EUROPE

Highlights on health
in Israel
2004

Highlights on health

Highlights on health give an overview of a country's health status, describing recent data on mortality, morbidity and exposure to key risk factors along with trends over time. The reports link country findings to public health policy considerations developed by the WHO Regional Office for Europe and by other relevant agencies. *Highlights on health* are developed in collaboration with Member States and do not constitute a formal statistical publication.

Each report also compares a country, when possible, to a reference group. This report uses the 27 countries with very low child mortality and very low adult mortality, designated Eur-A by WHO, as the reference group. Eur-A comprises Andorra, Austria, Belgium, Croatia, Cyprus, the Czech Republic, Denmark, Germany, Greece, Finland, France, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

To make the comparisons as valid as possible, data, as a rule, are taken from one source to ensure that they have been harmonized in a reasonably consistent way. Unless otherwise noted, the source of data in the reports is the European health for all database of the WHO Regional Office for Europe. Other data and information are referenced accordingly.

Contents

Summary: findings and policy options

Life expectancy

People in Israel are living longer – since 1980, they have gained about five years of life. Girls born in 2002 are estimated to live 81.4 years on average; boys about 77.3 years.

As the length of life increases, older people can respond with lifestyle changes that can increase healthy years of life. Correspondingly, health care systems need to shift towards more geriatric care, the prevention and management of chronic diseases and more formal long-term care. Since people are living longer, measures to improve health and prevent disease need to focus on people of working age.

What are the main risk factors for disability in old age and how can disability be prevented? (Health Evidence Network, 2003a)

Infant mortality

Despite downward trends for both infant and neonatal mortality rates in Israel, both remained higher than Eur-A averages in 2001, infant mortality by 11% and neonatal mortality by 3%. From 2001 to 2002, both rates in Israel rose.

Antenatal care is one of the most important services in health care. Nevertheless, it can be expensive, and interventions may be excessive, unneeded and unproven. A simplified model of antenatal care, based on evidence of benefit, is available.

Managing newborn problems: a guide for doctors, nurses and midwives (WHO, 2003b)

What is the efficacy/effectiveness of antenatal care? (Health Evidence Network, 2003b)

The WHO reproductive health library, version 6 (WHO, 2003e)

Main causes of death

Noncommunicable conditions account for 68% of all deaths in Israel. About one third of all deaths are related to cardiovascular diseases; about one quarter to cancer; 7% to respiratory diseases; almost 6% to external causes (intentional and unintentional injuries); and 2% to neuropsychiatric disorders. Ischaemic heart disease is the single largest killer among people in Israel, causing just over 15% of all deaths in 1999.

There are two other disease categories in which both males and females in Israel experience quite high mortality relative to Eur-A averages: diseases of the genitourinary system and endocrine, nutritional and metabolic diseases.

Preventive care, delivered through a country's primary care system, can improve all-cause mortality and premature mortality, particularly from CVD.

A strategy to prevent chronic disease in Europe: a focus on public health action: the CINDI vision (WHO Regional Office for Europe, 2004e)

Towards a European strategy on noncommunicable diseases (WHO Regional Office for Europe, 2004h)

What are the advantages and disadvantages of restructuring a health care system to be more focused on primary health care services? (Health Evidence Network, 2004a)

Gender and health

Israel has the lowest difference between male and female mortality among the Eur-A countries, pointing to a relative excess mortality among women since mortality rates among men are below Eur-A averages overall. Beginning at age 55 years, Israeli women have higher mortality than the Eur-A average. By age 65 years, rates are about 25% higher in Israel compared with the same age group in the Eur-A. In 1999, the death rate due to breast cancer was almost 18% higher among women in Israel than among women in the Eur-A.

Factors that determine health and ill health are not the same for women and men. To achieve the greatest standards of health in populations, health policies must recognize that women and men, owing to their biological differences and their gender roles, have different needs, obstacles and opportunities regarding their health and well-being. Gender mainstreaming in health is both a political and a technical process that requires shifts in organizational cultures and ways of thinking.

Mainstreaming gender equity in health: the need to move forward (WHO Regional Office for Europe, 2001a)

Excess weight and physical inactivity

Fewer adults in Israel are overweight than their Eur-A counterparts, but more are obese. Among 15-year-olds, fewer boys and girls in Israel are pre-obese than in Eur-A, but slightly more boys in Israel are obese than boys in Eur-A.

In 1999–2001, 21% of men and 21% of women 25–64 years old reported having engaged in physical activity of at least 20 minutes three times a week or more.

Better eating habits can prevent premature death from CVD, but people's chances for a healthy diet depend on what food is available and whether it is affordable. Food and nutrition policies need to cross sectors and be coordinated, so that non-health sectors give priority to public health. This also applies to the promotion of physical activity: policies to encourage active living over the life course need to be integrated across health and non-health sectors.

CINDI dietary guide (WHO Regional Office for Europe, 2000)

Diet, nutrition and the prevention of chronic diseases (WHO, 2003a)

Food and health in Europe: a new basis for action (Robertson et al., 2004)

The potential contribution of increased vegetable and fruit consumption to health gain in the European Union (Joffe & Robertson, 2001)

Mental health

Israeli men have higher than average mortality rates than Eur-A men due to neuropsychiatric disorders and homicides.

Among disease categories, neuropsychiatric conditions account for the highest burden of disease in the Israeli population due to the associated disability in daily living over the life course. The degree of burden for both males and females in Israel is higher than any of the burden estimates for these conditions for people in other Eur-A countries.

Better recognition and monitoring of depressive disorders can lead to positive effects, including reduced suicide rates. Comprehensive treatment programmes directed at the addictive and depressive features in alcohol abuse have been shown to be effective.

Mental health in Europe: country reports from the WHO European network on mental health (WHO Regional Office for Europe, 2001a)

Mental health policy and practice across Europe: the future direction of mental health care: proposal for analytical study (Knapp et al., 2004)

Project Atlas: mapping mental health resources in the world (WHO, 2003c)

The world health report 2001: mental health: new understanding, new hope (WHO, 2001)

Tobacco

Between the mid 1990s and 2001/2002, surveys showed that smoking among adult men and among 15-year-old girls attending school in Israel increased. The prevalence decreased among adult women and 15-year-old boys attending school.

To reduce consumption across the whole population, policy-makers need permanently to raise prices for tobacco through taxes, and cessation policies need to target vulnerable groups. Increasing adults' cessation of tobacco use is cost-effective for public health in the short and medium terms.

European Strategy for Tobacco Control (WHO Regional Office for Europe, 2002b)

Tobacco control database [online database] (WHO Regional Office for Europe, 2004f)

Which are the most effective and cost-effective interventions for tobacco control? (Health Evidence Network, 2003c)

WHO European strategy for smoking cessation policy (WHO Regional Office for Europe, 2003)

WHO Framework Convention on Tobacco Control (WHO, 2003d)

HIV/AIDS

The majority of the diagnosed HIV infections in Israel are attributed to heterosexual contact. The number of new cases is increasing among injecting drug users, especially among new immigrants, with a small increase in people aged 21–29 years, most of whom come from countries with a generalized epidemic. The proportion of HIV-infected women who were born in countries where the virus is endemic is also increasing.

Prevention, treatment and care programmes need to reach all people affected by HIV/AIDS, particularly those whose language, culture or immigrant status might limit their access to health services.

The HIV/AIDS epidemic in Europe and central Asia (WHO Regional Office for Europe, 2004e)

Access to care: privilege or right? Migration and HIV vulnerability in Europe (Broring et al., 2003)

AIDS: epidemic update December 2003 (UNAIDS & WHO, 2003*)*

Tuberculosis

Since 1990, the incidence of TB in Israel has risen slightly, whereas the trend in the Eur-A is downward.

High rates of tuberculosis are frequently associated with HIV infection, weaknesses in the health care system and failure to reach vulnerable populations. Risk populations such as new immigrants or migrants from areas with a high TB incidence need focused preventive interventions.

European framework to decrease the burden of TB/HIV (De Colombani et al., 2003)

Global tuberculosis control: surveillance, planning, financing (WHO, 2004a)

Selected demographic information

Population profile

Israel had a population of just over 6.6 million at the end of 2002. In the Eur-A group, it is one of the countries with a population heavily concentrated in urban areas.

Israel's population is young compared with the other Eur-A countries. In 2000, it had the highest proportion of population aged 14 years and younger: about 29% versus the 17% average in the Eur-A countries. The opposite applies to people 65 years and older: in 2000 they comprised about 10% of the population in Israel versus 16% as the Eur-A average. Nevertheless, the number of people in Israel aged 65 years and older is expected to grow by almost 50% between 2003 and 2030 even though their proportion of the total population will remain relatively low (Annex. Age pyramid).

Percentage of the population aged 0–14, 15–64 and 65+ years,
Israel, 1950 to 2050 (projected)
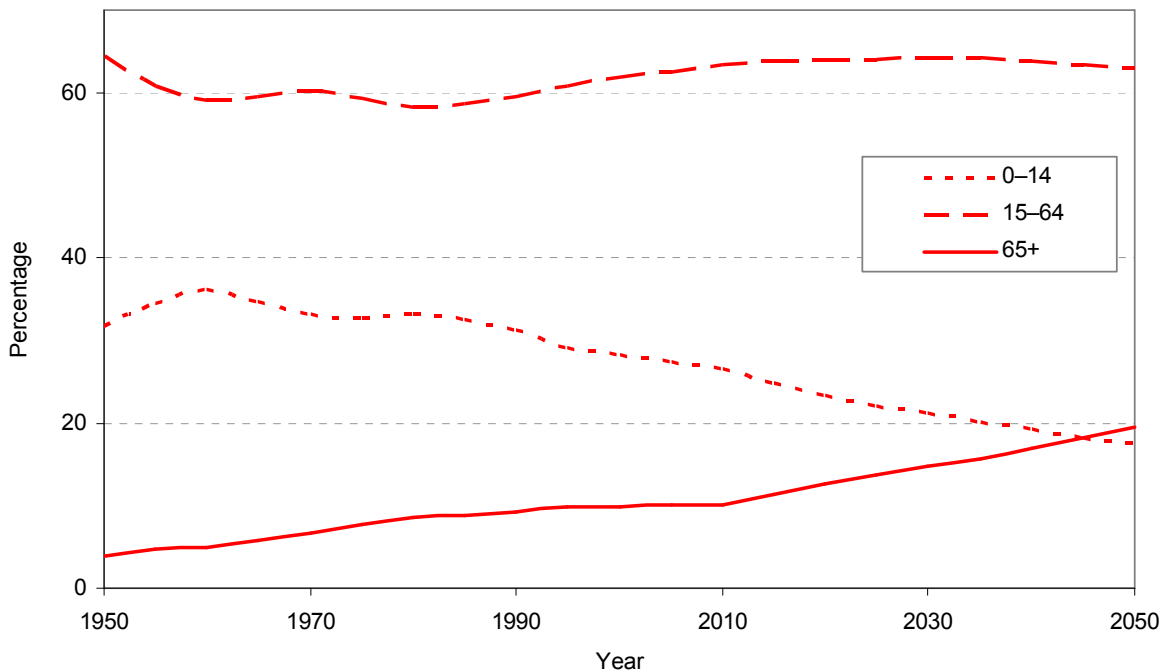
Source: United Nations (2002).

Israel has the highest birth rate of the Eur-A group, almost twice the average. Its rate has dropped since 1980, but by only 12% versus 23% average for the Eur-A countries. Israel's rates of natural increase and net migration are positive and also high compared with the Eur-A.

Selected demographic indicators in Israel and Eur-A,
2002 or latest available year

Indicators	Israel (2002)	Eur-A (2001)		
	Value	Average	Minimum	Maximum
Population (in 1000s)[a]	6631.1	–	–	–
0–14 years (%)	28.7	–	–	–
15–64 years (%)	61.5	–	–	–
65+ years (%)	9.8	–	–	–
Urban population (%)[b, c]	91.8	79.5	49.2	100.0
Live births (per 1000)[d]	21.2	11.3	8.7	21.2
Natural population growth (per 1000)	15.5	1.1	–2.36	15.5 [b]
Net migration (per 1000)[d]	3.2	3.5	–9.6	17.3 [b]

[a] At the end of 2002.

[b] 2001.

[c] Including Andorra and Monaco.

[d] Including Andorra.

Sources: Council of Europe (2003), WHO Regional Office for Europe (2004b); Central Bureau of Statistics of Israel (2003) for data on Israel.

Vulnerable populations

Income

The evidence on determinants of health shows that people who are socioeconomically disadvantaged bear the greatest burden of disease. Among determinants, income is related to an accumulation of factors that affect mortality (Martikainen et al., 2001). For example, it influences and is influenced by education and employment.

Even in the richest Member States in the WHO European Region, wealth is not equitably distributed and pockets of relative poverty exist (WHO Regional Office for Europe, 2002a; WHO, 2002). The association between poverty and urban areas is especially important in Europe. As populations migrate and become more urban, there are increases in the number of urban poor whose housing, employment conditions and diet expose them to greater risk of illness and disease (WHO Regional Office for Europe, 2001c). The nature and impact of poverty can be unevenly distributed among poor people according to such factors as gender and age group (Ziglio et al., 2003).

In 2001, the GINI index for Israel was 35.5, indicating a relatively high level of income inequality in its population. By comparison, the average GINI index for the Eur-A countries for the same year was 30.8 (UNDP, 2004). From 1987 to 1997, 13.5% of Israel's population lived below the 50% median income level. The comparable figure for the Eur-A group was 8.7% (UNDP, 2004).

Overall unemployment in Israel was 10.3% in 2002. In the Eur-A group, the average unemployment level was 6.5% in the same year (UNSD, 2004).

Social exclusion

Social exclusion has a broad impact on health. It refers to the relative position of an individual or a group in society as a whole. The processes that accompany and result in social exclusion – such as discrimination, stigmatization and hostility – prevent people from getting education or training and from gaining access to services and citizenship activities, making them more vulnerable to health risks and disease.

Examples of people outside the mainstream include members of ethnic or religious minorities; people who live in geographically disadvantaged areas, are unemployed or are elderly; and in some countries, indigenous peoples. People new to a country – such as refugees, immigrants or migrant workers – may also be socially excluded. The table gives the total population figures for various

vulnerable groups of people resident in Israel. Immigrants include nationals and foreigners from within and outside the European Region. Countries have different data sources and administrative definitions of immigrant status.

