
International Smoking Statistics

Web Edition

A collection of worldwide historical data

Israel

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Contents

Contents	3
List of Figures	4
Preface	5
Downloads	5
Acknowledgements	6
Introduction.....	7
Years considered	7
Sales data	7
Survey data	7
Table 1.1 Total annual production of tobacco products.....	9
Table 1.2 Total annual production, consumption or sales of cigarettes	10
Table 1.3 Percentage of production of tobacco in different forms (by weight), selected years	11
Table 2 Sales of cigarettes and production of all tobacco products. Annual total and average per adult (age 15 years and over) per day	12
Table 3 Manufactured cigarettes: percentage of total sales or production as filter cigarettes	14
Table 4M Prevalence of smoking, males: selected surveys by age.....	16
Table 4F Prevalence of smoking, females: selected surveys by age	17
Table 5M Number of cigarettes smoked per smoker per day, males: selected surveys by age	20
Table 5F Number of cigarettes smoked per smoker per day, females: selected surveys by age	21
Table 6M Number of cigarettes smoked per person per day, males: selected surveys by age; with percentage total sales	22
Table 6F Number of cigarettes smoked per person per day, females: selected surveys by age; with percentage total sales	23
Table 7M Number of cigarettes smoked per person per day, sales-adjusted, males: selected surveys ¹ by age; with percentage total sales	24
Table 7F Number of cigarettes smoked per person per day, sales-adjusted, females: selected surveys ¹ by age; with percentage total sales	25
Table 8 Estimated ¹ prevalence of smoking and estimated ¹ number of cigarettes per person per day (unadjusted and sales-adjusted): summary of Tables 4, 6 and 7. Males and females aged 15 years and over.....	26
Notes	29
Notes on sources of sales data	29
Production data	29
Sales and consumption data for cigarettes	29
Estimates of smuggling	30
Estimates of numbers of hand-rolled cigarettes	30
Plain/Filter cigarettes sales.....	30
Menthol cigarette sales.....	30
Tar and nicotine machine yields of cigarettes	30
Notes on sources of survey data	30
Additional information (not presented in tables)	33
References	34

¹ See footnotes to Tables

List of Figures

Figure 1	Percentage of production of tobacco in different forms (by weight), selected years	11
Figure 2	(i) Sales of manufactured cigarettes and (ii) production of all tobacco products. Average per adult (aged 15 years and over) per day	13
Figure 3	Estimated prevalence of smoking of (i) manufactured cigarettes, and (ii) all tobacco products; by year of survey. Males and females aged 15 years and over	27
Figure 4	Estimated number of manufactured cigarettes smoked per person per day, sales-adjusted; by year of survey. Males and females aged 15 years and over ...	28

¹ See footnotes to Figures

Preface

International Smoking Statistics is a collection of smoking data covering most of Europe and various other economically developed countries. The second edition (published by Wolfson Institute of Preventive Medicine and OUP, 2002, www.oup.co.uk/isbn/0-19-850856-5) included data for 30 countries up to 1995. Since 2006, work has been ongoing to make individual country updates available online. Please register at www.pnlee.co.uk if you wish to be informed when updates are posted.

The methods used in the web edition are essentially unchanged from those of the second edition, although some minor changes are included in the online Methods chapter. Readers are strongly recommended to consult the Methods chapter.

The two main types of data presented are sales data and survey data. We give the results of the original authors as closely as possible, whilst presenting them in a uniform format.

Sales data give the total national consumption of tobacco. Data on sales of cigarettes and of all tobacco products are presented, usually from about 1920. Estimates of the consumption of hand-rolled cigarettes are included where possible, as are data on the types of manufactured cigarettes sold. The Tobacco Research Council provided most of the sales data until 1973, while later sales data were obtained from government and industry sources.

Survey data provide information on the prevalence and amount of smoking according to age and sex. These were obtained from a wide variety of surveys. Some survey data are available for the early part of the 20th century, but for most countries they are available only from the 1950s or 1960s onwards.

In additional tables we calculate further statistics by combining sales and survey data using certain standardized assumptions. The figures are intended to provide an easily interpretable summary of the data presented in the tables, and the commentary has deliberately been kept to a minimum.

In this chapter, the survey data are largely reproduced from the 2nd edition, which covered the years up to 1995, subject to a few amendments for consistency with the Web edition. For the subsequent years, only certain multinational surveys have been added.

Downloads

Updates currently available to download from <http://www.pnlee.co.uk/iss.htm> include:

Methods, including

Appendix I: *Estimated size of adult population;*

Appendix II: *Comparisons of manufactured and hand-rolled cigarettes and differences in the way they are smoked;*

Appendix III: *Consumption category estimation;*

Comparisons between countries;

Updated country chapters (see *Methods* for current list);

Tables from each updated chapter, in Excel format, including extended versions of Tables 4 and 6 and a customisable version of Figure 3;

Supplement 1: *Estimation of sex-specific smoking statistics by standardized age groups and time periods*. [The web edition comprises a brief Update Note, together with tables (in Excel format only) for the countries with a chapter in the web edition. The original Supplement 1 to the second edition (an extended version of Appendix IV to the second edition) is also available and gives a full description and tables for the other countries]. No update to Supplement 1 is planned for countries (including Israel) which have only been partially updated for the web edition.

Also available from the same source are:

Supplement 2 to the second edition: *Estimating past smoking habits by an indirect method. An investigation into a method based on recall, with application to Great Britain*. [This supplement is an extended version of Appendix V to the second edition];

An updated version of Appendix V Bibliography. [This bibliography lists published papers that use an indirect method for estimating past smoking habits based on recall];

IMASS, a comprehensive Excel database system, based on WHO mortality data and smoking statistics from Supplement 1. The IMASS system includes powerful routines for creating graphs and tables.

Acknowledgements

We would like to acknowledge the tobacco industry for their financial support and for providing some of the sales data in International Smoking Statistics.

We would also like to thank the many government and research organizations and individuals who supplied much of the information included.

We thank Yvonne Cooper, Pauline Wassell and Diana Morris for maintenance of our references database.

We are indebted to G. F. Todd, past director of the Tobacco Research Council, who, shortly before he died in 1988, had prepared a draft report from which the first edition of International Smoking Statistics developed.

Professor Nicholas Wald was an editor of earlier editions, and we thank him for his support and encouragement.

We alone bear the responsibility for the analysis and interpretation of the data presented.

Introduction

Years considered

In this chapter, the sales data have been fully updated, but the survey data are largely reproduced from the 2nd edition, which covered the years up to 1995, with only certain multinational surveys added.

Sales data

See Tables 1-3, Figures 1 and 2 and *Notes on sources of sales data*.

Comprehensive data on tobacco consumption in Israel are not available. Data on products other than cigarettes are based only on Israeli production, and there are differing estimates of cigarette consumption from various sources, although they all show a similar pattern.

From 1960 until the mid-1990s the consumption of manufactured cigarettes per adult was about 6-7 cigarettes per day. By 2014, it decreased to below 4 cigarettes per day. No data on consumption of hand-rolled cigarettes are available in Israel, although there are reports that this form of consumption has been taken up in the last few years. The data presented for 1981 onwards refer to tax-paid sales; the limited information available suggests that smuggling has not been a major problem in recent years.

The consumption of all tobacco products combined, based on production data and available for certain years only, varied around 6-7 g per adult per day from 1970 to the mid-1980s, after which time increasing imports make this an inappropriate basis. Nearly all tobacco in this period was consumed in manufactured cigarettes. Until 1982 about 1% of all tobacco was used in water-pipes ('Tombac'), and in the 1970s another 1% was used as snuff. In 1982, the last year for which production data were available for cigars and pipe tobacco, quantities of these tobacco products were negligible.

Survey data

See Tables 4-8, Figures 3 and 4 and *Notes on sources of survey data*.

At the time of writing the 2nd edition, a series of surveys (source 4, see Table 4) gave information on smoking almost annually from 1972 to 1983, but related only to the Jewish population and the data were only available by two broad age groups. A study carried out in 1985-1987 (source 12) presented a more detailed breakdown in age groups. Few data were available for more recent years.

Between 1972 and 1983, the prevalence of tobacco smoking among those aged 15 years and over was around 45% in men and around 30%, perhaps decreasing slightly, in women. Later sources generally gave lower estimates of prevalence, 36-38% in men and 21-25% in women, but one source for 1989 (source 16) gave values similar to the earlier years.

Data on smoking among teenagers were scarce. Surveys in the 1970s showed that more boys smoked than girls, but this difference disappeared after the mid-1980s. At discharge from military service (age 20-22) more young men than young women smoked, but this prevalence decreased, from about 60% and 40% respectively in the early 1980s, to 40% and 30% in 1995.

Comparison of survey and sales data (recalculated for this edition) suggests that surveys reported consumption within plus or minus 20% of manufactured cigarette sales data. However, comparisons should be made with caution, since the sales data are not definitive, and the survey-based consumption is calculated from limited data (see e.g. notes 4b and 12b). Between 1970 and the mid-1990s, the estimated number of cigarettes smoked per person per day (sales-adjusted) varied little, remaining around 8 to 9 for men and about 4 to 5 for women.

