

19 Smoking-related disease

Disease characteristics

Smoking is the single greatest preventable agent of disease in Australia and similar countries. Smoking has been causally linked to death from 36 diseases (see Appendix Table D5). It is estimated that in 1998 there were 17,820 deaths in Australia attributable to the smoking of tobacco (accounting for 14% of all deaths) (Figure 19.1).

Mortality due to tobacco smoking is of major concern, because of the large numbers of deaths attributed each year and because, on the whole, these deaths are preventable. Tobacco increases the risk of coronary heart disease, stroke and peripheral vascular disease as well as a range of cancers and other diseases and conditions (Mathers et al. 1999).

Most deaths associated with active cigarette smoking are due to lung cancer, ischaemic heart disease and COPD. Most associated deaths occur after the age of 65–73% of deaths in males and 76% of deaths in females.

Tobacco consumption has existed for many centuries in a number of different forms, from sucking and chewing tobacco to smoking it with pipes and cigars. The manufactured cigarette is a more recent phenomenon in historical terms, and has had a major impact on how tobacco is used worldwide. The accessibility and convenience of smoking cigarettes has led to frequent, addictive use. While the other methods of tobacco consumption have their own disease burdens, the frequency of use and depth of inhalation involved in cigarette smoking have resulted in far more disease.

Passive-smoking-related deaths are not included here due to the difficulties associated with estimating total passive exposure to cigarette smoke. Deaths due to exposure of the foetus to cigarette smoking by the mother have been included in the analysis (English et al. 1995).

There were an estimated 118,000 PYLL before the age of 75 in 1998, making smoking-related disease the largest cause of preventable premature death in Australia.

Historic view

The manufactured cigarette was first marketed in England in the 1850s. The convenience of cigarettes meant that they were distributed widely, and during the First World War 60% of tobacco donated to the Allies was in the form of the cigarette. Between the First and Second World Wars, it was males who smoked, but by the time the Second World War was over, three-quarters of the male population and a quarter of the female population were smoking. In 1950 Doll and Bradford-Hill published their studies causally linking smoking and lung cancer and by the early 1960s the evidence on the harmful effects of smoking was overwhelming (Winstanley, Woodward & Walker 1995).

Smoking rates in Australia have been declining since the 1970s but the rates of decrease slowed in the 1990s (Mathers et al. 1999). Male rates of smoking declined from 72% in 1945 to 30% in 1995, while female smoking rates increased from 26% in 1945 to 33% in 1976, and fell back to 25% in 1995 (Makkai & McAllister 1998).

Age–sex distribution

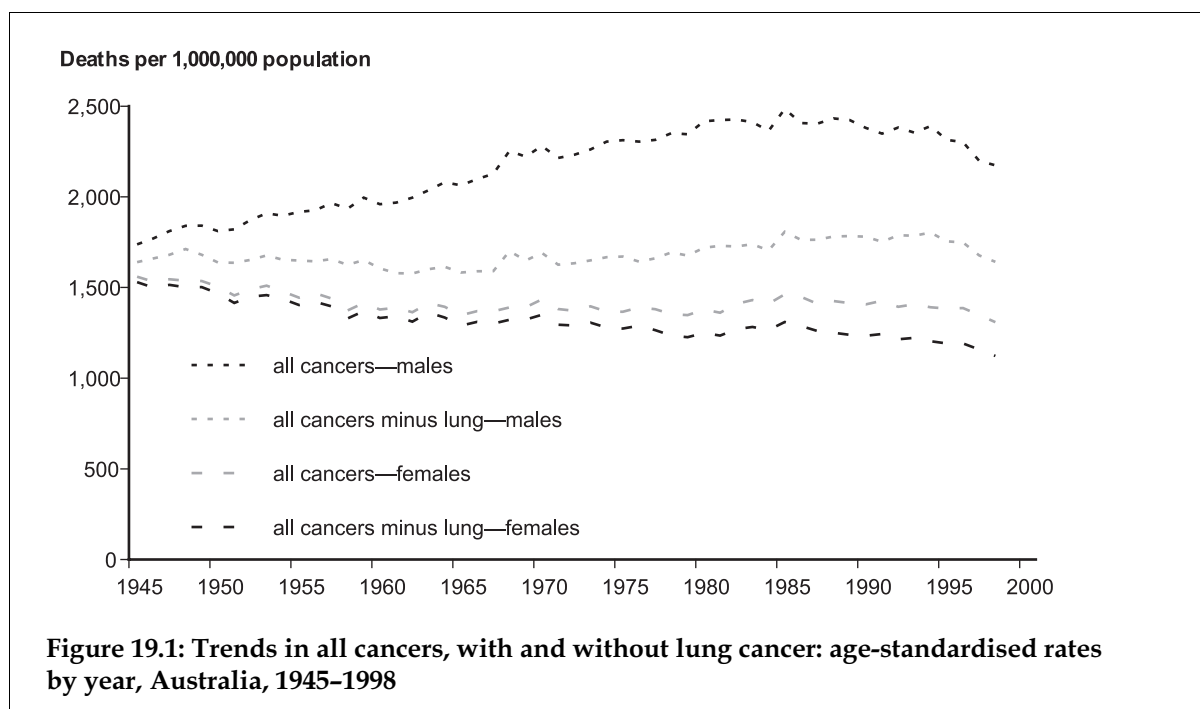
The causes of death causally linked to smoking are listed in Appendix Table D5. Males represented 12,849 (72%) of the smoking-related deaths. For 1998 it is estimated that 19% of all male deaths were attributable to tobacco smoking, with the mortality rate for males (1,437 per million) three times as high as the rate for females (428) (Table 19.1). These estimates refer only to active smoking of cigarettes. The health problems associated with cigar and pipe smoking have not been included because their much lower use makes it difficult to estimate their population impact as precisely as that of cigarettes.

