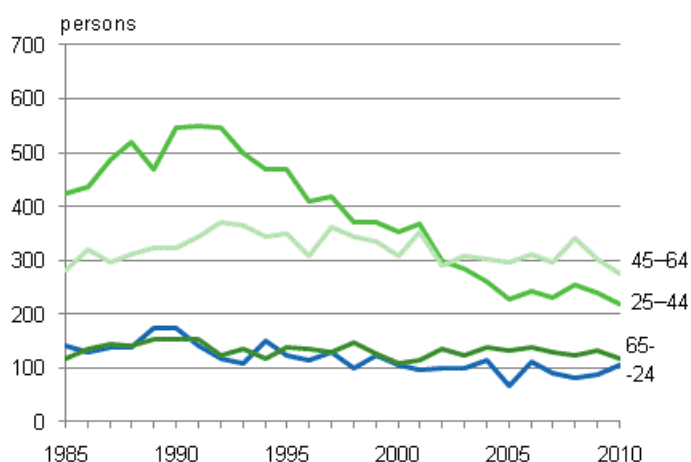


# Causes of death 2010

## The number of suicides lowest in 40 years

In 2010 the number of suicides was eight per cent lower than in the previous year. The number of suicides has last been lower in 1967. A total of 954 persons, 718 men and 236 women, committed suicide in 2010. The highest numbers of suicides are committed by people of working age and in these age groups suicides have diminished considerably in recent years. Men commit suicides significantly more often than women: two thirds of the suicides are committed by men.

### Suicides by age in 1985-2010, men



Altogether 50,910 persons died in 2010. The number was two per cent higher than in the previous year and the highest in 17 years. The longer life expectancy can be seen in the change in the age distribution of deaths: the mortality rate among those aged 80 or over increased from the year before, for younger age groups than this the mortality rate remained more or less unchanged. Increased mortality of aged people is visible in causes of death primarily as the growing number of deaths from dementia and diseases of the circulatory system.

Forty per cent of deaths in 2010 were caused by diseases of the circulatory system. The second highest number of deaths, 22 per cent, was caused by neoplasms. Dementia (inclusive of Alzheimer's disease) caused 12 per cent of deaths in 2010.

In 2010, 1,962 persons died from alcohol-related diseases and alcohol poisonings, that is, five per cent fewer than in the previous year. Seventy-seven per cent of those dying from alcohol-related causes were aged under 65. Deaths from alcohol-related causes follow fairly regularly changes in total alcohol consumption: consumption of alcohol went down by two per cent from the previous year.

### Leading causes of death, whole population 2009 and 2010

	2009			2010		
	Total	Males	Females	Total	Males	Females
Diseases of the circulatory system	20 235	9 744	10 491	20 475	9 900	10 575
Neoplasms	11 310	5 953	5 357	11 879	6 239	5 640
Dementia, Alzheimer's disease	5 489	1 661	3 828	6 057	1 890	4 167
Accidents	2 433	1 597	836	2 466	1 575	891
Disease of the respiratory system	2 210	1 333	877	1 988	1 221	767
Alcohol related diseases and accidental poisoning by alcohol	2 065	1 651	414	1 962	1 536	426
Suicides	1 034	761	273	954	718	236
Other causes of death	5 128	2 452	2 676	5 129	2 468	2 661
Deaths total	49 904	25 152	24 752	50 910	25 547	25 363

In Finland statistics on causes of death have been compiled in their present form for 75 years. To honour the anniversary, Statistics Finland has collected time series on causes of death among Finnish residents starting from 1936. During that time, life expectancy has lengthened considerably: the life expectancy of a Finnish man in the 1930s was around 53 years and that of a woman 59 years. The life expectancy is 76.7 years for a boy born in 2010 and 83.2 years for a girl. This is visible in mortality for example in that 11 per cent of those dying in 1936 were aged 85 or over, while in 2010 as many as nearly one half. Causes of death among the Finnish population have changed similarly as in other industrialised countries - as the standard of living has improved and the medical science has advanced, infectious diseases have diminished, but at the same time, diseases of the circulatory system and neoplasms have increased their share in all causes of death.

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## *Foreword*

This publication contains data on causes of death in 2010 and some data on the development of mortality in 1936 to 2010. Time series data on causes of death are available as database tables on Statistics Finland's web pages.

The publication was edited by Marja-Liisa Helminen, Helena Korpi and Irmeli Penttilä. Ulla Arkkio, Jari Hellanto, Kati Hietala, Mauno Huohvanainen, Raija Maljanen and Terttu Turpeinen contributed to the publication and compilation of the statistics. Medical experts were forensic pathologist Sari Papinaho and professor Erkki Vuori. Jouni Asp and Ismo Jauhiainen were in charge of IT issues.

# 1. Changes in causes of death 1936 to 2010

In 1936 the number of deaths was 49,124 and in 2010 of a similar size, i.e. 50,910. The number of population in 1936 was considerably lower than now - the population of Finland was 3.6 million, while at the moment it is about 5.4 million. The mortality rate was thus significantly higher as people died younger and child mortality was still quite high.

Figure 1 contains a few causes of death in 1936 and the corresponding figures from 2010. It should be noted that the classifications of causes of death have changed several times over the years and therefore not all cause of death categories can be compared with each other.<sup>1)</sup> Figure 1 contains selected cause of death categories that can be compared indicatively.

**Figure 1. Mortality from certain causes of death per 100,000 persons of the mean population in 1936 and 2010**



The biggest change in causes of death of the population during 75 years has been the extinction of tuberculosis. At the end of the 1930s, tuberculosis caused as many as 16 per cent of all deaths. In the 2000s, the share of all infectious diseases (tuberculosis being one of them) in all deaths was just close on one per cent. Deaths from diseases of the circulatory system have increased slightly over the same period, from 350 to 380 deaths per 100,000 population. Mortality from neoplasms has increased from around 110 to 220 per 100,000 population. Mortality from diseases of the digestive system has remained more or less at the same level over the decades.

In 1936, as many as 4,500 children died under the age of one, while in 2010 the figure was only 138. The level of mortality from accidents and suicides has not differed significantly from the present one (see also Sections 4, 5 and 6 later in this publication).

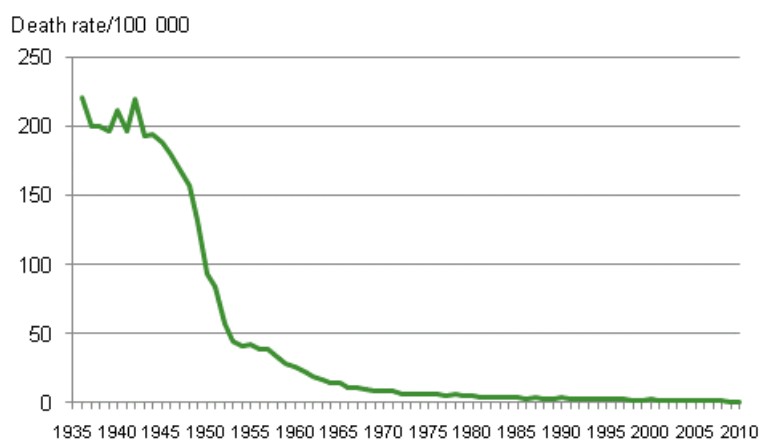
1) Statistics on causes of death have been produced since 1749. However, the classifications of causes of death have varied so much over the years that it is not possible to produce reliable time series over this whole time period. A new nomenclature for causes of death was introduced in 1936, and the establishment of causes of death was transferred from parishes to physicians. Because of this renewal, the time series of this publication start from 1936. However, it is not possible to produce a time series from 1936 onwards on some groups of causes of death, because the classifications of diseases have also changed after this. Therefore, data are given on some causes of death starting from 1969. Today all causes of death are reported by a physician, but in 1936 one third of causes of death were based on accounts by relatives or other persons. For this reason, the figures of that time should be taken more as indicative. Data on causes of death on earlier years are available in the statistical publications on Causes of Death, which are digitised and transferred to the Doria database of the National Archive (<http://www.doria.fi/handle/10024/67158>).