Table 1.1 Total annual production of tobacco products

Year	Manufactured cigarettes tonnes	Cigars tonnes	Pipe tobacco tonnes	Tombac tonnes	Snuff tonnes	All tobacco products tonnes
1970	3 868	15	19	60	39	4 001
1975	5 553	16	17	52	36	5 674
1980	5 337	9	8	41	27	5 423
1982	6 043	3	1	35	24	6 107
1983	6 373			29	23	6 425
1984	6 714			29	21	6 764
1985	6 709			29	20	6 758
1986	6 723			33	21	6 777
1987	6 888			29	19	6 936
1988	5 882			27	20	5 928
1989	5 245			25	18	5 288
1990	5 440					
1991	5 590					
1992	5 742					
1993	5 525					
1994	5 638					
1995	4 933					

Source: see *Notes on sources of sales data: Production data*, p. 29.

Table 1.2 Total annual production, consumption or sales of cigarettes

Year	Production CBS tonnes	Consumption		Sales	
		USDA millions	WHO millions	OECD	
				tonnes	millions
1960		2 593			
1961		2 603			
1962		2 733			
1963		2 957			
1964		3 038			
1965		3 333			
1966		3 167			
1967		3 348			
1968		3 510			
1969		3 921			
1970	3 868	4 027	3 998		
1971		4 133	4 125		
1972		4 522	4 518		
1973		5 182	5 218		
1974		5 495	5 573		
1975	5 553	5 812	5 953		
1976		6 055	6 488		
1977		5 341	5 950		
1978		6 000	5 934		
1979		5 455	5 455		
1980	5 337	6 025	5 651		
1981		6 685	6 285	5 200	6 500
1982	6 043	6 324	5 443	5 334	6 668
1983	6 373	6 398	7 273	5 539	6 924
1984	6 714	6 726	7 089	5 632	7 040
1985	6 709	6 725	7 001	5 744	7 179
1986	6 723	7 023	7 233	5 680	7 101
1987	6 888	6 750	7 470	5 904	7 380
1988	5 882	7 250	7 767	5 983	7 479
1989	5 245	7 250	7 353	6 032	7 541
1990	5 440	7 565	7 473	6 000	7 500
1991	5 590	7 750	7 607	6 142	7 677
1992	5 742	7 900	8 182	6 480	8 100
1993	5 525	7 950	8 140	6 479	8 099
1994	5 638	8 100	8 875	6 688	8 360
1995	4 933	8 150	8 518	7 008	8 760
1996		8 200	7 768	7 024	8 780
1997		8 250		6 704	8 380
1998		8 350		6 224	7 780
1999				6 624	8 280
2000				6 577	8 221
2001				6 928	8 660
2002				6 848	8 560
2003				6 704	8 380
2004				6 608	8 260
2005				6 400	8 000
2006				6 368	7 960
2007				6 448	8 059
2008				6 608	8 260
2009				6 640	8 300
2010				6 638	8 298
2011				6 689	8 362
2012				6 399	7 999
2013				5 983	7 479
2014				5 601	7 001

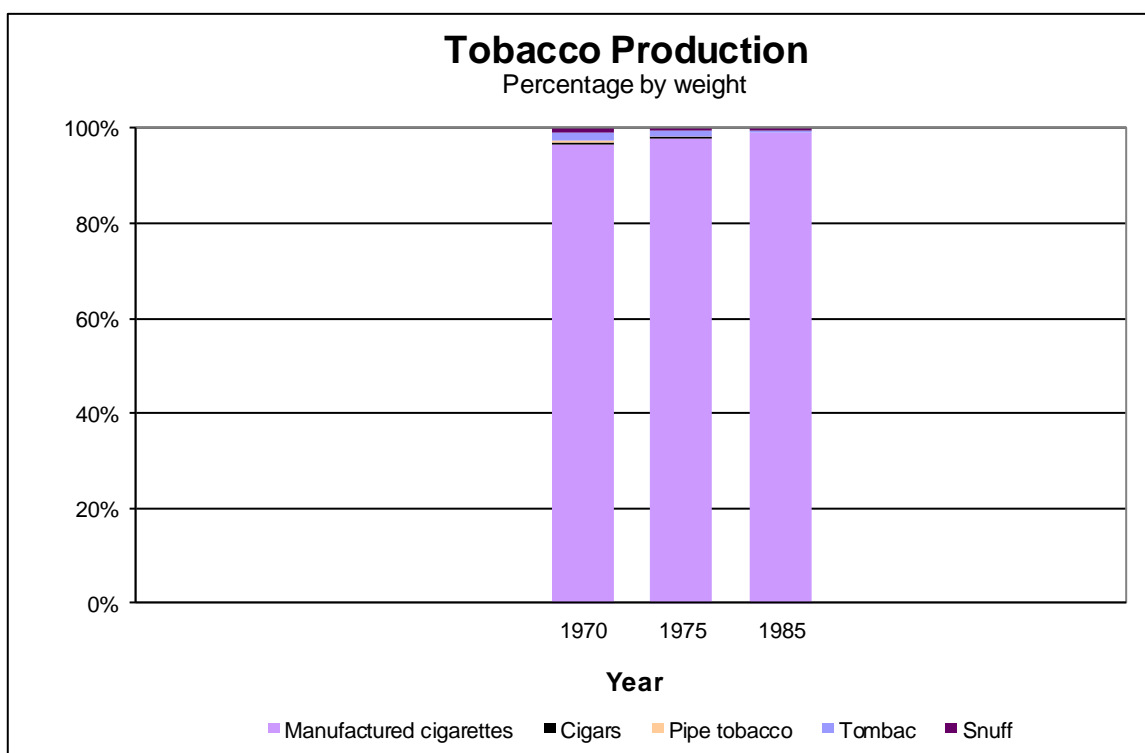
Source: see *Notes on sources of sales data: Sales and consumption data for cigarettes*, p. 29.

Table 1.3 Percentage of production of tobacco in different forms (by weight), selected years

Year	Manufactured cigarettes %	Cigars %	Pipe tobacco %	Tombac %	Snuff %
1970	96.7	0.4	0.5	1.5	1.0
1975	97.9	0.3	0.3	0.9	0.6
1985	99.3			0.4	0.3

Source: calculated from Tables 1.1.

Figure 1 Percentage of production of tobacco in different forms (by weight), selected years



Source: Table 1.3.

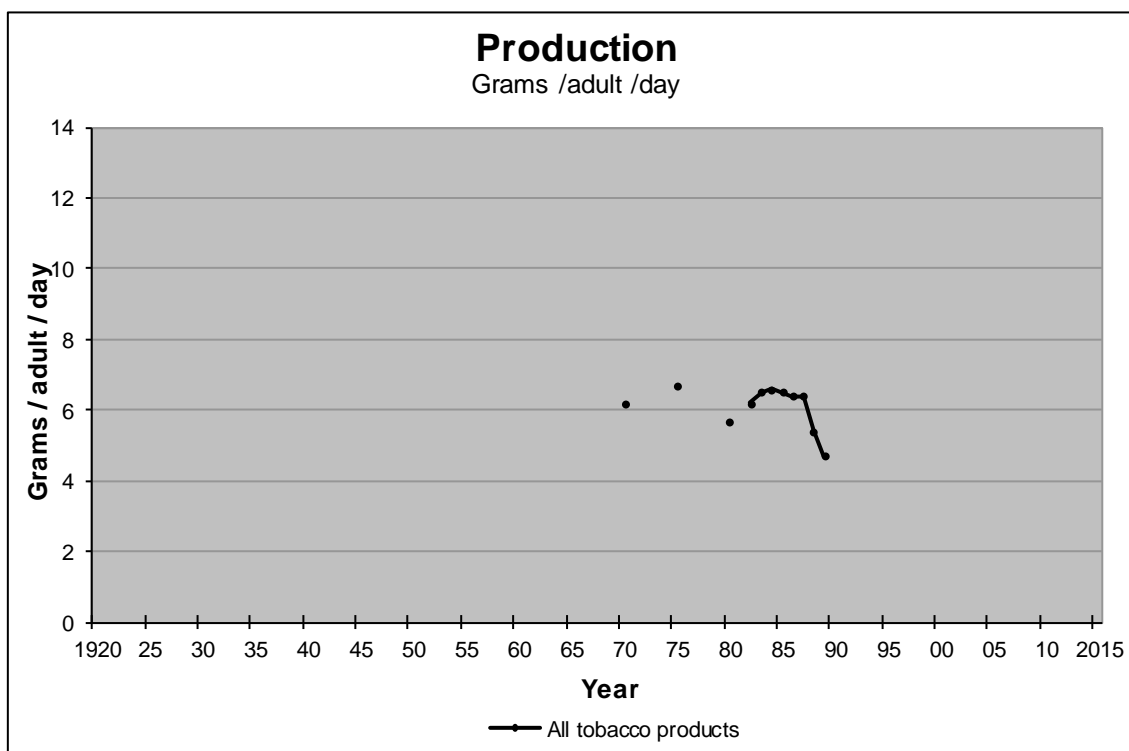
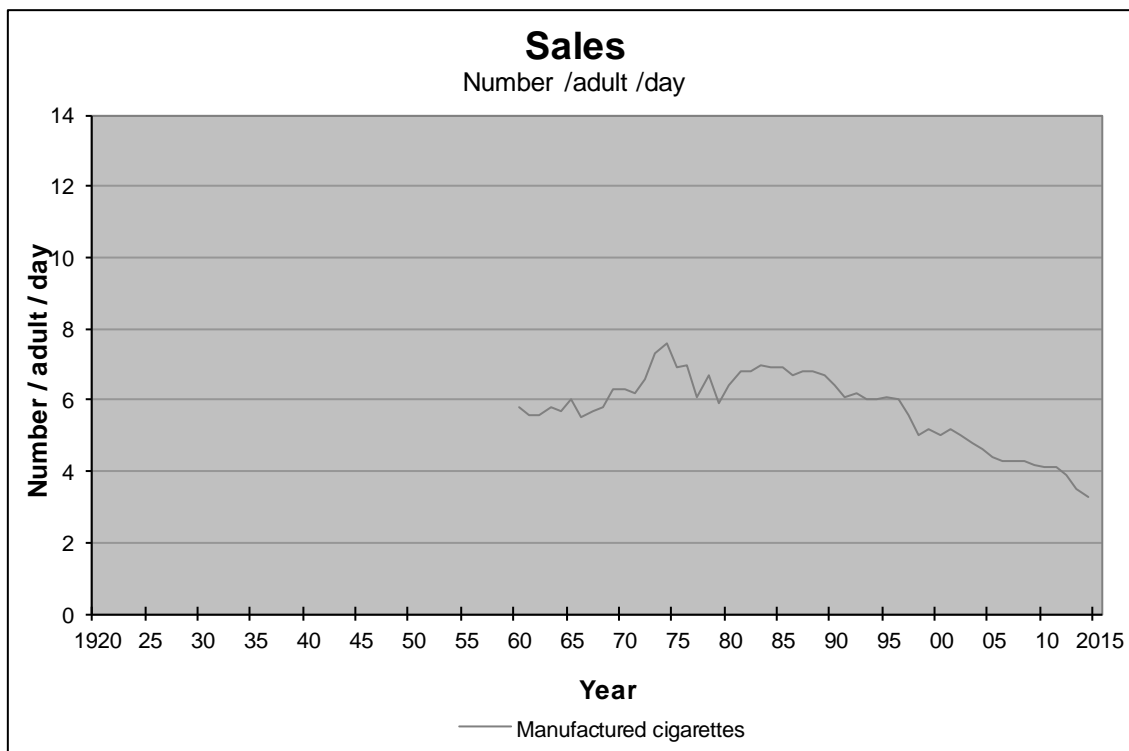
Table 2 Sales of cigarettes and production of all tobacco products.
Annual total and average per adult (age 15 years and over) per day