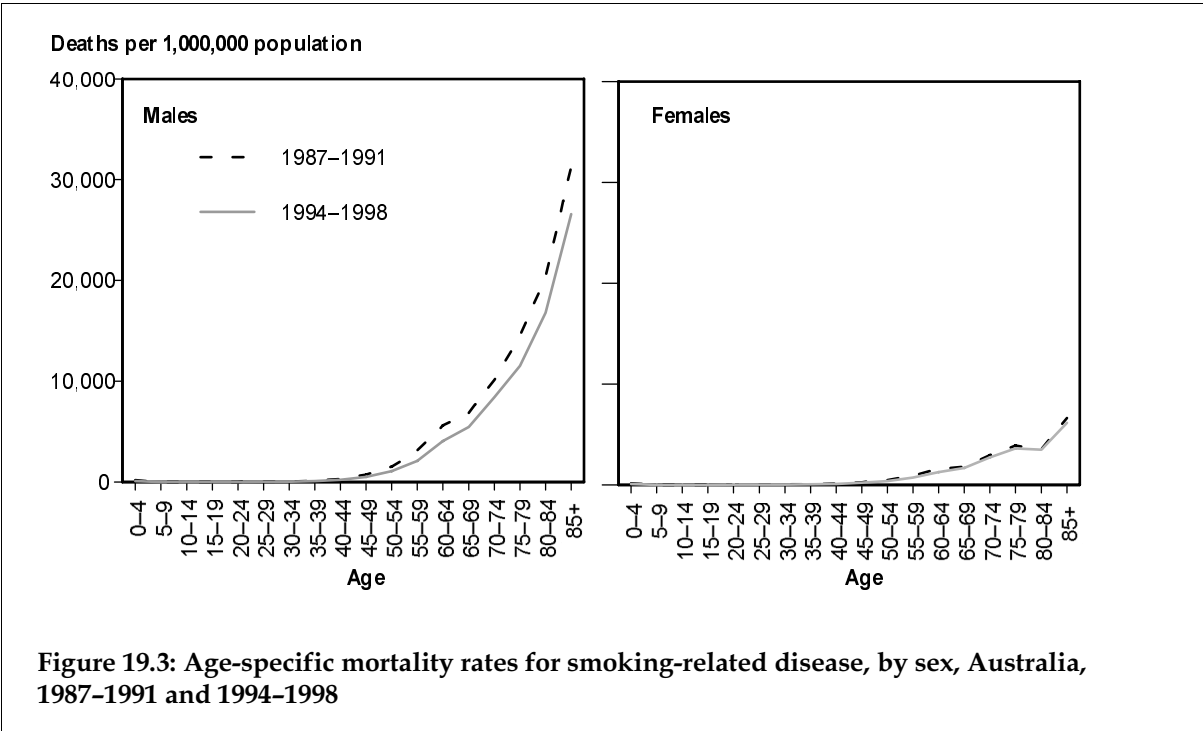
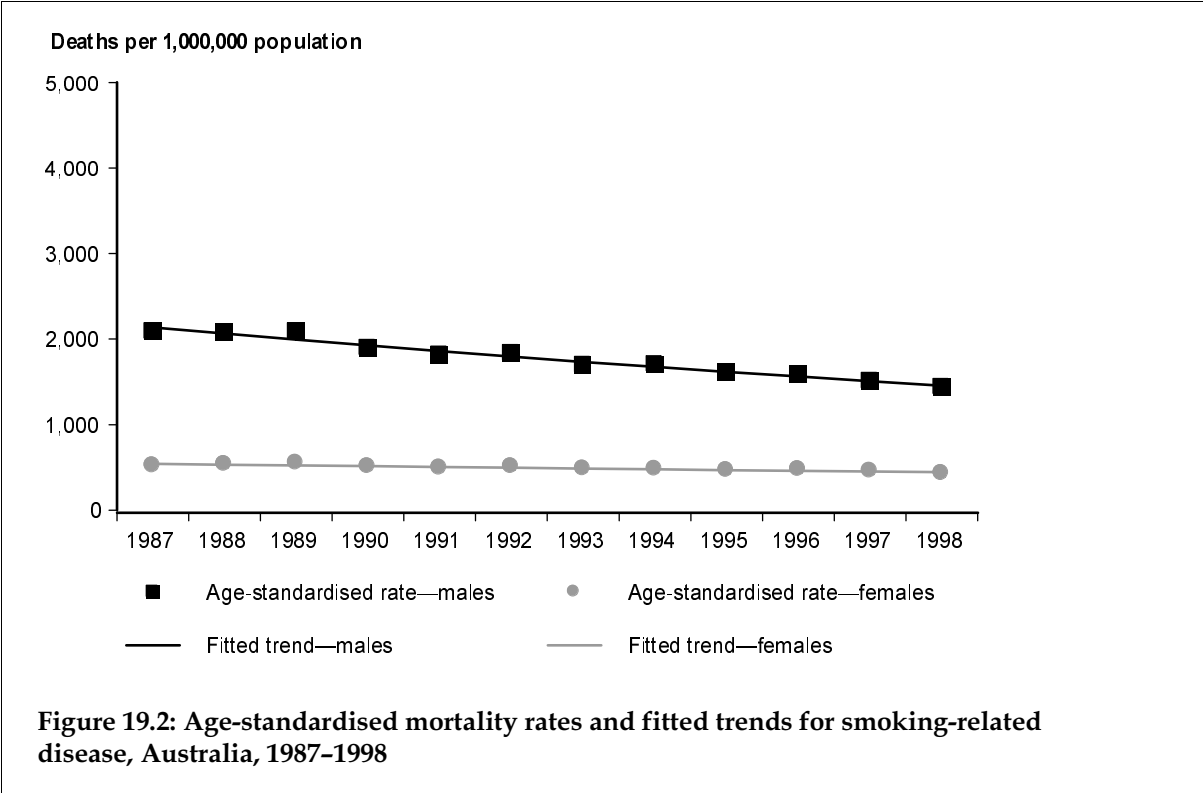
Age-specific mortality rates were 66 per million for boys aged 0–4 (due to exposure of the foetus to cigarette smoking by the mother) and 53 per million for girls 0–4, before dropping off significantly until adulthood (Figure 19.3; Table 19.1).