Vulnerable populations in Israel

Population	1992	1995	1998	2001	2003
Immigrants	77 350	77 660	58 500	44 633	24 652
Refugees	–	–	–	4000	–
Prison inmates (per 100 000 national population)	201	189	147	153	174

Sources: Ministry of Immigrant Absorption of Israel (2004), UNDP (2003) and International Centre for Prison Studies (2004).

The table also includes data about prison inmates, a particularly vulnerable population in that they are typically from minority groups and have lower socioeconomic status and less education than the general population. Incarceration can expose them to direct health hazards, particularly if prison populations outpace capacity. The resulting overcrowding causes and contributes to many health problems, most notably mental health conditions and communicable diseases. In fact, drugs and drug-related infectious diseases in prisons are causing major problems in all countries in the European Region, with the risks of transmission affecting not only inmates but also prison employees and contacts outside the institutions (EMCDDA, 2002).

At the start of 2003, Israel had a 103% occupancy level in its prisons based on official capacity (International Centre for Prison Studies, 2004).

Burden of disease

The burden of disease can be viewed as the gap between current health status and an ideal situation in which everyone lives into old age free of disease and disability. Causing the gap are premature mortality, disability and certain risk factors that contribute to illness. The analysis that follows elaborates on the burden of disease in the population.

Life expectancy and healthy life expectancy

A person born in Israel in 2002 can expect to live 79.4 years on average: 81.4 years if female and 77.3 years if male, according to WHO (2003f) estimates. Israel's average is slightly higher than the Eur-A average (78.8 years). Between 1980 and 2002, people in Israel gained just over five years of life.

The trend in life expectancy (LE) in Israel over the last two decades, based on estimates reported by Israel, shows that the rate of gain by men in the country kept pace with the Eur-A average for men while their LE remained slightly higher than the Eur-A average. In contrast, women in Israel gained LE at a faster rate than Eur-A women over the same time period.

Life expectancy at birth for males, Israel and Eur-A, 1980 to latest available year

Life expectancy at birth for females, Israel and Eur-A,
1980 to latest available year
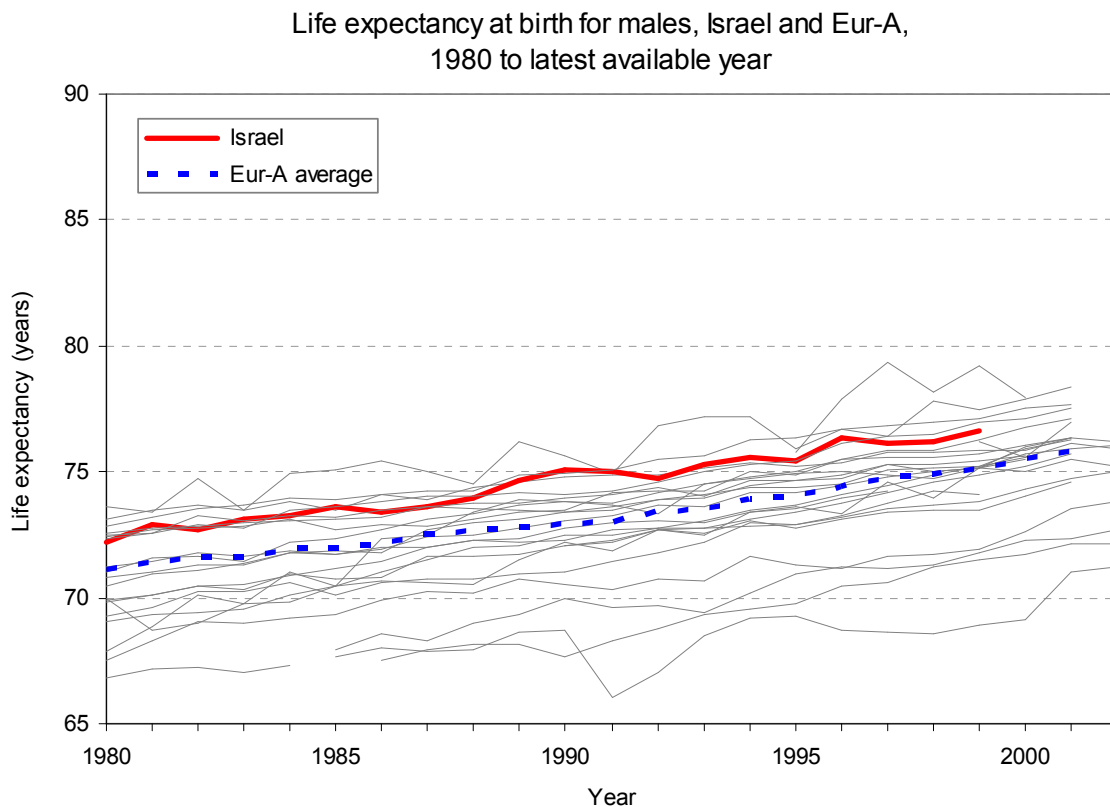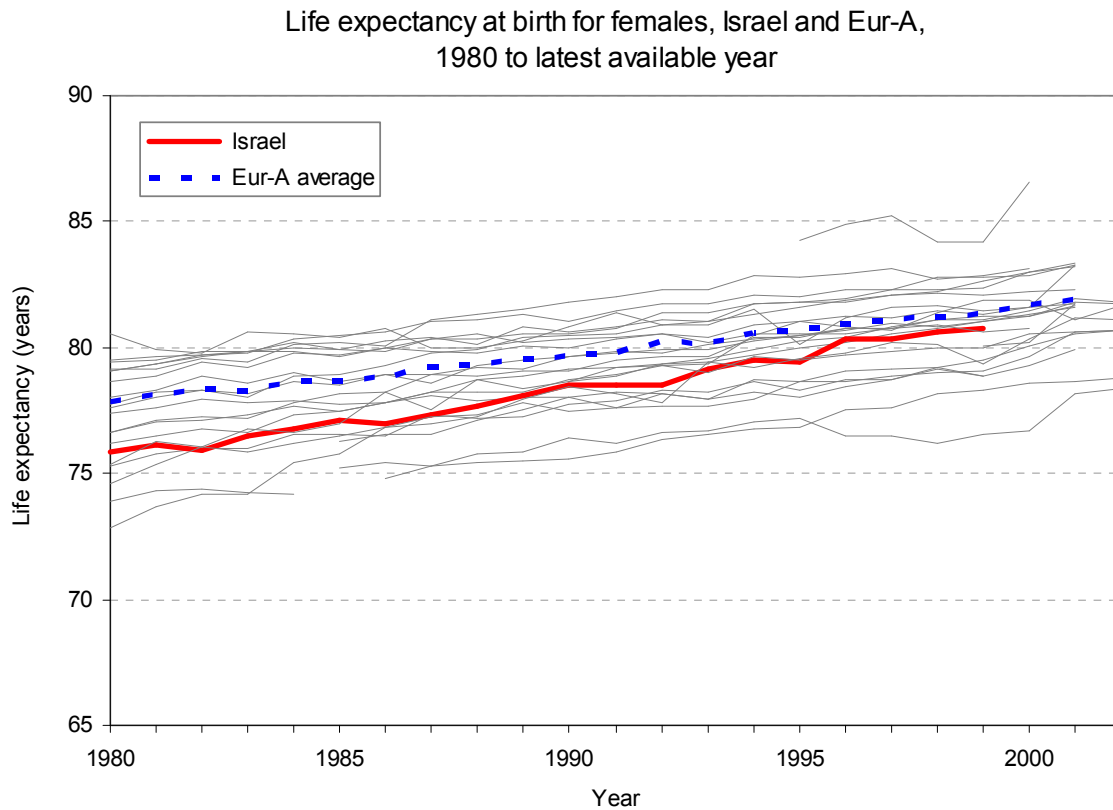
WHO also estimates that, on average, people in Israel can expect to be healthy for about 90% of their lives. They lose on average eight years to illness – the difference between LE and healthy life expectancy (HALE). Since women live longer than men, and since the possibility of deteriorating health increases with age, women lose more healthy years of life (nine years) than men (almost seven years). Nevertheless, a longer life expectancy for women in Israel compared with men gives them almost two more years of healthy life than men.

LE and HALE, Israel and Eur-A[a], 2002

Country	LE	HALE
Monaco	81.2	72.9
San Marino	80.6	73.4
Switzerland	80.6	73.2
Sweden	80.4	73.3
Andorra	80.3	72.2
Iceland	80.1	72.8
Italy	79.7	72.7
France	79.7	72.0
Spain	79.6	72.6
Israel	79.4	71.4
Austria	79.4	71.4
Norway	79.1	72.0
Luxembourg	78.8	71.5
Germany	78.7	71.8
Netherlands	78.6	71.2
Eur-A average	78.6	71.1
Belgium	78.4	71.1
Greece	78.4	71.0
Finland	78.2	71.1
United Kingdom	78.2	70.6
Malta	78.1	71.0
Cyprus	77.3	67.6
Denmark	77.2	69.8
Ireland	77.1	69.8
Portugal	77.1	69.2
Slovenia	76.7	69.5
Czech Republic	75.8	68.4
Croatia	74.8	66.6

Years

[a] Including Andorra and Monaco.
Source: WHO (2003f).

Mortality

Infant mortality and neonatal death

From 1995 to 2001, Israel's infant and neonatal mortality rates both dropped slightly more rapidly than in Eur-A. Despite the downward trend, both rates in Israel have remained higher than Eur-A averages in 2001, infant mortality by 11% and neonatal mortality by 3%. In 2002, both rates rose in Israel compared with 2001 – infant mortality went from 5.1 per 1000 live births to 5.5; neonatal mortality went from 3.3 per 1000 live births to 3.7 (Ministry of Health, 2002). Israel's rates are among the highest in Eur-A.

Infant deaths and neonatal deaths per 1000 live births,
Israel and Eur-A[a], latest available year

Country	Infant deaths	Neonatal deaths
Croatia (2002)	7.0	5.0
Ireland (2001)	6.0	4.2
Malta (2002)	5.9	5.4
Belgium (1997)	5.6	3.6
Israel (2002)	5.5	3.7
United Kingdom (2002)	5.2	3.5
Netherlands (2000)	5.1	3.9
Portugal (2002)	5.1	3.4
Greece (2001)	5.1	3.5
Switzerland (2001)	5.0	3.6
Cyprus (2001)	4.9	
Italy (2001)	4.7	3.4
Eur-A average (2001)	4.6	3.2
France (2000)	4.4	2.8
Germany (2001)	4.3	2.7
Denmark (1999 and 1996)	4.2	3.9
Czech Republic (2002)	4.2	2.7
Spain (2001)	4.1	2.8
Norway (2001)	4.1	3.0
Austria (2002)	4.1	2.8
Luxembourg (2002)	3.9	2.8
Slovenia (2002)	3.8	3.0
Sweden (2001)	3.7	2.5
Finland (2002)	3.0	2.1
Iceland (2001)	2.7	2.0

Deaths per 1000 live births

Since the 1980s, the percentage of live births weighing 2500 grams or more has been falling in Israel as well as in the Eur-A group. The difference in percentages between Israel and the Eur-A average has remained fairly constant over the period, with Israel having on average about 1.5 percentage points fewer babies weighing at least 2500 grams. In 2000, the percentage in Israel was the second lowest in Eur-A.

Maternal mortality

Maternal mortality in Israel rose above the Eur-A average in the late 1990s. In 2000, it fell below the average but increased again in 2001 and 2002 to become about equivalent to the rate for the Eur-A group.

Excess mortality

Excess mortality in Israel, compared with Eur-A, is concentrated among women. Data for 1999 show the excess for Israeli women beginning at age 50 and reaching a peak (25% excess) among those from 65–84 years old (the Eur-A average was for 2000).

Males, in contrast, from 15 years of age onward, have overall a lower rate of mortality than Eur-A averages across the age groups.

The ratio between the below-average mortality rate for Israeli men and the higher-than-average mortality for Israeli women is the lowest among all Eur-A countries. In other words, the difference

between male and female mortality in Israel is the lowest among all Eur-A countries, indicating again a relative excess mortality among women.

**Male and female total mortality ratio,
Israel and Eur-A[a], 1980 to latest available year**

[a] Excluding Cyprus.
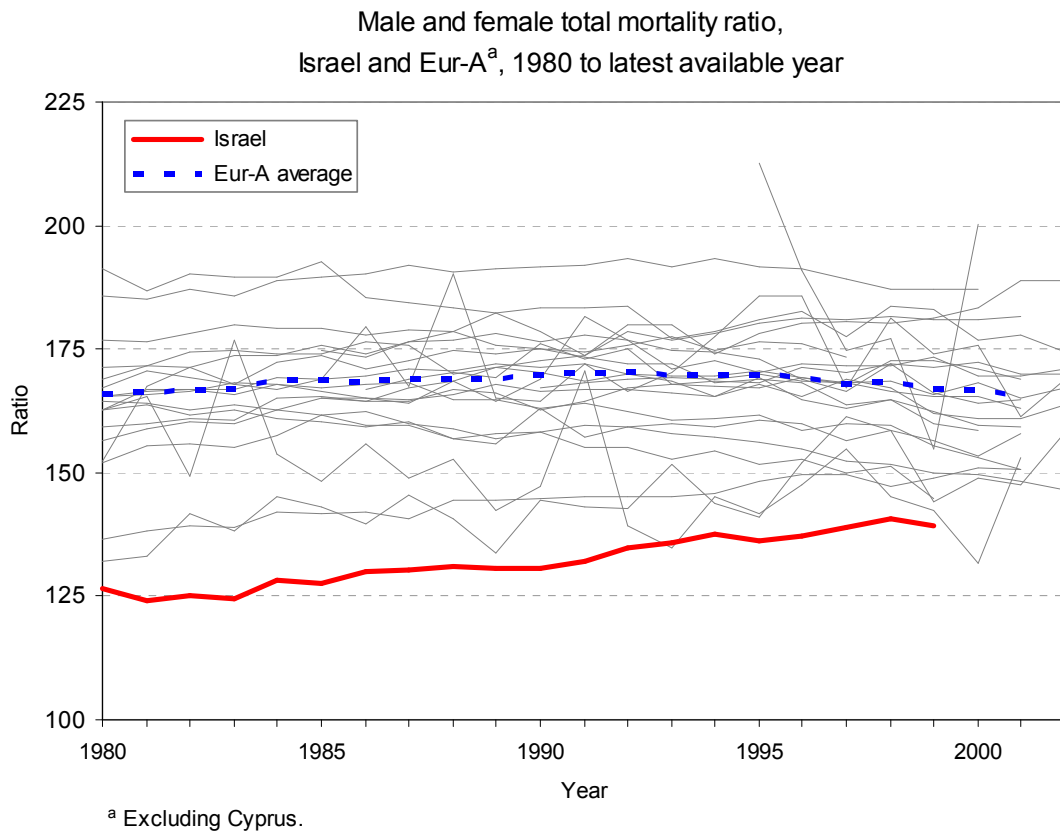
Total mortality is generally low in younger age groups, but children in Israel up to 14 years of age have an excess mortality of about 25% compared with the Eur-A average.