Year	Manufactured cigarettes		Hand-rolled cigarettes		Total cigarettes		All tobacco products	
	Total annual millions	Number/ adult/day	Total annual millions	Number/ adult/day	Total annual millions	Number/ adult/day	Total annual tonnes	Grams/ adult/day
1960	2 593	5.8						
1961	2 603	5.6						
1962	2 733	5.6						
1963	2 957	5.8						
1964	3 038	5.7						
1965	3 333	6.0						
1966	3 167	5.5						
1967	3 348	5.7						
1968	3 510	5.8						
1969	3 921	6.3						
1970	4 027	6.3					4 001	6.2
1971	4 133	6.2						
1972	4 522	6.6						
1973	5 182	7.3						
1974	5 495	7.6						
1975	5 812	6.9					5 674	6.7
1976	6 055	7.0						
1977	5 341	6.1						
1978	6 000	6.7						
1979	5 455	5.9						
1980	6 025	6.4					5 423	5.7
1981	6 500	6.8						
1982	6 668	6.8					6 107	6.2
1983	6 924	7.0					6 425	6.5
1984	7 040	6.9					6 764	6.6
1985	7 179	6.9					6 758	6.5
1986	7 101	6.7					6 777	6.4
1987	7 380	6.8					6 936	6.4
1988	7 479	6.8					5 928	5.4
1989	7 541	6.7					5 288	4.7
1990	7 500	6.4						
1991	7 677	6.1						
1992	8 100	6.2						
1993	8 099	6.0						
1994	8 360	6.0						
1995	8 760	6.1						
1996	8 780	6.0						
1997	8 380	5.6						
1998	7 780	5.0						
1999	8 280	5.2						
2000	8 221	5.0						
2001	8 660	5.2						
2002	8 560	5.0						
2003	8 380	4.8						
2004	8 260	4.6						
2005	8 000	4.4						
2006	7 960	4.3						
2007	8 059	4.3						
2008	8 260	4.3						
2009	8 300	4.2						
2010	8 298	4.1						
2011	8 362	4.1						
2012	7 999	3.9						
2013	7 479	3.5						
2014	7 001	3.3						

Source: Manufactured cigarettes Table 1.2 (USDA to 1980, OECD 1981 onwards). All tobacco products, Table 1.1. Population, see *Population, Methods* p. 14.

Columns for hand-rolled cigarettes and for total cigarettes including hand-rolled are shown as standard for all chapters, although for Israel no estimates are available. See also *Notes on sources of sales data, Estimates of numbers of hand-rolled cigarettes*, p. 30

Figure 2 (i) Sales of manufactured cigarettes and (ii) production of all tobacco products. Average per adult (aged 15 years and over) per day



Source: Table 2.

Table 3 Manufactured cigarettes: percentage of total sales or production as filter cigarettes

Year	Filter	
	sales %	production %
1968	77.5	
1969	83.0	
1970	86.4	
1971	93.0	
1972	95.0	
1973	95.4	
1974	96.8	
1975	96.9	
1976	97.1	
1977	97.3	
1978	97.6	
1979	97.9	
1980	98.7	
1981		98.8
1982		99.0
1983		99.1
1984		99.3
1985		99.3
1986		99.6
1987		99.3
1988		99.2
1989		99.1
1990		99.1
1991		99.1
1992		99.1
1993		99.1
1994		99.2
1995		99.2
1996		99.2
1997		99.2
1998		99.2

Source: see *Notes on sources of sales data: Plain/Filter cigarettes sales*, p. 30.
There is also limited information in the *Notes on Menthol cigarette sales*, p. 30 and *Tar and nicotine machine yields of cigarettes*, p. 30.

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Table 4M Prevalence of smoking, males: selected surveys by age
(continues on p. 18)

Year	Source	Product	Frequency	Age Groups																	All ages					
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70	75	80+	
63	1	UC	R												56	51	49	46							43	
63	1	A	U												57	52	50	48							45	
70	2	UC	U					31					61		54		59		52		39		32		34	50
72	4	U	U																							43
73	4	U	U																							41
74	4	U	U																							48
75	4	U	U																							44
76	4	U	U																							45
78	6	U	U																							26
79	4	U	U																							50
79	7	U	U																							31
80	3	UC	U																							31
81	4	U	U																							40
81	8	UC	*																							42
81	8	UC	R																							34
81	13	UC	U																							28
81	8	UC	*																							47
81	8	UC	R																							17
81	13	UC	U																							17
82	13	UC	U																							57
83	4	U	U																							60
83	9	U	U																							50
83	13	UC	U																							50
84	10	U	U																							38
84	13	UC	U																							44
85	11	U	U																							17
85	12	UC	R																							59
85	13	UC	U																							34
85	19	UC	R																							53
85	19	UC	A																							53
86	5	U	*																							31
86	5	U	R																							31
86	5	U	A																							48
86	13	UC	U																							48
87	13	UC	U																							48
87	14	MCR																								48
88	13	UC	U																							48
88	15	UC	R																							48
88	15	UC	A																							48
89	13	UC	U																							48
89	16	U	U																							45
90	13	UC	U																							47
91	13	UC	U																							47
92	13	UC	U																							46
92	17	U	U																							40
92	18	U	U																							38
93	13	UC	U																							46
94	5	U	R																							48
94	13	UC	U																							48
95	13	UC	U																							48

Table 4F Prevalence of smoking, females: selected surveys by age
(continues on p.19)

Year	Source	Product	Frequency	Age Groups																	All ages					
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70	75	80+	
63	1	UC	R																							
63	1	A	U																							
70	2	UC	U					18		31		35		31		27		16		22		7				27
72	4	U	U																							
73	4	U	U									41														36
74	4	U	U									34														31
75	4	U	U									40														34
76	4	U	U																							
78	6	U	U																							
79	4	U	U																							
79	7	U	U																							
80	3	UC	U																							
81	4	U	U																							
81	8	UC	*																							
81	8	UC	R					4	11	13	33															13
81	13	UC	U																							
82	13	UC	U																							
83	4	U	U																							
83	9	U	U																							
83	13	UC	U																							
84	10	U	U																							
84	13	UC	U																							
85	11	U	U																							
85	12	UC	R																							
85	13	UC	U																							
85	19	UC	R																							
85	19	UC	A																							
86	5	U	*																							
86	5	U	R																							
86	5	U	A																							
86	13	UC	U																							
87	13	UC	U																							
87	14	MCR																								
88	13	UC	U																							
88	15	UC	R																							
88	15	UC	A																							
89	13	UC	U																							
89	16	U	U																							
90	13	UC	U																							
91	13	UC	U																							
92	13	UC	U																							
92	17	U	U																							
92	18	U	U																							
93	13	UC	U																							
94	5	U	R																							
94	13	UC	U																							
95	13	UC	U																							