## 2. Mortality from diseases in 1936 to 2010

### 2.1 Mortality from tuberculosis, influenza and other infectious diseases in 1936 to 2010

In the 1930s and 1940s, infectious diseases were the most significant cause of death category: around one quarter of all deaths resulted from them in 1936. A considerable number of deaths from infectious diseases, around 60 to 70 per cent, was caused by tuberculosis (Figure 2). The most common type of tuberculosis was pulmonary tuberculosis or consumption. Other big infectious disease groups were whooping cough, diphtheria and influenza, which in 1936 was included in infectious diseases.

**Figure 2. Tuberculosis mortality in 1936 to 2010 per 100,000 persons of the mean population**

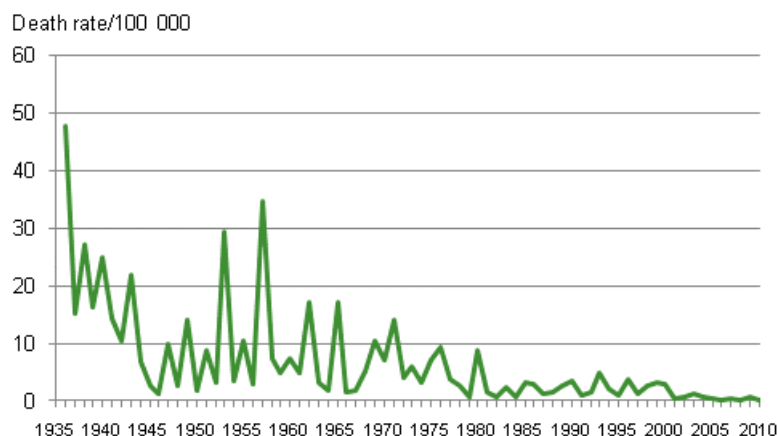


Tuberculosis mortality was high before the Second World War and during it. Even if the food and housing situation was poor in the 1940s during the war, the tuberculosis situation did not actually get worse. On the other hand, the situation deteriorated among young and middle-aged men. This was evidently connected to the difficult conditions on the war front, such as overcrowded housing. Tuberculosis caused exceptionally many deaths in 1942, when the war was still ongoing. The high number was possibly also a result of the difficult food situation and partial interruption of sanatorium care when the Continuation War broke out in 1941.

After the war, tuberculosis mortality started to abate from 1945 onwards. This was an outcome of protective vaccination and the antibiotics introduced to treat the disease. Difficulties in the war and depression time eased off, and tuberculosis mortality diminished considerably. The standard of living also rose rapidly after the war, and the quality of food and housing improved and new more hygienic ways of life were adopted. After 1967 tuberculosis mortality has been under ten deaths per 100,000 population per year. In 2010, 48 persons died from tuberculosis.

Influenza was also a significant cause of death in past years (Figure 3). A wave of influenza was experienced in 1936, when 1,725 persons died from influenza.

**Figure 3. Influenza mortality in 1936 to 2010 per 100,000 persons of the mean population**



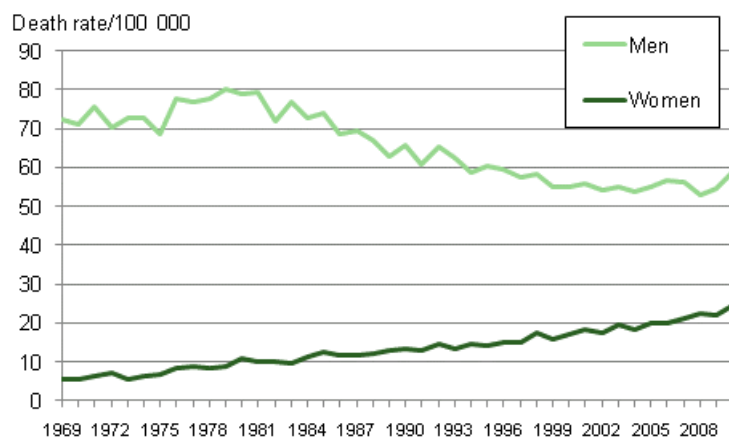
Between 1956 and 1958 the "Asian" influenza raged in Finland, resulting in 1,800 deaths. From 1968 to 1971 the influenza came from Hong Kong, causing the death of 1,000 persons in those years. Between 1975 and 1976 the "Muscovite" claimed the life of nearly 800 persons. After that, influenza has caused at its highest 250 deaths per year. In 2010, nine persons died from influenza.

## 2.2 Mortality from lung cancer in 1969 to 2010<sup>1)</sup>

Mortality from lung cancer among women has increased during the last four decades, but among men it started to decline already in the 1980s.

Most European countries have developed in the same way as Finland; male mortality from lung cancer is falling and the female one is increasing. Smoking is the most significant risk factor related to lung cancer. As smoking by women has grown, female lung cancer mortality has also started to rise.

**Figure 4. Lung cancer mortality in 1969 to 2010 per 100,000 persons of the mean population**



## 2.3 Mortality from breast cancer in 1936 to 2010

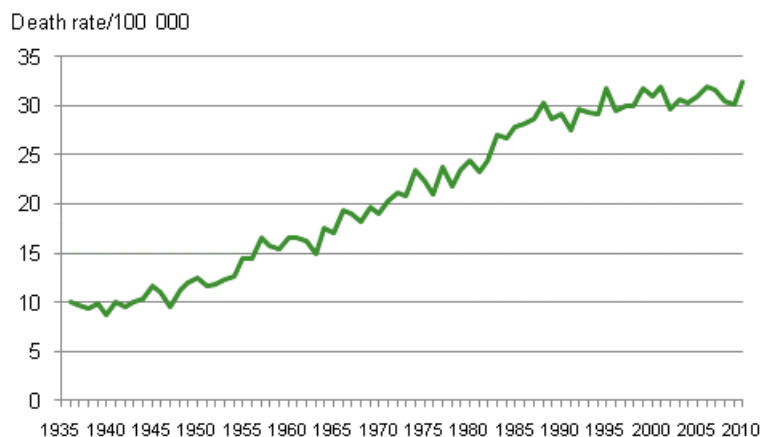
Mortality from breast cancer has been growing steadily from the 1930s to 1990s, but the growth seems to be slowing down slightly during the 2000s. Nevertheless, breast cancer is the most common type of cancer among women.

1) Comparable data on mortality from lung cancer are available only starting from 1969.



Mortality from breast cancer has started to decline in many European countries. In Finland, breast cancer mortality among working-age women has fallen during the last twenty years by around one fifth. The age-standardised figures also show that mortality from breast cancer is falling. It has been found that screening has diminished the mortality rate from breast cancer particularly among women aged 50 or over.

**Figure 5. Breast cancer mortality in 1936 to 2010 per 100,000 women of the mean population**

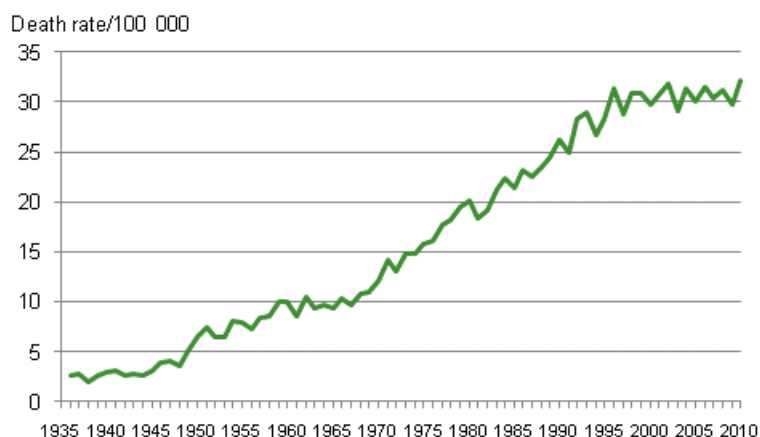


Alongside alcohol-related causes, breast cancer is the most common cause of death among women of working age. Breast cancer was a slightly more common cause of death among them in 2010 than alcohol-related causes, but the difference between these two has not been great in 2010 or in any previous year either. Breast cancer mortality among working-age women was in 2010 slightly higher than in 2009 and deaths from alcohol-related causes went down from the previous year. In 2010 the number of deaths from breast cancer was 886, that is, 32 deaths per 100,000 women.

