 2010 male death rates, out of 100 men aged 35, 24 would die before age 70 (with 7 of these deaths attributed to smoking)

Note: Most of those killed by smoking would otherwise have survived beyond age 70, but a minority (shaded area to right of dotted line) would have died by 70 anyway

FEMALE



<b>UNITED STATES: 1950-2015</b>
---------------------------------

**Relative importance of deaths in MIDDLE age (35–69), 2015 projections**

Age range (years)	Deaths attributed to SMOKING /total deaths (thousands)		Mean years lost PER DEATH FROM SMOKING
	Male	Female	
0–34	– / 70	– / 35	–
35–69	124 / 494	83 / 321	<b>23 years</b>
70+	162 / 761	219 / 931	7 years
<b>All ages</b>	<b>286 / 1325</b>	<b>302 / 1288</b>	<b>13 years</b>

**Numbers of deaths attributed to smoking / total deaths (thousands)**

Year	Male (by age)				Female (by age)			
	0–34	35–69	70+	All	0–34	35–69	70+	All
1955	–/121	114/410 <b>(28%)</b>	24/351 <b>(7%)</b>	139/882	–/81	1.4/245 <b>(0.6%)</b>	0.0/337	1.4/663
1965	–/118	169/461 <b>(37%)</b>	66/457 <b>(14%)</b>	235/1036	–/74	18/265 <b>(7%)</b>	1.5/456 <b>(0.3%)</b>	19/795
1975	–/109	193/461 <b>(42%)</b>	112/493 <b>(23%)</b>	305/1063	–/57	53/266 <b>(20%)</b>	26/536 <b>(5%)</b>	79/858
1985	–/99	183/423 <b>(43%)</b>	152/569 <b>(27%)</b>	335/1092	–/48	80/260 <b>(31%)</b>	89/674 <b>(13%)</b>	169/983
1995	–/90	161/416 <b>(39%)</b>	179/656 <b>(27%)</b>	341/1163	–/43	87/261 <b>(34%)</b>	184/831 <b>(22%)</b>	272/1135
2005	–/77	131/430 <b>(30%)</b>	171/692 <b>(25%)</b>	302/1199	–/39	84/283 <b>(30%)</b>	218/907 <b>(24%)</b>	302/1229
2015 <i>proj.</i>	–/70	124/494 <b>(25%)</b>	162/761 <b>(21%)</b>	286/1325	–/35	83/321 <b>(26%)</b>	219/931 <b>(23%)</b>	302/1288