Table 4M (continued from p. 16)
Prevalence of smoking, males

Year	Source	Product	Frequency	Age Groups																	All ages				
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70	75	80+
98	5	A	*		6		17																		
98	5	A	R		12		24																		
02	5	A	*		5		11																		
02	5	A	R		10		17																		
06	5	A	*		3		6																		
06	5	A	R		6		12																		
14	5	A	*		3		12																		
14	5	A	R		7		17																		

Source: see *Notes on sources of survey data*, p. 30
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products

Frequency: A = all smokers (including occasional)
 R = regular or daily smokers
 U = unspecified
 * = refer to *Notes on sources of survey data*, p. 30
 All ages: relates to ages reported; as given in original source

Table 4F (continued from p. 17)
Prevalence of smoking, females

Year	Source	Product	Frequency	Age Groups																	All ages					
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70	75	80+	
98	5	A	*		3		7																			
98	5	A	R		6		13																			
02	5	A	*		2		8																			
02	5	A	R		5		12																			
06	5	A	*		1		5																			
06	5	A	R		1		7																			
14	5	A	*		2		4																			
14	5	A	R		4		6																			

Source: see *Notes on sources of survey data*, p. 30
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products

Frequency: A = all smokers (including occasional)
 R = regular or daily smokers
 U = unspecified
 * = refer to *Notes on sources of survey data*, p. 30
 All ages: relates to ages reported; as given in original source

Table 5M Number of cigarettes smoked per smoker per day, males:
selected surveys by age

Year	Source	Product	Estimated	Age Groups															All ages						
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50		55	60	65	70	75	80+
63	1	UC	E												21	20	19	19				18			20
70	2	UC	E*				15				18		19		18		18		15		15		12		18
73	4	UC	E*										22								19				
74	4	UC	E*										19								20				
75	4	UC	E*										21								21				
79	4	UC	E*										24								22				
80	3	UC	E																		19				
81	8	UC	E				8.3																		
83	4	UC	E*										20								19				
85	12	UC	E*										21		21		21		20		19				21
85	19	UC															24		24		20		19		21
88	15	UC	E																		22				
89	13	UC																			22				
90	13	UC																			20				
91	13	UC																			19				
92	13	UC																			18				
93	13	UC																			19				
94	13	UC																			17				
95	13	UC																			17				
98	5	UC				0.7			2.9																

Source: see *Notes on sources of survey data*, p. 30
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

Estimated: E = mean estimated from percentage distribution
 (see also *Consumption category estimation*, Methods p. 11, and Appendix III)
 * = refer to *Notes on sources of survey data*, p. 30
 All ages: relates to ages reported; as given in original source

Table 5F Number of cigarettes smoked per smoker per day, females:
selected surveys by age

Year	Source	Product	Estimated	Age Groups																	All ages				
				12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60		65	70	75	80+
63	1	UC	E																						
70	2	UC	E*				12			13		13		13		14		12		13		9.7			11
73	4	UC	E*									16						15							
74	4	UC	E*									16						16							
75	4	UC	E*									17						16							
79	4	UC	E*									17						15							
80	3	UC	E				9.5											13							
81	8	UC	E				6.0																		
83	4	UC	E*									16						17							
85	12	UC	E*							12		15		15		16		16							15
85	19	UC										19		17		20		21							19
88	15	UC	E									16													
89	13	UC										14													
90	13	UC										15													
91	13	UC										13													
92	13	UC										14													
93	13	UC										14													
94	13	UC										12													
95	13	UC										13													
98	5	UC				0.6		1.4																	

Source: see *Notes on sources of survey data*, p. 30
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

Estimated: E = mean estimated from percentage distribution
 (see also *Consumption category estimation*, Methods
 p. 11, and Appendix III)
 * = refer to *Notes on sources of survey data*, p. 30
 All ages: relates to ages reported; as given in original source

Table 6M Number of cigarettes smoked per person per day, males:
selected surveys by age; with percentage total sales

Year	Source	Product	Age Groups																	All ages	% Total sales									
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60			65	70	75	80+					
63	1	UC												12	10	9.5	8.8							7.7	9.9	**				
70	2	UC*								4.4				11		10				11					9.5	5.8	4.9	4.1	8.7	92% ^m
73	4	UC*																												96% ^m
74	4	UC*																												87% ^m
75	4	UC*																												105% ^m
79	4	UC*																												118% ^m
80	3	UC																												**
81	8	UC																												**
83	4	UC*																												91% ^m
85	12	UC*																												79% ^m
85	19	UC																												**
88	15	UC																												**
89	13	UC																												**
90	13	UC																												**
91	13	UC																												**
92	13	UC																												**
93	13	UC																												**
94	13	UC																												**
95	13	UC																												**
98	5	UC																												**

Source: *Notes on sources of survey data*, p. 30
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

* = refer to *Notes on sources of survey data*, p. 30
 All ages: relates to ages reported; as given in original source
 % Total sales: estimated % of total sales of M = manufactured or T = total cigarette consumption implied by survey, sexes combined, (m – see Methods p. 12)
 ** = cannot be calculated
 -- = adjusted by original author

Table 6F Number of cigarettes smoked per person per day, females:
selected surveys by age; with percentage total sales

Year	Source	Product	Age Groups																All ages	% Total sales				
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55			60	65	70	75
63	1	UC								24	29	34	39	44	49	54	59	64	69	74	79			**
70	2	UC*				2.2			3.9		4.5		4.2		3.7		1.9		2.9		0.6		3.0	92% _m
73	4	UC*									6.6								5.1					96% _m
74	4	UC*									5.3								4.4					87% _m
75	4	UC*									6.6								4.4					105% _m
79	4	UC*									5.3								3.9					118% _m
80	3	UC						1.8										3.2						**
81	8	UC				0.4																		**
83	4	UC*									5.7								3.6					91% _m
85	12	UC*							3.0		4.3		4.2		2.9		2.3						3.5	79% _m
85	19	UC									7.7		5.1		5.4		6.1						5.5	**
88	15	UC								4.3														**
89	13	UC								4.3														**
90	13	UC								4.5														**
91	13	UC								3.9														**
92	13	UC								3.5														**
93	13	UC								4.1														**
94	13	UC								3.6														**
95	13	UC								4.1														**
98	5	UC		0.0		0.2																		**

Source: *Notes on sources of survey data*, p. 30
Product: MC = manufactured cigarettes
TC = total cigarettes (including hand-rolled)
UC = cigarettes (type unspecified)
A = all products
U = unspecified

* = refer to *Notes on sources of survey data*, p. 30
All ages: relates to ages reported; as given in original source
% Total sales: estimated % of total sales of M = manufactured or T = total cigarette consumption implied by survey, sexes combined, (m – see Methods p. 12)
** = cannot be calculated
-- = adjusted by original author

Table 7M Number of cigarettes smoked per person per day, sales-adjusted, males: selected surveys¹ by age; with percentage total sales

Year	Source	Product	Age Groups																		All ages	% Total sales		
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60	65			70	75
70	2	UC*								12	11	12	10	6.2	5.3	4.5							9.4	92% ^m
73	4	UC*								12				7.1										96% ^m
74	4	UC*								12				9.2										87% ^m
75	4	UC*								13				6.7										105% ^m
79	4	UC*								10				7.5										118% ^m
83	4	UC*								11				8.1										91% ^m
85	12	UC*								13	13	11	9.7	6.5								10	79% ^m	

1 Based on those surveys in Table 6 with data for both sexes and age range at least 21-64 (see *Cigarette consumption per person*, Methods p. 11).

Source:	<i>Notes on sources of survey data</i> , p. 30	*	= refer to <i>Notes on sources of survey data</i> , p. 30
Product:	MC = manufactured cigarettes	All ages:	relates to ages reported; as given in original source
	TC = total cigarettes (including hand-rolled)	% Total sales:	Adjustment factor used, estimated % of total sales
	UC = cigarettes (type unspecified)		of M = manufactured or T = total cigarette consumption
	A = all products		implied by survey, sexes combined, (m – see
	U = unspecified		Methods p. 12)
		--	= adjusted by original author

Table 7F Number of cigarettes smoked per person per day, sales-adjusted, females: selected surveys¹ by age; with percentage total sales

Year	Source	Product	Age Groups																	All ages	% Total sales		
			12	13	14	15	16	17	18	19	20	25	30	35	40	45	50	55	60			65	70
70	2	UC*				2.4			4.3	4.9		4.5		4.0		2.0		3.1		0.7		3.2	92% ^m
73	4	UC*								6.9													96% ^m
74	4	UC*								6.1													87% ^m
75	4	UC*								6.3													105% ^m
79	4	UC*								4.5													118% ^m
83	4	UC*								6.3													91% ^m
85	12	UC*							3.8	5.4		5.3		3.6		2.9						4.4	79% ^m

1 Based on those surveys in Table 6 with data for both sexes and age range at least 21-64 (see *Cigarette consumption per person*, Methods p. 11).