## 2.4 Mortality from prostate cancer in 1936 to 2010

The graph for mortality from prostate cancer follows almost the same shape as that of breast cancer mortality. However, it has lagged somewhat behind the trend of breast cancer mortality. When all cancers are taken into consideration, the highest number of men get prostate cancer but most commonly men die from lung cancer. External factors, such as the environment and manner of living have the most effect on prostate cancer, similarly as on other cancers.

**Figure 6. Prostate cancer mortality in 1936 to 2010 per 100,000 men of the mean population**



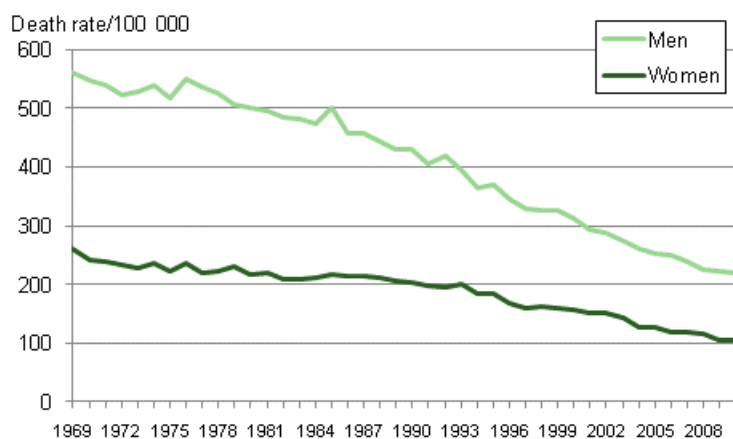
Prostate cancer mortality was in 2010 on level with women's breast cancer mortality, that is, 32 deaths per 100,000 men. In 2010 the number of deaths from prostate cancer was 845, while in 2009 it was 778.

## 2.5 Mortality from ischaemic heart disease in 1969 to 2010<sup>2)</sup>

Diseases of the circulatory system, such as ischaemic heart disease, are nowadays the most common causes of death in Finland. Ischaemic heart disease causes the death of every fifth person.

Figure 7 shows ischaemic heart disease mortality age-standardised. In age standardisation the effect of the age structure of the population and its changes are eliminated. In this case it is seen at which level mortality from ischaemic heart disease would be if the age structure of the population remained unchanged during the whole reference period. When the ageing of the population is eliminated from the figures by age standardisation, it can be seen that ischaemic heart disease mortality has fallen evenly over the last 40 years.

**Figure 7. Age-standardised ischaemic heart disease mortality in 1969 to 2010 per 100,000 persons of the mean population**



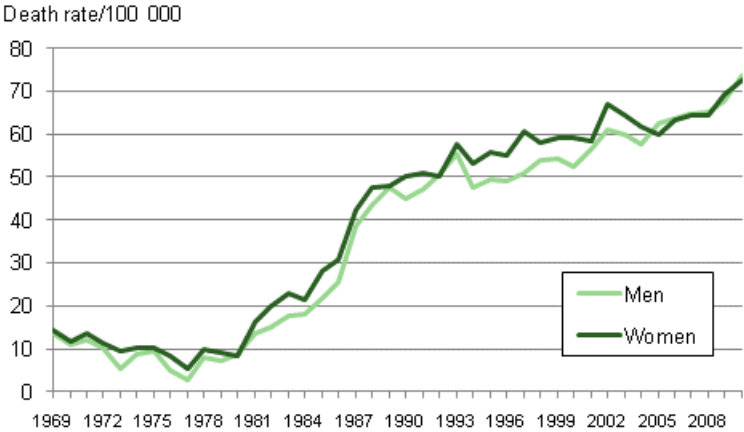
The decrease in ischaemic heart disease mortality has been significant particularly among middle-aged people during the last decades. In the 1960s, mortality among working-age men from this disease was still one of the highest in the world, but after that mortality has been going down noticeably. During the reference period, mortality among working-age men from ischaemic heart disease has fallen by as much as 81 per cent.

## 2.6 Deaths from dementia and Alzheimer's disease in 1969 to 2010

In 2010, nearly every fifth death at the age of 80 or over was caused by dementia or Alzheimer's disease. The number has more than doubled over the past 20 years. The growth is partly caused by improved diagnostics, but also clearly by the ageing of the population.

2) Comparable data on mortality from ischaemic heart disease are available only starting from 1969.

**Figure 8. Age-standardised dementia mortality (incl. Alzheimer's disease) in 1969 to 2010 per 100,000 persons of the mean population**

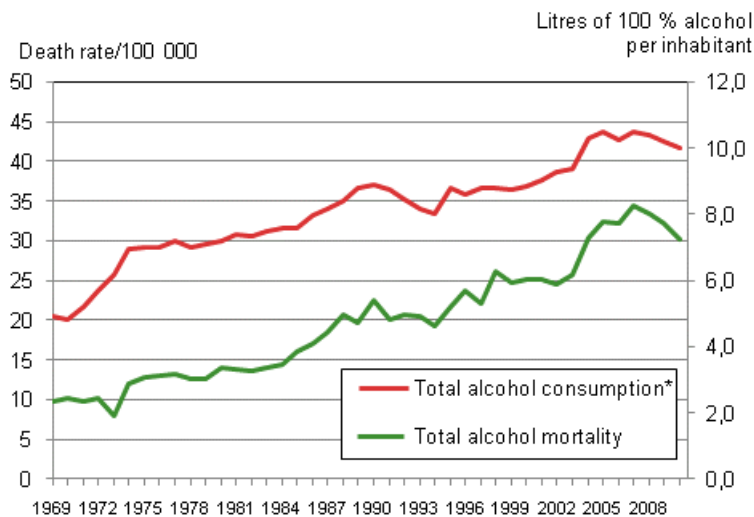


Because dementia becomes more common steeply with age, along with the lengthening of life expectancy, more people get dementia and die as a result of it. This concerns particularly women, because women live longer than men do, on average. The number of deaths from dementia and Alzheimer's disease was 6,057 in 2010. Sixty-nine per cent of them were women. Around two-thirds of deaths were caused by Alzheimer's disease.

### 3. Alcohol-related causes of death in 1969 to 2010<sup>1)</sup>

Alcohol-related causes have been for several years among the most common causes of death for both men and women, and the figures are high for the whole population as well. Alcohol-related deaths include both alcohol-related diseases and accidental poisoning by alcohol.

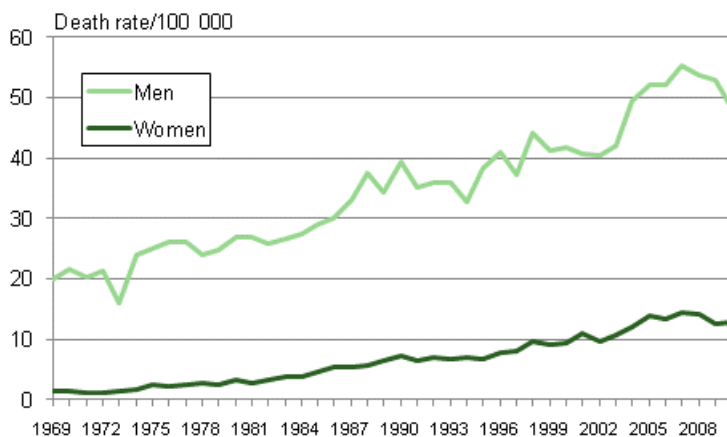
**Figure 9a. Age-standardised mortality from alcohol-related diseases and accidental poisoning by alcohol and total consumption of alcohol in 1969 to 2010**



\*Source: National Institute for Health and Welfare; Valvira 2011.

