



Highlights on health in Denmark 2004

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.

Keywords

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Summary: findings and policy options

Life expectancy

People in Denmark are living longer – by 2030, almost a quarter of the population will be aged 65 years or over. Women continue to have higher life expectancy than men: 79.5 and 74.8 years, respectively. Yet Danish women have the third lowest life expectancy in the Eur-A countries, more than two years below the average; and Danish men's life expectancy is one year below the Eur-A average.

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)

Ageing and employment policies (OECD, 2004a)

Infant mortality

Denmark's infant mortality rate is lower than the Eur-A average, while its neonatal mortality rate is higher.

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

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

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

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

Main causes of death

Noncommunicable conditions account for about 80% of all deaths in Denmark. Ischaemic heart disease is the single biggest killer. Of total deaths, 33% are due to cardiovascular diseases (CVD); 29% to cancer and about 7% to external causes (intentional and unintentional injuries).

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

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

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

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)

Excess weight

Overweight affects 40% of Danish men and slightly over 26% of Danish women; 10% of men and 9% of women are obese. Among 15-year-olds, 7% of boys are pre-obese and about 3% are obese, and about 10% of girls are pre-obese and 4% are obese.

Better eating habits can prevent premature death from CVD, but people's chances of 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.

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)

Gender and health

Mortality from cancer is higher in Denmark than in the Eur-A as a whole. The rate for men was about 50% higher than that for women in 1999. In the last 10 years, however, cancer mortality has declined among men but risen among women. By 1999, Danish women aged 25–64 and 65 and over had the highest mortality from cancer in the Eur-A.

Denmark had one of the highest lung cancer mortality rates in Eur-A in 1999. The rate for men was at the Eur-A average, but that for women was almost three times the Eur-A average. Estimated lung cancer incidence among Danish women is over twice the average for Eur-A; incidence in men is on the same level as the average.

Mortality rates from breast and cervical cancer are also high in Denmark. In 1999, Danish women had the third highest rate of death from breast cancer in Eur-A. Mortality from cervical cancer was over twice the Eur-A average.

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)

Tobacco

Smoking prevalence among women is higher than the Eur-A average.

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)

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)

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

Mental health

Neuropsychiatric conditions have the highest burden of disease in the Danish population, owing to the associated disability in daily living over the life-course.

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)

Alcohol

Levels of pure alcohol consumption in Denmark are about 10% higher than the Eur-A average. While the death rate from chronic liver disease and cirrhosis has fallen in Eur-A, it has risen in Denmark.

Alcohol consumption varies among countries and between different population groups within countries. The variation in drinking patterns affects rates of alcohol-related problems and has implications for the choice of alcohol control policies. Measures that are generally effective in reducing alcohol consumption and the associated harm include pricing and taxation and restricting the availability of alcohol, opening hours for sales outlets and the legal drinking age. Most drink-driving countermeasures have been effective as well. International trade agreements and common markets have weakened the ability of national-level decision-makers to establish national alcohol policies. Most notable are the converging trends in alcohol taxation in several countries in the European Union.

What are the most effective and cost-effective interventions in alcohol control? (Health Evidence Network, 2004b)

Alcohol: no ordinary commodity. Research and public policy (Babor et al., 2003)

Alcohol control database [online database] (WHO Regional Office for Europe, 2004a)

HIV/AIDS

In 2002, the majority of newly diagnosed HIV infections in Denmark were acquired through heterosexual contact. A third of the most recent new infections involved people who were or whose partners were from countries with generalized HIV epidemics.

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)

Drug use and hepatitis C

In Denmark, limited local testing at needle exchange locations found that 75–85% of injecting drug users were infected with hepatitis C.

The key to effective prevention of hepatitis C is to reduce the number of people who start to inject drugs and to encourage harm reduction among young and new injectors. A high proportion of those with the most serious drug use and addiction problems are found in prisons. Coordination of efforts within and between countries is a vital component of effective drug policy in the WHO European Region.

Annual report 2003: the state of the drugs problem in the European Union and Norway (EMCDDA, 2003)

Declaration. Prison health as part of public health, Moscow, 24 October 2003 (HIPP, 2003)

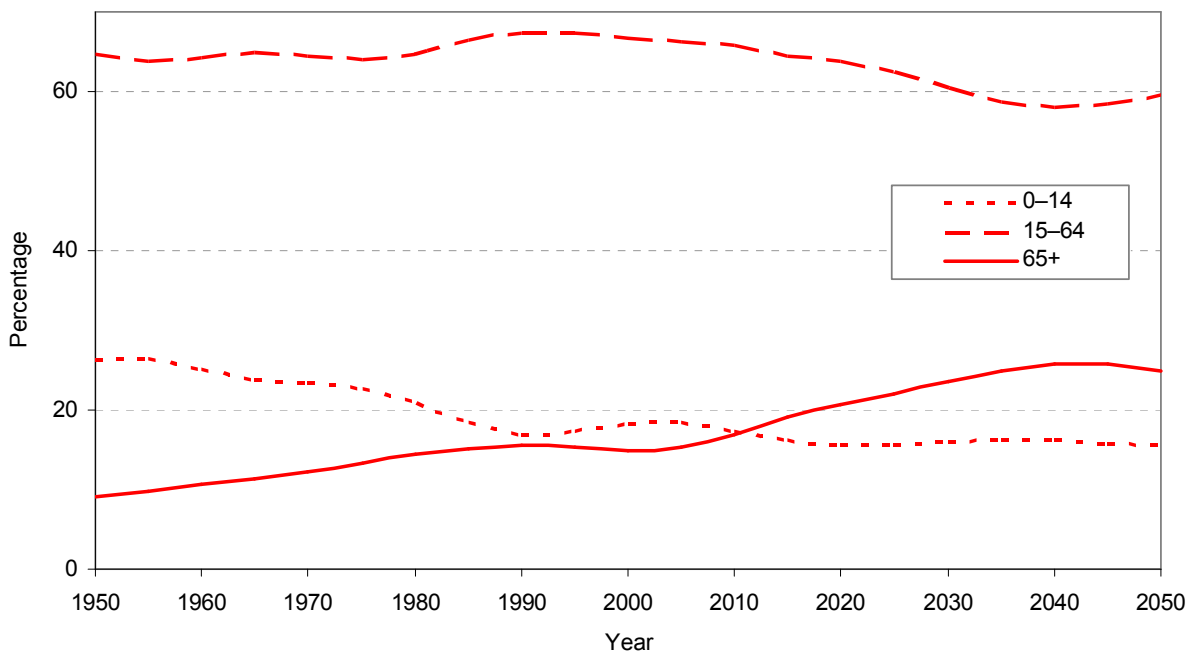
Selected demographic information

Population profile

Denmark had a population of almost 5.4 million at the start of 2003. The proportion of its population that lives in urban areas is a bit higher than the average for Eur-A.

The most striking demographic feature observed across Eur-A countries is the increase in the proportion of elderly people in the population. In contrast, the proportion of people in Denmark aged 65 years and more has decreased in the last ten years. Nevertheless, as the large birth cohorts of the late 1940s approach retirement age, the number of people aged 65 and over is expected to grow from about 15% of the population in 2000 (Council of Europe, 2003) to 24% in 2030 ((Annex. Age pyramid).

Percentage of the population aged 0–14, 15–64 and 65+ years,
Denmark, 1950 to 2050 (projected)



Source: United Nations (2002).

Denmark's birth rate is above the average for Eur-A, although it has dropped about 5% since 1995. Denmark's positive rate of natural increase and net migration have caused its population to grow slightly.

Selected demographic indicators in Denmark and Eur-A,
1999 or latest available year

Indicators	Denmark	Eur-A		
	Value	Average	Minimum	Maximum
Population (in 1000s) ^a	5383.5	–	–	–
0–14 years (%)	18.3	–	–	–
15–64 years (%)	66.8	–	–	–
65+ years (%)	14.9	–	–	–
Urban population (%) ^{b, c}	85.1	79.5	49.2	100.0
Live births (per 1000) ^{d, e}	11.9	11.3	8.7	21.2
Natural population growth (per 1000)	1.4	1.1	–2.4	15.5
Net migration (per 1000) ^{d, e}	1.8	3.5	–9.6	17.3

^a As of 1 January 2003.

^b 2001.

^c Including Andorra and Monaco.

^d 2002.

^e Including Andorra.

Sources: Council of Europe (2003), WHO Regional Office for Europe (2004c); 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).

According to the GINI index, Denmark has the lowest level of income inequality overall among the Eur-A countries (UNDP, 2004). However, in the period 1990–2000, about 9% of Denmark's population lived below the 50% median income level, which is at the average for 19 Eur-A countries with estimates.

In 2002, overall unemployment was 4.7% in Denmark compared with an average of 6.5% for 25 Eur-A countries (UNSD, 2004). Unemployment among Danes aged 15–24 years was also lower than the average: in 2001, 7.3% of young men and 9.3% of young women were unemployed (UNECE, 2003). Over 80% of unemployed Danes had educational attainment of secondary education or less. Of the unemployed, 22% had been jobless for 12 months or more.

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 below gives the total population figures for various vulnerable groups of people resident in Denmark. 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 Denmark

Population	1992	1995	1998	2001	2003 (estimate)
Immigrants	43 377	63 187	51 372	55 984	
Refugees	–	–	–	73 000	
Prison inmates (per 100 000 national population)	66	66	64	59	72

Sources: EUROSTAT (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).

In late 2003, Denmark reported a 100% occupancy level for its prisons, based on official capacity (International Centre for Prison Studies, 2004).

Burden of disease

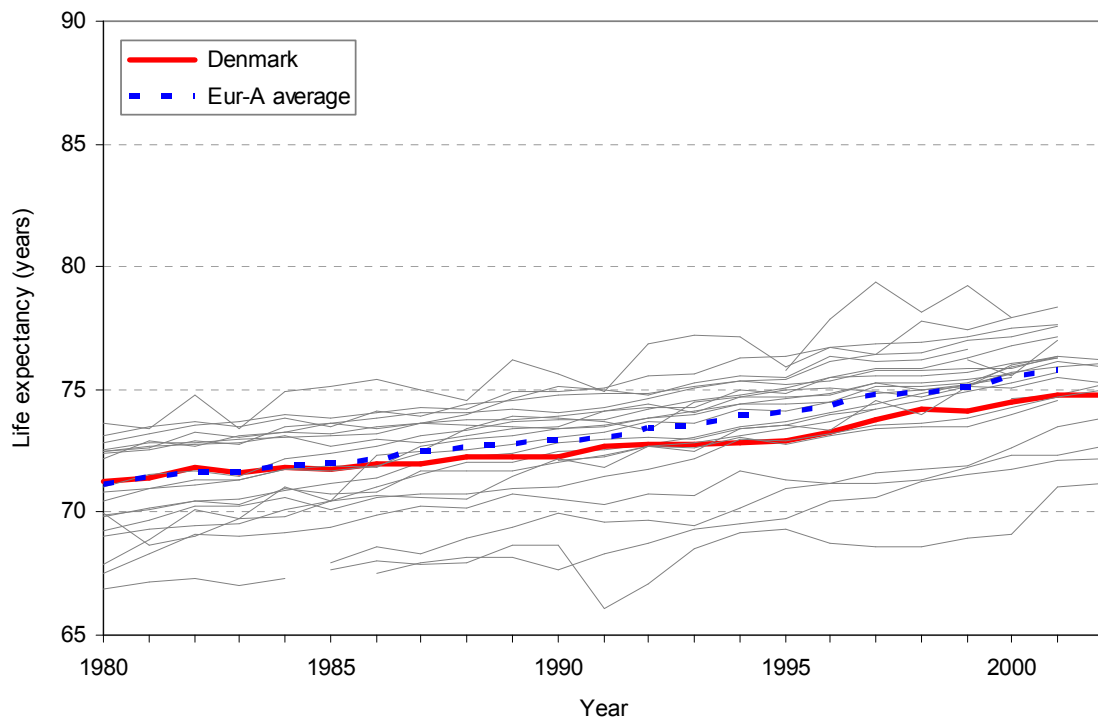
The burden of disease can be viewed as the gap between current health status and an ideal situation in which everyone lives into old age free of disease and disability. Causing the gap are premature mortality, disability and certain risk factors that contribute to illness. The analysis that follows elaborates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

Life expectancy and healthy life expectancy

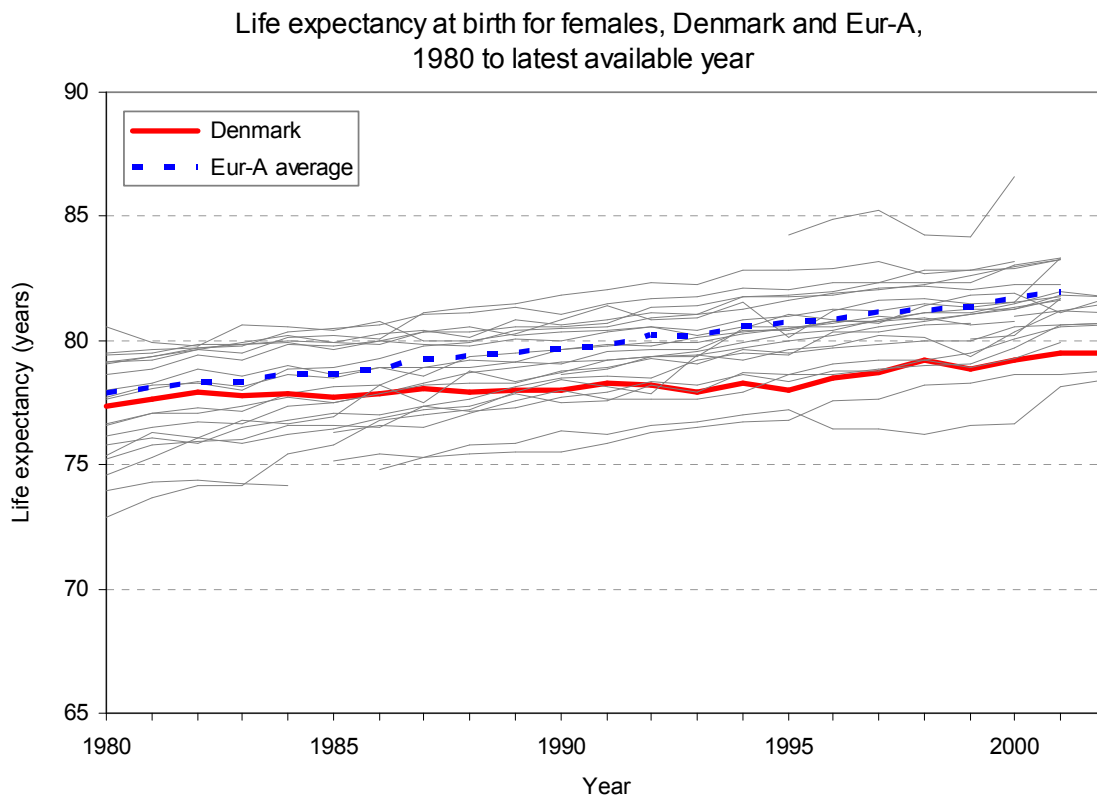
A Dane born in 2002 can expect to live 77.2 years on average: 79.5 years if female and 74.8 years if male, according to WHO (2003f) estimates. Yet Danish women have the third lowest life expectancy (LE) in Eur-A, over two years below the average; and Danish men's LE is one year below the Eur-A average, according to WHO (2003f) estimates.