Main causes of mortality by sex and age group in Israel
in comparison with Eur-A (Eur-A = 100), 1999
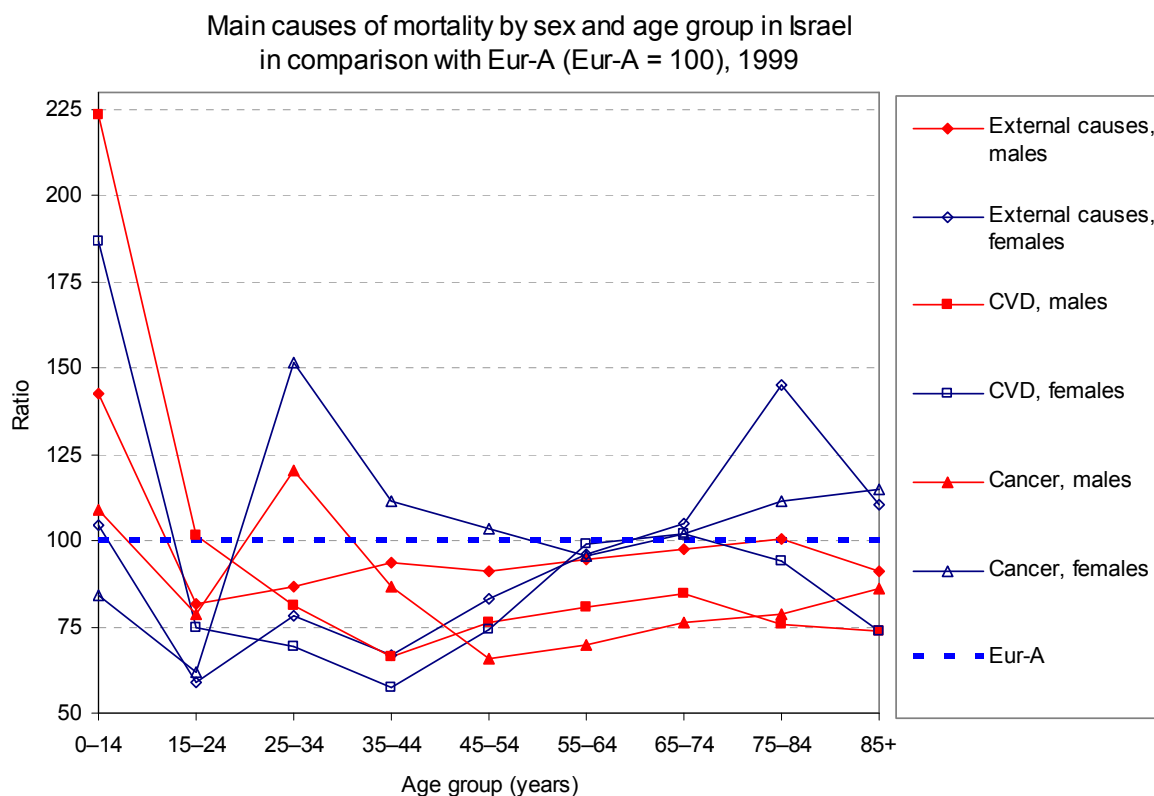
Main causes of death

In 1999, noncommunicable diseases accounted for 68% of all deaths in Israel; external causes for about 6%; and communicable diseases for 3% (Annexes. Selected mortality and mortality data). The proportion for noncommunicable diseases was about 12 percentage points lower than the Eur-A average. For communicable diseases, the proportion was about three times the Eur-A average.

Cardiovascular diseases (CVD) accounted for about 31% of deaths in Israel, less than the Eur-A average but still the leading cause of death in the country. Ischaemic heart disease by itself accounted for about 15% of all deaths in the country, a slightly higher proportion than in Eur-A countries.

For the three groups of conditions shown in the figure, excess mortality in 1999 in Israel versus Eur-A, was due primarily to cancer among females, with an overall excess of 4%. The age group 25–34 years had the highest relative excess at 51%; the group 35–44 years had 12%. Women 65 years and older had an average excess of 10%.

Among males, excess mortality in 1999 was concentrated among those 0–14 years old for all three main causes of death. A spike in the age group 25–34 years was due to cancer.

Main causes of mortality by age group in Israel in comparison with Eur-A (Eur-A = 100), 1999
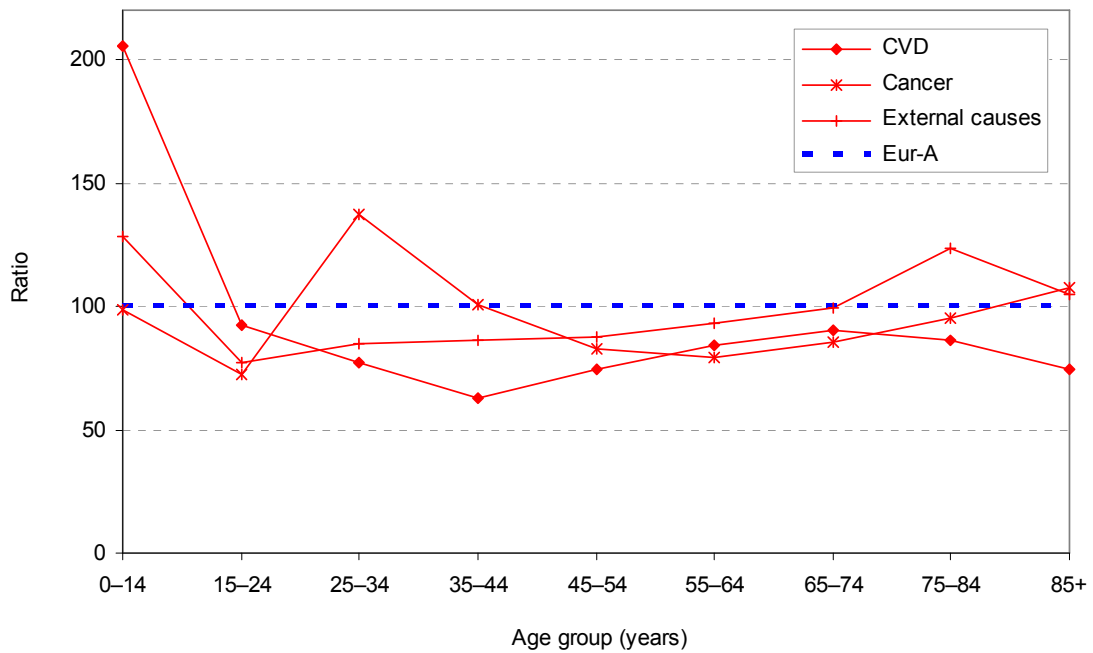
Starting in 1995, mortality from cancer among women declined but remained slightly higher than the Eur-A average for women in 1999. In 1999, the death rate due to breast cancer was almost 18% higher for women in Israel than women in the Eur-A group as a whole.

Standardized death rates (SDR) for malignant neoplasms for females, all ages, Israel and Eur-A[a], 1980 to latest available year

[a] Excluding Cyprus.

SDR for breast cancer for females, all ages,
Israel and Eur-A[a], 1980 to latest available year

ᵃ Excluding Cyprus.
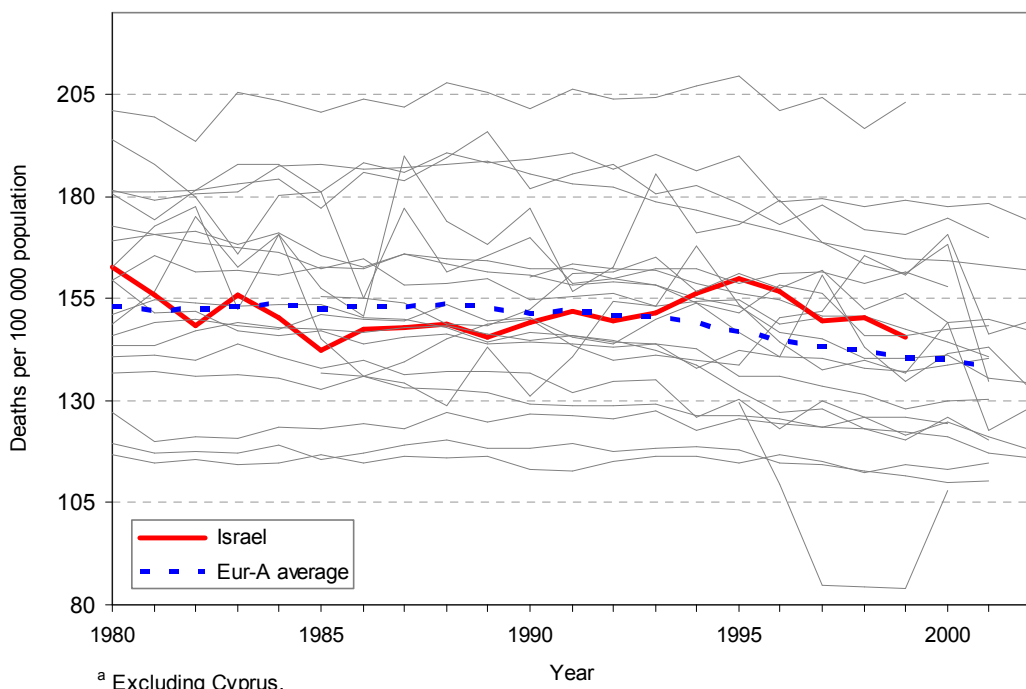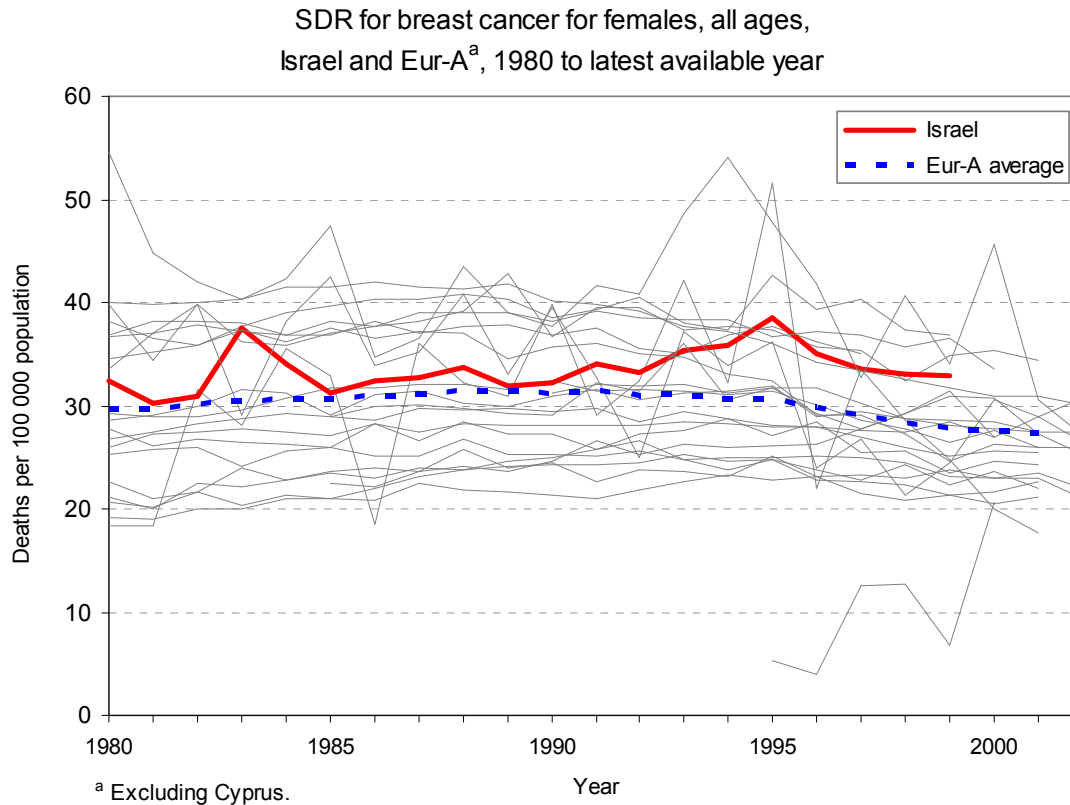
   Conversely, for men in Israel, mortality from all causes is lower than the Eur-A average for men. In 1999, specific rates of death from cancer, respiratory and digestive diseases were all lower than corresponding averages for the Eur-A.

   Both males and females in Israel experience quite high mortality relative to Eur-A averages in two disease categories: diseases of the genitourinary system and endocrine, nutritional and metabolic diseases. For diseases of the genitourinary system, mortality among Israeli men and women in 1999 was 2.5 times the Eur-A averages; in the latter category, the mortality rate among Israeli men was 1.5 times the Eur-A average in 1999 and the rate among women was 3 times the Eur-A average in the same year. Among men, the rate of mortality was also higher than in Eur-A for neuropsychiatric disorders and homicide.