Twelve-year trends 1987–1998

Smoking-related mortality rates decreased significantly over 1987–1998, reflecting declines in cigarette use in earlier decades. Mortality rates for males decreased by 8.7% each year, with significant decreases in the 0–4 years age group and all age groups from age 35 onwards. Mortality rates for females decreased 0.6% each year with significant decreases in the 0–4 years age group, and most age groups from age 40 years onwards (Table 19.1; Figure 19.2).

Figure 19.1 provides an insight into the impact of smoking on overall cancer mortality rates over the second half of the 20th century. If lung cancer, which is almost entirely due to smoking, is included, overall male cancer mortality rates steadily increase over the period. If lung cancer is excluded these rates would have remained fairly constant.





Comparisons by State and Territory, geographic category, Indigenous origin, country of birth and socioeconomic status have not been made for deaths attributable to tobacco smoking.

Table 19.1: Age-specific and age-standardised mortality rates for smoking-related disease per million population, Australia, 1987–1998

Year	Age																	ASMR Aust 1991		
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84		85+	Crude rate
	Males																			
1987	238	0	1	9	14	25	53	141	321	859	1,707	3,549	5,961	7,152	10,631	14,960	20,722	32,328	1,718	2,088
1988	225	1	1	6	17	30	58	158	343	807	1,599	3,249	5,991	6,984	10,599	15,266	21,120	32,405	1,718	2,076
1989	210	1	1	9	12	32	65	149	296	771	1,577	3,147	5,698	7,077	10,898	15,312	21,791	33,912	1,737	2,087
1990	206	0	0	9	22	31	47	124	297	711	1,429	3,040	5,366	6,572	9,450	13,786	19,886	29,646	1,600	1,895
1991	175	0	0	10	13	27	55	131	282	665	1,337	2,762	5,094	6,501	9,172	13,346	18,456	28,718	1,556	1,813
1992	155	1	0	3	14	22	53	116	280	610	1,323	2,668	5,097	6,509	9,333	13,643	19,325	29,592	1,592	1,833
1993	123	1	1	4	12	19	51	133	252	552	1,250	2,495	4,758	5,884	8,841	12,418	17,587	27,799	1,498	1,695
1994	104	1	1	8	12	25	60	118	241	551	1,190	2,331	4,481	6,027	9,143	12,903	17,073	29,346	1,527	1,704
1995	114	1	0	4	17	24	48	131	239	540	1,129	2,222	4,140	5,678	8,659	11,659	17,438	26,654	1,466	1,607
1996	114	1	0	6	12	26	49	104	243	530	1,124	2,028	4,114	5,460	8,281	11,652	17,643	27,511	1,468	1,586
1997	80	0	0	11	16	30	60	118	235	524	1,019	1,976	3,969	5,128	8,029	10,985	16,453	26,119	1,422	1,508
1998	66	1	0	10	11	28	54	110	236	469	946	1,903	3,604	4,965	7,847	10,571	15,641	24,810	1,379	1,437
	Females																			
1987	149	0	0	4	9	20	36	69	122	260	509	879	1,569	1,730	2,902	3,807	3,530	6,692	566	520
1988	146	0	0	2	12	17	35	58	126	257	465	1,003	1,664	1,860	2,977	3,924	3,630	6,546	585	535
1989	145	1	0	3	11	19	35	53	129	269	474	986	1,662	1,851	3,177	4,031	3,763	7,031	605	550
1990	162	0	0	5	9	23	32	63	106	223	431	831	1,553	1,785	2,882	3,900	3,353	6,461	564	509
1991	116	1	0	2	11	20	27	50	103	240	421	815	1,513	1,692	2,784	3,795	3,345	6,345	551	492
1992	116	1	0	1	14	16	30	47	102	207	444	835	1,505	1,832	2,888	4,009	3,459	6,728	579	510
1993	93	3	0	5	9	14	30	55	112	223	404	760	1,371	1,740	2,866	3,854	3,238	6,066	555	483
1994	87	1	1	6	8	12	25	51	94	212	409	768	1,290	1,739	2,794	3,834	3,478	6,292	560	479
1995	83	2	1	3	8	12	26	48	98	188	415	657	1,334	1,704	2,735	3,642	3,428	6,041	548	465
1996	89	0	0	4	7	13	26	59	93	196	411	756	1,273	1,702	2,735	3,785	3,495	6,507	571	476
1997	60	0	0	9	6	14	36	51	85	208	363	716	1,214	1,704	2,631	3,492	3,479	6,417	557	457
1998	53	1	0	7	14	18	27	57	94	184	350	642	1,140	1,486	2,583	3,275	3,426	5,773	528	428

Note: ASMR = age-standardised mortality rate.