Over the last 20 years, according to estimates reported by Denmark, Danes have gained about 2.9 years in LE, with men showing a greater gain than women: 3.6 years and 2.1 years, respectively. This represents a 5.0% gain in Danish men's LE, compared with the 6.6% gain for Eur-A men on average, and a 2.8% gain in Danish women's LE, compared with the 5.2% gain for Eur-A women on average.

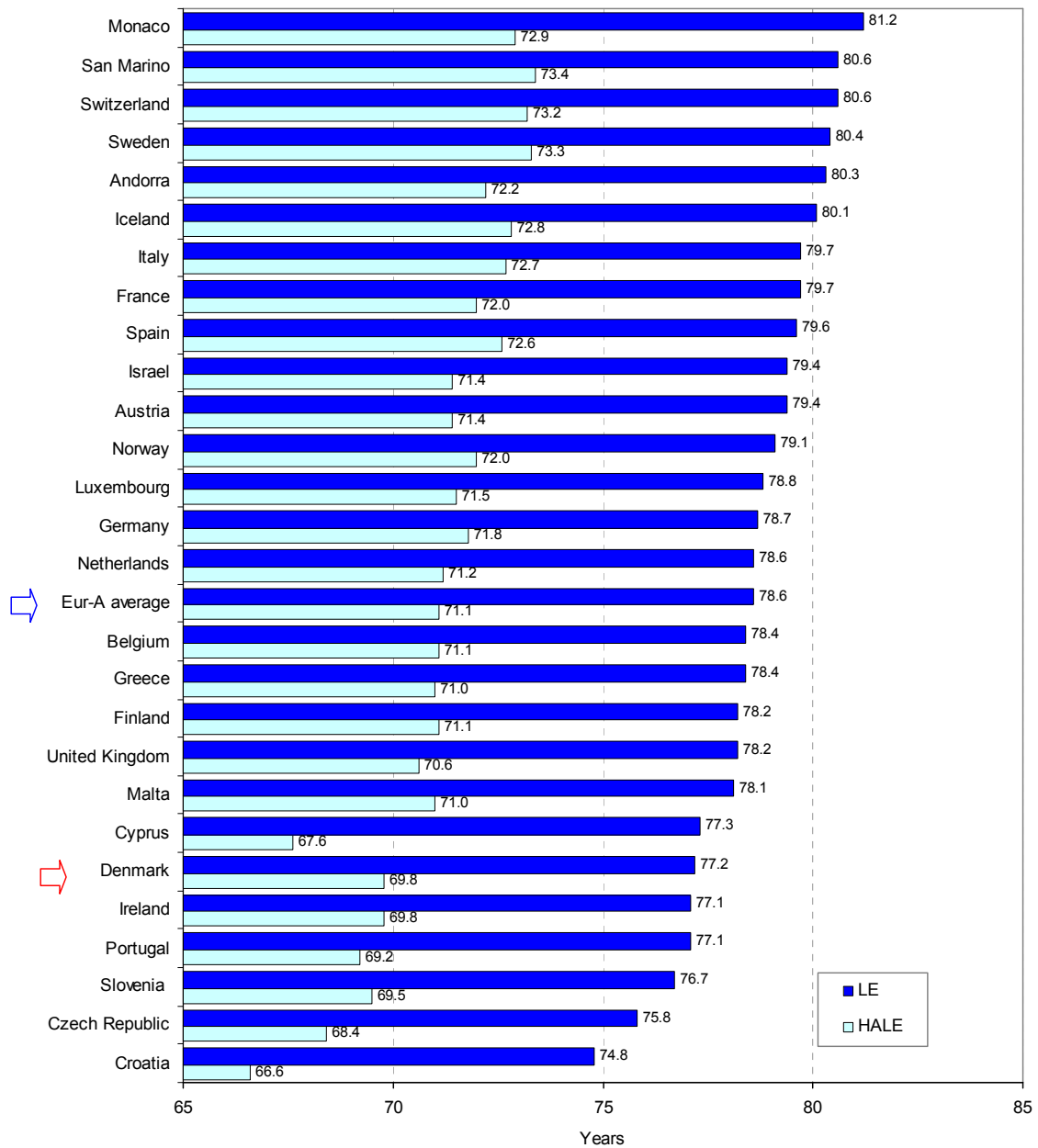
Life expectancy at birth for males, Denmark and Eur-A,
1980 to latest available year



Sources : WHO Regional Office for Europe (2004b) and WHO (2003e).



In addition, WHO (2003f) estimates that, on average, people in Denmark can expect to be healthy for about 90% of their lives. They lose on average 7.4 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 (8.4 years) than men (6.2 years). Nevertheless, a longer LE for women in Denmark gives them about 2.5 more years of healthy life than Danish men.

LE and HALE, Denmark and Eur-A^a, 2002

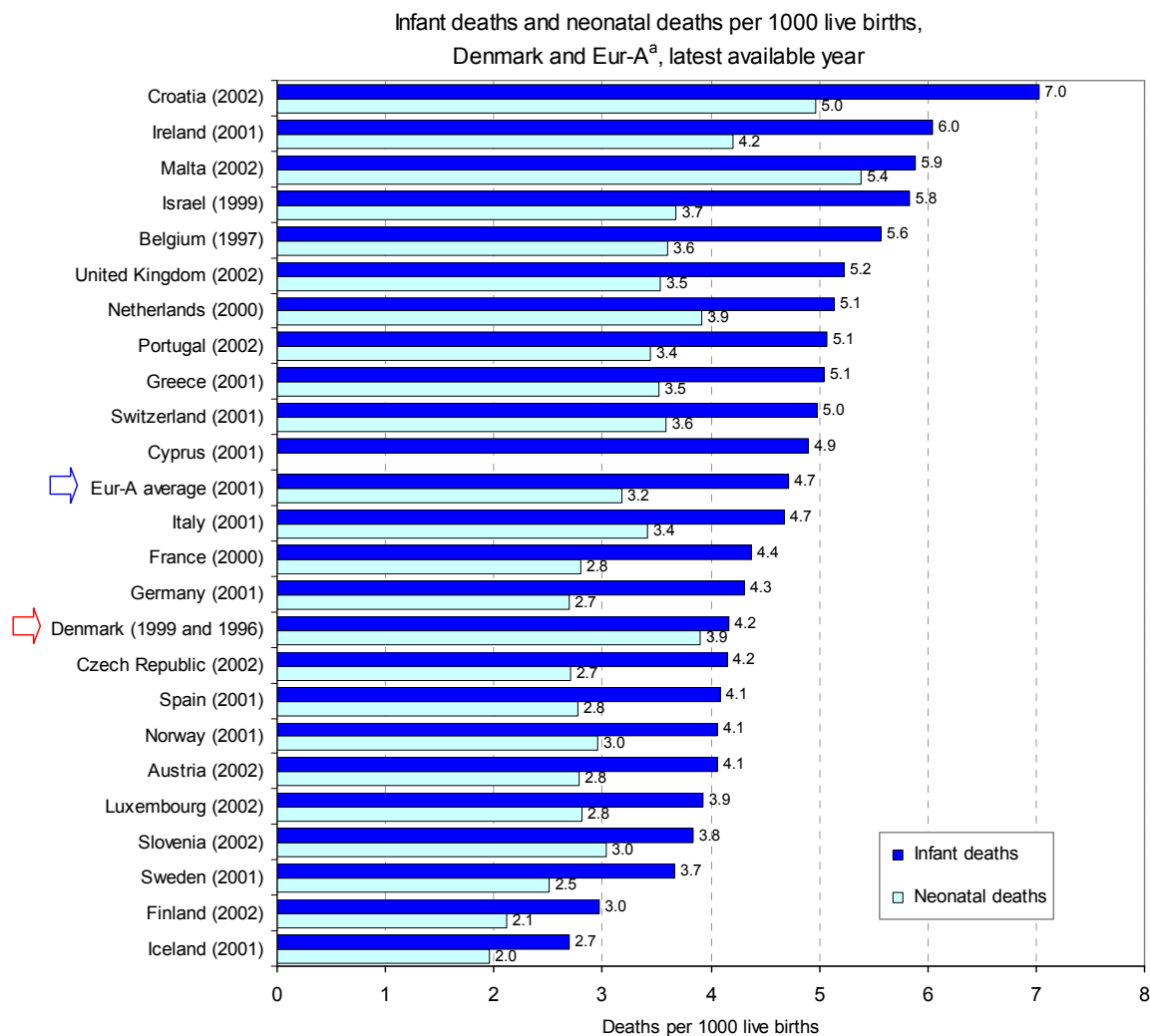
^a Including Andorra and Monaco.

Source: WHO (2003f).

Mortality

Infant mortality and neonatal death

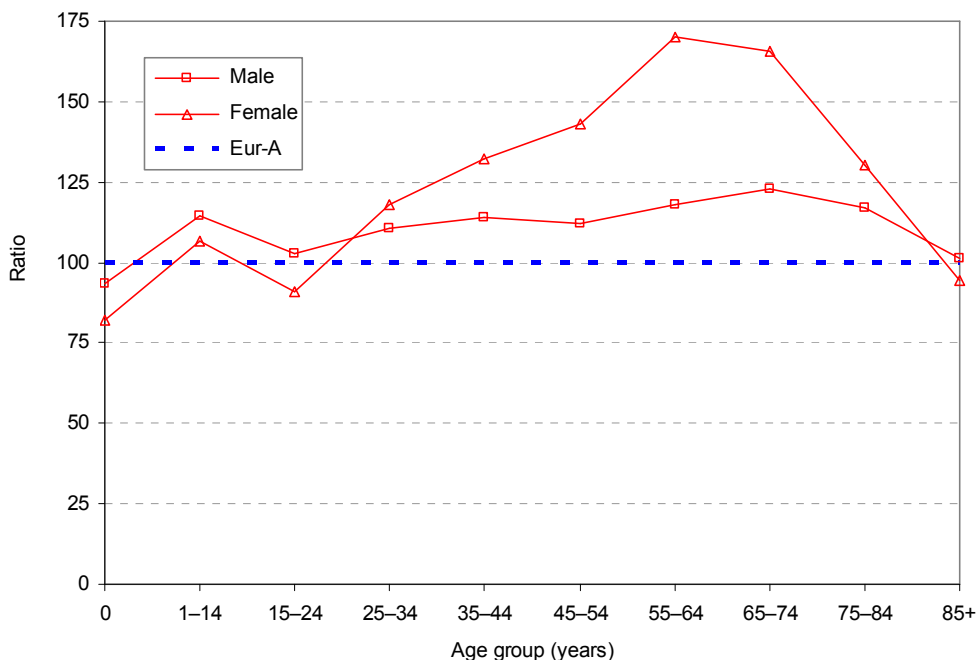
Denmark's infant mortality rate is lower than the Eur-A countries reporting, while its neonatal mortality rate is higher.