SDR for homicide and assaults in males aged 25–64 years,
Israel and Eur-A[a], 1980 to latest available year

a Excluding Cyprus and San Marino.
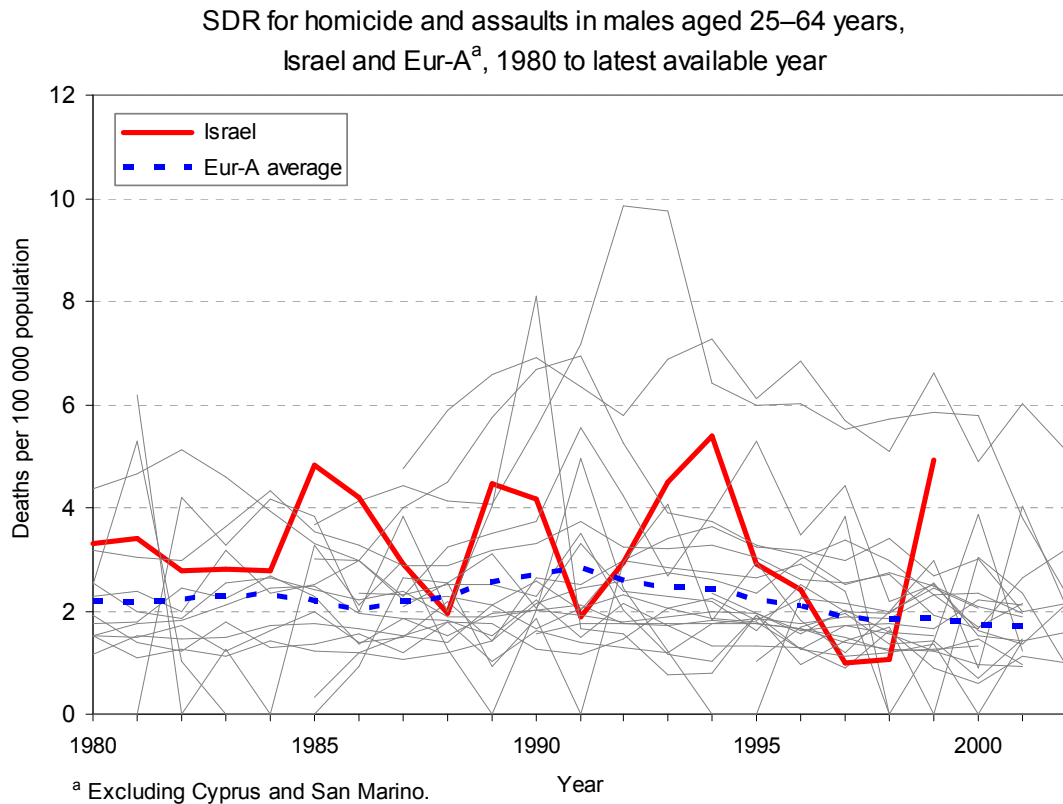
The death rate due to communicable diseases was three times higher in Israel than in the Eur-A countries in 1999, but comparing Israel with western Europe may not be relevant for these conditions. Nevertheless, Israel had a particularly high mortality due to tuberculosis in the mid- to late 1990s, especially in the older age groups, among both men and women. But at that time the rates were falling.

SDR for tuberculosis, all ages, both sexes,
Israel and Eur-A[a], 1980 to latest available year

[a] Excluding Cyprus and San Marino.
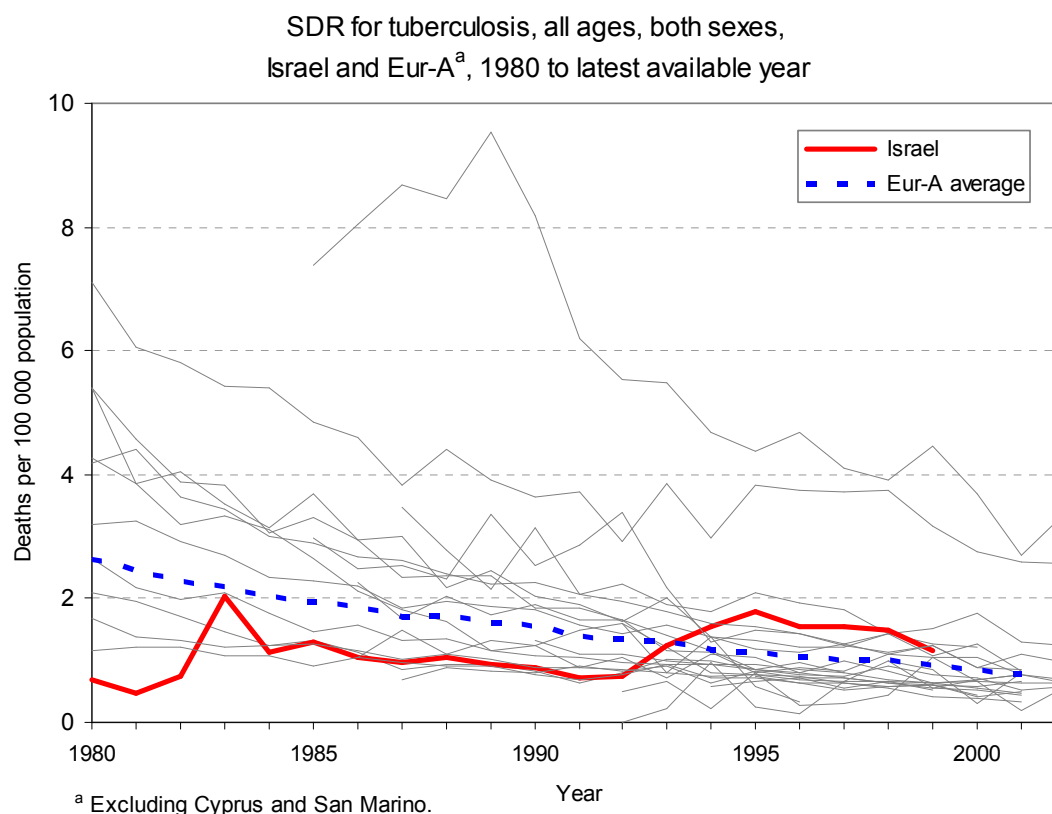
Disability-adjusted life-years

The disability-adjusted life-year (DALY) is a summary measure that combines the impact of illness, disability and mortality on population health. The table lists the top 10 conditions affecting males and females in Israel in terms of DALYs.

Ten leading disability groups as percentages of total DALYs for both sexes
in Israel

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Neuropsychiatric conditions	27.6	Neuropsychiatric conditions	34.6
2	Malignant neoplasms	12.9	Malignant neoplasms	13.2
3	Cardiovascular diseases	11.8	Cardiovascular diseases	9.1
4	Unintentional injuries	7.5	Respiratory diseases	6.6
5	Respiratory diseases	6.4	Musculoskeletal diseases	4.5
6	Intentional injuries	5.8	Sense organ diseases	4.3
7	Sense organ diseases	3.9	Unintentional injuries	3.6
8	Diabetes mellitus	3.4	Diabetes mellitus	3.3
9	Musculoskeletal diseases	3.1	Endocrine disorders	2.8
10	Perinatal conditions	3.1	Infectious and parasitic diseases	2.5

Source: Background data from WHO (2003f).

Neuropsychiatric conditions have the highest burden of disease in Israel, as is most Eur-A countries. Nevertheless, the estimated burden for both men and women in Israel is higher than any of the estimates for these conditions for people in the other Eur-A countries. Because mortality from these conditions is minor compared with that from other diseases, disability in daily living comprises the bulk of their burden on the health of the population.

Main risk factors

The table presents the top 10 risks to health in developed countries in terms of DALYs. As with the conditions in the previous table, risk factors are estimated to contribute differently to the burden of illness and death in a population. The degree to which the population in Israel is exposed to five of these risks is described below.

Ten leading selected risk factors as percentage causes of disease burden measured in DALYs in developed countries

Risk factors	Total DALYs (%)
Tobacco	12.2
Blood pressure	10.9
Alcohol	9.2
Cholesterol	7.6
Overweight	7.4
Low fruit and vegetable intake	3.9
Physical inactivity	3.3
Illicit drugs	1.8
Unsafe sex	0.8
Iron deficiency	0.7

Source: WHO (2002).

Tobacco

The European Region has only 15% of the world's population but nearly 33% of the worldwide burden of tobacco-related diseases (WHO Regional Office for Europe, 2004f). The annual number of deaths in the Region attributable to the consumption of tobacco products was recently estimated to be 1.2 million, and about 40% occur in Eur-A countries (WHO Regional Office for Europe, 2002a). About half the deaths affect people in middle age. Typically, the more affluent are the first both to begin smoking and to stop. As they quit, smokers increasingly comprise people with less education and lower income (Bostock, 2003).

From the early 1980s up to 1996, per capita cigarette consumption in Israel was less than the average in Eur-A based on official statistics for production, import and export. (Not included was consumption of additional cigarettes available unofficially, for example, through smuggling across borders and bootlegging.)

Surveys in 1994–1998 and then in 1999–2001 found that smoking among adult women dropped. Among men, the same surveys found that smoking prevalence had increased between the two time periods.

Unpublished data from surveys conducted by the Department of Health Education and the Israeli Center for Disease Control (2003) involving Jewish adults 18 years of age and older showed that smoking rates among women stayed constant from 1994 to 2001 and then dropped in 2002 and again in 2003. Among men in this age group, the prevalence of smoking consistently declined from 1994 to 2003. Data were not age adjusted.

Smoking prevalence among adults in Israel
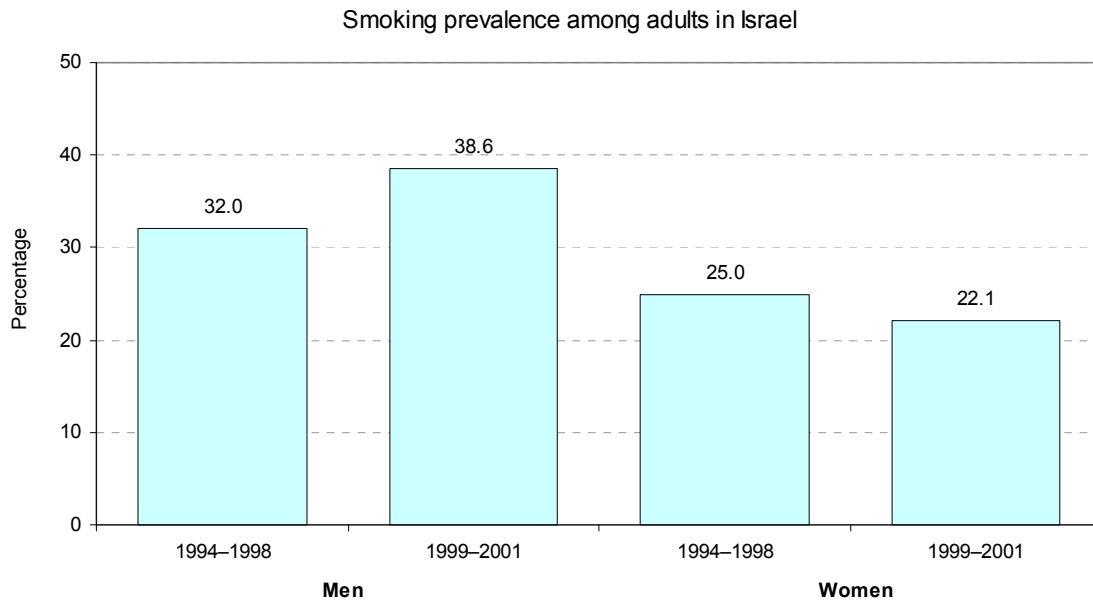
Source: WHO Regional Office for Europe (2004e).

Surveys among 15-year-olds attending school conducted in 1997/1998 and then in 2001/2002 found that daily smoking among girls had increased between the surveys and had fallen among boys.

Fifteen-year-olds who smoke every day,
Israel and Eur-A[a] average
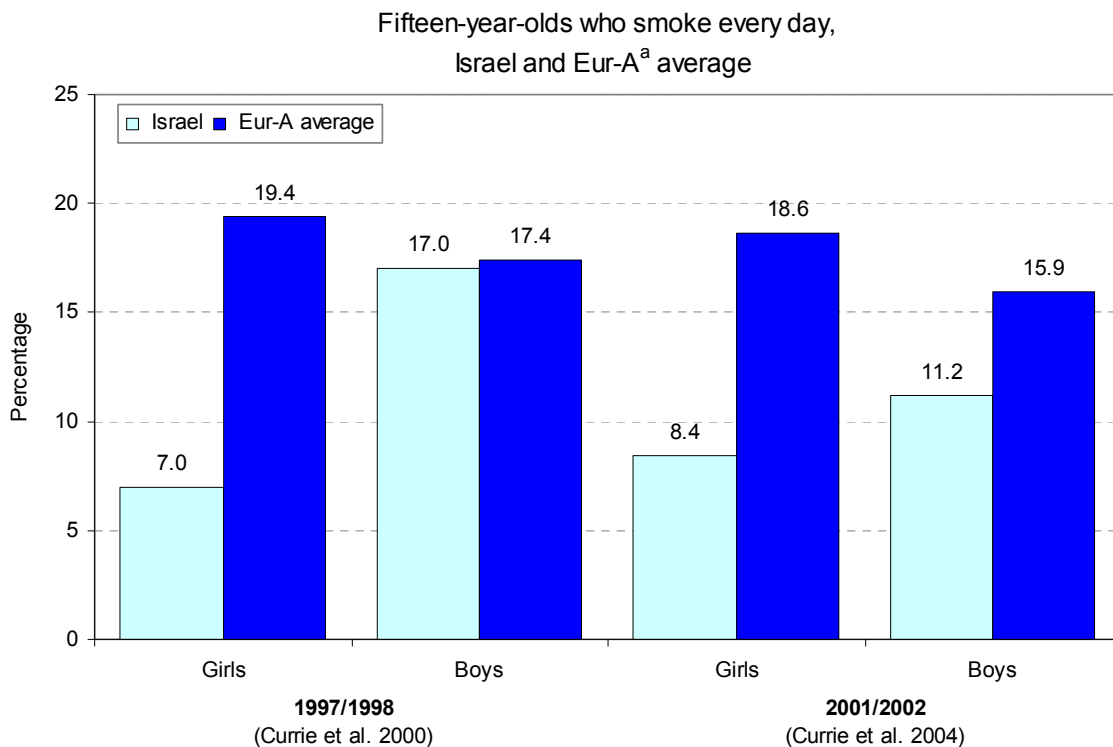
[a] Excluding Cyprus, Iceland, Luxembourg and San Marino.