The most significant reason for high alcohol mortality is increased consumption of alcohol over the past decades. Changes in alcohol-related mortality follow fairly regularly the graph for total consumption of alcoholic beverages. As the alcohol tax was lowered in 2004, consumption of alcohol increased distinctly. At the same time, alcohol deaths increased considerably.

**Figure 9b. Age-standardised mortality from alcohol-related diseases and accidental poisoning by alcohol in 1969 to 2010 per 100,000 persons of the mean population**



Men die from alcohol-related causes clearly more often than women do. Male mortality also follows more closely changes in total consumption of alcohol. However, female mortality has risen evenly along with men over several decades.

1) Comparable data on alcohol-related causes of death are available only starting from 1969.

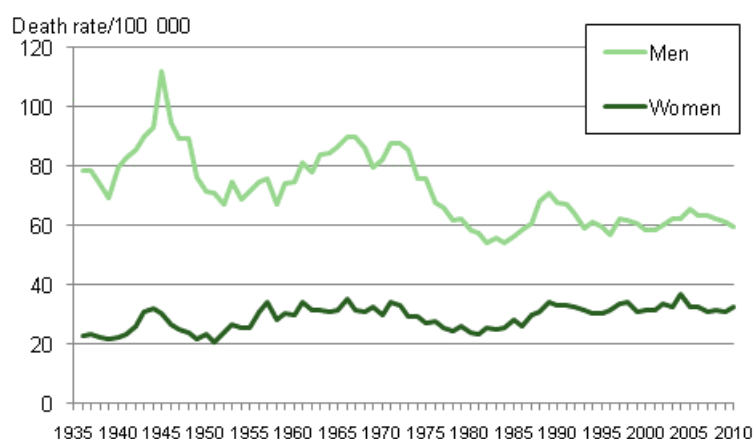
In 2010, 1,962 persons died from alcohol-related causes, 1,556 of whom from alcohol-related diseases and 406 from alcohol poisonings. Seventy-five per cent of those dying from alcohol poisonings were men. Most of those dying were at working age. The number of deaths from alcohol-related causes has been falling since 2009. The fall is mainly caused by decreasing alcohol deaths of men.

Alcohol can also be a contributing factor to death. The share of intoxication in accidents will be discussed in the following section.

## 4. Accident mortality in 1936 to 2010

Fatal accidents include such as fatal traffic accidents, fatal falls and stumbles, drownings, fatal fires and alcohol and drug poisonings. Accident mortality has been from 1936 to 2010 considerably higher for men than for women, although the highs and lows have occurred at the same time for both genders. Accident mortality among young people is more general than average for the whole population.

**Figure 10. Accident mortality in 1936 to 2010 per 100,000 persons of the mean population**



There were many fatal accidents during the war years regardless of the fact that the mortality rate directly caused by the war is not included in the figures presented. For example, poisoning deaths increased. The statistics for 1941 to 1945 indicate that this was the result of "on the one hand, carbon monoxide poisonings caused by charcoal and wood-gas generator cars, on the other hand, use of wood spirit and other poisonous liquids for intoxicating purposes". Accident mortality was at its highest immediately after the war in 1945. The number of deaths by drowning and from fractures and contusions was particularly high and fatal accidents of men especially increased. One reason is assumed to be the traumatic experiences of men returning from the war. Post-traumatic stress can have caused risen accident-proneness and increased use of alcohol, which could also have raised the number of accidents. However, there are no extensive research data on the matter in Finland.

Accident mortality was again slightly higher in the 1960s, but started to fall in the late 1970s. In the 1960s and early 1970s, 40 per cent of fatal accidents were traffic accidents. The number of fatal accidents started to grow again in 1986, specifically due to the growing number of fatal traffic accidents especially in younger age groups. Accident mortality has remained more or less unchanged since the recession years of the 1990s. More information on persons killed in road traffic accidents from 1931 to 2006 is available in [the time series published on Statistics Finland's web pages](#) in 2007.

A total of 2,856 persons died in accidents in 2010, of whom 1,869 were men and 987 women. Accidents caused around six per cent of all deaths. In 2010 the most common accident leading to death among both men and women was a stumble or fall, which caused the death of 1,185 persons. Over one third of men's fatal accidents and over one half of women's were caused by stumbles and falls. In 2010, 299 persons died in transportation accidents, three fourths of whom were men. Among men more than one in ten (12.0%) fatal accidents took place in traffic (transportation), among women slightly fewer (7.6% of women's fatal accidents).

Finland's accident mortality is the highest among EU countries after Latvia, Estonia and Lithuania. Particularly fatal accidents at home and leisure are in Finland higher relative to the population size than elsewhere in Western Europe. However, there are often problems involved in comparing national statistics, which are due to differences in classification practices and establishment of causes of death. Not all countries record fatal accidents as accurately as Finland, which may appear as lower mortality rates for those countries. According to the latest data, the share of people killed in traffic in Finland is the lowest

in the EU, five persons per 100,000 population. Traffic mortality is of the same size or lower in Sweden, Norway and Germany, for example.

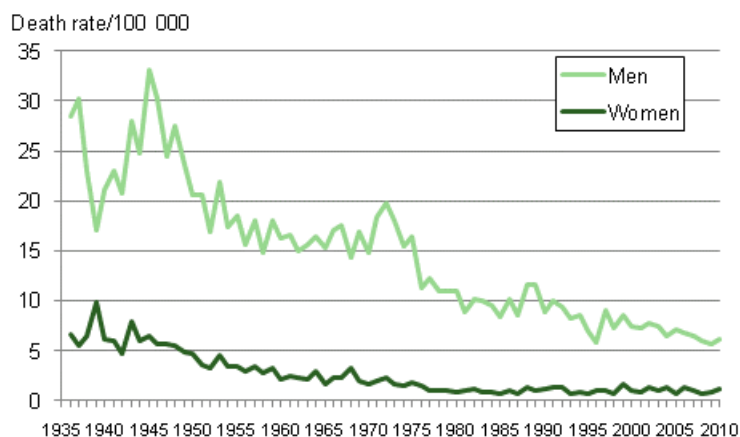
### ***Contribution of alcohol, drugs and intoxication to fatal accidents***

In 2010, 20 per cent, or 442 persons (excl. actual alcohol poisonings) of those dying accidentally were intoxicated. In fatal accidents intoxication means that the doctor signing the death certificate judged that alcohol had contributed to the death. The figures exclude alcohol and drug poisonings where alcohol or drugs have not directly caused the death. In heat of sauna deaths 28 out of 45 persons were intoxicated at death. In fires and among those dying of cold less than one half were intoxicated, in drowning accidents over one half. Slightly more than every fifth road traffic fatality occurred while intoxicated.

### ***Drownings and deaths in water traffic accidents in 1936 to 2010***

Drownings and water traffic accidents have been falling from the 1930s to this day.<sup>1)</sup> As said earlier, in the war years and right after it, fatal accidents increased and the number of drownings was particularly high in 1945. The number of drownings has been around 200 in recent years. In the 1930s and 1940s, the number varied between 500 and 700.

**Figure 11. Drownings and water traffic accidents, mortality in 1936 to 2010 per 100,000 persons of the mean population**



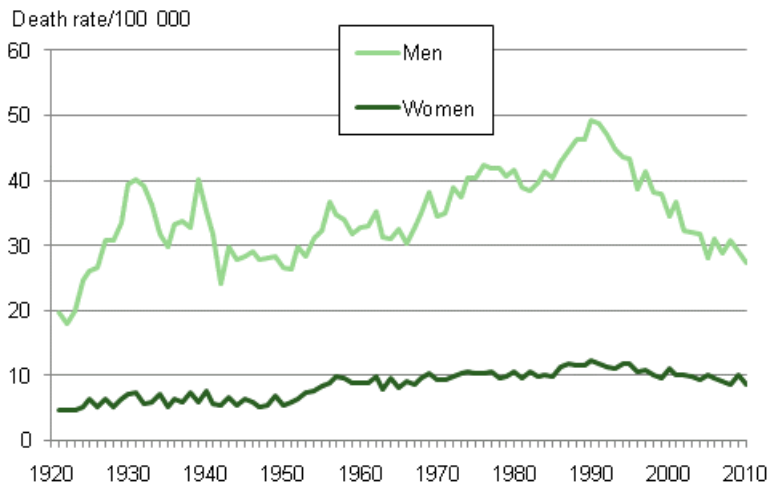
In Finland alcohol is very often connected to drowning accidents. Slightly over one half of drowning cases occur while intoxicated, even more in summer months.