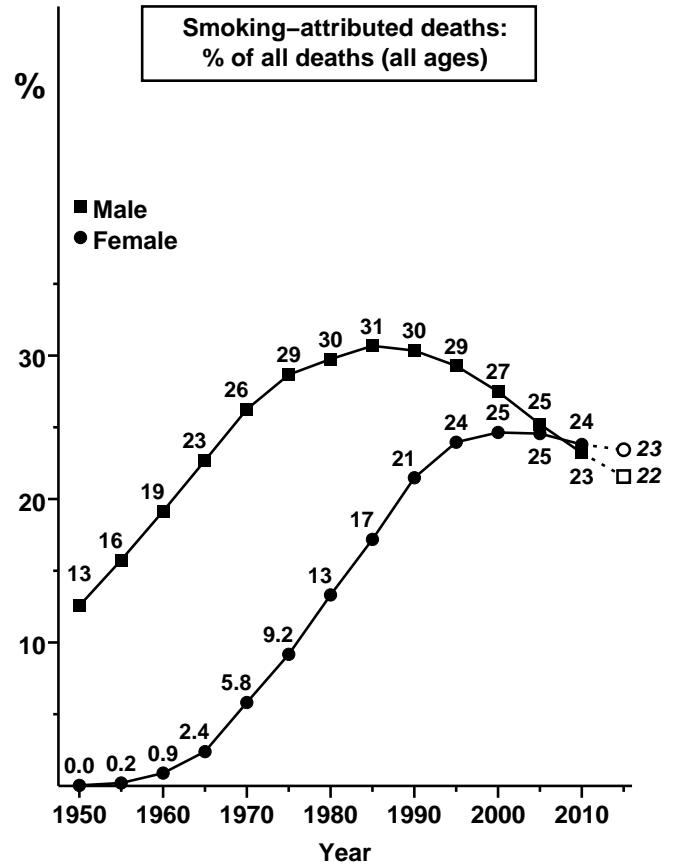
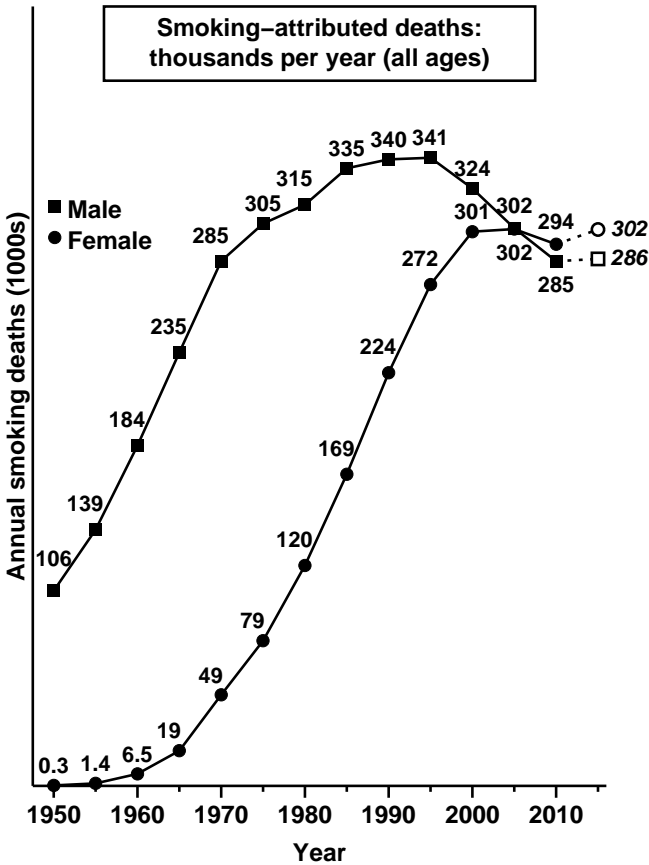
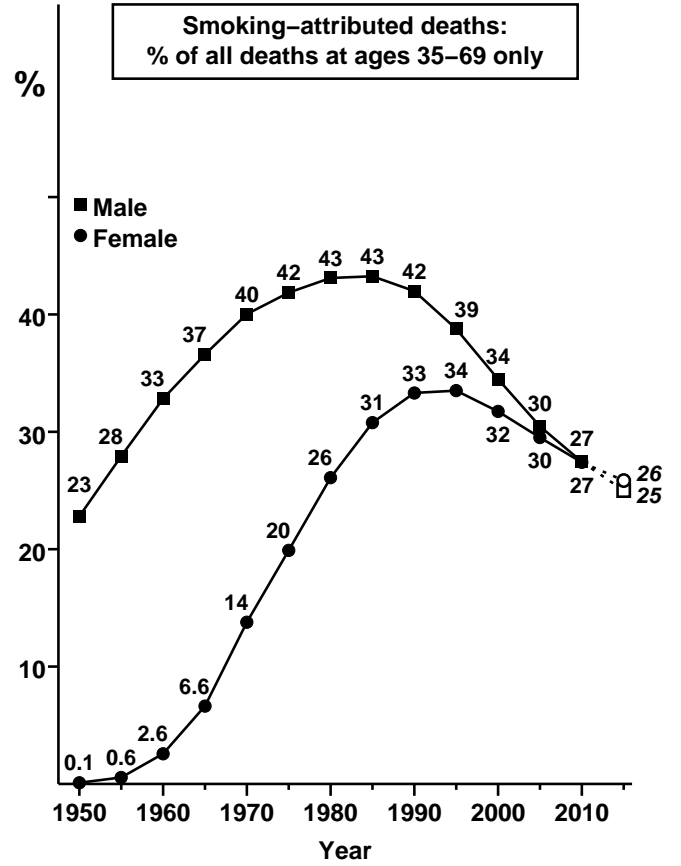