Alcohol

Two major public health issues are related to alcohol consumption: regular drinking of more than small amounts and harmful patterns such as binge drinking (when a person consumes a bottle of wine or equivalent on one occasion; or having five or more "standard" drinks in a row). Both practices cause or

aggravate health problems and increase the risks of injury to the drinker and others (European Commission, 2003).

Per capita consumption of pure alcohol in Israel is the lowest in the Eur-A (based on official statistics on local production, sales, imports and exports).

Alcohol consumption in the group aged 15+ years, Israel and Eur-A[a], 1980 to latest available year

a Excluding San Marino.
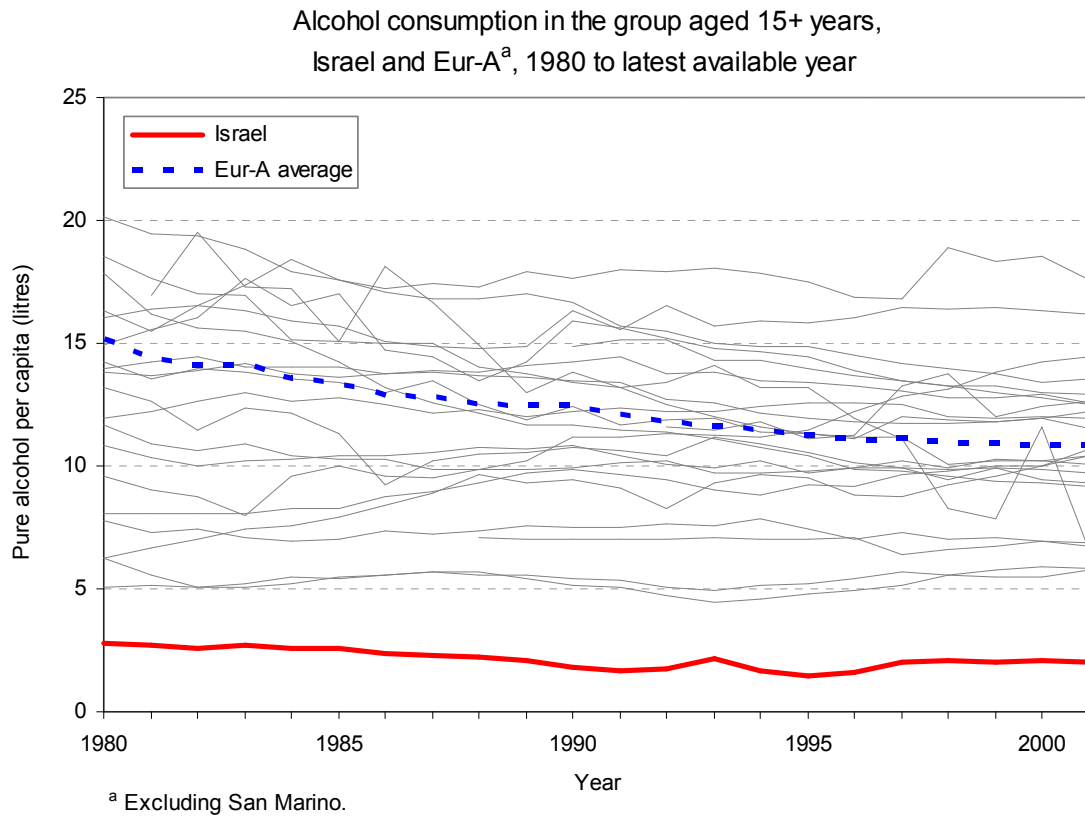
Mortality from liver cirrhosis is the classical indicator of harm from chronic excessive drinking. In Israel, corresponding with the low official consumption of alcohol, the numbers of deaths due to chronic liver disease and cirrhosis are among the lowest in Eur-A.

SDR for chronic liver disease and cirrhosis, all ages, both sexes,
Israel and Eur-A[a], 1980 to latest available year
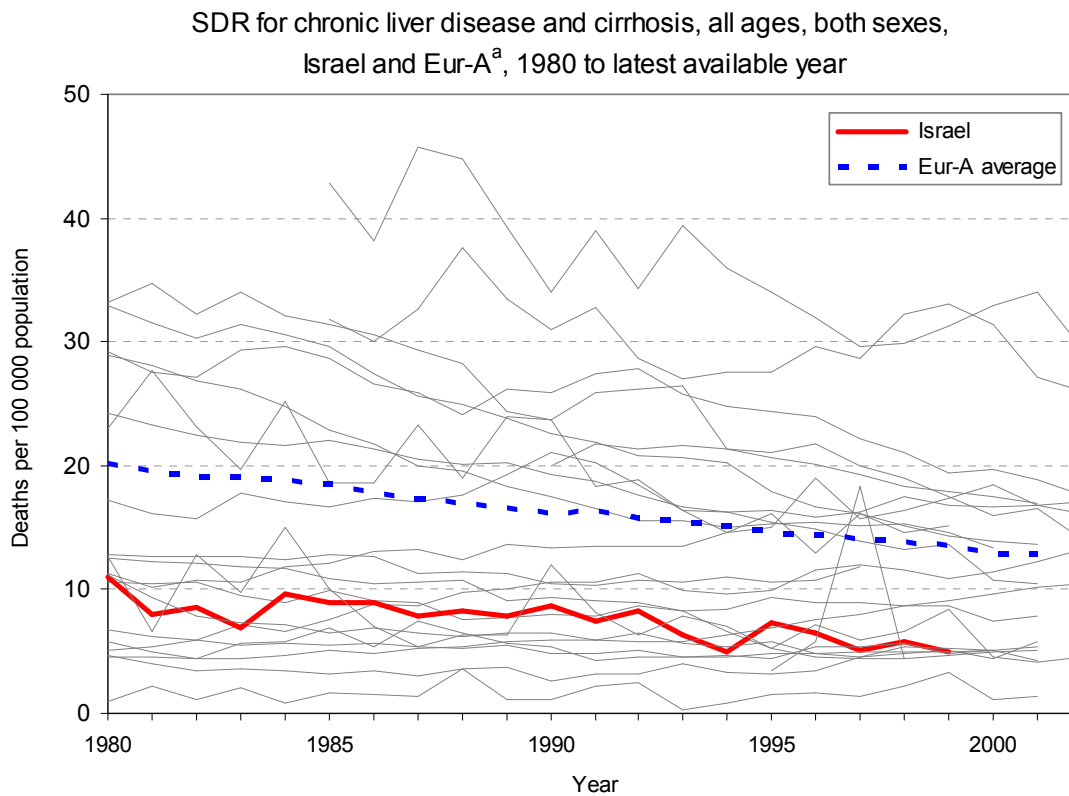
Excess weight

Studies have shown that excess weight contributes to CVD and cancer. In the 15 countries that comprised the European Union before May 2004, research suggests that the condition is responsible for 5% of all cancer cases (3% among men and 6% among women) and overall, almost 300 000 deaths annually (Banegas, 2002; Bergstrom et al., 2001). For children and adolescents, the main problem associated with excess weight, in particular, obesity, is its persistence into adult life and its association with the risk of diabetes and CVD (Stark et al., 1981).

In the population in Israel aged 25–64 years, according to the recommended body mass index (BMI), 46% of men and 33% of women in Israel are overweight (BMI of 25.0–29.9). About 20% of men and 26% of women are obese (BMI of 30+) (Israeli Center for Disease Control, 2003). Data were not weighted for the two population groups in Israel.

Overweight and obese adults, Israel and Eur-A[a] average
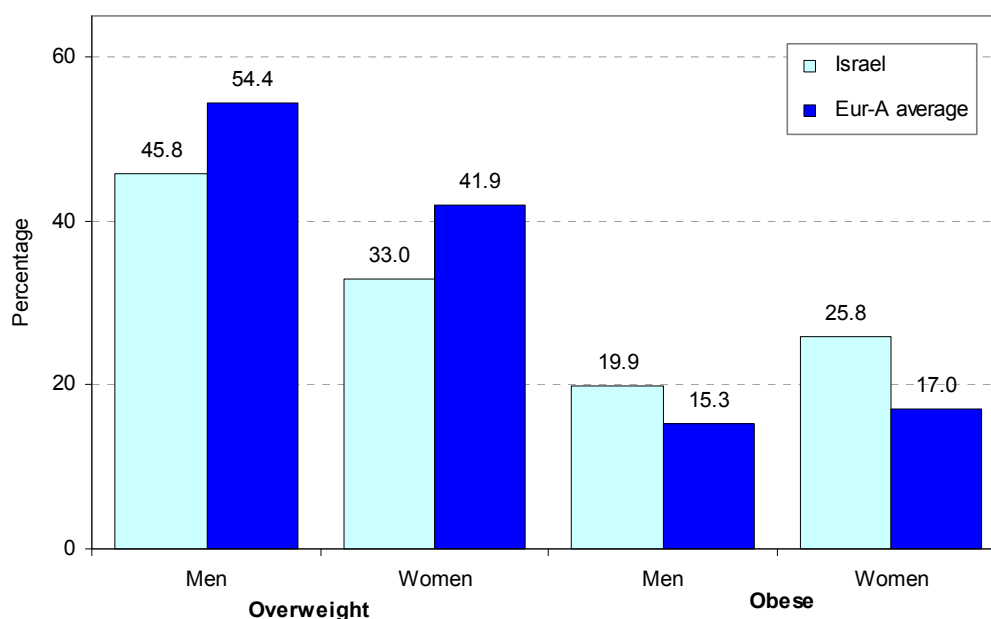
a Excluding Austria, Croatia, Cyprus, Iceland, Ireland, Luxembourg, San Marino and Slovenia.
Sources: Robertson et al. (2004), the Danish Nutrition Council (2003) for data on Denmark and Israeli Center for Disease Control (2003) for data on Israel.

According to self-reported data on height and weight collected in schools, adjusted to correspond to adult BMI, about 11% of boys and 6% of girls aged 15 years in Israel are considered to be pre-obese and almost 3% of boys and about 1% of girls are considered obese. The percentage of boys considered obese is slightly higher than the Eur-A average.

Pre-obese and obese 15-year-olds by sex,
Israel and Eur-A[a] average
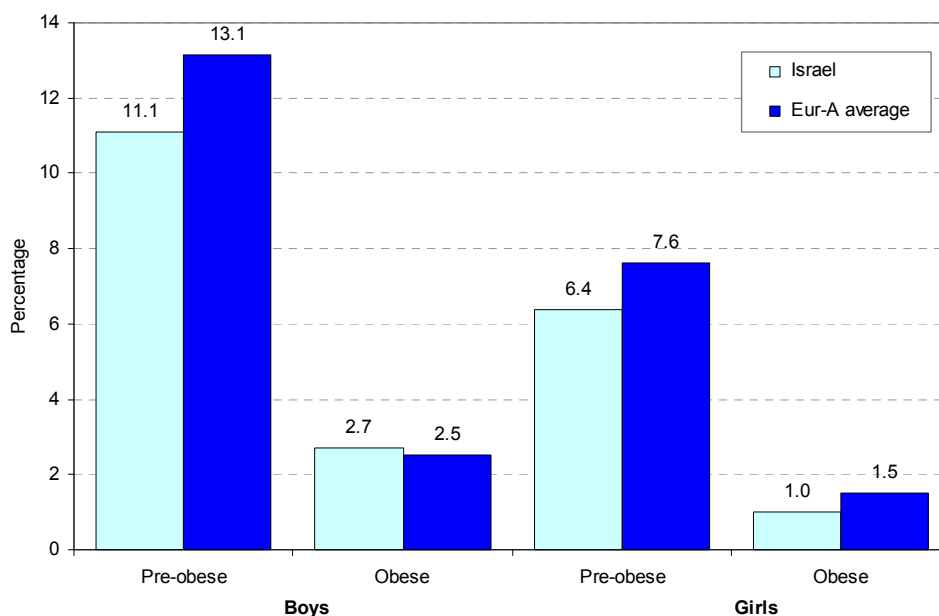
a Excluding Cyprus, Iceland, Luxembourg and San Marino.
Sources: Mulvihill et al. (2004) and the Danish Nutrition Council (2003) for data on Denmark.

Intake of fruits and vegetables

Both CVD and cancer have substantial dietary bases. Conservative estimates suggest that better eating habits could prevent about a third of CVD cases and a third of all cancer deaths worldwide (Robertson et al., 2004). Contributing risk factors are high blood pressure and serum cholesterol, overweight and obesity, and low intake of fruits and vegetables. For the large proportion of the population that does not smoke, diet is one of the most important modifiable determinants of cancer risk.

Low fruit and vegetable intake is estimated to cause around 18% of gastrointestinal cancer, about 28% of ischaemic heart disease and 18% of stroke in the European Region. WHO recommends an intake of more than 400 g fruits and vegetables per person per day.

A sample of men and women 25–64 years old surveyed in Israel in 1999–2001 reported a total mean intake of fruits and vegetables of 399 g per person per day (Israeli Center for Disease Control, 2003). Mean consumption, however, is a poor measure of the intake distribution within a population. Data for the countries comprising the European Union before May 2004 show that people with higher incomes typically eat more fruits and vegetables than those with lower incomes (Joffe & Robertson, 2001).

But in Mediterranean countries such as Israel, fruits and vegetables are generally more accessible. The survey noted above showed that mean consumption among people living above and below the poverty line in Israel differed but only slightly: 405 g per person per day for the former and 379 g for the latter (Israeli Center for Disease Control, 2003). Data were not weighted for the two population groups in Israel.

Vegetable and fruit intake in selected countries in Eur-A, latest available year

Country (year)	Intake (mean g/day)
Spain (1994)	605
Slovenia (1997)	516
Greece (1997)	500
Italy (1994–1995)	479
France (1997)	437
Czech Republic (1999)	413
Portugal (1980)	399
Israel (1999–2001)	399
Belgium (1989)	360
Norway (1993–1994)	341
Austria (2003)	330
Denmark (2000–2001)	313
Croatia (1990)	299
Sweden (1989)	265
Finland (1997)	258
Germany (1990)	250
Netherlands (1997–1998)	228
Iceland (1990)	224
Ireland (1989)	220
United Kingdom (1986–1987)	209

Sources: WHO Regional Office for Europe (2004a), Robertson et al. (2004) for data on Germany, Greece, Ireland and Spain, IFEW (2003) for data on Austria, Danish Institute of Food and Veterinary Research (2004) for data on Denmark and Israeli Center for Disease Control (2003) for data on Israel.