Excess mortality

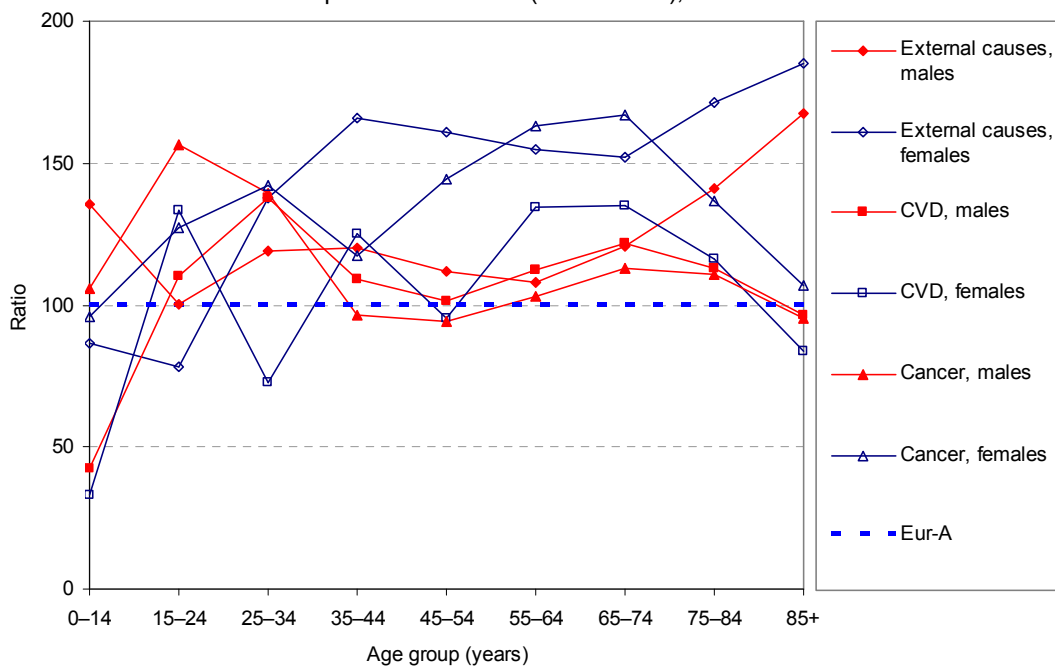
Danish women aged 25–84 years have a dramatic excess mortality relative to the Eur-A average, with the most significant difference, about 70%, experienced by the group aged 55–74 years. In general, Danish men also have a higher mortality rate than the Eur-A average, with excesses in the groups aged 1–14 and 25–84 years.

Total mortality by sex and age group in Denmark in comparison with Eur-A (Eur-A=100), 1999



Almost all age groups of both sexes in the Danish population have excess mortality from the three main disease groups compared with the Eur-A average. Cardiovascular diseases have excess mortality in all age groups except the youngest and oldest. Cancer deaths among females are dramatically higher than the Eur-A average, and deaths from external causes are especially high among adult women and elderly men.

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



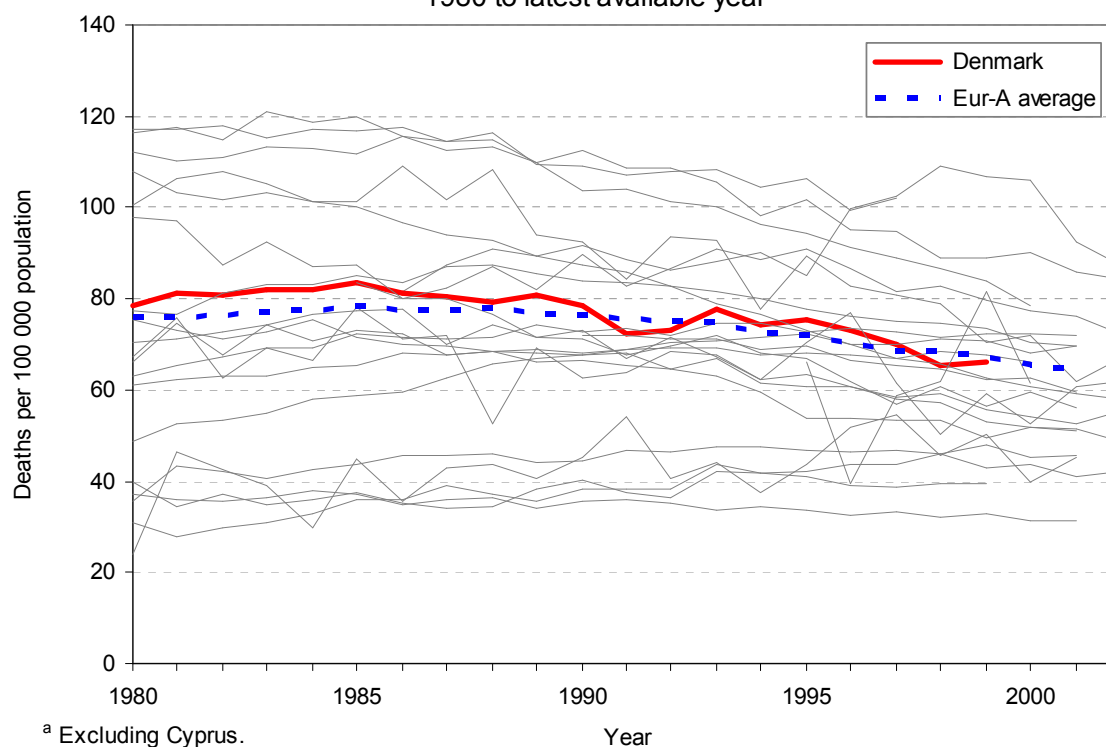
Main causes of death

In 2002, noncommunicable diseases accounted for 80% of all deaths in Denmark and external causes for about 7%. Communicable diseases accounted for less than 1% of deaths (Annex. Selected mortality).

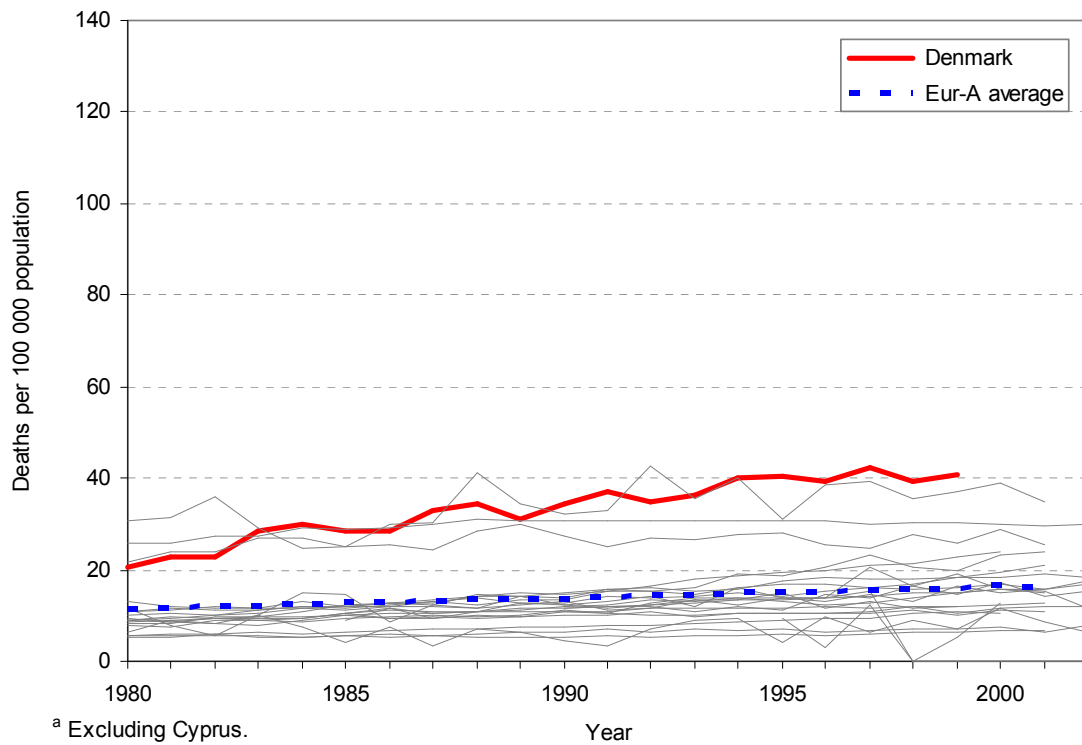
As everywhere in the Eur-A countries, CVD are the number-one cause of death in Denmark. Overall, they have affected Danes at about the same rate as the Eur-A average. Within the CVD category, ischaemic heart disease is the biggest killer among Danes (Annex. Selected mortality).

Death rates for cancer are almost as high as those for CVD in Denmark. The overall mortality from cancer is about 24% higher than the Eur-A average. Death rates are especially high for cancer of the lung, breast and colon (Annex. Selected mortality). For lung cancer, Danish men are following the downward trend in the Eur-A, while Danish women are following the upward trend in the Eur-A. Yet Danish women have levels of mortality from lung cancer and from chronic obstructive pulmonary disease that are almost three times the Eur-A average; deaths from the latter cause have dramatically increased in the last 15 years.

Standardized death rates (SDR) for trachea, bronchus and lung cancer in males, all ages, Denmark and Eur-A^a, 1980 to latest available year

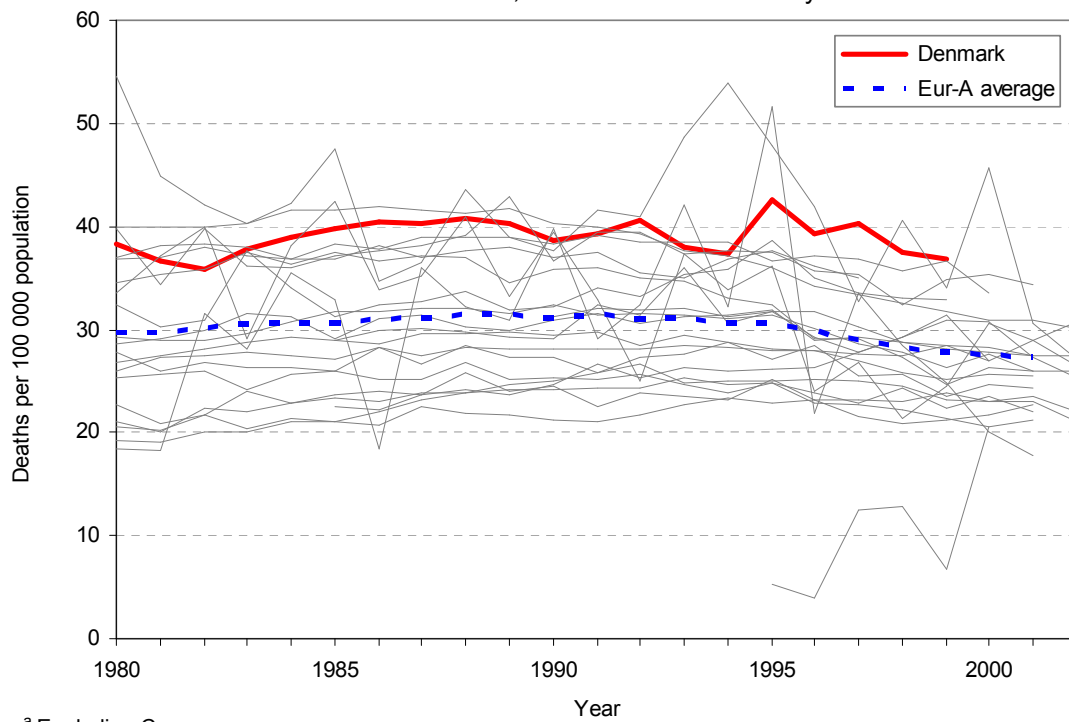


SDR for trachea, bronchus and lung cancer in females, all ages, Denmark and Eur-A^a, 1980 to latest available year

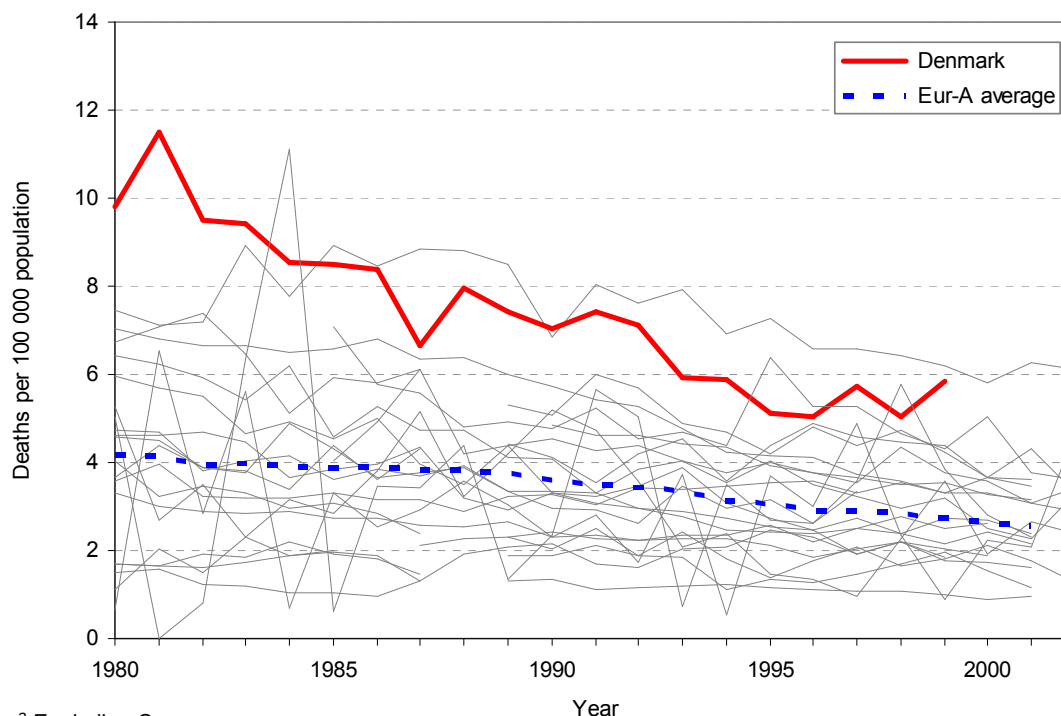


Danish women have one of the highest levels of mortality from cancer of the breast and the cervix in the Eur-A.