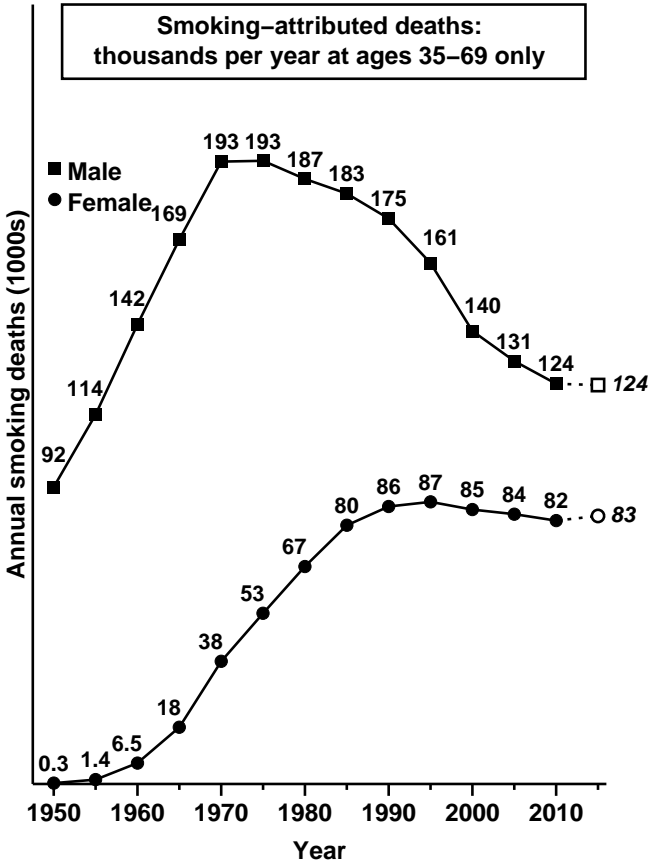
**60–year total (M=millions), decade of 1960s to decade of 2010s (1960–2020\*): 29 / 132M**