Physical inactivity

WHO and other international and national agencies encourage at least 30 minutes of physical activity each day, defined as any body movement that results in energy expenditure. Promoting physical activity is probably one of public health's most beneficial interventions, reducing the risk of several diseases and conditions, including CVD, non-insulin-dependent diabetes and obesity, and contributing to physical coordination, strength and mental well-being. It comprises more than sports – it is a cornerstone of a healthy lifestyle, integrated into the routines of everyday life. In Europe, more than 30% of adults do not meet the WHO recommendation for physical activity of 30 minutes daily (Racioppi et al., 2002).

The First Israeli National Health and Nutrition Survey (Israeli Center for Disease Control, 2003; WHO 2004b) conducted in 1999–2001 among both urban and rural populations found that 21% of men and 21% of women 25–64 years old engaged in physical activity of at least 20 minutes three times a week or more. The survey was weighted for the two population groups in Israel according to figures for the year 2000.

Selected causes of illness

Cancer

Cancer accounted for almost 25% of deaths in Israel in 1999. The combination of death and illness due to cancer, represented as DALYs, accounts for almost 13% of the disease burden among both males and females in Israel. Together the indicators show that the burden of cancer to the population is mainly attributable to death rather than long-term illness.

Between 1995 and 2001, the cancer incidence increased by about 11% in Israel. The incidence in Israel has been consistently lower than in the Eur-A for both males and females.

Cancer incidence in Israel and Eur-A[a],
1980 to latest available year
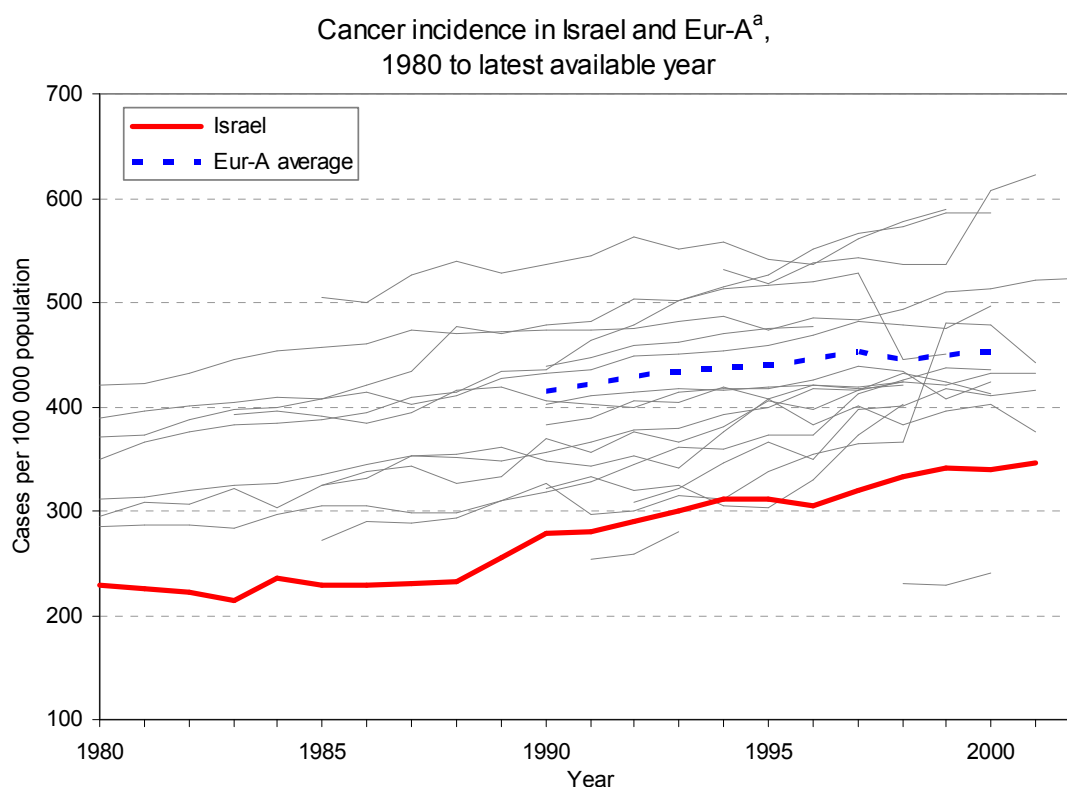
[a] Excluding Greece, San Marino, Spain and Switzerland.

HIV

Increased trade and population movement within the European Region have facilitated the spread of infectious diseases. Surveillance of communicable diseases in western Europe remains incomplete,

particularly testing for and reporting HIV. Data on newly diagnosed HIV infections and especially comparisons of rates in countries should be interpreted with caution (EuroHIV, 2003a, b).

Between 1980 and June 2004, the cumulative total of notified people with HIV/AIDS in Israel was 4141 (Department of TB & AIDS, 2004). WHO estimates that 5000 people are currently living with HIV/AIDS in the country.

From the mid-1990s to 2002, the rate of newly diagnosed HIV infections increased by about 55%; 1998 saw a spike in new infections that has eased since then.

New registered cases of HIV, Israel and Eur-A[a], 1990 to latest available year
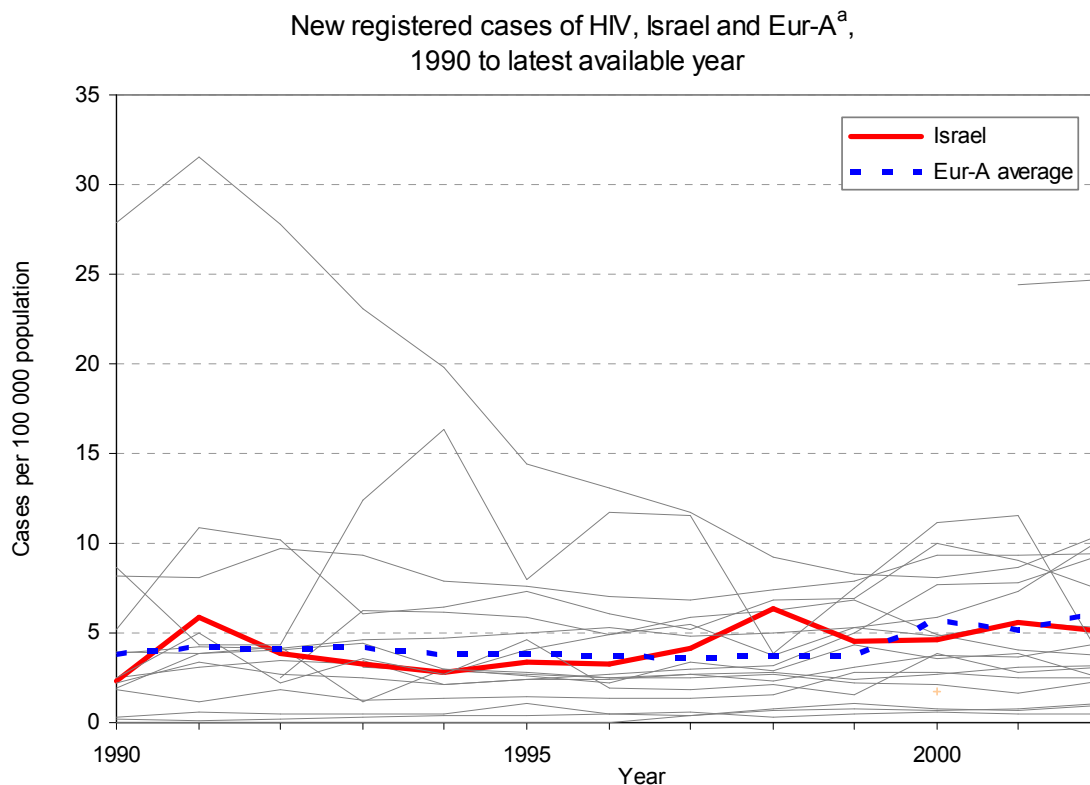
[a] Excluding Austria, Cyprus, France, Italy, the Netherlands and Spain.

Of the cumulative total of new infections reported as of June 2003, the majority involved people infected through heterosexual contact. The second largest number of cases was diagnosed among homosexual and bisexual men, followed by cases involving injecting drug users (EuroHIV, 2003b).

Since the mid-1990s, more cases have been found among injecting drug users, especially among new immigrants, with a small increase among young people aged 21–29 years, most of whom come from countries with a generalized epidemic.

Among those infected with HIV living in Israel, the proportion attributable to women who were born in countries where HIV is endemic (such as sub-Saharan countries) is also increasing (UNAIDS & WHO, 2004).

Hepatitis C

Since the introduction of screening of blood and blood products for hepatitis C in the countries of the European Union before May 2004, transmission of the virus has fallen dramatically. Injecting drug users are now the group at greatest risk, accounting for up to 60–90% of new infections. Young and new injectors are at high risk of contracting the virus shortly after they begin injecting.

Wherever injecting drug use is likely to increase, new epidemics of hepatitis C are likely to emerge. Social exclusion is a factor in and a characteristic of the spread of infection (EMCDDA, 2004). Hepatitis C is predicted to have considerable long-term effects in terms of both health care spending and personal suffering.

Unpublished data collected at blood banks in 1999 by the Central Blood Services (Magen David Adom) in Israel showed age- and origin-adjusted rates of anti-hepatitis C antibodies among Jewish blood donors to be 0.24 per 100 men and 0.27 per 100 women. From 1995 to 1999, rates among both male and female blood donors dropped by about 30%. There are no current data on the prevalence of the virus among injecting drug users.

TB

Between 1995 and 2001, TB notification rates decreased overall in western Europe. Drug resistance remains relatively low in reporting countries, indicating that TB control is in general effective (EuroTB, 2003). Higher rates are typically found in pockets of risk populations (such as immigrants and refugees from areas with high TB incidence) and among the indigenous poor, homeless people and prison inmates. Higher rates are also associated with HIV.

Between 1990 and 2002, the overall incidence of TB in Israel increased very slightly, whereas the trend for Eur-A was downward.

TB incidence in Israel and Eur-A[a],
1980 to latest available year
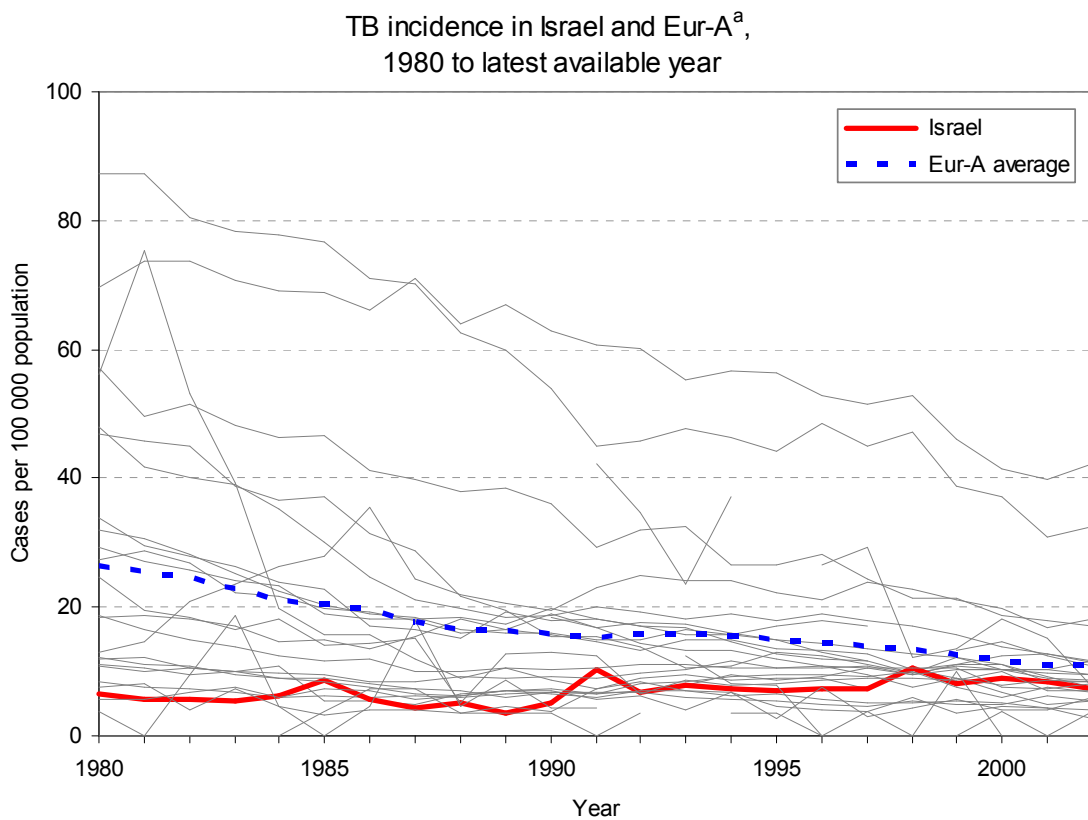
[a] Including Andorra and Monaco.

Self-reported health

People are usually well informed about their health status, the positive and negative effects of their behaviour on their health and their use of health care services. Yet their perceptions of their health can differ from what administrative and examination-based data show about levels of illness within populations. Thus, survey results based on self-reporting at the household level complement other data on health status and the use of services.

The Mabat Survey conducted in 1999–2001 (Israeli Center for Disease Control, 2003) among people 25–64 years old found that 90% of men and 87% of women perceived their health as being "good" or "very good". Another survey conducted in 2003 among the population 21 years and older, asking the same question as the Mabat Survey, found that 69% of men and 65% of women perceived their health as being "good" or "very good". The findings are typical in that more men than women usually report their health to be good. A Eur-A average for total populations, based on comparable survey data collected between 1997 and 2000 in several of countries in the reference group, but not including Israel, was 73% reporting good to very good health status (European Commission, 2003).

Health system[1]

Organizational structure of the health system

Israel's health system is financed through social insurance and taxation and is based on regulated competition among health plans. The introduction of national health insurance (NHI) in 1995 achieved universal coverage. The Ministry of Health has overall responsibility for the health of the population and the functioning of the health system.