SDR for breast cancer in females, all ages, Denmark and Eur-A^a, 1980 to latest available year



SDR for cancer of the cervix, all ages, Denmark and Eur-A^a,
1980 to latest available year



^a Excluding Cyprus.

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 Denmark in terms of DALYs.

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

Rank	Males		Females	
	Disability groups	Total DALYs (%)	Disability groups	Total DALYs (%)
1	Neuropsychiatric conditions	24.2	Neuropsychiatric conditions	25.9
2	Cardiovascular diseases	17.8	Malignant neoplasms	17.2
3	Malignant neoplasms	16.8	Cardiovascular diseases	12.5
4	Respiratory diseases	7.7	Respiratory diseases	12.0
5	Unintentional injuries	6.7	Digestive diseases	5.7
6	Digestive diseases	5.8	Unintentional injuries	5.1
7	Sense organ diseases	4.0	Musculoskeletal diseases	4.7
8	Musculoskeletal diseases	3.1	Sense organ diseases	4.3
9	Intentional injuries	2.8	Endocrine disorders	2.1
10	Diabetes mellitus	2.4	Diabetes mellitus	1.7

Source: Background data from WHO (2003f).

These conditions contribute to about 90% of the total disease burden in Denmark. Neuropsychiatric conditions have the highest burden of disease among both Danish males and females. Because mortality from these conditions is minor in comparison to that from other diseases, disability comprises the bulk of their burden on the health of the population. CVD, cancer and respiratory diseases follow as the most burdensome diseases among Danes.

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 table on disability groups, risk factors are estimated to contribute differently to the burden of illness and death in a population. The degree to which the Danish population is exposed to five of these risks is described below.

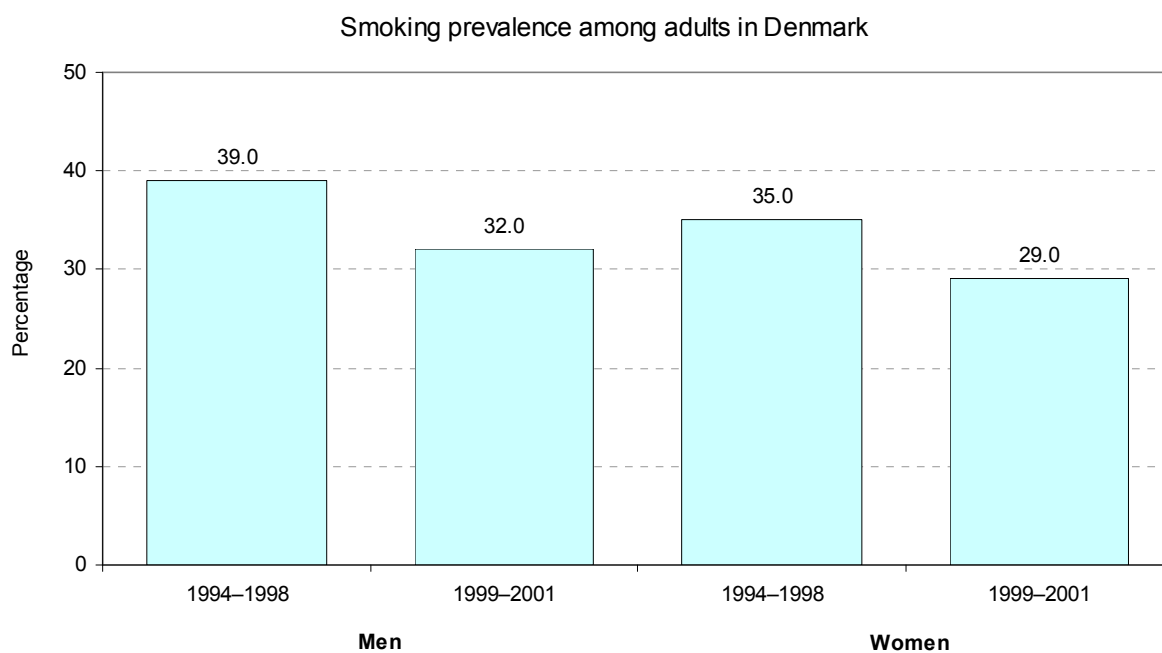
Ten leading selected risk factors as percentage causes of disease burden measured in DALYs in developed countries

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

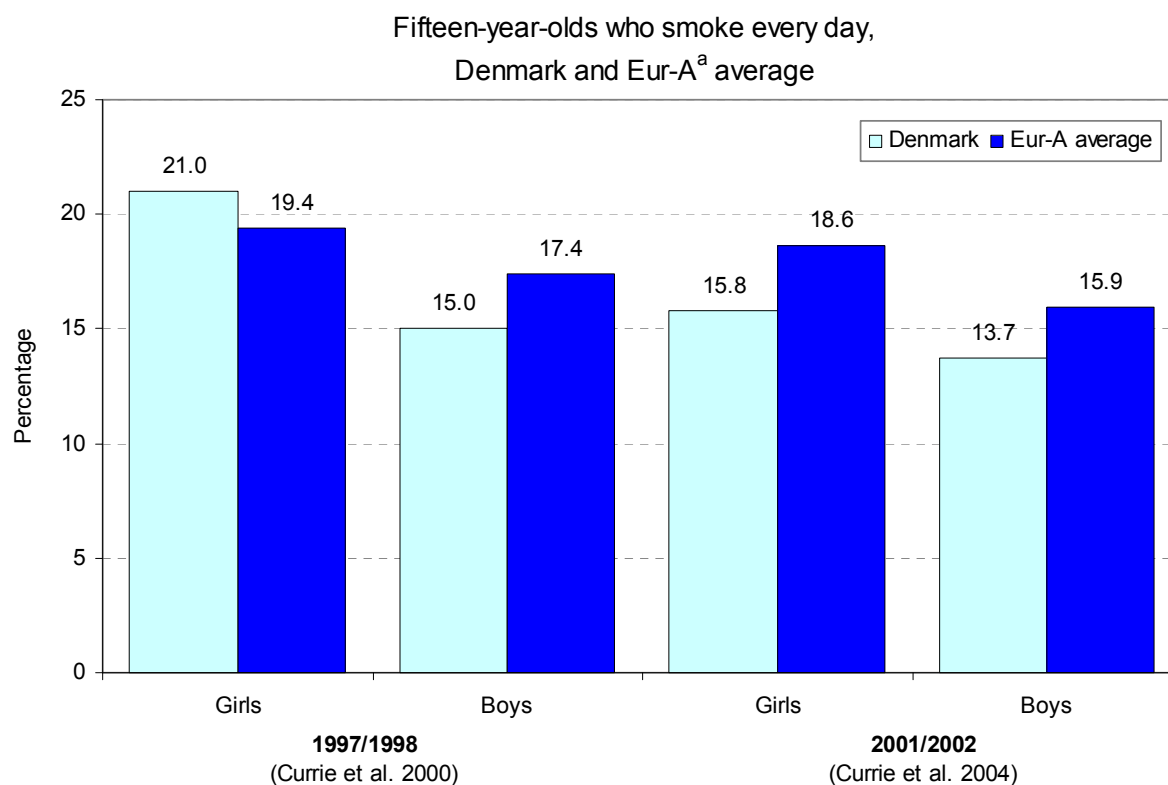
Source : WHO (2002).

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, 2004g). 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).

In 2000, Danes consumed about 6% fewer cigarettes per person than the Eur-A average, according to official statistics for production, import and export. (Not included is consumption of additional cigarettes available unofficially, for example, through smuggling across borders and bootlegging.) Smoking prevalence has dropped the last 10 years to about 30%. Smoking prevalence among 15-year-old boys and girls has decreased since 1997/1998 and is lower than the Eur-A averages.



Source: WHO Regional Office for Europe (2004f).



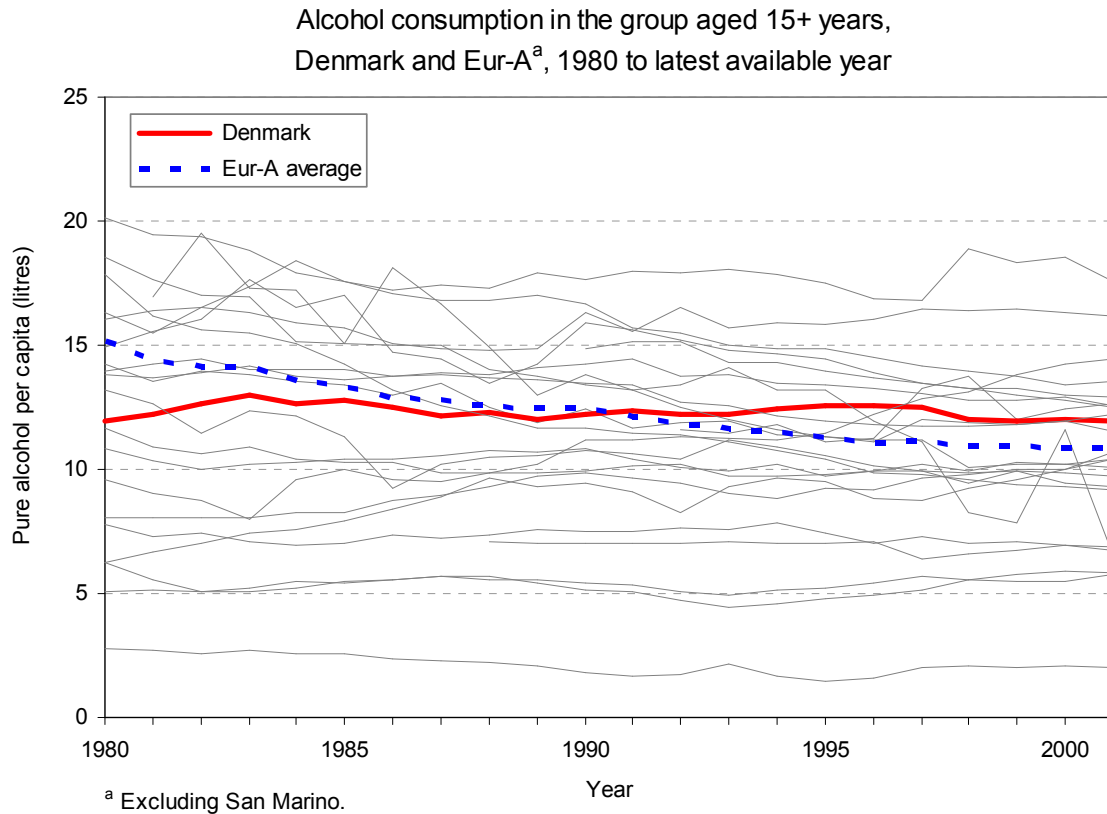
^a Excluding Cyprus, Iceland, Luxembourg and San Marino.

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

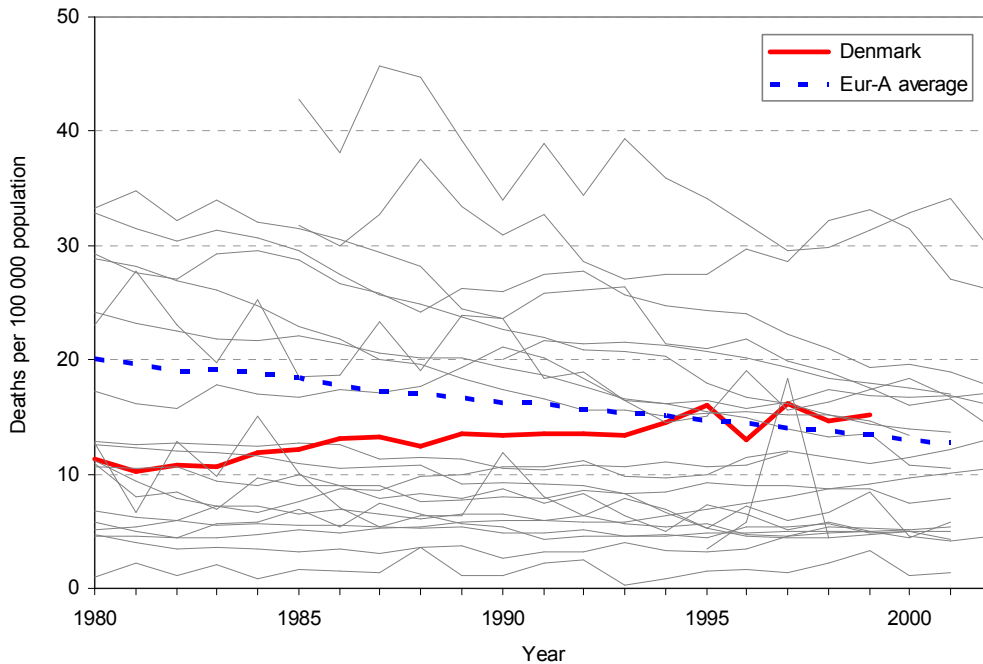
equivalent on one occasion; or having five or more “standard” drinks in a row). Both practices cause or aggravate health problems and increase the risks of injury to the drinker and others (European Commission, 2003).

In 2001, levels of pure alcohol consumption in Denmark were about 10% above the Eur-A average.



Mortality from liver cirrhosis is the classic indicator of harm from chronic excessive drinking. While the death rate from chronic liver disease and cirrhosis has fallen in the Eur-A, it has risen in Denmark.