Source: See *Notes on sources of survey data*, p. 30
 Product: MC = manufactured cigarettes
 TC = total cigarettes (including hand-rolled)
 UC = cigarettes (type unspecified)
 A = all products
 U = unspecified

* = refer to *Notes on sources of survey data*, p. 30
 All ages: relates to ages reported; as given in original source
 % Total sales: Adjustment factor used, estimated % of total sales of M = manufactured or T = total cigarette consumption implied by survey, sexes combined, (m – see Methods p. 12)
 -- = adjusted by original author

Table 8 Estimated¹ prevalence of smoking and estimated¹ number of cigarettes per person per day (unadjusted and sales-adjusted): summary of Tables 4, 6 and 7. Males and females aged 15 years and over

Year	Source ²	Product ³	Prevalence ⁴				Number of cigarettes								
			Manufactured cigarettes ⁵		Total cigarettes		All products ⁶		Unadjusted ⁷			Sales-adjusted ⁸			
			M	F	M	F	M	F	Number/ person/day	Total sales %	Manufactured cigarettes ⁹ number/ person/day	Total cigarettes number/ person/day	M	F	
1970	2	<i>UC</i>	48	26					8.3	3.3	92	8.9	3.6		
1972	4	<i>U</i>			41	29						(8.5	4.7)		
1973	4	<i>UC+U</i>			43	34		8.7	5.4	96	9.0	5.6			
1974	4	<i>UC+U</i>			45	29		8.6	4.6	87	9.9	5.3			
1975	4	<i>UC+U</i>			46	32		9.4	5.1	105	8.9	4.9			
1976	4	<i>U</i>			43	32					(8.8	5.3)			
1979	4	<i>UC+U</i>			43	28		9.7	4.4	118	8.2	3.7			
1981	4	<i>U</i>			45	27					(9.1	4.5)			
1983	4	<i>UC+U</i>			42	26		8.3	4.4	91	9.1	4.9			
1985	12	<i>UC</i>	38	21				7.7	3.2	79	9.8	4.1			
1987	14	<i>MC</i>	38	25							(9.0	4.7)			
1989	16	<i>U</i>			45	30					(8.8	4.7)			
1992	17	<i>U</i>			36	24					(8.2	4.3)			

1 Surveys covering an age range of at least 21-64 are included. Any gaps in the data for ages 15-20 and 65 years and over are filled in by assumed extensions to the age distribution, shown in the extended versions of Tables 4 and 6 in the Excel tables workbook. Method: see *Summary of adult smoking*, Methods p. 13.

2 See *Notes on sources of survey data*, p. 30.

3 Product: MC = manufactured cigarettes, TC = total cigarettes (including hand-rolled), UC = cigarettes (type unspecified), A = all products, U = unspecified. Frequency of smoking is indicated by: regular or daily smokers in normal type, **all smokers (including occasional) in bold**, *unspecified in italics*.

4 Estimated from data in Table 4 (see also extended version of Table 4 in the Excel tables workbook)

5 This column includes prevalence of smoking classified as UC = cigarettes (type unspecified).

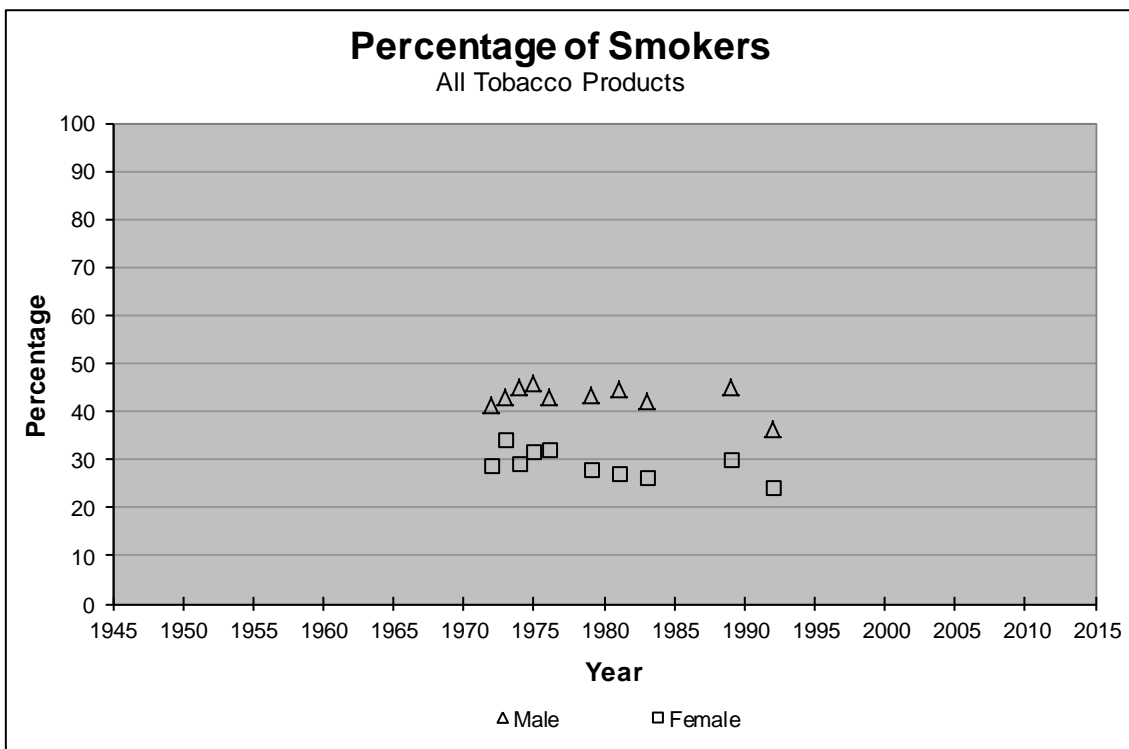
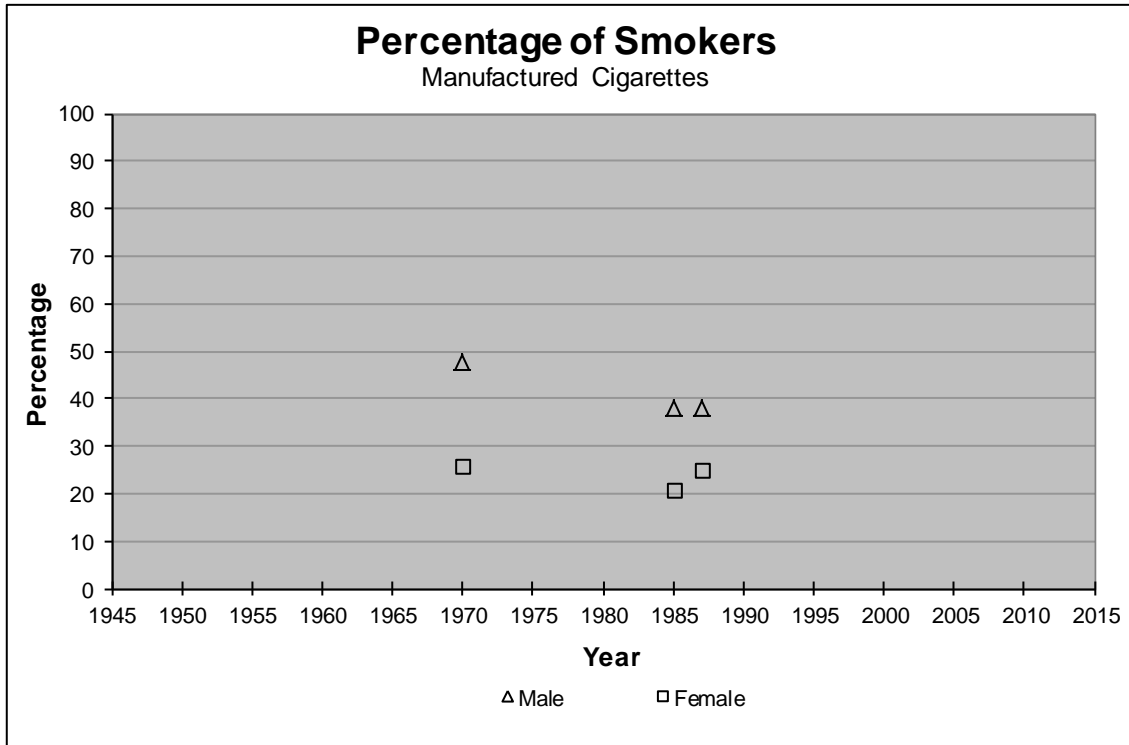
6 This column includes prevalence of smoking classified as U = unspecified product.

7 Estimated from data in Table 6 (see also extended version of Table 6 in the Excel tables workbook)

8 From Table 7, except data in parentheses, which are derived from the prevalence of smoking from Table 4 as described in *Summary of adult smoking*, Methods p. 13.