Four competing health plans, which are voluntary, not-for-profit organizations, cover the entire population and offer their members a benefits package defined by legislation. Enrolment in a health plan is mandatory, but there is free choice of plan. About 65% of Israelis have supplementary voluntary health insurance (VHI) offered by the health plans; 26% are covered by commercial supplementary VHI and 20% are covered by both a health plan and commercial supplementary VHI.

The Ministry of Health has regional offices; although some central government authority has been deconcentrated to lower administrative levels, substantial authority rests at the national level. The health plans also have regional offices, but again, authority remains at the national headquarters. The NHI law has increased government control of the health system, particularly in terms of regulation of benefits and health plan financing. Efforts to transfer responsibility for providing services from the government to the voluntary sector have not been successful so far.

Health care financing and expenditure

Total expenditure on health care in Israel was estimated to be 8.7% of GDP in 2002, about the same as the Eur-A average, and US$ 1622 per capita in 2001 (Annex. Total expenditure on health), well below the Eur-A average of US$ 2348 per capita. Public expenditure accounted for 70% of total expenditure on health.

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[1] This section is based on publications of the European Observatory on Health Care Systems (2002a–c) and Rosen (2003).

Total public and private expenditure on health as share of GDP
in selected countries in Eur-A, 2002

Country	Public expenditure	Private expenditure
Germany	8.6	2.3
Iceland	8.3	1.6
Sweden	7.9	1.3
France	7.4	2.3
Norway	7.4	1.3
Denmark	7.3	1.5
Czech Republic	6.8	0.6
Switzerland	6.5	4.7
Portugal	6.5	2.8
Belgium	6.5	2.6
Italy	6.4	2.1
United Kingdom	6.4	1.3
Israel	6.1	2.6
Ireland	5.5	1.8
Finland	5.5	1.8
Austria	5.4	2.3
Spain	5.4	2.2
Luxembourg	5.3	0.9
Greece	5.0	4.5

Percentage

Sources: OECD (2004); data for Israel are 2001 estimates from WHO (2004c).

In 2000, total health expenditure consisted of general taxation (46%), the health tax (25%) and private funding (29%). The health tax is an earmarked payroll tax collected by the NHI Institute, with exemptions for several groups (such as pensioners and recipients of income maintenance allowances). Private funding consists of out-of-pocket payments and VHI. VHI accounts for about 16% of private spending on health care.

Each year the government sets the NHI budget based on the previous year adjusted automatically for inflation. The NHI budget may also be adjusted to take into account demographic and technological changes. Ninety-five per cent of public NHI financing is allocated to the four health plans based on a capitation formula that takes into account two factors: the number of members and the age mix. The remaining 5% is allocated based on the number of health plan members with various diseases (such as AIDS and end-stage renal disease).

Currently, the reimbursement of public hospitals (which include both government-owned and not-for-profit privately owned hospitals and constitute 96% of acute beds) consists of fee-for-service charge lists for hospital outpatient care in ambulatory clinics and emergency departments, per diem fees for inpatient admission and case payments (diagnosis-related groups) for about 30 types of admission. Further, a hospital revenue cap was established in 1995 to reduce the growth in hospital utilization and reduce the health plans' expenditure for services above the cap.

The largest health plan, Clalit (covering about 60% of the population), offers primary care from their own clinics with free choice of physician, paid by salary and monthly capitation payment based on enrolment. In the other health plans, most primary care physicians work independently and are paid on a capitation basis either based on actual patient visits or enrolment lists (as in Clalit). Community-based specialists are either independent (paid on an active capitation basis in addition to receiving fee-for-service payments) or salaried. Hospital-based physicians are primarily paid a salary based on their clinical and administrative responsibility and years of experience.

Health care provision

Access to primary health care has improved substantially in the past decades. In three of four health plans, NHI fully covers the cost of primary care visits to health plan physicians, and waiting times are minimal. In all the health plans, primary care physicians act as gatekeepers to hospital-based specialists. However, in the small health plans, members have access to plan-affiliated community-based specialists without prior authorization. The number of outpatient contacts in Israel was 7.1 per person in 2000.

About half of all acute hospital beds are in government-owned hospitals. The remainder are owned by Clalit (one third), private for-profit hospitals (5%) and voluntary not-for-profit hospitals. Israel has few acute hospital beds (2.2 per 1000 population in 2002) (Annex. Selected health care resources), a very low average length of stay and high admission and occupancy rates.

The Ministry of Health operates a Public Health Service, which coordinates regional and district offices. Vaccination coverage is high in Israel. Key issues in public health centre around the low levels of spending in this area (0.8% of national health expenditure), developing methods for setting priorities among and funding public health interventions and changing the ownership of and modernizing family health centres (the primary source for screening).

Israel has a high physician-to-population ratio (3.7 physicians per 1000 population in 2002) that approximates the Eur-A average of 3.5. However, there are shortages in some medical specialties and urban-rural discrepancies in physician density. The number of nurses (6.0 per 1000 inhabitants) is 73% of the Eur-A average (Annex. Selected health care resources).

Developments and issues

Israel's health system is interesting. It represents a synthesis between government and market forces, is made up of organizations that combine funding and delivery functions, employs risk-adjusted capitation financing to limit cream skimming by insurers, has an explicit method of setting priorities and defining the benefits package and maintains a strong focus on equity.

The health system is predominantly publicly funded through progressive taxation and provides broad population coverage and good geographical access to primary health care. However, equity remains an issue due to the relatively high proportion of private funding. In recent years private health services have expanded and, although health care is highly equitable within the public system, several important components of health care – such as dental care and institutional long-term nursing care – remain outside the public system.

Recent reforms stimulated by the 1988 Netanyahu Commission critique of the health system sought to improve efficiency. Some of these efforts, such as introducing the NHI and improving patients' rights, were quite effectively implemented, whereas efforts to reduce government responsibility in the delivery of health services have not yet occurred. Efforts to reform mental health care are currently underway, and the basis has probably been laid for future improvements in this area.

Current issues on the policy agenda include continued financial strain and the need to improve methods of measuring and rewarding quality of care. Challenges facing Israel's health system include adapting to the special health needs of a large number of immigrants, making effective use of the large number of physicians, ensuring adequate and responsive care to the Arab population and managing the strain on emergency and rehabilitative services due to a high number of casualties of terrorism and conflict.

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Annexes

Annex. Age pyramid

Age pyramid for Israel
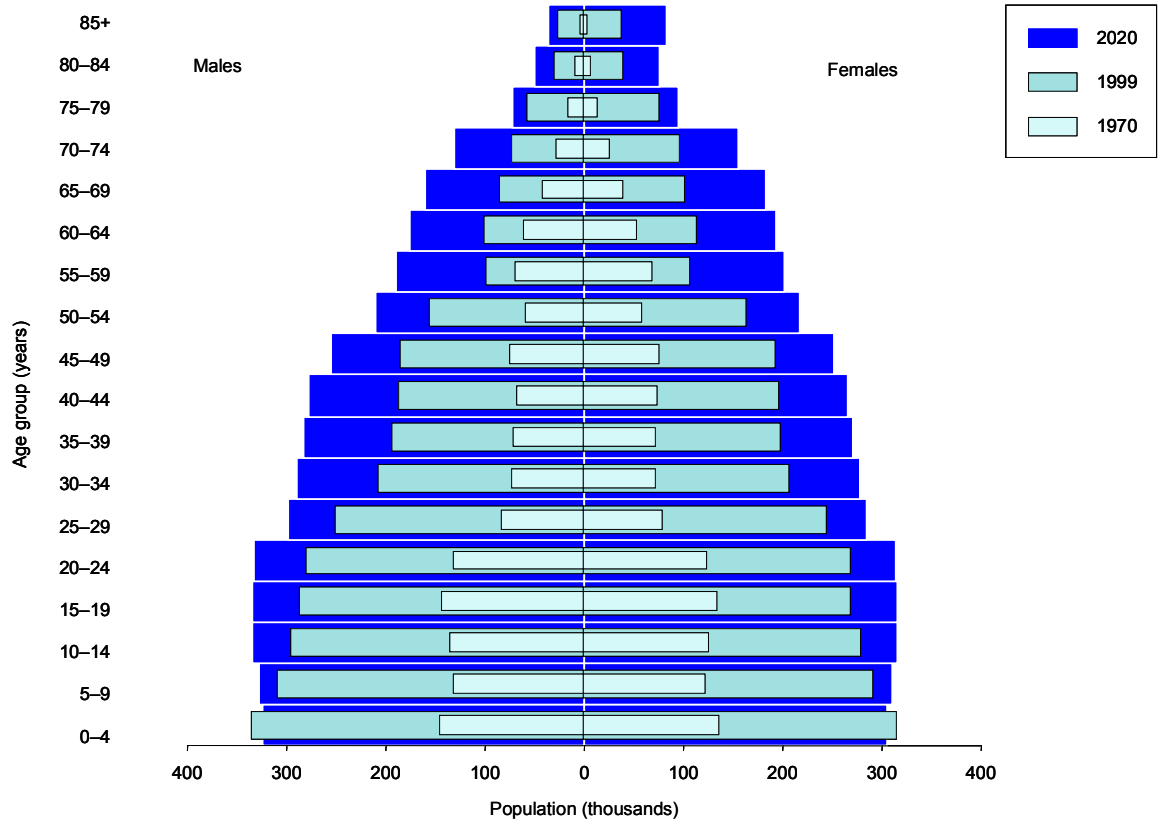
Sources: WHO Regional Office for Europe (2004b) and United Nations (2002).

Annex. Selected mortality

Selected mortality in Israel compared with Eur-A averages

Condition	SDR per 100 000		Excess mortality in Israel (%)	Total deaths in Israel (%)	Total deaths in Eur-A (%)
	Israel (1999)	Eur-A average (2001)			
Selected noncommunicable conditions	446.2	519.5	− 14.1	67.8	79.9
Cardiovascular diseases	201.6	246.3	− 18.1	30.6	37.9
Ischaemic heart disease	100.9	97.3	3.7	15.3	15.0
Cerebrovascular disease	39.3	62.0	− 36.6	6.0	9.5
Diseases of pulmonary circulation and other heart disease	37.9	57.0	− 33.5	5.8	8.8
Malignant neoplasms	162.5	181.8	− 10.6	24.7	28.0
Trachea/bronchus/lung	24.2	37.0	− 34.5	3.7	5.7
Female breast	33.0	27.1	21.8	5.0	4.2
Colon/rectal/anal	22.3	20.7	7.7	3.4	3.2
Prostate	17.4	25.0	− 30.4	2.6	3.8
Respiratory diseases	46.0	47.7	− 3.6	7.0	7.3
Chronic lower respiratory diseases	21.2	20.0	5.9	3.2	3.1
Pneumonia	10.7	16.5	− 35.0	1.6	2.5
Digestive diseases	22.6	30.7	− 26.5	3.4	4.7
Chronic liver disease and cirrhosis	5.0	12.8	− 60.8	0.8	2.0
Neuropsychiatric disorders	13.5	13.0	3.9	2.1	2.0
					0.0
Selected communicable conditions	19.4	8.1	140.4	2.9	1.2
HIV/AIDS	0.4	0.9	− 55.1	0.1	0.1
External causes	37.4	39.5	− 5.2	5.7	6.1
Selected unintentional causes	10.5	16.1	− 34.6	1.6	2.5
Motor vehicle traffic injuries	8.7	10.0	− 12.9	1.3	1.5
Falls	1.8	6.1	− 70.3	0.3	0.9
Selected intentional causes	8.8	11.4	− 22.9	1.3	1.8
Self-inflicted (suicide)	6.6	10.5	− 36.8	1.0	1.6
Violence (homicide)	2.2	1.0	129.2	0.3	0.1
Ill-defined conditions	34.7	21.3	63.0	5.3	3.3
All causes	657.9	650.1	1.2	100.0	100.0

Annex. Mortality data

Table 1. Selected mortality data for the group aged 1–14 years by sex in Israel and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Israel (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	Both	22.0	− 7.2	17.0	− 20.4	12.9	28.2
	M	25.4	− 3.6	19.2	− 20.3	12.6	32.2
	F	18.4	− 11.9	14.8	− 20.4	4.9	24.1
Cardiovascular diseases	M	1.8	628.0	0.9	− 26.0		1.8
	F	1.0	21.7	1.0	− 21.8		1.6
Ischaemic heart disease	M	0.1			− 75.0		0.6
	F				− 66.7		0.2
Cerebrovascular disease	M	0.2		0.2	− 44.4		0.4
	F	0.1		0.2	− 39.4		0.7
Malignant neoplasms	M	3.6	1.7	3.3	− 15.4		5.1
	F	2.4	− 5.9	2.7	− 10.4		4.9
Lung cancer	M	0.2			− 80.0		0.2
	F						0.3
Breast cancer	F				− 100.0		0.1
Respiratory diseases	M	1.2	2.5	0.8	− 13.7		3.0
	F	1.4	25.2	0.7	− 11.9		2.4
Digestive diseases	M	0.5	− 47.8	0.3	− 21.6		0.7
	F	0.6	59.0	0.2	− 25.0		2.6
External causes	M	9.8	6.7	6.4	− 30.7	3.5	20.3
	F	4.2	− 26.4	4.0	− 24.3		7.0
Motor vehicle traffic injuries	M	4.1	− 11.7	2.7	− 30.3		8.0
	F	2.1	− 48.0	1.8	− 29.3		4.1
Suicide	M	0.7	89.5	0.4	− 11.9		0.7
	F			0.1	0.0		0.6