\*Estimated as 10 times the sum of the annual numbers for 1965, 1975, 1985, 1995, 2005 and 2015

**1960–2020, by age & sex:**

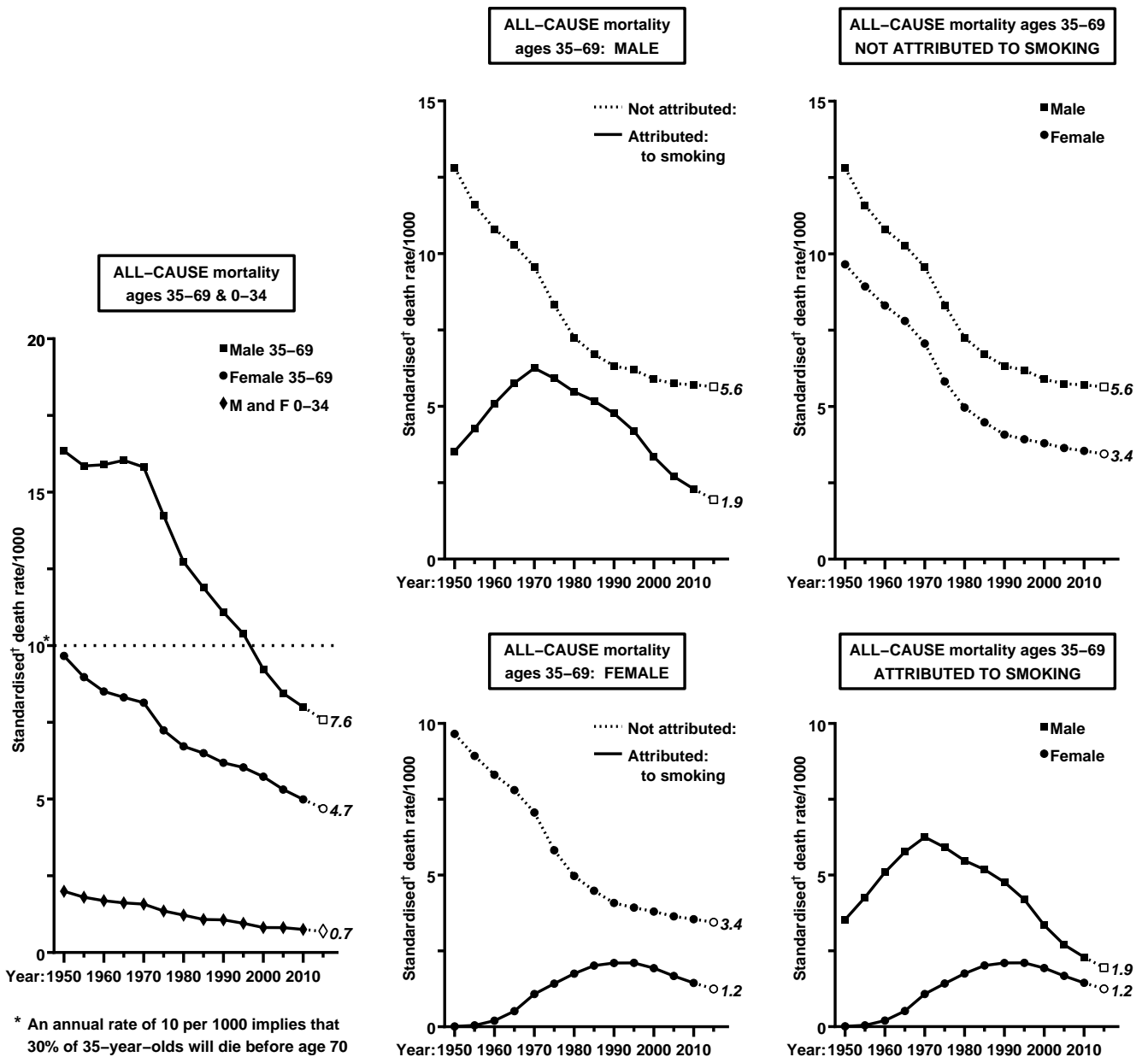
–/5.6M	9.6/27M	8.4/36M	18/69M	–/3.0M	4.0/17M	7.4/43M	11/63M
	<b>(36%)</b>	<b>(23%)</b>			<b>(24%)</b>	<b>(17%)</b>	