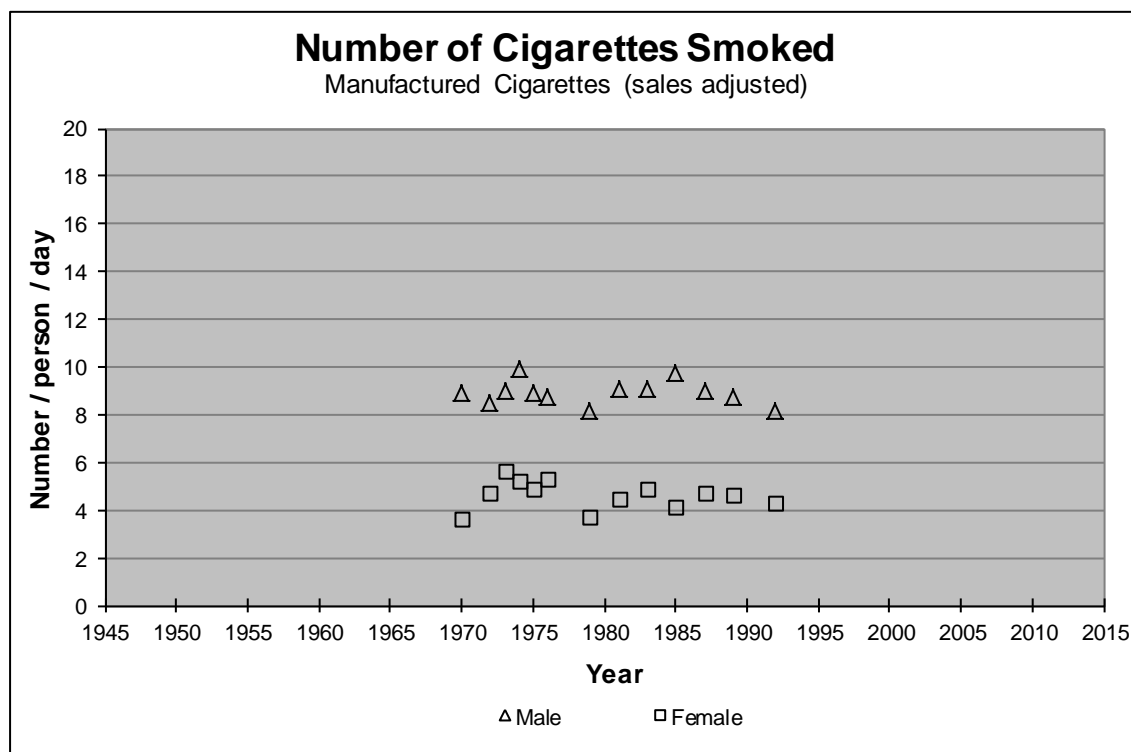
9 Number of cigarettes classified as UC = cigarettes (type unspecified) has been adjusted to manufactured cigarette sales and included in this column.

Figure 3 Estimated prevalence of smoking of (i) manufactured cigarettes, and (ii) all tobacco products; by year of survey. Males and females aged 15 years and over



Source: Table 8.
See also customisable version of Figure 3 in the Excel workbook.

Figure 4 Estimated number of manufactured cigarettes smoked per person per day, sales-adjusted; by year of survey. Males and females aged 15 years and over



Source: Table 8.

Notes

Notes on sources of sales data

The data presented in the tables and figures were obtained from several sources, details of which are given below, together with estimations and related assumptions. Full citations of the sources are given on p. 34 under *References*.

Note that population data up to 1974 are for the Jewish population only, thereafter for total population. The Jewish population was 89% of the total population in 1975.

Production data

Central Bureau of Statistics (CBS) (successive years)
Tables 1.1-1.3, and the “All tobacco products” columns of Table 2

Quantities are given for various forms of tobacco production in Israel. Data for cigars and pipe tobacco were not given after 1982 (and have been taken as zero when calculating the total). Data for ‘Tombac’ and snuff were not given after 1989. ‘Tombac’ is tobacco used in water-pipes.

In recent decades, Dubek has been the only tobacco manufacturer in Israel, described in 1993 as a “government-sanctioned monopoly”. Dubek’s share of the cigarette market was 95% in 1986 but fell after a free trade agreement was reached with the USA, to 65% in 1993 and 13% in 2015 (Levy (1993a), Globes (2015)). Data on imported and exported tobacco goods are available from CBS only in monetary value and for all products combined (not shown), and indicate that exports were insignificant. Thus production data were a reasonable indicator of consumption at least until the 1980s.

Writing in 2007, it was reported that, two decades earlier, the Industry and Trade Ministry had “adopted the [Israel Cancer] Association’s request” to ban the import of smokeless tobacco, but this regulation was no longer in force (Jerusalem Post (2007)).

Sales and consumption data for cigarettes

As there is no definitive source of cigarette data, estimates from various different sources are shown in Table 1.2 (with the CBS cigarette production data repeated from Table 1.1 for convenience).

USDA: US Department of Agriculture (2005)

Data were given in numbers and refer to domestic consumption of manufactured cigarettes. Data for 1999-2004 are not shown, as they repeated the 1998 data (for cigarettes and for other measures not shown).

WHO: World Health Organization (2013)

No original source given. However, these data correspond to data available for occasional years from Shafey (2003) suggesting that they are production (as given by CBS, see previous section) plus imports minus exports. Although stated to be millions, the original production data are tonnes, suggesting that a conversion factor of 1 g per cigarette may have been used.

OECD: Organisation for Economic Co-operation and Development (2016) quoting Ministry of Finance (successive years 1981-2009).

Data were based on sales tax charged on cigarette packs, and were converted to a basis of g per adult (age 15+) per year, using the assumption of 0.8 g per cigarette. We have converted back to total sales by multiplying by the relevant population. It was noted that these estimates exclude cigarettes purchased at duty free stores.

Alternative data (not shown) from International Agency for Research on Cancer (1986) quoting Maxwell (successive years) for the years 1968-1982 were intermediate between the CBS and USDA series.

Data for cigarettes in Table 2 and in all subsequent calculations are taken from the USDA series until 1980, and from the OECD series thereafter. *Note that earlier editions of this report relied mainly on the production data. Use of data which reflects the increasing levels of imports since the 1980s has led to higher sales-adjusted estimates in Tables 7-8 in this edition.*

Estimates of smuggling

Smuggled cigarettes were reported as 5.1% of legal sales in 2005, and as 2.8% of the total cigarette market in 2011 (Shafey *et al* (2009), Eriksen *et al* (2012) quoting Euromonitor International (2007, 2011)).

Estimates of numbers of hand-rolled cigarettes

Little information on smoking of hand-rolled cigarettes is available. Lack of a category for hand-rolling tobacco in the production data (Table 1.1) suggests that there is no tradition of this form of consumption. However recent reports have suggested a rise in their popularity among price-conscious and younger smokers (Euromonitor International (2016a, 2016b)). Due to lack of any further information, they have been assumed negligible and ignored in all calculations.

Plain/Filter cigarettes sales

1968-1980: Maxwell (successive years), market share of sales.
1981-2004: US Department of Agriculture (2005), production.
See Table 3

Menthol cigarette sales

Around 1999-2001, menthol cigarettes accounted for 2-3% of the total cigarette market (Giovino *et al* (2004) quoting ERC Group PLC (1999, 2001)).

Tar and nicotine machine yields of cigarettes

No sales-weighted data are available on tar and nicotine machine yields of cigarettes.

In an analysis of 10 samples purchased in 1979, the median (range) tar level was reported as 21 (9-26) mg/cigarette, and the nicotine content as 0.9 (0.6-1.3) mg/cigarette (International Agency for Research on Cancer (1986) quoting Jenkins *et al* (1986)).

During the years 2000-2002, ultra-light cigarettes (1-3 mg tar) held less than 1% of market share (Philip Morris International (2004)). (See also Table xiv in *Comparisons between countries* chapter.)

Notes on sources of survey data

Each source of survey data—either an individual survey or a series of surveys repeated over a number of years—is cited by a source number. This number is shown in the tables and corresponds to the source numbers given below, where details of the source publication and of the survey methodology are given. Full citations of the sources are given on p. 34 under *References*.

As mentioned in the introduction, the survey data in this chapter are largely reproduced from the 2nd (print) edition, which covered the years up to 1995. A few amendments have been made for consistency with the Web edition, and sales adjustment has been recalculated (as mentioned in *Sales and consumption data for cigarettes*, p. 29). For this edition, only certain multinational publications have been considered; they provide extended results for source 5 and the addition of source 19. No searches for country-specific sources or surveys were undertaken.

Source number

- 1 Goldbourt and Medalie (1975), Benjamin (1978)**
 - a. Israel Ischaemic Heart Disease Project. Civil servants. Substantial differences by country of origin and period of immigration were reported. Sample size (males only) 10 000.
 - b. Consumption category estimation based on 1-10, 11-20, and 21+ cigarettes/smoker/day.
- 2 Kark *et al* (1979), Gofin *et al* (1981)**
 - a. Health study in Kiryat Hayovel suburb of Jerusalem, 1969-1971. Sample size (males) 2 254, (females) 2 669. Response rate (males, 15-19 years) 50%, (males, 25 years +) 85%, (females) 91%.
 - b. 3% of men were pipe or cigar smokers.
 - c. Low response rate among young men attributed to absence due to army service. Results for this group should be regarded with caution.
 - d. Consumption category estimation based on two categories, 1-19 and 20+ cigarettes/smoker/day, and resulting figures should be regarded with caution.
- 3 Gofin *et al* (1982)**
 - a. Jerusalem Lipid Research Clinic Prevalence Study. Sample 17-year-olds and parents of 17-year-olds from Jerusalem. Sample size: (boys) 650, (girls) 557, (men) 1 064, (women) 595. Response rate (boys) 75%, (girls) 76%, (men) 77%, (women) 86%.
 - b. Results shown in All ages column relate to age 35+.
 - c. Persons of North African origin had the highest proportion of smokers; those of European origin had the lowest.
 - d. Consumption category estimation based on 1-10, 11-20 and 21+ cigarettes/smoker/day.
- 4 Epstein and Biger (1987), quoting Ben Sira (1983)**
 - a. Representative surveys of the Jewish population (excluding Kibbutzim) by Israel Institute of Applied Social Research. Study details only available for 1983. At home interviews. Sample size (age 20+) 830, (age 14-18) 282. See source **9** for the adolescent part of this study.
 - b. Consumption category estimation based on two categories, percentage smokers and percentage of smokers who smoked 21+ cigarettes/day, and resulting figures should be regarded with caution.
 - c. Assumed extensions to age distribution for percentage smokers and for cigarettes/person/day are shown in the extended versions of Tables 4 and 6 respectively in the Excel tables workbook.
- 5 Nutbeam and Aarø (1990), King *et al* (1996), Currie *et al* (2000, 2004, 2008), Inchley *et al* (2016)**
 - a. Part of the HBSC (Health Behaviour in School-Aged Children) Study, a collaborative cross-national research study sponsored by the WHO. School classes or schools were randomly selected, targeting age groups 11 (not presented here), 13 and 15. The target sample size in each age group was 1 000 – 1 500.