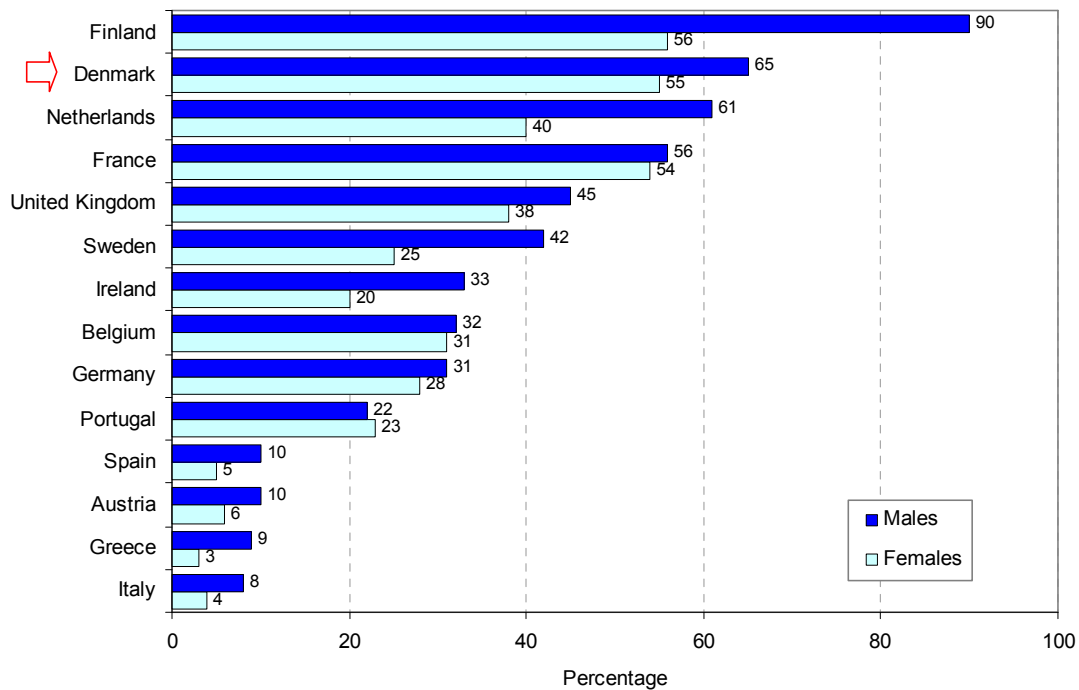
SDR for chronic liver disease and cirrhosis, all ages, both sexes, Denmark and Eur-A^a, 1980 to latest available year



^a Excluding Cyprus.

Mortality due to cirrhosis explicitly caused by alcohol is another indicator of harm from alcohol, but variations in the coding of deaths classified as alcoholic cirrhosis make cross-country comparisons unreliable. The figure below is therefore descriptive, showing where alcohol was the major risk factor in deaths due to cirrhosis in a particular country. For Denmark in the period 1987–1995, alcohol accounted for 65% of all deaths from liver cirrhosis among men and 55% among women.

Mortality from alcoholic liver cirrhosis as a percentage of total mortality from liver cirrhosis, selected countries in Eur-A, averages for 1987–1995

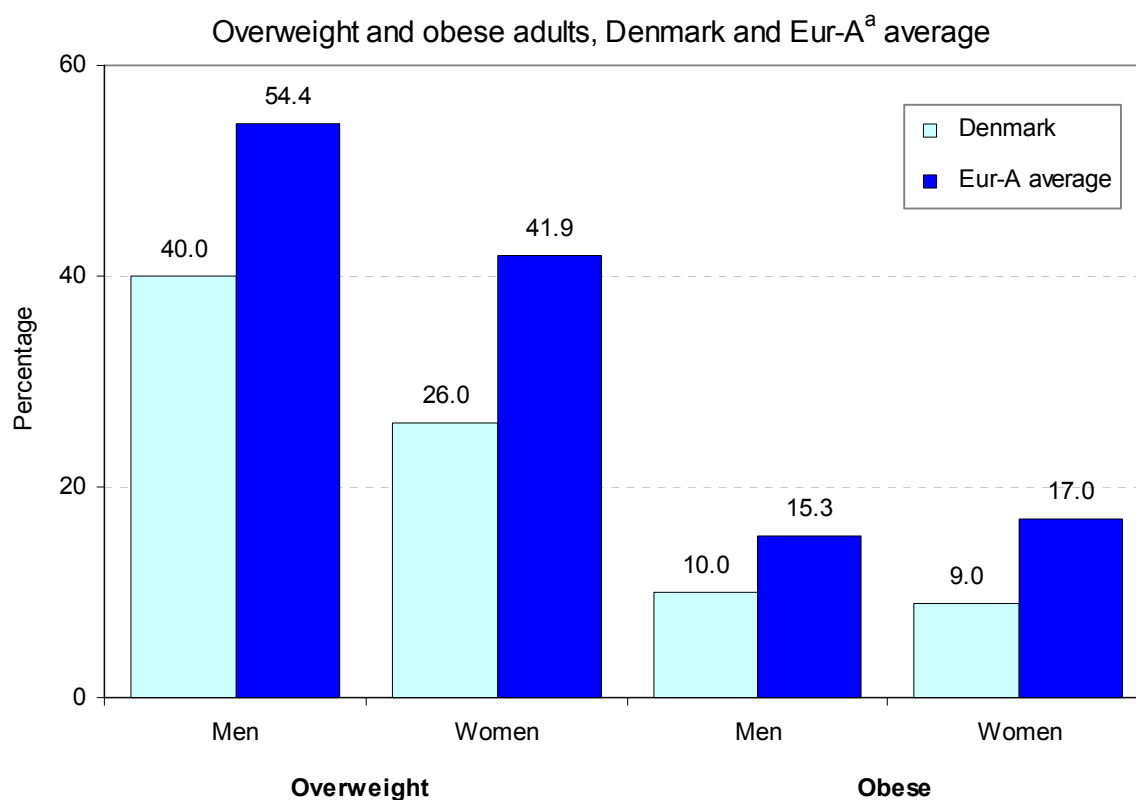


Note: Data for Germany refer to the territory of the Federal Republic of Germany as up to 3 October 1990.
Source: Hemström et al. (2002).

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).

According to the recommendations for body mass index (BMI), 40% of men and 26% of women in Denmark are overweight (BMI of 25.0–29.9) and about 10% of men and 9% of women are obese (BMI of 30+).

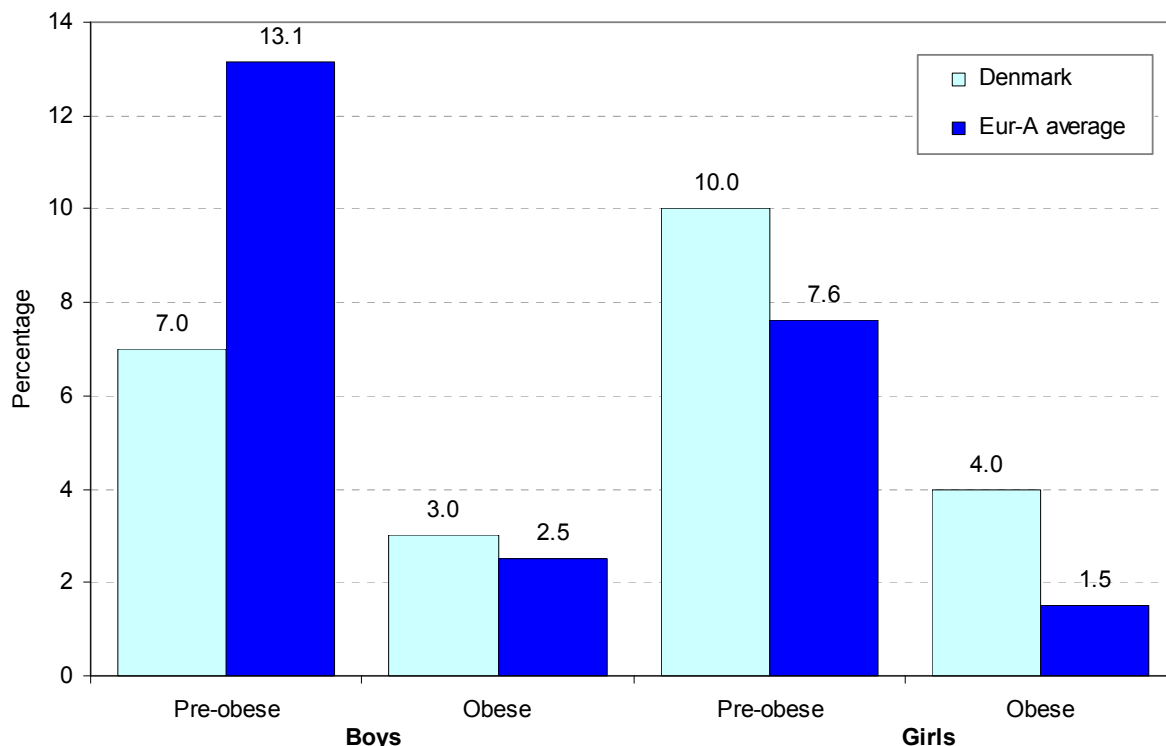


^a Excluding Austria, Croatia, Cyprus, Iceland, Ireland, Luxembourg, San Marino and Slovenia.

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, 7% of boys 15 years of age are pre-obese and 3% are obese; 10% of girls of the same age are pre-obese and 4% are obese.

Pre-obese and obese 15-year-olds by sex,
Denmark and Eur-A^a average



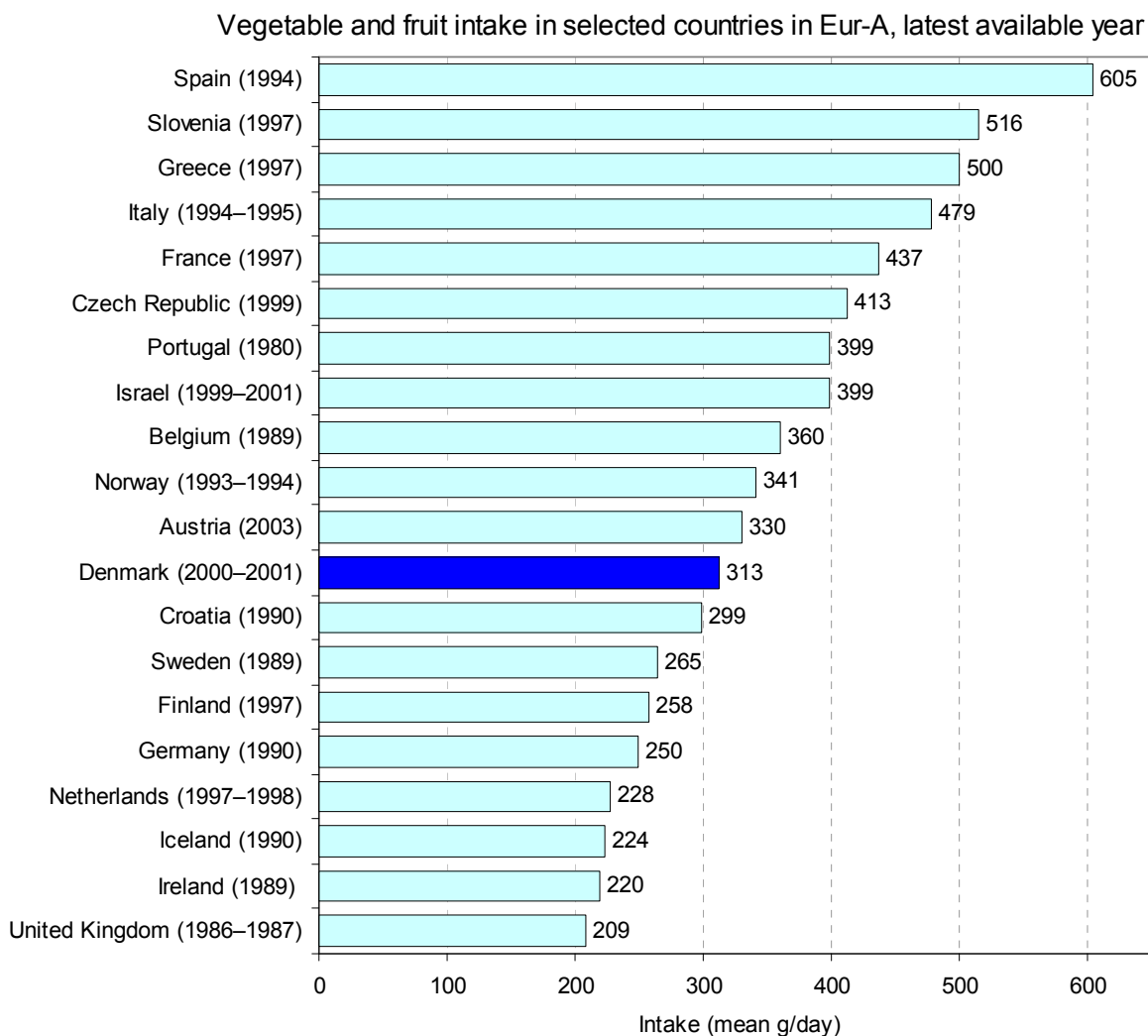
^a Excluding Cyprus, Iceland, Luxembourg and San Marino.

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. The average intake in Denmark is 313 g. 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).



Sources: WHO Regional Office for Europe (2004b), 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).