1) The figure includes water traffic accidents in addition to drownings (due to changed classifications). Water traffic accidents include both drownings and other deaths in water traffic. However, most of water traffic accidents are drownings.

## 5. Suicide mortality in 1921 to 2010

The population statistics contain information on suicides concerning even earlier years than many other causes of death: the times series starts here as early as 1921. Men's suicide mortality has always been much higher than women's. There is much variation in male suicide mortality, but among women it has remained more or less unchanged, except for the doubling of women's suicide mortality in the 1950s.

**Figure 12. Suicide mortality in 1921 to 2010 per 100,000 persons of the mean population**



Suicide mortality has been seen to decline during socially difficult times, during the reference period in the war time and at the time of the recession in the 1990s. In turn, suicide mortality grew during the economic boom in the 1980s, as did accident mortality discussed above. In Finland suicide mortality has been almost double that of the EU average in recent years.

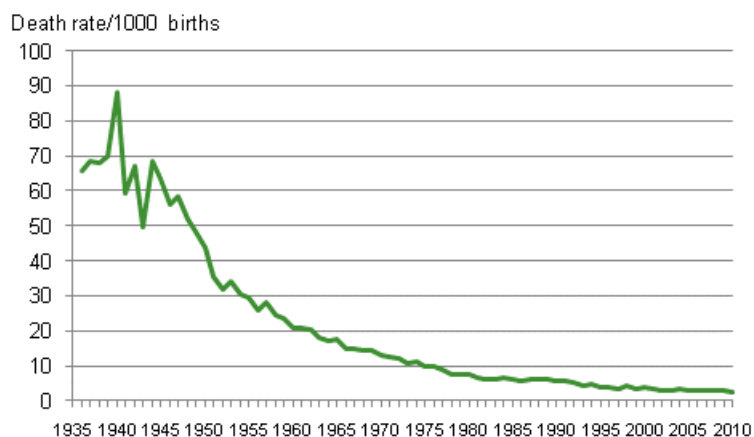
In 2010, 954 persons committed suicide. Three out of four of them, or 718 were men. The number of suicides has last been lower than this in the 1960s. The figure was at its highest in 1990, when there were a total of 1,520 suicides in Finland.



## 6. Infant mortality in 1936 to 2010

Finland's infant mortality is nowadays one of the lowest in the whole world. Figure 13 shows infant mortality, that is, mortality among children aged under one. Towards the end of the 1930s, nearly every tenth child born died under the age of one. In 1936, 40 per cent of children dying under the age of one died from birth injuries, developmental defects or innate weakness. Many children also died from pneumonia, diseases and violence. Nowadays only a few per mille die at the age of under one, and the most common cause of death for children aged under one is inborn malformation. Infectious diseases are very rare causes of death among under one-year-olds.

**Figure 13. Infant mortality in 1936 to 2010 per 1,000 births**



In 2010, 138 children (infants) died under the age of one. Fifty per cent of children dying under the age of one died during their first week of life and two thirds during the first four weeks of life. Perinatal mortality (deaths during the first week and stillborn) was 4.1 per thousand births. The figure has been falling from the beginning of the 1980s to nearly one half. In 2010 there were 17 cot deaths.

Mortality of children aged 1 to 14 has more than halved in the last twenty years: in 1989 the number of deaths among children aged 1 to 14 was 197 and in 2010 just 92. This corresponds to around 11 deaths per 100,000 population. The lower number of deaths among children aged 1 to 14 is primarily caused by the decrease in accident mortality.

Maternal mortality started to fall already in the 1970s, after which around one to seven mothers have died per year. There were three maternal deaths in 2010.

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## Appendix tables

**Appendix table 1a. Deaths by underlying cause of death (54-group classification) and by age in 2010, both sexes**

Cause of death (54 classes)	Ages total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	50 910	230	10 508	40 172
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	47 209	202	8 436	38 571
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	436	4	70	362
01 Tuberculosis (A15-A19, B90, J65)	48	1	4	43
02 Human immunodeficiency virus (HIV) disease (B20-B24)	7	0	7	0
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	381	3	59	319
04-22 Neoplasms (C00-D48)	11 879	30	3 021	8 828
04-21 Malignant neoplasms (C00-C97)	11 579	28	2 993	8 558
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	192	0	79	113
05 Malignant neoplasm of oesophagus (C15)	254	0	79	175
06 Malignant neoplasm of stomach (C16)	489	0	138	351
07 Malignant neoplasm of colon (C18, C19)	759	0	149	610
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	377	0	84	293
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	429	1	104	324
10 Malignant neoplasm of pancreas (C25)	995	0	266	729
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	2 260	0	626	1 634
12 Malignant melanoma of skin (C43)	189	0	67	122
13 Malignant neoplasm of breast (C50)	886	0	347	539
14 Malignant neoplasm of cervix uteri (C53)	55	0	24	31
15 Malignant neoplasm of uterus (C54-C55)	189	0	35	154
16 Malignant neoplasm of ovary (C56)	362	0	118	244
17 Malignant neoplasm of prostate (C61)	845	0	81	764
18 Malignant neoplasm of kidney (C64)	353	1	89	263
19 Malignant neoplasm of bladder (C67)	252	0	35	217
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	1 069	6	214	849
21 Other malignant neoplasms	1 624	20	458	1 146
22 Other neoplasms (D00-D48)	300	2	28	270
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	606	16	185	405
23 Diabetes mellitus (E10-E14)	456	0	151	305
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	150	16	34	100
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	6 057	0	49	6 008
26 Other diseases of the nervous system and sense organs	1 280	7	266	1 007
27-30 Diseases of the circulatory system (I00-I425, I427-I99)	20 475	8	2 506	17 961
27 Ischaemic heart diseases (I20-I25)	11 767	0	1 317	10 450
28 Other heart diseases excl. rheumatic and alcohol-related (I30-I425, I427-I52)	2 030	4	423	1 603
29 Cerebrovascular diseases (I60-I69)	4 235	3	430	3 802
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	2 443	1	336	2 106
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	1 988	3	272	1 713
31 Influenza (J09-J11)	9	0	4	5
32 Pneumonia (J12-J18, J849)	448	1	79	368
33 Bronchitis and emphysema (J40-J44, J47)	1 098	0	133	965
34 Asthma (J45-J46)	88	0	12	76
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	345	2	44	299
36 Diseases of the digestive system excl. alcohol-related diseases	1 270	3	227	1 040

Cause of death (54 classes)	Ages total	0-14	15-64	65-
37 Diseases of the genitourinary system (N00-N99)	419	0	27	392
38 Congenital malformations (Q00-Q99)	150	49	70	31
39 Other diseases	544	79	118	347
40 Ill-defined and unknown causes of mortality (R96-R99)	143	3	100	40
41 Alcohol related diseases and accid. poisoning by alcohol	1 962	0	1 525	437
42-53 ACCIDENTS AND VIOLENCE (V01-X44, X46-Y89)	3 594	26	2 015	1 553
42-49 Accidents (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	2 466	23	1 079	1 364
42 Land traffic accidents	254	7	180	67
43 Other land transport accidents	37	2	22	13
44 Water transport accidents (V90-V94)	48	0	33	15
45 Others and unspecified transport accidents (V95-V99)	4	0	3	1
46 Accidental falls (W00-W19)	1 185	0	225	960
47 Accidental drownings (W65-W74)	147	8	88	51
48 Accidental poisonings excl. accidental poisonings by alcohol (X40-X44, X46-X49, Y10-Y15)	314	0	274	40
49 Other accidents and sequelae of accidents	477	6	254	217
50 Suicides (X60-X84, Y87.0)	954	1	792	161
51 Assault (X85-Y09, Y87.1)	102	0	94	8
52 Event of undetermined intent (Y16-Y34, Y87.2)	66	1	49	16
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	6	1	1	4
54 NO DEATH CERTIFICATE	107	2	57	48