Year	Mean age		Sample size	
	Target age 13	Target age 15	Target age 13	Target age 15
1985-1986*	–	–	983	980
1994	13.5	15.6	1 646	1 352
1998	14.1	16.1	1 370	1 385
2002	14.1	16.0	2 202	1 567
2006	13.9	15.9	1 734	1 997
2014	13.8	15.8	1 863	1 864

* Jerusalem district

 - b. Number of cigarettes per smoker per day (Table 5, 1998 only) is derived from the median number smoked per week.
 - c. Israel was reported by Inchley *et al* (2016) to have participated in the 2009-2010 wave, but no results were given in the international report for that year (Currie *et al* (2012)).
 - d. Smokers marked as frequency *: smoked daily. Regular smokers: smoked once a week or more. All smokers: includes those smoking less than once a week.
- 6 Epstein and Biger (1987), quoting Tamir *et al* (1982)**
 - a. Ort Study, in a suburban area near Haifa.

- 7 Epstein and Biger (1987), quoting Halfon *et al* (1982)**
 a. Survey in Jerusalem among 17-year-olds. Smoking was most common among those of North African extraction and least common among those of European origin.
- 8 Zoller and Maymon (1983)**
 a. National study of high school adolescents developed by Oranim, the School of Education of the Kibbutz Movement in Israel. Sample size 1 420. The number of students in the 17-18 age group was noted to be smaller than in the other age groups.
 b. Smokers marked as frequency *: smoked 1+ cigarette per day. Regular smokers: smoked regularly or when given the chance, even if this meant just one (or a few) cigarettes per week.
 c. Consumption category estimation based on 1, 2-5, 5-10 and >10 cigarettes/daily smoker/day (1, 2-4, 5-10 and 11+ assumed), using standard distribution derived from adult smoking.
- 9 Epstein and Biger (1987), quoting Ben Sira (1983)**
 a. Adolescent part of study described in source 4.
- 10 Geizerova and Masironi (1988)**
 a. No original source.
- 11 Isralowitz and Sobel (1988)**
 a. Year not stated. Anonymous pre-coded questionnaire. Sample size (males) 33, (females) 21; comprising approximately 85% of high-school-age youth in an established kibbutz.
 b. Smoking was undefined; it was also reported that 75% of the smokers (n=15, sexes combined) smoked daily.
- 12 Green and Harari (1992)**
 a. The Cordis Study. Employees at 21 factories screened for cardiovascular risk factors, 1985-1987. Personal interviews. Sample size (males) 4 317, (females) 1 698; response rate 60%. Analysis restricted to Jewish subjects only (5 281).
 b. Consumption category estimation based on two categories, 1-19 and 20+ cigarettes/smoker/day, and resulting figures should be regarded with caution.
 c. Assumed extensions to age distribution for percentage smokers and for cigarettes/person/day are shown in the extended versions of Tables 4 and 6 respectively in the Excel tables workbook.
- 13 Ashkenazi and Shemer (1997)**
 a. Surveys of soldiers on their day of discharge from the Israeli Defence Forces between 1980 and 1995. Total sample size 32 166. Age assumed to be the same as for source 15, and see that source for comments on representativeness.
 b. Data taken from charts.
- 14 Mackay (1994)**
 a. No original source. Age group not stated.
- 15 Kark and Laor (1992)**
 a. Study of Israeli men and women on release from military service. Participants were aged under 25 and mostly age 20-22. Said to be largely representative of all Jewish men and of educated women in Israel. Sample size (males) 1 142, (females) 842.
 b. Consumption category estimation based on 1-9, 10-19, 20-29 and 30+ cigarettes/smoker/day.
- 16 World Health Organization (1997)**
 a. No original source. Age group not stated.
- 17 Levy (1993b)**
 a. No original source. Year not stated.
 b. Assumed extensions to age distribution for percentage smokers are shown in the extended version of Table 4 in the Excel tables workbook.
- 18 World Health Organization (1997)**
 a. A national survey. The data shown relate to the age groups with the highest smoking prevalence for each sex.
- 19 Tolonen *et al* (2000), Kuulasmaa *et al* (1998), Wolf *et al* (1998), Molarius *et al* (1999)**
 a. Survey using interviewer-administered questionnaires in one region, forming part of WHO MONICA Project. Only the first phase (of three conducted internationally) was carried out in Israel. Wolf *et al* (1998) noted that there were problems with the sampling frame used,

and inconsistencies in the participation rates reported – only those at home in the selected dwellings at the time of the interviewer’s visit were eligible, yet 82% of non-respondents were categorised as “not able to contact”.

Region	Phase	Participation rate (%)		Sample used*		Date
		Males	Females	Males	Females	
Tel-Aviv	1	96	97	672	706	Jan 1985-Jan 1986

* ‘Sample used’ includes age 25-64, all other figures are for age 35-64 only

- b. The *All ages* column (Tables 4-7) relates only to age 35-64 and is standardized to the world population.
- c. Regular cigarette smokers: smoked cigarettes daily. All cigarette smokers: smoked cigarettes daily or occasionally. Results for all smokers are not shown because of high rates (83%) of missing data for the questions on pipe and cigar smoking.

Additional information (not presented in tables)

World Health Organization (1997) gives adult (18+) Jewish smoking prevalence (sexes combined) as 31% in 1993 and 29% in 1994.

Meijer *et al* (1996) gives the smoking prevalence among students in two high schools in the Jerusalem area (year not specified) as follows:

Grade (age)	n	Current smokers	
		%	male:female ratio
6 th (11-12)	155	1	2.0
7 th (12-13)	213	4	1.7
8 th (13-14)	132	8	0.9
9 th (14-15)	111	21	0.6
10 th (15-16)	146	36	1.3
11 th (16-17)	90	28	1.2
Total	847	14	1.0

These smoking rates are considerably higher than those reported by source 5.

References

- Ashkenazi I. and Shemer J. (1997). Smoking habits of young Israeli soldiers. *Harefuah*, **132**, 502-507.
- Ben Sira Z. (1983). *Smoking among adults and youths: trends, predictions and justifications for smoking and its cessation*. Israel Institute for Applied Social Research, Jerusalem. §
- Benjamin B. (1978). *Tobacco smoking in the world. Report of the WHO Expert Committee on Smoking Control, Geneva 23-28 October 1978*. Unpublished.
- Central Bureau of Statistics (successive years). *Statistical abstract of Israel*. Jerusalem, Tel Aviv, Haifa.
- Currie C., Hurrelmann K., Settertobulte W., Smith R. and Todd J. (eds.) (2000). *Health and health behaviour among young people: Health behaviour in school-aged children: a WHO cross-national study (HBSC) international report*. World Health Organization. WHO Policy Series: Health policy for children and adolescents, issue 1.
http://www.euro.who.int/data/assets/pdf_file/0006/119571/E67880.pdf
- Currie C., Nic Gabhainn S., Godeau E., Roberts C., et al. (eds.) (2008). *Inequalities in young people's health. Health behaviour in school-aged children: international report from the 2005/2006 survey*. World Health Organization. Health policy for children and adolescents, No. 5.
http://www.euro.who.int/data/assets/pdf_file/0005/53852/E91416.pdf
- Currie C., Roberts C., Morgan A., Smith R., et al. (eds.) (2004). *Young people's health in context. Health behaviour in school-aged children (HBSC) study: international report from the 2001/2002 survey*. World Health Organization. Health policy for children and adolescents, No. 4.
http://www.euro.who.int/data/assets/pdf_file/0008/110231/e82923.pdf
- Currie C., Zanotti C., Morgan A., Currie D., et al. (eds.) (2012). *Social determinants of health and well-being among young people. Health Behaviour in School-aged Children (HBSC) study: international report from the 2009/2010 survey*. WHO Regional Office for Europe, Copenhagen. Health Policy for Children and Adolescents No 6.
http://www.euro.who.int/data/assets/pdf_file/0003/163857/Social-determinants-of-health-and-well-being-among-young-people.pdf; http://www.hbsc.org/documents/HBSC_2009-2010_Survey_Response_Rates.xls
- Epstein L. and Biger C. (1987). Cigarette smoking in Israel: prevalence and control. *Harefuah*, **112**, 301-306.
- ERC Group PLC (1999). *World cigarette market - the 1999 survey*, Vols I, II, III, and IV. ERC, Suffolk, UK. §
- ERC Group PLC (2001). *World cigarettes 1 and 2 - the 2001 survey*. ERC, Suffolk, UK. §
- Eriksen M., Mackay J. and Ross H. (2012). *The tobacco atlas*, 4th edition. American Cancer Society, World Lung Foundation, Atlanta, GA.
- Euromonitor International (2007). *The world market for tobacco*. Euromonitor International Inc. §
- Euromonitor International (accessed Oct 2011) *Passport database*. §
- Euromonitor International (accessed Apr 2016a) *Market research on smoking tobacco [summary]*.
<http://www.euromonitor.com/smoking-tobacco>
- Euromonitor International (2016b, Aug). *Tobacco in Israel [Executive Summary]*. Euromonitor International. <http://www.euromonitor.com/tobacco-in-israel/report>
- Geizerova H. and Masironi R. (1988). Cigarette smoking in children and adolescents: world review. In: Aoki M., Hisamichi S. and Tominaga S. (eds.) *Smoking and health 1987*. Presented at 6th World Conference on Smoking and Health, Tokyo, 9-12 November 1987. Elsevier Science Publishers B.V. (Biomedical Division), Amsterdam; 601-605. International Congress Series No. 780.
- Giovino G.A., Sidney S., Gfroerer J.C., O'Malley P.M., et al. (2004). Epidemiology of menthol cigarette use. *Nicotine Tob Res*, **6 (Suppl 1)**, S67-S81.
- Globes (2015, Jan 14). Israelis spent 5% more on cigarettes in 2014. <http://www.globes.co.il/en/article-israeli-spending-on-cigarettes-rises-5-in-2014-1001001006>