1950-2015: UNITED STATES



**UNITED STATES: 1950-2015**

**ALL-CAUSE mortality rates attributed and not attributed to smoking**



\* An annual rate of 10 per 1000 implies that 30% of 35-year-olds will die before age 70

† Mean of 7 age-specific rates, ages 35-69 (or ages 0-34)

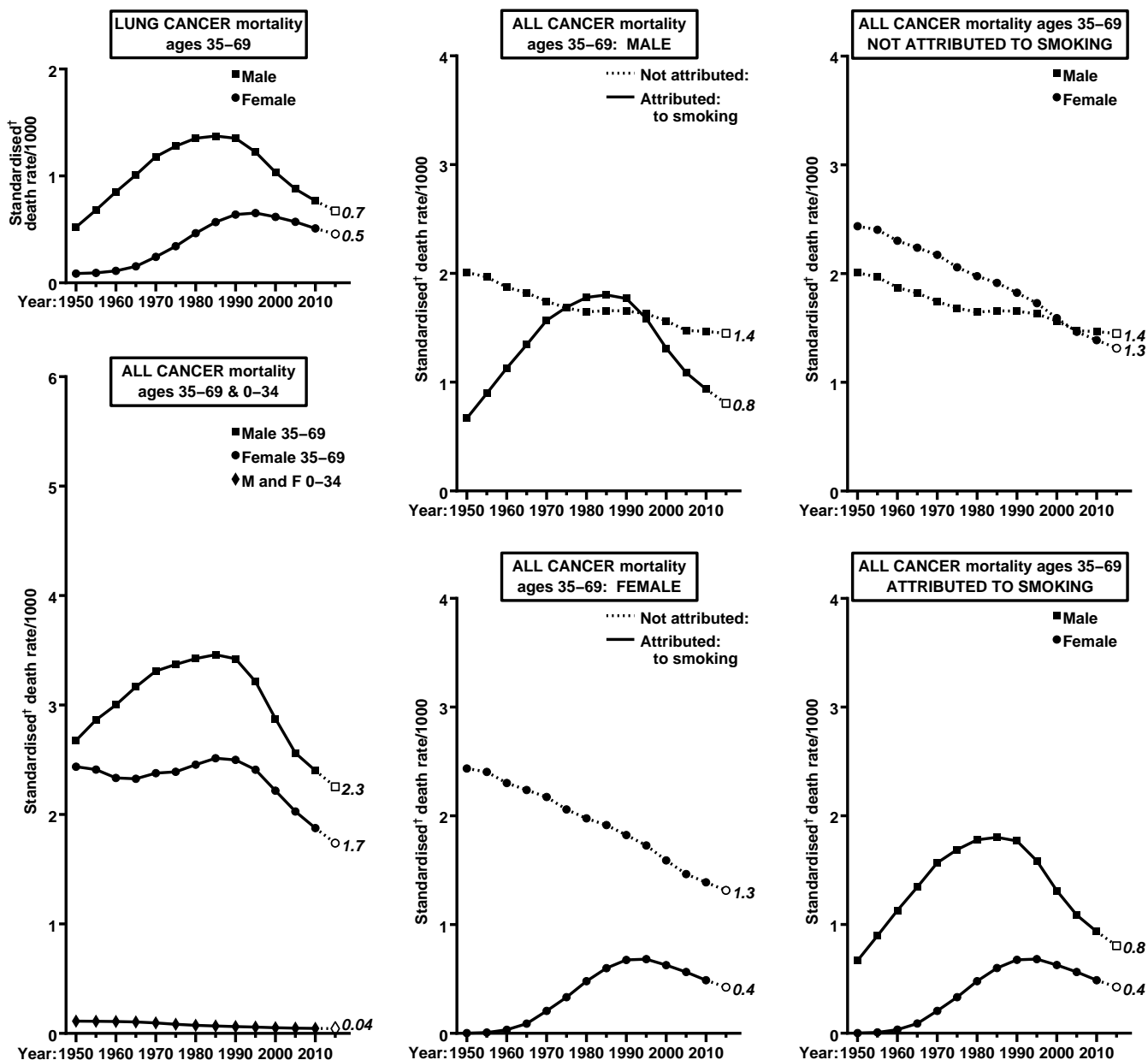
Year	MALE all-cause mortality (annual rate/1000, by age)							FEMALE all-cause mortality (annual rate/1000, by age)								
	Attributed to smoking?		0-34		35-69		70-79		Attributed to smoking?		0-34		35-69		70-79	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
1950	-	2.35	3.53	12.8	3.54	68.9	-	1.64	0.01	9.65	0.00	53.0				
1955	-	2.17	4.26	11.6	5.52	64.9	-	1.43	0.04	8.93	0.00	48.5				
1960	-	2.04	5.09	10.8	8.36	62.7	-	1.33	0.20	8.31	0.01	45.6				
1965	-	1.99	5.76	10.3	11.8	59.7	-	1.24	0.51	7.80	0.25	43.8				
1970	-	2.00	6.25	9.57	15.3	55.7	-	1.15	1.08	7.06	1.23	40.3				
1975	-	1.75	5.91	8.32	17.1	49.5	-	0.95	1.42	5.82	2.48	35.4				
1980	-	1.59	5.47	7.25	16.4	42.5	-	0.84	1.75	4.97	3.88	30.6				
1985	-	1.41	5.18	6.71	17.1	40.3	-	0.74	2.01	4.48	5.69	26.8				
1990	-	1.42	4.76	6.32	16.3	36.4	-	0.71	2.10	4.08	7.56	24.2				
1995	-	1.27	4.19	6.19	15.6	34.6	-	0.63	2.10	3.92	8.73	22.7				
2000	-	1.05	3.34	5.89	14.2	32.5	-	0.57	1.93	3.80	9.07	21.6				
2005	-	1.06	2.70	5.74	11.9	29.0	-	0.56	1.67	3.64	8.57	19.6				
2010	-	0.98	2.29	5.71	10.0	27.0	-	0.52	1.44	3.55	7.85	18.2				
2015	-	0.91	1.94	5.64	8.41	25.0	-	0.49	1.25	3.44	7.22	16.9				