**Appendix table 1b. Deaths by underlying cause of death (54-group classification) and by age in 2010, men**

Causes of death (54 classes)	Males			
	Total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	25 547	130	7 319	18 098
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	23 051	113	5 700	17 238
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	200	3	43	154
01 Tuberculosis (A15-A19, B90, J65)	22	1	4	17
02 Human immunodeficiency virus (HIV) disease (B20-B24)	5	0	5	0
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	173	2	34	137
04-22 Neoplasms (C00-D48)	6 239	15	1 663	4 561
04-21 Malignant neoplasms (C00-C97)	6 115	14	1 645	4 456
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	120	0	58	62
05 Malignant neoplasm of oesophagus (C15)	172	0	68	104
06 Malignant neoplasm of stomach (C16)	291	0	96	195
07 Malignant neoplasm of colon (C18, C19)	375	0	85	290
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	215	0	49	166
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	255	0	76	179
10 Malignant neoplasm of pancreas (C25)	498	0	158	340
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	1 588	0	449	1 139
12 Malignant melanoma of skin (C43)	118	0	47	71
13 Malignant neoplasm of breast (C50)	0	0	0	0
14 Malignant neoplasm of cervix uteri (C53)	0	0	0	0
15 Malignant neoplasm of uterus (C54-C55)	0	0	0	0
16 Malignant neoplasm of ovary (C56)	0	0	0	0
17 Malignant neoplasm of prostate (C61)	845	0	81	764
18 Malignant neoplasm of kidney (C64)	197	1	63	133
19 Malignant neoplasm of bladder (C67)	184	0	28	156
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	546	3	134	409
21 Other malignant neoplasms	711	10	253	448
22 Other neoplasms (D00-D48)	124	1	18	105
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	329	9	124	196
23 Diabetes mellitus (E10-E14)	243	0	102	141
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	86	9	22	55
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	1 890	0	29	1 861
26 Other diseases of the nervous system and sense organs	622	3	145	474
27-30 Diseases of the circulatory system (I00-I425, I427-I99)	9 900	6	1 992	7 902
27 Ischaemic heart diseases (I20-I25)	6 168	0	1 131	5 037
28 Other heart diseases excl. rheumatic and alcohol-related (I30-I425, I427-I52)	946	3	334	609
29 Cerebrovascular diseases (I60-I69)	1 702	2	283	1 417
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	1 084	1	244	839
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	1 221	2	173	1 046
31 Influenza (J09-J11)	3	0	2	1
32 Pneumonia (J12-J18, J849)	220	1	50	169
33 Bronchitis and emphysema (J40-J44, J47)	770	0	86	684
34 Asthma (J45-J46)	25	0	4	21
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	203	1	31	171
36 Diseases of the digestive system excl. alcohol-related diseases	571	1	152	418
37 Diseases of the genitourinary system (N00-N99)	164	0	14	150
38 Congenital malformations (Q00-Q99)	70	25	36	9

Causes of death (54 classes)	Males			
	Total	0-14	15-64	65-
39 Other diseases	215	48	56	111
40 Ill-defined and unknown causes of mortality (R96-R99)	94	1	71	22
41 Alcohol related diseases and accid. poisoning by alcohol	1 536	0	1 202	334
42-53 ACCIDENTS AND VIOLENCE (V01-X44, X46-Y89)	2 430	16	1 581	833
42-49 Accidents (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	1 575	13	865	697
42 Land traffic accidents	187	2	141	44
43 Other land transport accidents	30	1	20	9
44 Water transport accidents (V90-V94)	47	0	32	15
45 Others and unspecified transport accidents (V95-V99)	3	0	3	0
46 Accidental falls (W00-W19)	628	0	189	439
47 Accidental drownings (W65-W74)	117	7	70	40
48 Accidental poisonings excl. accidental poisonings by alcohol (X40-X44, X46-X49, Y10-Y15)	230	0	210	20
49 Other accidents and sequelae of accidents	333	3	200	130
50 Suicides (X60-X84, Y87.0)	718	1	600	117
51 Assault (X85-Y09, Y87.1)	80	0	74	6
52 Event of undetermined intent (Y16-Y34, Y87.2)	55	1	42	12
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	2	1	0	1
54 NO DEATH CERTIFICATE	66	1	38	27

**Appendix table 1c. Deaths by underlying cause of death (54-group classification) and by age in 2010, women**

Cause of death (54 classes)	Females			
	Age	0 - 14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	25 363	100	3 189	22 074
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	24 158	89	2 736	21 333
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	236	1	27	208
01 Tuberculosis (A15-A19, B90, J65)	26	0	0	26
02 Human immunodeficiency virus (HIV) disease (B20-B24)	2	0	2	0
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	208	1	25	182
04-22 Neoplasms (C00-D48)	5 640	15	1 358	4 267
04-21 Malignant neoplasms (C00-C97)	5 464	14	1 348	4 102
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	72	0	21	51
05 Malignant neoplasm of oesophagus (C15)	82	0	11	71
06 Malignant neoplasm of stomach (C16)	198	0	42	156
07 Malignant neoplasm of colon (C18, C19)	384	0	64	320
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	162	0	35	127
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	174	1	28	145
10 Malignant neoplasm of pancreas (C25)	497	0	108	389
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	672	0	177	495
12 Malignant melanoma of skin (C43)	71	0	20	51
13 Malignant neoplasm of breast (C50)	886	0	347	539
14 Malignant neoplasm of cervix uteri (C53)	55	0	24	31
15 Malignant neoplasm of uterus (C54-C55)	189	0	35	154
16 Malignant neoplasm of ovary (C56)	362	0	118	244
17 Malignant neoplasm of prostate (C61)	0	0	0	0
18 Malignant neoplasm of kidney (C64)	156	0	26	130
19 Malignant neoplasm of bladder (C67)	68	0	7	61
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	523	3	80	440
21 Other malignant neoplasms	913	10	205	698
22 Other neoplasms (D00-D48)	176	1	10	165
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	277	7	61	209
23 Diabetes mellitus (E10-E14)	213	0	49	164
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	64	7	12	45
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	4 167	0	20	4 147
26 Other diseases of the nervous system and sense organs	658	4	121	533
27-30 Diseases of the circulatory system (I00-I425, I427-I99)	10 575	2	514	10 059
27 Ischaemic heart diseases (I20-I25)	5 599	0	186	5 413
28 Other heart diseases excl. rheumatic and alcohol-related (I30-I425, I427-I52)	1 084	1	89	994
29 Cerebrovascular diseases (I60-I69)	2 533	1	147	2 385
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	1 359	0	92	1 267
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	767	1	99	667
31 Influenza (J09-J11)	6	0	2	4
32 Pneumonia (J12-J18, J849)	228	0	29	199
33 Bronchitis and emphysema (J40-J44, J47)	328	0	47	281
34 Asthma (J45-J46)	63	0	8	55
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	142	1	13	128
36 Diseases of the digestive system excl. alcohol-related diseases	699	2	75	622
37 Diseases of the genitourinary system (N00-N99)	255	0	13	242
38 Congenital malformations (Q00-Q99)	80	24	34	22