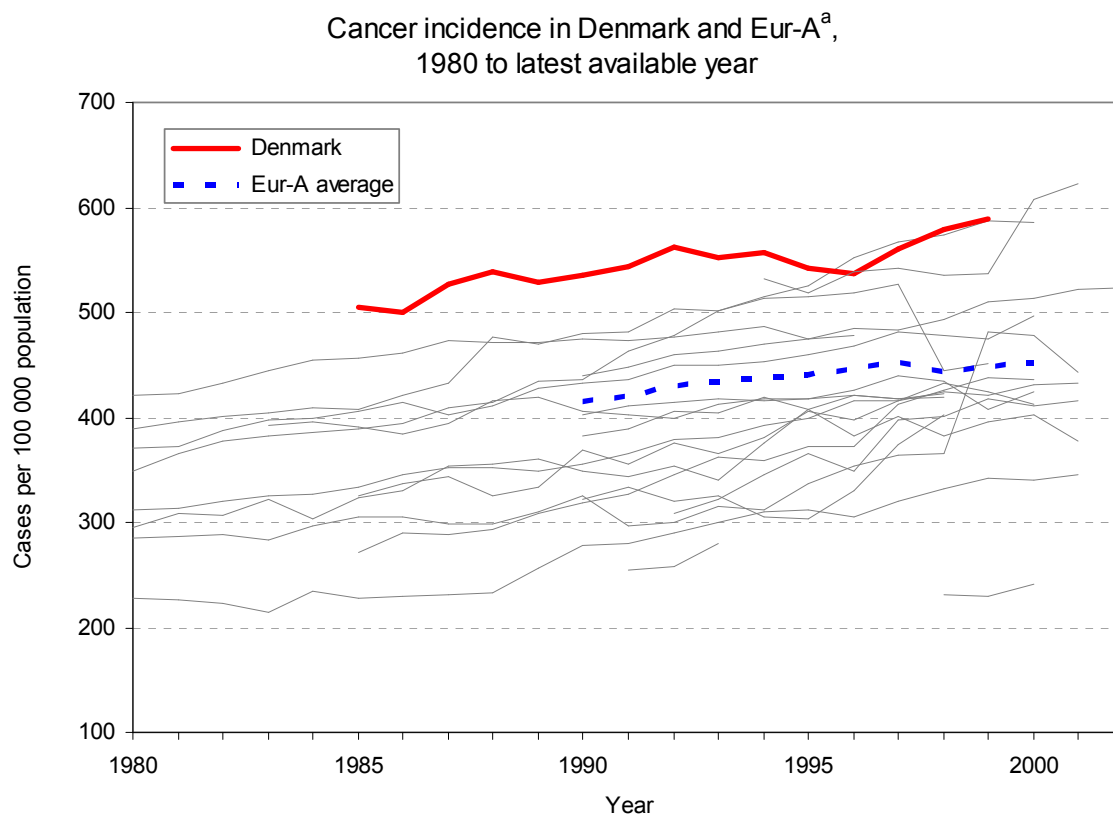
§A representative health and morbidity survey in Denmark in 2000 found that 16% of males and 17% of females 16 years of age and over did not exercise regularly during leisure. For people 65 years of age and older, the figures were 23% for men and 38% for women (WHO, 2004a).

Selected causes of illness

Cancer

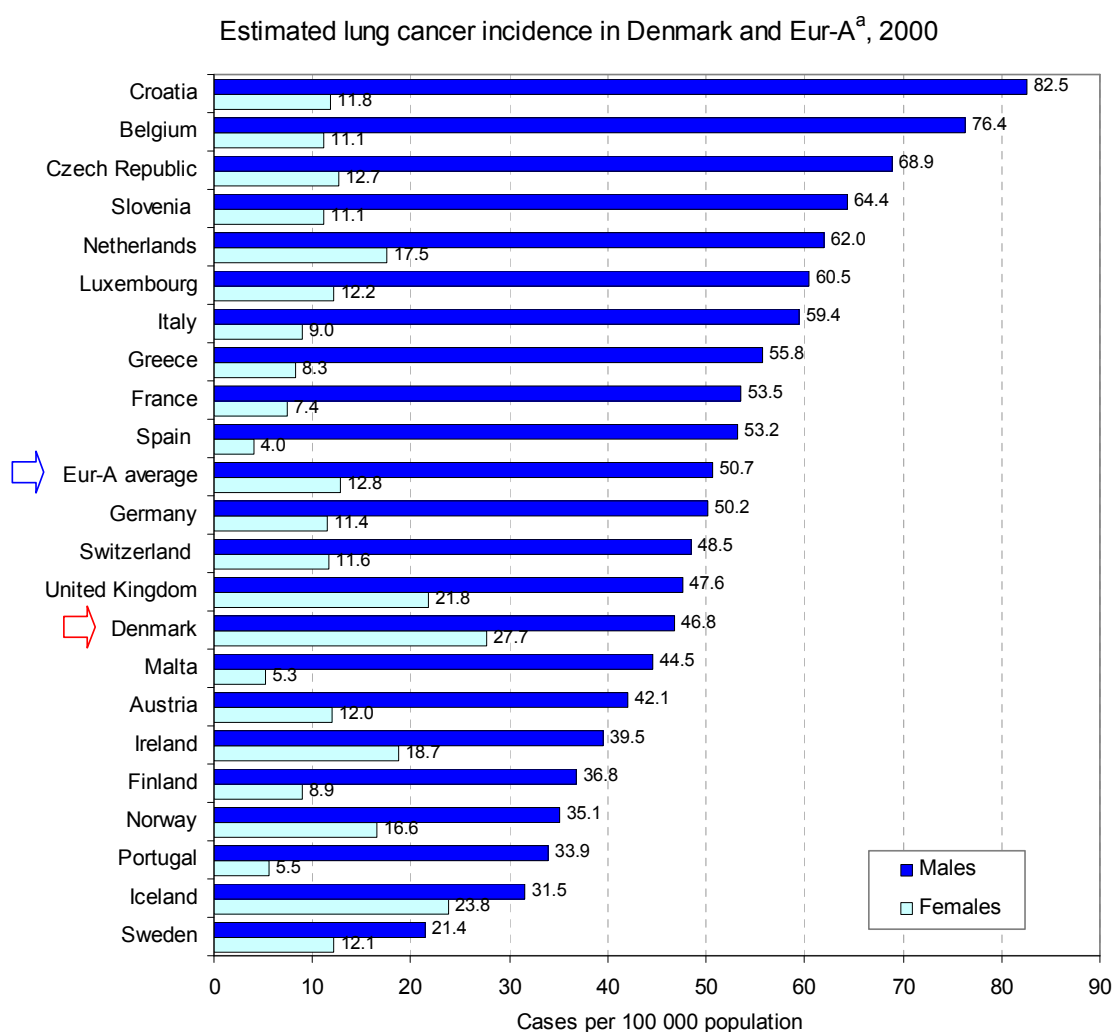
Cancer accounts for 29% of deaths in Denmark, while the combination of death and illness due to cancer, represented as DALYs (see table on disability groups), accounts for about 17% of the disease burden. Together the indicators show that the burden of cancer on the population is mainly attributable to death, rather than long-term illness.

The cancer incidence in Denmark has been among the highest in Eur-A since the mid-1980s. For the period 1990–2000, for which an average Eur-A incidence can be calculated, cancer incidence rose by 8% in Denmark but by about 4% in the Eur-A on average.



^a Excluding Greece, San Marino, Spain and Switzerland.

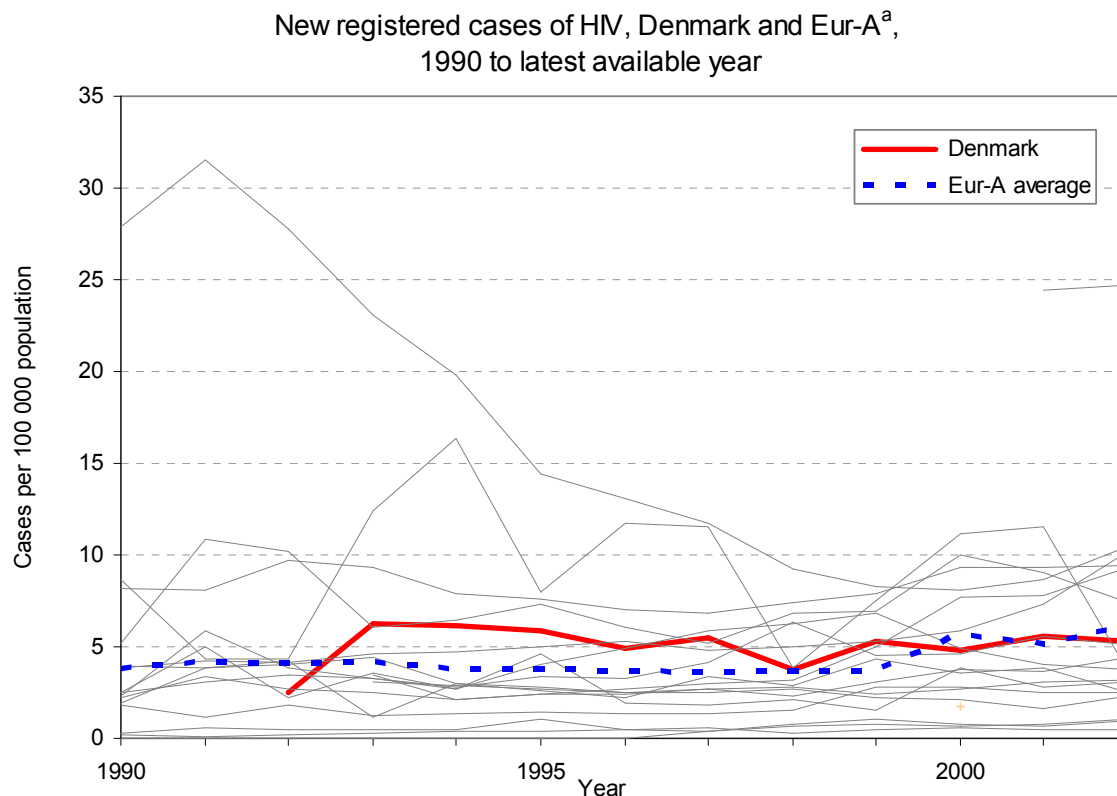
Lung cancer is the most common cancer in the Region and the world. The most important risk factor is tobacco (Tyczynski et al., 2002). In 2000, the estimated lung cancer incidence among Danish women was the highest in Eur-A and more than twice the average, while that for Danish men was at about the same level as the Eur-A average.



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).

The HIV infection rate in Denmark is slightly lower than that for the Eur-A. In 2002, there were 5.3 newly diagnosed HIV infections per 100 000 population in Denmark (EuroHIV, 2003b).



^a Excluding Austria, Cyprus, France, Italy, the Netherlands and Spain.

From the start of the epidemic to the end of March 2004, 4006 HIV cases were reported in Denmark. Similar to previous years, 265 new cases were reported in 2003. Over the past 10 years, HIV incidence has been relatively stable, while the number of AIDS cases has declined.

HIV transmission is primarily among men who have sex with men among Danish nationals, but primarily heterosexual among foreigners. Nevertheless, an increasing proportion of cases in Danish nationals resulted from heterosexual transmission from a partner originating from a country with a generalized HIV epidemic.

Of the 265 new HIV infections in 2003, 164 were among Danish nationals: 146 in men and 18 in women. Among the new cases in Danish men, 65% were among men who have sex with men, 27% among men who have sex with women and 7% among injecting drug users; 1% were classified as having other means of transmission. Of the new cases in Danish women, 61% were transmitted through heterosexual contact, 33% through injecting drug use and 6% in other ways (UNAIDS & WHO, 2004).

Hepatitis C

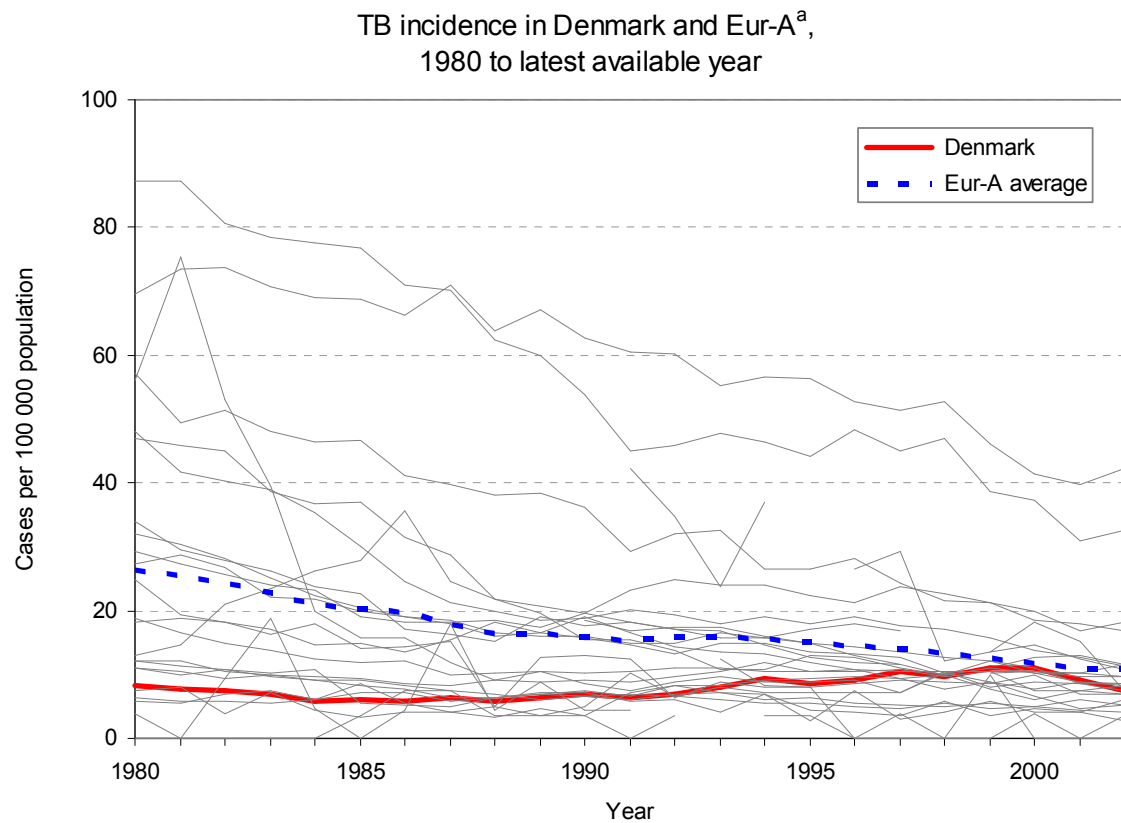
Since the introduction of screening of blood and blood products for hepatitis C in the countries of the European Union before May 2004, transmission of the virus has fallen dramatically. Injecting drug users are now the group at greatest risk, accounting for up to 60–90% of new infections. Young and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

In Denmark, limited local testing at needle exchange locations found that 75–85% of injecting drug users were infected with hepatitis C (EMCDDA, 2003).