0-34 and 35-69 = means of 7 age-specific rates; 70-79 = mean of 2 rates (70-74 & 75-79)



1950-2015: UNITED STATES

ALL CANCER mortality rates attributed and not attributed to smoking



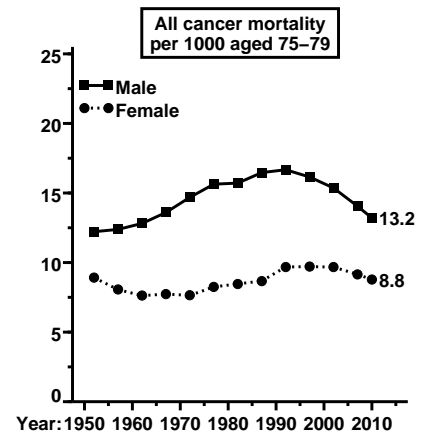
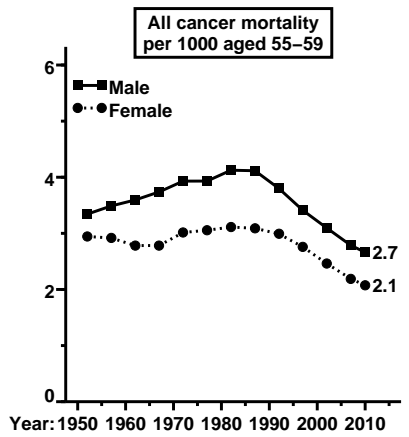
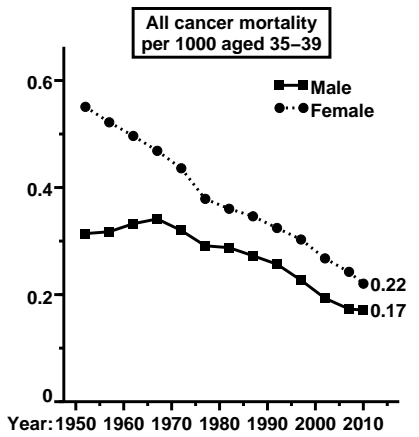
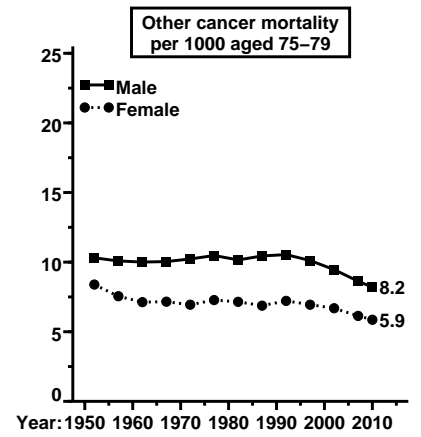
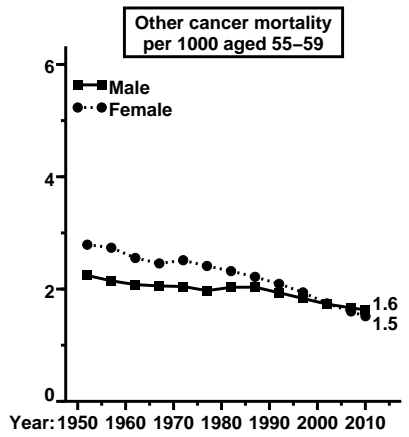
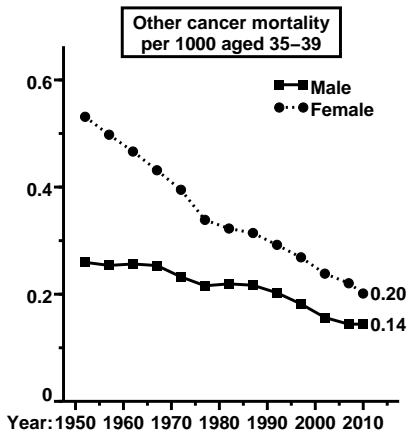
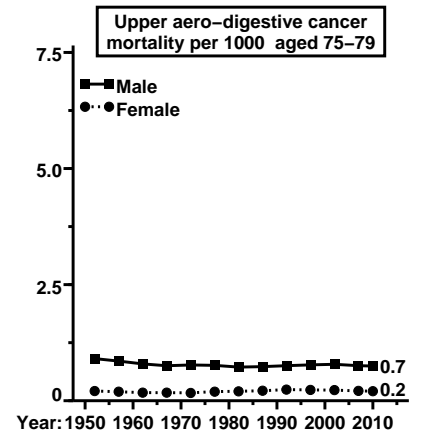
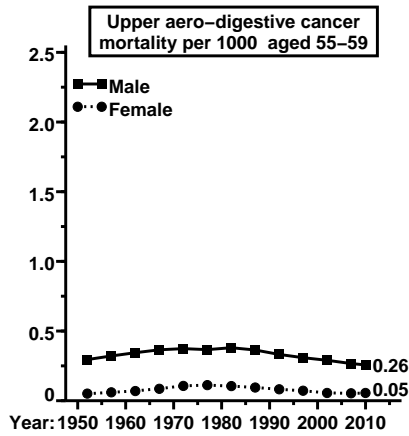
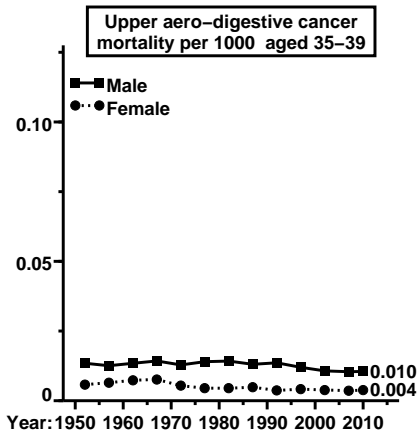
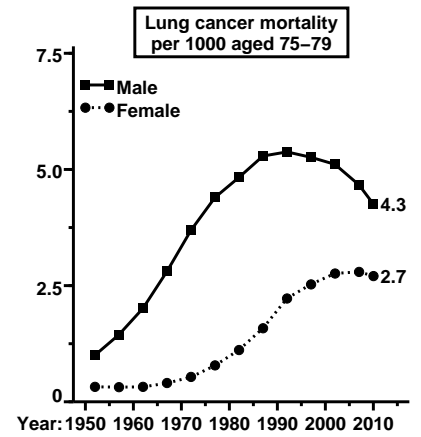
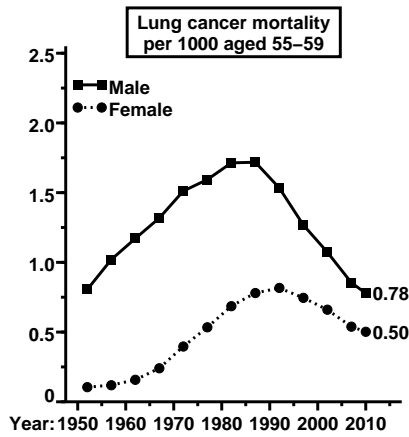
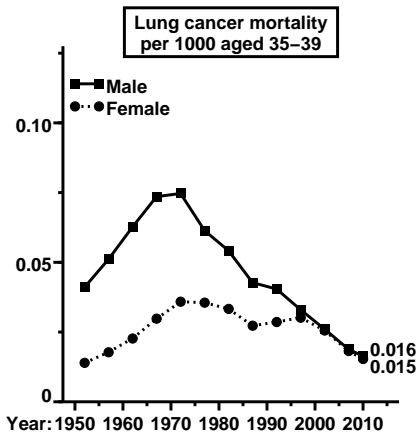
† Mean of 7 age-specific rates, ages 35-69 (or ages 0-34)