Cause of death (54 classes)	Females			
	Age	0 - 14	15-64	65-
39 Other diseases	329	31	62	236
40 Ill-defined and unknown causes of mortality (R96-R99)	49	2	29	18
41 Alcohol related diseases and accid. poisoning by alcohol	426	0	323	103
42-53 ACCIDENTS AND VIOLENCE (V01-X44, X46-Y89)	1 164	10	434	720
42-49 Accidents (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	891	10	214	667
42 Land traffic accidents	67	5	39	23
43 Other land transport accidents	7	1	2	4
44 Water transport accidents (V90-V94)	1	0	1	0
45 Others and unspecified transport accidents (V95-V99)	1	0	0	1
46 Accidental falls (W00-W19)	557	0	36	521
47 Accidental drownings (W65-W74)	30	1	18	11
48 Accidental poisonings excl. accidental poisonings by alcohol (X40-X44, X46-X49, Y10-Y15)	84	0	64	20
49 Other accidents and sequelae of accidents	144	3	54	87
50 Suicides (X60-X84, Y87.0)	236	0	192	44
51 Assault (X85-Y09, Y87.1)	22	0	20	2
52 Event of undetermined intent (Y16-Y34, Y87.2)	11	0	7	4
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	4	0	1	3
54 NO DEATH CERTIFICATE	41	1	19	21



**Appendix table 2. Deaths from accidents by external cause and deaths from alcohol intoxication 2010**

External cause	Alcohol intoxication		
	Deaths from accidents	Of which under alcohol intoxication	%
Accidental deaths (Excl. Poisonings by alcohol and medicaments)	2 162	442	20.4
Transport accidents	299	69	23.1
Falls	1 185	122	10.3
Drowning	191	104	54.5
Eating, inhalation of food	75	27	36.0
Heat of sauna	45	28	62.2
Fire	79	35	44.3
Natural cold	96	38	39.6
Poisoning by carbon monoxide	10	0	0.0
Other accident	182	19	10.4

**Appendix table 3. Mortality during infant and perinatal period 1987–2010**

	Perinatal deaths (stillbirths and first week deaths)	Perinatal mortality/ 1000 births (incl. stillbirths) <sup>1)</sup>	Stillbirths	First week mortality	First week mortality/ 1,000 births	Neonatal deaths	Neonatal mortality <sup>2)</sup>	Infant deaths	Infant mortality <sup>3)</sup>
1987	505	8,4	311	194	3,2	252	4,2	370	6,2
1988	530	8,3	333	197	3,1	250	3,9	385	6,1
1989	495	7,8	282	213	3,4	261	4,1	382	6,0
1990	507	7,7	307	200	3,1	245	3,7	368	5,6
1991	531	8,1	305	226	3,5	276	4,2	383	5,9
1992	490	7,3	288	202	3,0	248	3,7	344	5,2
1993	428	6,6	267	161	2,5	195	3,0	285	4,4
1994	431	6,6	248	183	2,8	220	3,4	300	4,6
1995	429	6,8	299	130	2,1	172	2,8	251	4,0
1996	378	6,2	242	136	2,2	176	2,9	238	3,9
1997	368	6,2	239	129	2,2	165	2,8	233	3,9
1998	373	6,5	237	136	2,4	169	3,0	236	4,1
1999	329	5,7	208	121	2,1	154	2,7	213	3,7
2000	325	5,7	228	97	1,7	136	2,4	205	3,6
2001	306	5,4	208	98	1,7	122	2,2	181	3,2
2002	304	5,5	213	91	1,6	117	2,1	165	3,0
2003	276	4,9	178	98	1,7	120	2,1	182	3,2
2004	300	5,2	187	113	2,0	142	2,5	193	3,3
2005	286	4,9	182	104	1,8	125	2,2	179	3,1
2006	284	4,8	193	91	1,5	119	2,0	168	2,9
2007	298	5,1	204	94	1,6	109	1,9	159	2,7
2008	283	4,7	189	94	1,6	116	1,9	159	2,7
2009	300	4,9	205	95	1,6	122	2,0	160	2,6
2010	248	4,1	181	67	1,1	91	1,5	138	2,3

1) Perinatal mortality = Stillborn (the duration of the mother's pregnancy at least 22 weeks) and deaths during the first week of life per thousand births (incl. stillborn).

2) Neonatal mortality = The number of deaths during the four first weeks of life per thousand live births.

3) Infant mortality = The number of deaths at under one year per thousand live births.

**Appendix table 4. Mean population 2010 by age and gender**

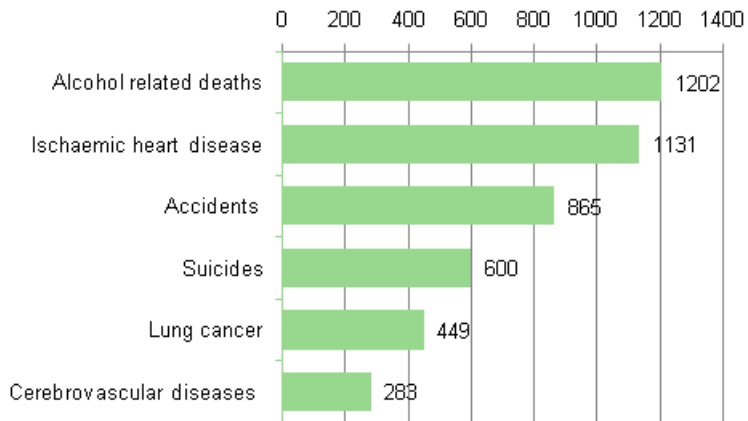
	Both genders	Males	Females
Age groups total	5 363 352	2 631 742	2 731 610
0	60 826	31 115	29 711
1 - 4	239 042	122 106	116 937
5 - 9	288 567	147 596	140 971
10 - 14	299 566	152 917	146 649
15 - 19	333 360	169 904	163 457
20 - 24	326 126	166 903	159 224
25 - 29	345 349	177 366	167 983
30 - 34	338 624	173 896	164 728
35 - 39	312 343	160 018	152 325
40 - 44	354 219	179 855	174 364
45 - 49	377 709	190 853	186 856
50 - 54	376 447	188 470	187 978
55 - 59	386 137	191 270	194 867
60 - 64	399 299	195 953	203 347
65 - 69	270 158	128 561	141 598
70 - 74	224 269	101 017	123 252
75 - 79	179 654	74 686	104 969
80 - 84	140 235	50 147	90 088
85 - 89	78 399	22 082	56 317
90 - 94	26 410	5 892	20 518
95 -	6 618	1 141	5 477

**Appendix table 5. Standard population used in calculating age-standardised figures**

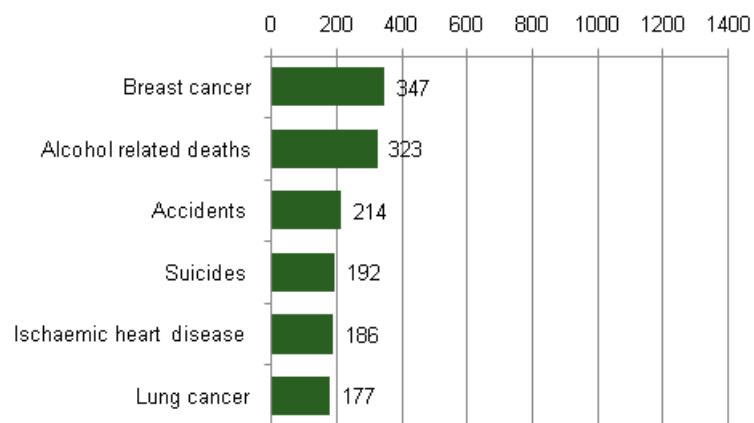
Age	Standard population
0	1 305
1-4	5 021
5-9	6 472
10-14	6 772
15-19	7 208
20-24	7 792
25-29	7 871
30-34	7 528
35-39	7 212
40-44	6 860
45-49	5 865
50-54	5 876
55-59	5 553
60-64	5 245
65-69	4 680
70-74	2 932
75-79	2 897
80-84	1 606
85-	1 305
Total	100 000

## Appendix figures

**Appendix figure 1. Leading causes of death among men aged 15 to 64 in 2010**



**Appendix figure 2. Leading causes of death among women aged 15 to 64 in 2010**



# Quality description of cause of death statistics

## 1. Relevance of cause of death statistics

In the cause of death statistics statistical information is produced annually on the causes of death of persons permanently resident in Finland. The statistics are compiled on the basis of death certificates on deaths, and the data are supplemented with and verified against data from the Population Information System of the Population Register Centre. Death certificates are archived at Statistics Finland. The cause of death statistics and the archive of death certificates have been operating since 1936.