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). In Denmark, TB incidence rose in the late 1990s but has decreased since 2000. 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.



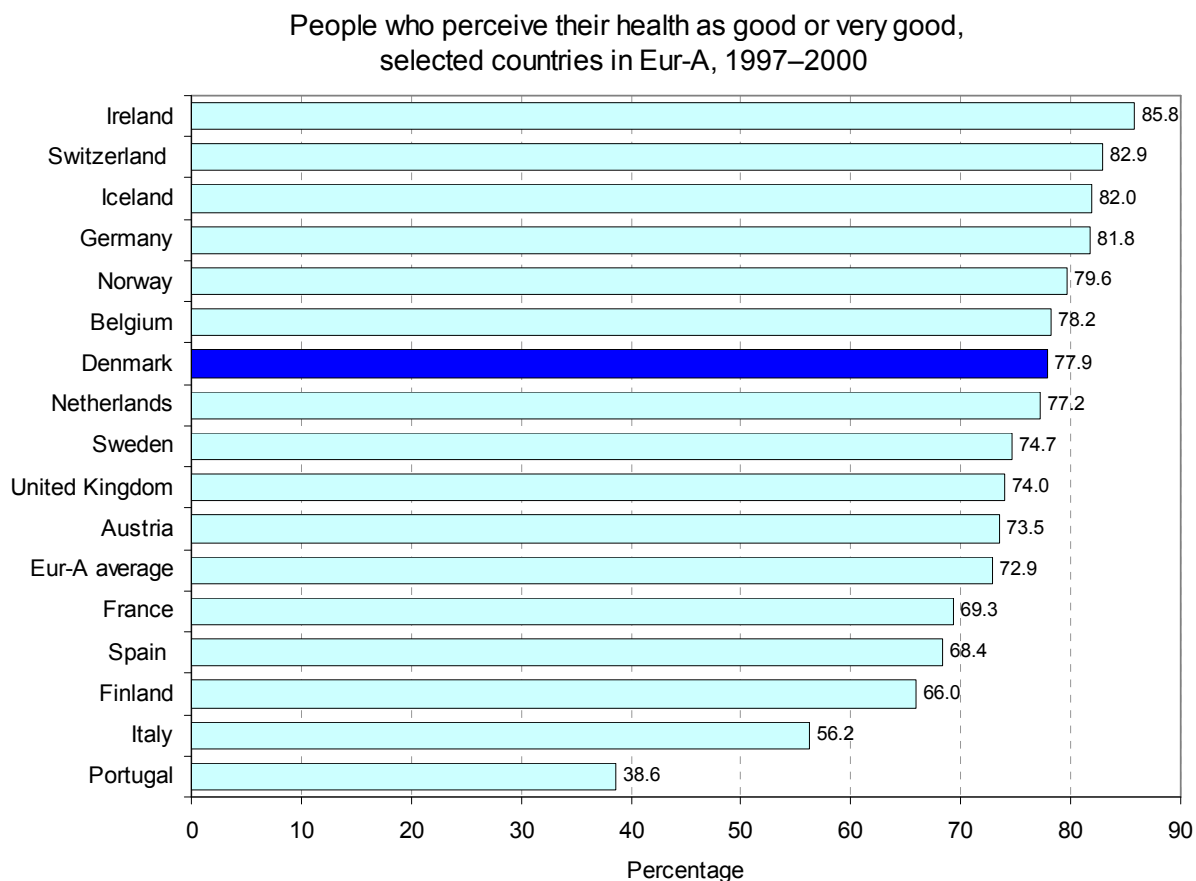
^a Including Andorra and Monaco.

Since 1995, the incidence of TB has dropped by 13% in Denmark and 26% in the Eur-A countries overall. In 2002, the rate for Denmark was 30% below the average for the Eur-A: 7.5 and 10.9 per 100 000, respectively.

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.

In 1997–2000, the percentage of adults in Denmark rating their health as good or reasonably good was above the average for the Eur-A.



Sources: European Commission (2003) and Kasmel et al. (2004) for data on Finland.

Health system¹

Organizational structure of the health system

Denmark has a tax-based, decentralized health system providing universal coverage for all residents. Hospital care, general practitioner (GP) services and public health services are free at the point of use.

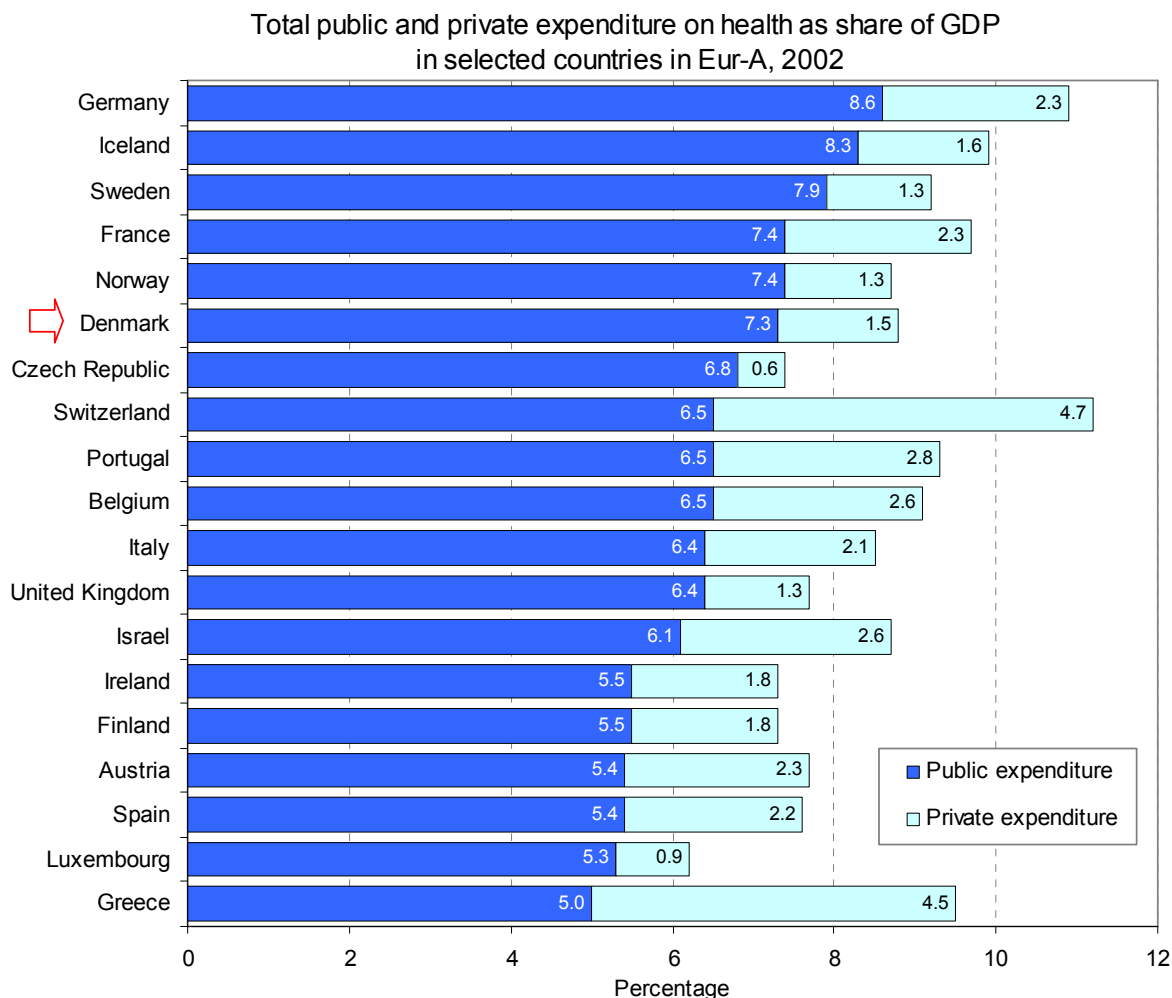
The Government (the Ministry of the Interior and Health) plays a relatively limited role in health care. Its main responsibilities include establishing goals for national health policy, preparing health legislation and regulations (including the supervision of health personnel), promoting cooperation between the different actors in health care and providing health information. The Ministry of Finance plays a key role in setting the overall economic framework for the health sector.

The counties fund and provide most health care; they control the number and location of GPs and own and run most hospitals. Exceptions to this include hospitals in the Copenhagen area and private for-profit hospitals, the latter accounting for fewer than 1% of the total number of hospital beds in 2002 (Annex 5). The municipalities are responsible for providing services such as those of nursing homes, health visitors, home nurses and school health services.

Health care financing and expenditure

In 2002 Denmark spent 8.8% of its gross domestic product (GDP) on health: US\$ 2580 (purchasing power parity) per capita (Annex. Total expenditure on health). A combination of state, county and municipal taxes financed 83% of total expenditure on health care, with the Government taking the financial responsibility for the overall health service: local taxes are supplemented by state subsidies that are calculated annually according to the size of local tax revenues. In addition, resources are transferred between counties and municipalities according to a formula taking account of the age structure as well as socioeconomic indicators.

¹ This section is based on publications of the European Observatory on Health Care Systems and Policies (2000, 2002a–c).



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

Private expenditure on health accounted for 17% of the total and can be attributed to out-of-pocket payments: for example, co-payments for physiotherapy, dental care, spectacles and pharmaceuticals, as well as contributions to voluntary health insurance schemes. About 30% of the population purchase complementary voluntary health insurance to cover the costs of the statutory co-payments.

The most significant resource allocation mechanism in Denmark is the national budget negotiation that takes place once a year between the health and finance ministries and the Association of County Councils and the National Association of Local Authorities. This negotiation aims to set overall limits for the average growth of county and municipal budgets and funding levels.

Public hospital resources are mainly allocated through prospective global budgets set by the counties in negotiation with hospital administrators. In addition, since 2000, diagnosis-related group (DRG) payment for patients treated at hospitals outside their own county have been introduced. DRG payment is also being gradually introduced in the financing of the counties' own hospitals, and now accounts for 20% of the expenses.

GPs' remuneration is a mixture of quarterly capitation payments (accounting for 30% of remuneration) for the patients on their lists and fees for services. County-licensed specialists are paid on a fee-for-service basis. Public hospital staff are paid a salary.

Health care provision

Self-employed health care professionals and municipal health services provide primary health care. The privately practising GPs are the patient's first point of contact and gatekeepers to specialists, physiotherapists and hospitals. Danish residents older than 16 years have been able to choose from two

general options: for Group-1 patients access to a GP is free at the point of use, the GP then acting as a gatekeeper. Group-2 patients can visit any GP or specialist without referral but have to pay part of the treatment/consultation costs. In 2002, only 1.7% of the population opted for Group 2, owing partly to the extra costs involved and partly to general satisfaction with the GP referral system.

The number of beds per 1000 population fell from 7.6 in 1980 to 3.4 in 2001 (Annex. Selected health care resources). The general decline in the number of beds in both general and psychiatric hospitals has been associated with a large increase in the number of outpatient visits.

In 2002 the number of physicians per 1000 population was 3.7. The number of nurses is 9.7 per 1000 population. It is felt that recruiting nurses may become increasingly difficult, as the profession is associated with low salaries, heavy workloads and poor working conditions.

Developments and issues

National and local reforms initiated during the last decade have focused on increasing productivity and quality and reducing waiting lists for non-acute care, notably through the introduction of free choice of hospital in 1993, contracts and target-based management in hospitals, restructuring delivery on the basis of functional units, DRG classification, in parts activity-based hospital financing, the development of quality indicators and waiting times guarantees. Primary care continues to be a key strength of the Danish health care system and a source of high satisfaction in the population. Most current reform initiatives focus on hospitals and inpatient care. While further structural changes, possibly associated with a greater role of the private sector, are discussed, according to general political consensus the Danish system will remain committed to welfarist ideals of tax financing and universal access to high-quality health care.

The Government has proposed a radical change in the regional administrative structure of Denmark, reducing the numbers of municipalities and counties/regions. This was being negotiated with the political parties in the parliament in June 2004.