- Gofin J., Kark E., Mainemer N., Kark S.L., *et al.* (1981). Prevalence of selected health characteristics of women and comparisons with men: a community health survey in Jerusalem. *Isr J Med Sci*, **17**, 145-159.
- Gofin J., Kark J.D., Halfon S.T., Friedlander Y. and Stein Y. (1982). Cigarette smoking and its relation to anthropometric characteristics and biochemical variables in Jerusalem 17-year-olds and adults. *Isr J Med Sci*, **18**, 1233-1241.
- Goldbourt U. and Medalie J.H. (1975). Characteristics of smokers, nonsmokers and ex-smokers among 10,000 adult males in Israel. 1. Distribution of selected sociodemographic behavioural variables and the prevalence of disease. *Isr J Med Sci*, **11**, 1079-1101.
- Green M.S. and Harari G. (1992). Past and present smoking behaviour and its association with health-related habits in selected Israeli working populations. The Cordis study. *Int J Epidemiol*, **21**, 494-501.
- Halfon S.-T., Kark J.D., Bonar M., Friedlander Y. and Eisenberg S. (1982). Smoking, lipids and lipoproteins in Jerusalem 17 year olds. *Isr J Med Sci*, **18**, 1150-1157. §
- Inchley J., Currie A.R., Young T., Samdal O., *et al.* (eds.) (2016). *Growing up unequal: gender and socioeconomic differences in young people's health and well-being. Health Behaviour in School-aged Children (HBSC) study: international report from the 2013/2014 survey*. WHO Regional Office for Europe, Copenhagen. Health Policy for Children and Adolescents No 7. http://www.euro.who.int/_data/assets/pdf_file/0003/303438/HSBC-No7-Growing-up-unequal-full-report.pdf?ua=1
- International Agency for Research on Cancer (1986). *Tobacco smoking*. IARC, Lyon, France. IARC Monographs on the evaluation of the carcinogenic risk of chemicals to humans, 38. <http://monographs.iarc.fr/ENG/Monographs/vol1-42/mono38.pdf>
- Isralowitz R.E. and Sobel R. (1988). Smoking among Kibbutz youth: Patterns, perceptions and determinants. *J Adolesc Health Care*, **9**, 495-497.
- Jenkins R.A., Holladay S.K., Griest W.H. and Guerin M.R. (1986). Tar, nicotine, and carbon monoxide deliveries of commercial cigarettes from selected nations. Presented at *Fifth World Conference on Smoking and Health, Winnipeg, Canada, 10-15 July 1983*,. Canadian Council on Smoking and Health, Ottawa. §
- Jerusalem Post (2007, Aug 15). 'Sucking tobacco' illegally imported into Israel.
- Kark J.D. and Laor A. (1992). Cigarette smoking and educational level among young Israelis upon release from military service in 1988 - a public health challenge. *Isr J Med Sci*, **28**, 33-37.
- Kark S.L., Gofin J., Abramson J., Makler A., *et al.* (1979). Prevalence of selected health characteristics of men: a community health survey in Jerusalem. *Isr J Med Sci*, **15**, 732-741.
- King A., Wold B., Tudor-Smith C. and Harel Y. (1996). *The health of youth, a cross-national survey*. WHO Regional Publications, Europe, Copenhagen. European Series No. 69. <http://www.hbsc.org/publications/international/>
- Kuulasmaa K., Tolonen H., Ferrario M. and Ruokokoski E. (1998). *Age, date of examination and survey periods in the MONICA surveys*. World Health Organization. <http://www.thl.fi/publications/monica/age/ageqa.htm>
- Levy D. (1993a). Genetic influence on smoking [Letter]. *N Engl J Med*, **328**, 353-354.
- Levy J. (1993b). Israel's roller coaster year. *Tob Int*, **195**, 30-31.
- Mackay J.L. (1994). The fight against tobacco in developing countries. *Tuber Lung Dis*, **75**, 8-24.
- Maxwell J.C., Jr. (successive years). How the brands ranked. Maxwell International Estimates. *World Tob*.
- Meijer B., Branski D., Knol K. and Kerem E. (1996). Cigarette smoking habits among schoolchildren. *Chest*, **110**, 921-926.
- Ministry of Finance (successive years 1981-2009). *State Revenue Report*. Israel. §
- Molarius A., Kuulasmaa K., Evans A., McCrum E. and Tolonen H. (1999). *Quality assessment of data on smoking behaviour in the WHO MONICA project*. World Health Organization. <http://www.thl.fi/publications/monica/smoking/qa30.htm>

- Nutbeam D. and Aarø L.E. (1990). Smoking and alienation from school: the implications for health education with young people. Results from the WHO study of health behaviour in schoolchildren. In: Durston B. and Jamrozik K. (eds.) *Tobacco & health 1990. The global war*. Presented at *Seventh World Conference on Tobacco and Health, 1-5 April 1990, Perth, Western Australia, 1990*. Organising Committee of the Seventh World Conference on Tobacco and Health, 189 Royal Street, East Perth, Western Australia 6004; 539-544.
- Organisation for Economic Co-operation and Development (accessed Aug 2016) *OECD health data - online database*.
<http://www.ecosante.fr/index2.php?base=OCDE&langh=ENG&langs=ENG&sessionid=>
- Philip Morris International *PMI estimates based on AC Nielsen and in-market sales data*. [Personal communication to Lee P.N.] 2004.
- Shafey O., Dolwick S. and Guindon E. (eds.) (2003). Tobacco control country profiles, 2nd edition. *12th World Conference on Tobacco or Health, Helsinki, August 2003*. American Cancer Society Inc., World Health Organization, International Union Against Cancer, Atlanta GA.
<http://www.cancer.org/Healthy/InformationforHealthCareProfessionals/tobacco-control-country-profiles#source>
- Shafey O., Eriksen M., Ross H. and Mackay J. (2009). *The tobacco atlas*, 3rd edition. American Cancer Society, World Lung Foundation, Atlanta, GA. <http://TobaccoAtlas.org>;
http://www.afro.who.int/index.php?option=com_docman&task=cat_view&gid=1487&Itemid=1974&lang=en
- Tamir A., Wolff H. and Epstein L.M. (1982). Health-related behaviour in Israel adolescents. *J Adolesc Health Care*, **2**, 261-265. §
- Tolonen H., Kuulasmaa K. and Ruokokoski E. (2000, revised November 2005). *MONICA population survey data book*. World Health Organization.
<http://www.thl.fi/publications/monica/surveydb/title.htm>
- US Department of Agriculture (accessed Jul 2005, last updated 2005) *PSD online dataset for Tobacco, Mfg., Cigarettes*. <http://www.fas.usda.gov/psdonline/psdHome.aspx>
- Wolf H.K., Kuulasmaa K., Tolonen H. and Ruokokoski E. (1998). *Participation rates, quality of sampling frames and sampling fractions in the MONICA surveys*. World Health Organization.
<http://www.thl.fi/publications/monica/nonres/nonres.htm>
- World Health Organization (1997). *Tobacco or health: A global status report*. WHO, Geneva.
http://apps.who.int/iris/bitstream/10665/41922/1/924156184X_eng.pdf
- World Health Organization (accessed Apr 2013) *European health for all database (HFA-DB)*.
<http://data.euro.who.int/hfadb/>
- Zoller U. and Maymon T. (1983). Smoking behaviour of high school students in Israel. *J Sch Health*, **53**, 613-617.
- § Original paper not obtained, but information taken as quoted by another author