Year	MALE cancer mortality (annual rate/1000, by age)							FEMALE cancer mortality (annual rate/1000, by age)										
	Attributed to smoking?		0-34		35-69		70-79		Attributed to smoking?		0-34		35-69		70-79			
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No		
1950	-	0.11	0.67	2.01	0.92	9.69	-	0.11	0.00	2.44	0.00	7.85	-	0.11	0.01	2.40	0.00	7.41
1955	-	0.11	0.90	1.97	1.47	9.59	-	0.11	0.03	2.30	0.00	6.93	-	0.10	0.09	2.24	0.03	6.90
1960	-	0.11	1.13	1.87	2.19	9.17	-	0.10	0.21	2.17	0.01	6.75	-	0.09	0.21	2.06	0.01	6.82
1965	-	0.11	1.34	1.82	3.12	8.94	-	0.10	0.33	2.06	0.03	6.69	-	0.09	0.48	1.98	0.03	6.69
1970	-	0.10	1.57	1.74	4.20	8.74	-	0.09	0.48	1.98	0.03	6.69	-	0.09	0.60	1.91	0.03	6.44
1975	-	0.09	1.69	1.68	5.16	8.74	-	0.08	0.67	1.82	0.03	6.44	-	0.08	0.67	1.82	0.03	6.44
1980	-	0.08	1.78	1.65	6.11	8.42	-	0.07	0.68	1.73	0.03	6.33	-	0.07	0.68	1.73	0.03	6.33
1985	-	0.07	1.80	1.66	6.29	8.42	-	0.06	0.63	1.59	0.03	6.00	-	0.06	0.63	1.59	0.03	6.00
1990	-	0.06	1.77	1.65	5.91	7.92	-	0.06	0.56	1.46	0.03	5.58	-	0.06	0.49	1.39	0.03	5.25
1995	-	0.06	1.58	1.63	5.27	7.29	-	0.05	0.49	1.39	0.03	5.25	-	0.05	0.49	1.39	0.03	5.25
2000	-	0.05	1.31	1.56	4.55	6.93	-	0.05	0.42	1.31	0.03	4.94	-	0.05	0.42	1.31	0.03	4.94
2005	-	0.05	1.09	1.47	3.92	6.57	-	0.04	0.42	1.31	0.03	4.94	-	0.05	0.42	1.31	0.03	4.94
2010	-	0.05	0.93	1.47	3.92	6.57	-	0.04	0.42	1.31	0.03	4.94	-	0.05	0.42	1.31	0.03	4.94
2015	-	0.05	0.80	1.45	3.92	6.57	-	0.04	0.42	1.31	0.03	4.94	-	0.05	0.42	1.31	0.03	4.94