NA = not applicable. Blank = rate < 0.1

Table 2. Selected mortality data for the group aged 15–24 years by sex in Israel and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Israel (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	All	40.4	− 27.3	53.1	− 13.2	37.4	69.7
	M	61.0	− 24.1	77.8	− 13.0	59.4	110.2
	F	19.0	− 36.6	27.7	− 13.2	13.9	34.8
Cardiovascular diseases	M	3.3	51.6	3.3	− 12.1		5.7
	F	1.3	28.8	1.8	− 13.1		2.9
Ischaemic heart disease	M	0.2		0.3	− 15.0		1.6
	F	0.0		0.1	− 7.7		0.7
Cerebrovascular disease	M	0.4	94.7	0.7	− 13.6		1.4
	F	0.4	− 11.6	0.4	− 24.1		1.4
Malignant neoplasms	M	4.2	− 22.4	5.4	− 7.9		15.5
	F	2.3	− 57.5	3.7	− 7.9		7.0
Lung cancer	M	0.0		0.1	− 50.0		0.3
	F	0.0		0.0	− 33.3		0.3
Breast cancer	F	0.0		0.1	− 16.7		0.3
Respiratory diseases	M	0.6	40.0	1.1	− 25.7		4.5
	F	1.2	85.5	0.8	− 18.8		2.0
Digestive diseases	M	0.4	− 7.5	0.5	− 28.8		1.2
	F	0.4	− 39.7	0.3	− 30.4		1.1
External causes	M	44.8	0.7	54.9	− 12.0	33.0	96.5
	F	8.4	− 31.4	14.3	− 14.8	6.9	23.5
Motor vehicle traffic injuries	M	14.9	− 37.2	30.2	− 9.3	14.9	71.1
	F	4.8	− 20.7	8.1	− 10.7	2.6	14.3
Suicide	M	11.4	16.3	11.2	− 11.5		36.7
	F	1.3	− 67.9	2.5	− 24.3		7.5

NA = not applicable. Blank = rate < 0.1

Table 3. Selected mortality data for the group aged 25–64 years by sex in Israel and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Israel (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	All	284.1	– 9.0	315.4	– 13.1	218.8	449.7
	M	364.7	– 8.9	425.4	– 14.3	276.0	661.7
	F	210.4	– 9.0	208.4	– 11.0	128.0	322.5
Cardiovascular diseases	M	86.4	– 35.1	110.6	– 20.8	72.2	225.0
	F	33.5	– 38.4	38.2	– 21.3	23.4	74.7
Ischaemic heart disease	M	50.1	– 30.8	59.8	– 24.6	35.2	108.6
	F	12.4	– 46.7	13.6	– 28.0	5.4	28.6
Cerebrovascular disease	M	12.6	– 42.7	17.4	– 22.0	7.5	56.6
	F	8.0	– 34.2	10.5	– 20.2	5.2	27.0
Malignant neoplasms	M	105.1	– 2.9	148.8	– 9.8	91.0	217.2
	F	103.7	– 4.6	102.4	– 7.7	76.1	155.2
Lung cancer	M	27.1	– 4.2	43.9	– 12.8	18.5	71.0
	F	8.0	– 22.9	13.3	11.7	6.9	32.8
Breast cancer	F	33.9	– 7.8	27.5	– 14.3	14.7	37.2
Respiratory diseases	M	15.5	30.7	15.8	– 19.2	8.5	29.7
	F	7.3	– 10.4	7.9	– 12.3	3.7	22.6
Digestive diseases	M	12.5	– 24.6	31.8	– 9.6	3.1	67.0
	F	4.2	– 44.9	13.4	– 7.5	4.2	26.2
External causes	M	54.7	14.0	59.9	– 10.5	28.2	120.7
	F	14.6	5.0	17.8	– 10.6		33.1
Motor vehicle traffic injuries	M	11.4	– 33.2	15.8	– 7.8	6.5	34.0
	F	5.2	8.5	4.3	– 14.4		7.4
Suicide	M	13.9	5.4	21.2	– 9.0	6.6	56.4
	F	2.7	– 23.5	6.8	– 11.1		15.8

NA = not applicable. Blank = rate < 0.1

Table 4. Selected mortality data for the group aged 65+ years by sex in Israel and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Israel (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	All	4434.7	– 10.5	4199.5	– 11.5	3714.4	6010.0
	M	5114.3	– 9.0	5328.5	– 13.2	4658.1	7580.8
	F	3935.7	– 11.6	3460.2	– 11.5	2937.7	5088.6
Cardiovascular diseases	M	1745.4	– 34.8	2232.9	– 23.4	1614.4	4272.2
	F	1388.3	– 36.1	1613.4	– 21.7	1027.5	3314.3
Ischaemic heart disease	M	944.2	– 33.2	948.2	– 20.3	517.5	1702.7
	F	643.0	– 36.7	539.5	– 17.4	244.7	1084.7
Cerebrovascular disease	M	324.8	– 39.9	536.2	– 35.9	324.8	1302.3
	F	293.8	– 37.5	457.0	– 32.6	170.4	1018.5
Malignant neoplasms	M	1175.1	– 6.6	1482.9	– 12.1	1175.1	1900.6
	F	814.3	– 11.1	749.8	– 9.4	589.1	1088.5
Lung cancer	M	226.2	– 3.6	371.8	– 22.0	196.0	615.4
	F	71.0	– 16.9	81.7	15.6	13.8	213.2
Breast cancer	F	136.4	– 21.5	113.9	– 10.1	83.3	164.1
Respiratory diseases	M	441.7	62.7	545.9	– 13.6	371.8	1115.6
	F	298.6	56.7	266.5	– 13.9	157.9	716.3
Digestive diseases	M	185.3	– 1.1	205.0	– 10.5	117.8	342.9
	F	147.9	– 16.8	143.3	– 20.3	77.8	196.0
External causes	M	148.7	– 10.8	152.6	2.0	80.6	282.8
	F	109.7	– 21.2	91.0	0.7	41.3	157.3
Motor vehicle traffic injuries	M	27.5	– 17.3	20.4	– 15.3	8.7	46.0
	F	12.7	– 19.0	7.9	5.4	0.0	15.5
Suicide	M	18.1	– 28.4	34.3	– 13.5	8.8	86.1
	F	7.9	– 40.6	9.9	– 17.6	1.1	23.6

Annex. Total expenditure on health per capita

Total public and private expenditure on health per capita, in selected countries in Eur-A, 2002

Country	Expenditure (US$ purchasing power parity)
Austria	2220
Belgium	2515
Czech Republic	1118
Denmark	2580
Finland	1943
France	2736
Germany	2817
Greece	1814
Iceland	2807
Ireland	2367
Israel	1622
Italy	2166
Luxembourg	3065
Netherlands	2643
Norway	3083
Portugal	1702
Spain	1646
Sweden	2517
Switzerland	3445
United Kingdom	2160
Eur-A average	2348

Sources: OECD (2004) and WHO Regional Office for Europe (2004b) for 2001 data on Israel.

Annex. Selected health care resources

Selected health care resources per 100 000 population in Eur-A, latest available year

Eur-A	Nurses		Physicians		Acute hospital beds	
	Number	Year	Number	Year	Number	Year
Andorra	316.1	2002	304.2	2002	283.2	2002
Austria	587.4	2001	332.8	2002	609.5	2002
Belgium	1075.1	1996	447.8	2002	582.9	2001
Croatia	501.6	2002	238.3	2002	367.3	2002
Cyprus	422.5	2001	262.3	2001	406.6	2001
Czech Republic	971.1	2002	350.5	2002	631.3	2002
Denmark	967.1	2002	364.6	2002	340.2	2001
Finland	2166.3	2002	316.2	2002	229.9	2002
France	688.6	2002	333.0	2002	396.7	2001
Germany	973.1	2001	335.6	2002	627.0	2001
Greece	256.5	1992	453.3	2001	397.1	2000
Iceland	898.2	2002	363.6	2002	368.2	1996
Ireland	1676.2	2000	238.3	2001	299.5	2002
Israel	598.4	2002	371.3	2002	218.0	2002
Italy	296.2	1989	612.1	2001	397.9	2001
Luxembourg	779.3	2002	259.3	2002	558.7	2002
Malta	551.1	2002	267.2	2002	348.8	2002
Monaco	1621.4	1995	664.3	1995	1553.6	1995
Netherlands	1328.2	2001	314.9	2002	307.4	2001
Norway	2055.7	2001	364.5	2002	308.9	2001
Portugal	384.0	2001	322.9	2001	330.8	1998
San Marino	507.7	1990	251.7	1990	–	–
Slovenia	717.9	2002	224.2	2002	414.3	2002
Spain	367.2	2000	324.3	2000	296.4	1997
Sweden	975.1	2000	304.1	2000	228.3	2002
Switzerland	830.0	2000	361.6	2002	398.3	2002
United Kingdom	497.2	1989	210.0	2002	390.0	2002
Eur-A average	819.8	2001	354.1	2002	409.6	2001

Sources: WHO Regional Office for Europe (2004b) and OECD (2004) for data on physicians and acute hospital beds for the United Kingdom.

Technical notes

Calculation of averages
In general, the average annual or ten-year percentage changes have been estimated using linear regression. This gives a clearer indication of the underlying changes than estimates based on the more straightforward percentage change between two fixed points over a period.

To smooth out fluctuations in annual rates caused by small numbers, three-year averages have been used, as appropriate. For example, maternal mortality, usually a small number, has three-year moving averages calculated for all countries.

Data sources
To make the comparisons as valid as possible, data for each indicator have, as a rule, been taken from one common international source or from the Statistical Office of the European Communities (EUROSTAT) to ensure that they have been harmonized in a reasonably consistent way. Unless otherwise noted, the source of data for figures and tables is the January 2004 version of the WHO Regional Office for Europe's European health for all database.

Disease coding
Case ascertainment, recording and classification practices (using the ninth and tenth revisions of the International Statistical Classification of Diseases and Related Health Problems: ICD9 and ICD10, respectively), along with culture and language, can influence data and therefore comparability across countries.

Healthy life expectancy (HALE) and disability-adjusted-life-years (DALYs)
HALE and DALYs are summary measures of population health that combine information on mortality and non-fatal health outcomes to represent population health in a single number. They complement mortality indicators by estimating the relative contributions of different causes to overall loss of health in populations.

DALYs are based on cause-of-death information for each WHO region and on regional assessments of the epidemiology of major disabling conditions. The regional estimates were disaggregated to Member State level for the highlights reports.

National estimates of HALE are based on the life tables for each member state, population representative sample surveys assessing physical and cognitive disability and general health status, and on detailed information on the epidemiology of major disabling conditions in each country.

More explanation is provided in the statistical annex and explanatory notes of *The world health report 2003*.[1]

Household surveys
Household surveys are currently the only source of evidence of health status at the individual level. The information generated is subjective and self reported. It complements the official aggregated statistics on death rates, life expectancy and morbidity. Tools are available for both designing the surveys and analytically estimating health, adjusted for differences in cultural norms and expectations of health, so that survey results become comparable across populations and groups.

Limitations of national-level data
National-level averages, particularly when they indicate relatively good positions or trends in health status, as is the case in most developed countries, hide pockets of problems. Unless the health status of a small population is so dramatically different from the norm that it influences a national indicator, health risks and poorer health outcomes for small groups will only become evident through subnational data.

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[1] *The world health report 2003 – Shaping the future.* Geneva, World Health Organization, 2003 (http://www.who.int/whr/2003/en/, accessed 25 May 2004).

Ranking

A special case of comparison gives each country a rank order. Although useful as a summary measure, ranking can be misleading and should be interpreted with caution, especially if used alone, as the rank is sensitive to small differences in the value of an indicator. Also, when used to assess trends (as in the table at the start of the section on health status), ranking can hide important absolute changes in the level of an individual country. Graphs have usually been used to show time trends from 1970 onwards. These graphs present the trends for all the reference countries and for the EU-15, as appropriate. Only the country in focus and the appropriate group average are highlighted, and identified in the legend. This enables the country's trends to be followed in relation to those of all the reference countries, and performance in relation to observable clusters and/or the main trend or average to be recognized more easily.

Reference groups for comparison

When possible, international comparisons are used as one means of assessing a country's comparative strengths and weaknesses and to provide a summary assessment of what has been achieved so far and what could be improved in the future. Differences between countries and average values allow the formulation of hypotheses of causation or imply links or remedies that encourage further investigation.

The country groups used for comparison are called reference groups and comprise:

- countries with similar health and socioeconomic trends or development; and/or

- geopolitical groups such as the European Union (EU), the newly independent states or the central Asian republics.

The fifteen-member EU (EU-15) is the reference group comprising Austria, Belgium, Denmark, Germany, Greece, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Comparisons should preferably refer to the same point in time, but the countries' latest available data are not all for the same year. This should be kept in mind, as a country's position may change when more up-to-date data become available.

Glossary

Causes of death	*ICD-10 code*
Cerebrovascular diseases	I60–I69
Chronic liver disease and cirrhosis	K70, K73, K74, K76
Chronic obstructive pulmonary disease	J40–J47
Colon/rectal/anal cancer	C18–C21
Diseases of pulmonary circulation and other heart disease	I26–I51
Falls	W00–W19
Female breast cancer	C50
Ischaemic heart disease	I20–I25
Pneumonia	J12–J18
Prostate cancer	C61
Neuropsychiatric disorders	F00–99, G00–99, H00–95
Road traffic injuries	V02–V04, V09, V12–V14, V19–V79, V82–V87, V89
Self-inflicted (suicide)	X60–X84
Trachea/bronchus/lung cancer	C33–C34
Violence	X85–Y09

Technical terminology	
Disability-adjusted life-year (DALY)	The DALY combines in one measure the time lived with disability and the time lost owing to premature mortality. One DALY can be thought of as one lost year of healthy life.
GINI index	The GINI index measures inequality over the entire distribution of income or consumption. A value of 0 represents perfect equality; a value of 100, perfect inequality. Low levels in the WHO European Region range from 23 to 25; high levels range from 35 to 36[1].
Healthy life expectancy (HALE)	HALE summarizes total life expectancy into equivalent years of full health by taking account of years lived in less than full health due to diseases and injuries.
Income poverty line (50% of median income)	The percentage of the population living below a specified poverty line: in this case, with less than 50% of median income.
Life expectancy at birth	The average number of years a newborn infant would live if prevailing patterns of mortality at the time of birth were to continue throughout the child's life.
Natural population growth	The birth rate less the death rate.
Neuropsychiatric conditions	Mental, neurological and substance-use disorders.
Population growth	(The birth rate less the death rate) + (immigration less emigration).
Standardized death rate (SDR)	The age-standardized death rate calculated using the direct method: that is, it represents what the crude rate would have been if the population had the same age distribution as the standard European population.

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[1] WHO Regional Office for Europe (2002). *The European health report 2002*. Copenhagen, WHO Regional Office for Europe:156 (http://www.euro.who.int/europeanhealthreport, accessed 28 May 2004).