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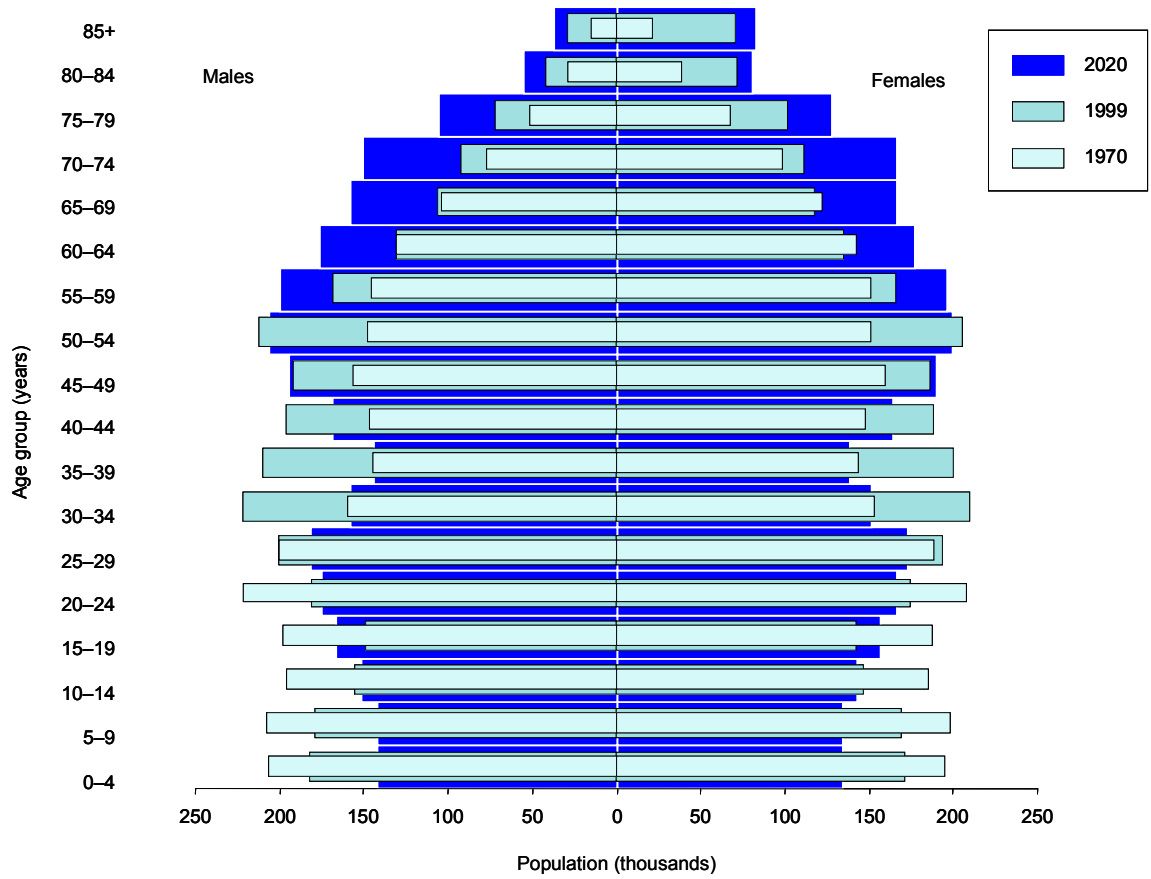
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Annexes

Annex. Age pyramid

Age pyramid for Denmark



Sources: WHO Regional Office for Europe (2004c) and United Nations (2002).

Annex. Selected mortality

Selected mortality in Denmark compared with Eur-A averages

Condition	SDR per 100 000		Excess mortality in Denmark (%)	Total deaths in Denmark (%)	Total deaths in Eur-A (%)
	Denmark (1999)	Eur-A average (2001)			
Selected noncommunicable conditions	625.8	519.5	20.5	79.4	79.9
<i>Cardiovascular diseases</i>	265.3	246.3	7.7	33.7	37.9
Ischaemic heart disease	122.5	97.3	25.9	15.5	15.0
Cerebrovascular disease	61.4	62.0	-0.9	7.8	9.5
Diseases of pulmonary circulation and other heart disease	51.6	57.0	-9.4	6.5	8.8
<i>Malignant neoplasms</i>	225.0	181.8	23.7	28.6	28.0
Trachea/bronchus/lung	51.6	37.0	39.5	6.5	5.7
Female breast	36.8	27.1	35.7	4.7	4.2
Colon/rectal/anal	28.9	20.7	39.5	3.7	3.2
Prostate	33.1	25.0	32.4	4.2	3.8
<i>Respiratory diseases</i>	71.8	47.7	50.3	9.1	7.3
Chronic lower respiratory diseases	49.0	20.0	145.0	6.2	3.1
Pneumonia	16.6	16.5	0.7	2.1	2.5
<i>Digestive diseases</i>	41.3	30.7	34.2	5.2	4.7
Chronic liver disease and cirrhosis	14.8	12.8	16.0	1.9	2.0
<i>Neuropsychiatric disorders</i>	22.6	13.0	73.8	2.9	2.0
					0.0
Selected communicable conditions	6.5	8.1	-19.5	0.8	1.2
HIV/AIDS	0.8	0.9	-10.1	0.1	0.1
External causes	52.0	39.5	31.6	6.6	6.1
<i>Selected unintentional causes</i>	25.6	16.1	59.7	3.3	2.5
Motor vehicle traffic injuries	9.2	10.0	-7.7	1.2	1.5
Falls	16.4	6.1	170.5	2.1	0.9
<i>Selected intentional causes</i>	14.3	11.4	25.7	1.8	1.8
Self-inflicted (suicide)	13.3	10.5	27.0	1.7	1.6
Violence (homicide)	1.1	1.0	11.5	0.1	0.1
Ill-defined conditions	31.9	21.3	50.0	4.1	3.3
All causes	788.0	650.1	21.2	100.0	100.0

Annex. Mortality data

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

Causes of death	Sex	Denmark (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	Both	18.9	-8.2	17.0	-20.4	12.9	28.2
	M	21.9	-10.2	19.2	-20.3	12.6	32.2
	F	15.7	-5.1	14.8	-20.4	4.9	24.1
<i>Cardiovascular diseases</i>	M	0.2	-83.3	0.9	-26.0		1.8
	F	0.5	-33.3	1.0	-21.8		1.6
Ischaemic heart disease	M				-75.0		0.6
	F				-66.7		0.2
Cerebrovascular disease	M	0.2	-20.0	0.2	-44.4		0.4
	F	0.2		0.2	-39.4		0.7
Malignant neoplasms	M	3.5	-22.9	3.3	-15.4		5.1
	F	2.5	-39.8	2.7	-10.4		4.9
Lung cancer	M				-80.0		0.2
	F						0.3
Breast cancer	F				-100.0		0.1
<i>Respiratory diseases</i>	M	0.2	-52.2	0.8	-13.7		3.0
	F	0.4	-8.3	0.7	-11.9		2.4
<i>Digestive diseases</i>	M	0.2		0.3	-21.6		0.7
	F			0.2	-25.0		2.6
<i>External causes</i>	M	9.2	-0.1	6.4	-30.7	3.5	20.3
	F	3.4	-13.6	4.0	-24.3		7.0
Motor vehicle traffic injuries	M	5.1	37.3	2.7	-30.3		8.0
	F	1.6	-42.6	1.8	-29.3		4.1
Suicide	M	0.7	172.0	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 Denmark and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Denmark (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	All	53.0	2.1	53.1	-13.2	37.4	69.7
	M	80.0	8.3	77.8	-13.0	59.4	110.2
	F	25.2	-13.6	27.7	-13.2	13.9	34.8
<i>Cardiovascular diseases</i>	M	3.6	124.2	3.3	-12.1		5.7
	F	2.4	-14.9	1.8	-13.1		2.9
Ischaemic heart disease	M			0.3	-15.0		1.6
	F			0.1	-7.7		0.7
Cerebrovascular disease	M	1.3	15.6	0.7	-13.6		1.4
	F	0.3		0.4	-24.1		1.4
Malignant neoplasms	M	8.4	43.9	5.4	-7.9		15.5
	F	4.7	2.6	3.7	-7.9		7.0
Lung cancer	M			0.1	-50.0		0.3
	F			0.0	-33.3		0.3
Breast cancer	F	0.3		0.1	-16.7		0.3
<i>Respiratory diseases</i>	M	0.6	110.0	1.1	-25.7		4.5
	F			0.8	-18.8		2.0
<i>Digestive diseases</i>	M	0.9	61.4	0.5	-28.8		1.2
	F			0.3	-30.4		1.1
<i>External causes</i>	M	55.0	-7.8	54.9	-12.0	33.0	96.5
	F	11.2	-16.2	14.3	-14.8	6.9	23.5
Motor vehicle traffic injuries	M	30.3	-13.1	30.2	-9.3	14.9	71.1
	F	7.2	-5.9	8.1	-10.7	2.6	14.3
Suicide	M	12.2	-5.4	11.2	-11.5		36.7
	F	2.1	-5.8	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 Denmark and Eur-A:
SDR per 100 000 population and percentage changes from 1995 to latest available year

Causes of death	Sex	Denmark (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	All	406.6	- 8.4	315.4	- 13.1	218.8	449.7
	M	490.3	- 8.9	425.4	- 14.3	276.0	661.7
	F	322.5	- 8.1	208.4	- 11.0	128.0	322.5
<i>Cardiovascular diseases</i>	M	121.2	- 13.6	110.6	- 20.8	72.2	225.0
	F	46.3	- 15.9	38.2	- 21.3	23.4	74.7
Ischaemic heart disease	M	58.7	- 31.9	59.8	- 24.6	35.2	108.6
	F	15.2	- 41.6	13.6	- 28.0	5.4	28.6
Cerebrovascular disease	M	25.6	18.3	17.4	- 22.0	7.5	56.6
	F	14.8	12.4	10.5	- 20.2	5.2	27.0
Malignant neoplasms	M	149.9	- 3.1	148.8	- 9.8	91.0	217.2
	F	155.2	- 8.4	102.4	- 7.7	76.1	155.2
Lung cancer	M	38.4	- 16.5	43.9	- 12.8	18.5	71.0
	F	32.8	- 8.1	13.3	11.7	6.9	32.8
Breast cancer	F	35.3	- 19.8	27.5	- 14.3	14.7	37.2
<i>Respiratory diseases</i>	M	18.3	- 13.5	15.8	- 19.2	8.5	29.7
	F	22.6	- 3.4	7.9	- 12.3	3.7	22.6
<i>Digestive diseases</i>	M	43.0	- 1.2	31.8	- 9.6	3.1	67.0
	F	24.9	6.3	13.4	- 7.5	4.2	26.2
<i>External causes</i>	M	68.8	- 2.9	59.9	- 10.5	28.2	120.7
	F	27.7	- 6.4	17.8	- 10.6		33.1
Motor vehicle traffic injuries	M	13.0	16.3	15.8	- 7.8	6.5	34.0
	F	4.8	- 6.9	4.3	- 14.4		7.4
Suicide	M	26.6	- 9.9	21.2	- 9.0	6.6	56.4
	F	9.6	- 24.0	6.8	- 11.1		15.8

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

Causes of death	Sex	Denmark (1999)		Eur-A (2001)			
		Rate	Change (%)	Average	Change (%)	Minimum	Maximum
All causes	All	5041.6	- 8.8	4199.5	- 11.5	3714.4	6010.0
	M	6111.3	- 12.0	5328.5	- 13.2	4658.1	7580.8
	F	4339.8	- 5.7	3460.2	- 11.5	2937.7	5088.6
<i>Cardiovascular diseases</i>	M	2467.1	- 18.5	2232.9	- 23.4	1614.4	4272.2
	F	1685.4	- 14.7	1613.4	- 21.7	1027.5	3314.3
Ischaemic heart disease	M	1249.9	- 24.0	948.2	- 20.3	517.5	1702.7
	F	720.3	- 22.5	539.5	- 17.4	244.7	1084.7
Cerebrovascular disease	M	496.9	- 17.6	536.2	- 35.9	324.8	1302.3
	F	428.0	- 12.3	457.0	- 32.6	170.4	1018.5
Malignant neoplasms	M	1617.9	- 6.9	1482.9	- 12.1	1175.1	1900.6
	F	1088.5	1.4	749.8	- 9.4	589.1	1088.5
Lung cancer	M	417.5	- 9.8	371.8	- 22.0	196.0	615.4
	F	213.2	9.0	81.7	15.6	13.8	213.2
Breast cancer	F	164.1	- 6.6	113.9	- 10.1	83.3	164.1
<i>Respiratory diseases</i>	M	692.6	- 7.8	545.9	- 13.6	371.8	1115.6
	F	478.5	7.4	266.5	- 13.9	157.9	716.3
<i>Digestive diseases</i>	M	228.2	- 7.1	205.0	- 10.5	117.8	342.9
	F	196.0	2.3	143.3	- 20.3	77.8	196.0
<i>External causes</i>	M	219.5	- 12.1	152.6	2.0	80.6	282.8
	F	157.3	- 11.8	91.0	0.7	41.3	157.3
Motor vehicle traffic injuries	M	13.5	- 50.0	20.4	- 15.3	8.7	46.0
	F	6.6	- 60.5	7.9	5.4	0.0	15.5
Suicide	M	38.8	- 20.2	34.3	- 13.5	8.8	86.1
	F	12.1	- 49.8	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 (2004b) and WHO Regional Office for Europe (2004c) 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 (2004c) and OECD (2004b) 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.

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

	<i>ICD-10 code</i>
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.

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).