0-34 and 35-69 = means of 7 age-specific rates; 70-79 = mean of 2 rates (70-74 & 75-79)

**UNITED STATES: 1950-2010**

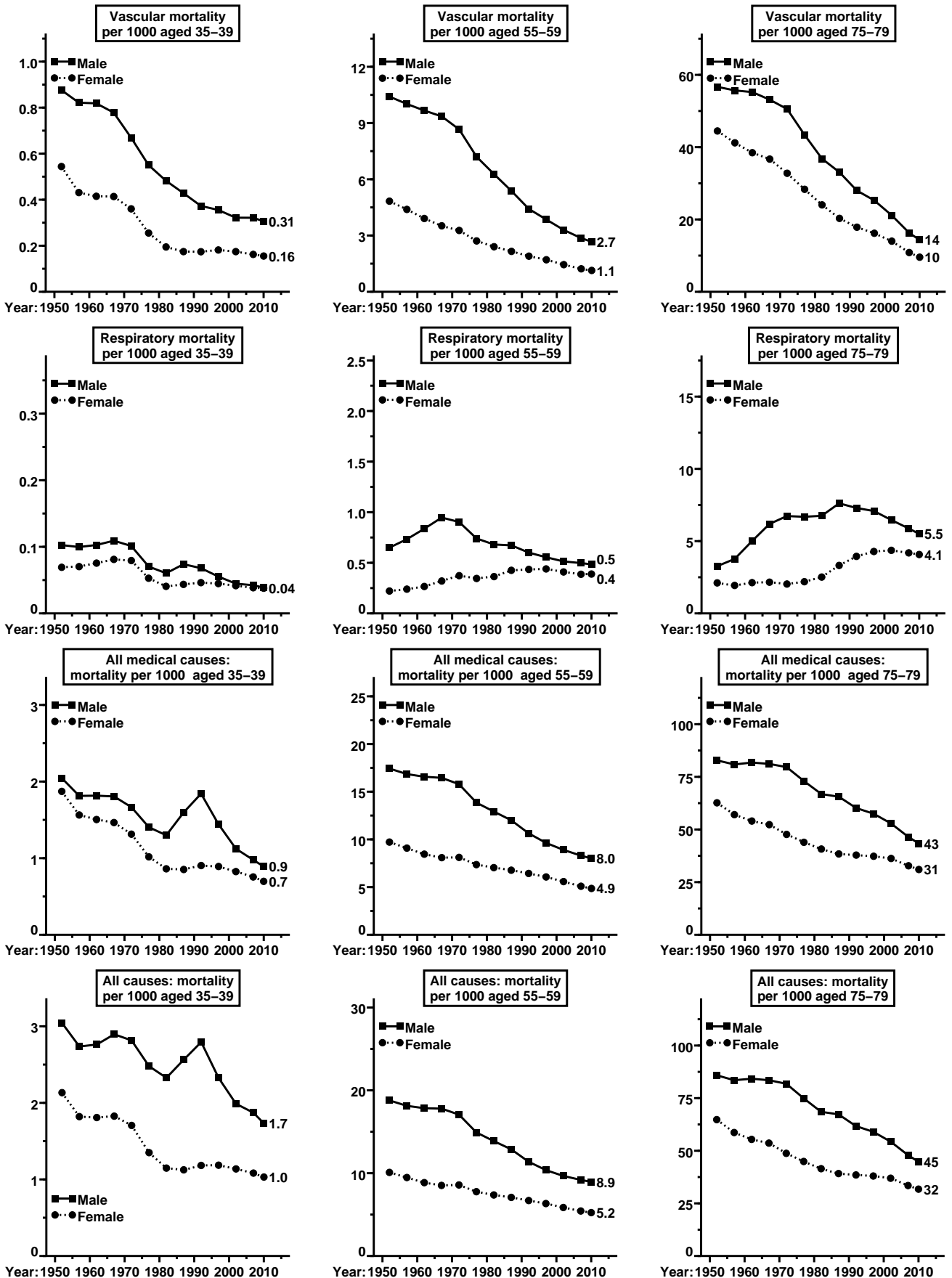
**Mortality\* trends at selected ages: 35–39, 55–59 & 75–79**



\* Annual mortality per 1000: averages of years available in 1950–54,.....,2005–09; then year 2010 separately

1950-2010: UNITED STATES

Mortality\* trends at selected ages: 35-39, 55-59 & 75-79



\* Annual mortality per 1000: averages of years available in 1950-54,.....,2005-09; then year 2010 separately