Cause of death data are used i.a. in health surveys, in allocating health promotion measures and monitoring health as well as in various medical examinations. By combining the data with other data files it is possible to study, for instance, differences in mortality between different population groups. The basis for an investigation of the cause of death is the information on the death certificate. The basis in law for an investigation of the cause of death is the Act on the Investigation of the Cause of Death (1973/459). Furthermore, Regulation (EC) No 1338/2008 of the European Parliament and of the Council of 16 December 2008 on Community statistics on public health and health and safety at work regulates the data produced for Community cause of death statistics. Draft Implementing Regulation regarding this Regulation is in hand.

### Definitions

**Age-standardised mortality rate** indicates the number of deaths per 100,000 persons of the mean population, when the age structure is kept calculatorily unchanged during the reference period. The standardisation is necessary so that changes in mortality not due to the ageing of the population structure or differences in the age structure of regions can be highlighted. The standardisation used in cause of death statistics is made by using direct age standardisation (Standardised Death Rate, SDR). The formula used in the standardisation is as follows.

$$SDR = \sum (m_i P_i / P) \times 100\,000$$

$m_i$  = mortality rate at age  $i$

$P_i$  = standard population at age  $i$

$P$  = standard population

The age structure of standard population used is in Appendix table 4. European standard population used in calculation is in Appendix table 5.

**Mortality rate** indicates the number of deaths in a given age group per mean population in the corresponding age group.

**The causes of death** included in the statistics have since 1987 been the underlying cause of death, direct cause, intervening causes and contributing causes. Annual cause of death statistics are compiled according to the statistical underlying cause of death.

- The underlying cause of death is the disease which has initiated the series of illnesses leading directly to death, or the circumstances connected with an accident or an act of violence which caused the injury or poisoning leading to death. The underlying cause of death used in statistics (statistical underlying cause of death) is determined according to the selection and application rules of the International Classification of Diseases (ICD-10) compiled by the World Health Organisation (WHO).
- The direct cause of death refers to the disease, failure or injury whose symptoms cause the person to die.
- The intervening cause of death indicates the condition leading from the underlying cause to the direct cause.
- The contributing cause of death is recorded in the death certificate. The doctor will report in part II of the death certificate as contributing causes of death the reasons which have adversely affected the development of the condition leading to death and hence contributed to it.

- If the death entails an accident or violence, the death is described with an external cause. Data on the cause is supplemented with data on mortal injuries, poisonings and certain other consequences of external causes.

In the case of stillbirths and infants dying before the age of 28 days the causes of death are the main diseases or conditions in the fetus or infant, other conditions in the fetus or infant and maternal diseases affecting the fetus or infant. Above causes of death can be retrieved from the records in the cause-of-death data base.

**Early neonatal mortality** refers to the number of deaths during the first week of life relative to the live births during the statistical year.

**General death rate** indicates the number of deaths per 1,000 or 10 000 persons of the mean population. Infant mortality is calculated by dividing the number of deaths of infants under one year of age by the number of live births during the statistical year. Multiplying the result by 1,000 gives the figure in per mille.

**Late neonatal mortality** refers to the number of deaths which occur at the age of 7 to 27 days relative to the live births during the statistical year. Maternal mortality covers all deaths which occur during the pregnancy or during 42 days after the end of the pregnancy, regardless of the duration or location of the pregnancy. Included are all deaths of pregnant women due to any pregnancy related cause or a cause exacerbated by pregnancy, but not accidental or violent deaths. Maternal mortality is obtained by dividing the number of maternal deaths by 100,000 live-born children. Neonatal mortality is calculated by dividing the number of deaths during the first week of life by the number of live births during the statistical year and multiplying the result by 1,000.

**Perinatal mortality** is calculated by dividing the number of stillbirths and deaths during the first week of life by the number of all births during the statistical year. The age during the first week is calculated in hours.

**Stillbirths** include a fetus or a newborn who shows no signs of life at the time of birth after a pregnancy lasting at least 22 weeks or, when the duration of the pregnancy is unknown, if the newborn weighs at least 500 grams. Miscarriages that occurred before 22nd week of the pregnancy are not regarded as stillbirths.

## *2. Methodological description of survey*

The cause of death statistics data are total data including all deaths in Finland or abroad of persons permanently resident in Finland at the time of their death. Amount of deaths is yearly about 49 000–50 000.

Death certificates are issued by physicians. If determining the cause of death requires an autopsy, the death certificate is issued by a forensic pathologist after the information acquired from the autopsy is complete. The physician issuing the death certificate delivers the certificate to the National Institute for Health and Welfare (THL) to the regional unit where the deceased was a resident. A forensic pathologist there checks the correctness of the certificate and the certificates are sent on to Statistics Finland.

At Statistics Finland the death certificate data are compared with data on the deceased obtained from the Population Information System and lists of missing death certificates are sent to THL for monitoring purposes. The data files on causes of death are supplemented with other demographic data from the Population Information System.

From the beginning of 2010 the Provincial State Offices were discontinued and the forensic tasks of the Provincial State Offices were transferred to THL (the National Institute for Health and Welfare). These include the responsibility for checking and monitoring death certificates.

Statistics on stillbirths are made separately; cases of stillbirths are not included in deaths during the year. The coverage of statistics on stillbirths is supplemented with data from the birth register of THL.

### **3. Correctness and accuracy of data**

The data of the cause of death statistics comprise information on causes of death and other background information on the deceased and on the mother of those dead at the age of under 28 days. The information is given on the home page of the cause of death statistics under [Tietoluettelot](#) (in Finnish only).

The death certificate form is confirmed by the Ministry of Social Affairs and Health. The physician records the cause of death on the death certificate as a code and as text specifying the diagnosis. At Statistics Finland the causes of death are coded mainly on the basis of the diagnosis text. In case the information in the death certificate is deficient, inconsistent or difficult to classify, the information about the event recorded on the death certificate (as free text) or a medical expert will be consulted or more information is requested from the issuer of the death certificate. In cases of alcohol and medicinal poisonings, the additional information used consists of the research results from the register of forensic chemistry. The underlying cause of death is determined from the event information (free text) in the death certificate in about two to three per cent of the cases yearly. Additional information is requested from the issuer of the death certificate in about 200 to 400 cases per year. Around two to three per cent of the cases are handled by a medical expert every year. Additional information is obtained for around 200 to 300 cases per year from the register of forensic chemistry.

In practice, the coverage of the cause of death statistics is around 100 per cent, because the data on death are verified from the Population Information System as well. The number of deaths on which no information on the cause of death is obtained is a good 100 per year. Some of them are deaths abroad, on which only a notification on death is obtained, and some are deaths in Finland, on which a death certificate was not acquired by the compilation time of the statistics.

Causes of death are currently coded according to the ICD-10 classification (International Statistical Classification of Diseases and Related Health Problems, Volume 1-3, WHO Geneva 1992, new edition 2004). The causes of death are coded mainly in the most accurate level of the classification.

The classification of causes of death has changed several times; the classifications used in different years and the available comparable shortened cause of death classifications are described on the home page of the cause of death statistics under [Luokitukset](#) (in Finnish only).

### **4. Timeliness and promptness of published data**

Cause of death data are produced annually and they are completed in the end of the following year. The data are final and describe the deaths during the previous calendar year of persons permanently resident in Finland.

### **5. Accessibility and transparency/clarity of data**

Data are produced yearly under the topic Health on the home pages of the cause of death statistics and are released on Statistics Finland's StatFin database. Data are provided on the whole country, by region and by hospital district. The cause of death statistics are produced according to the underlying cause of death. Cause of death data are available since 1936 in publications and from 1969 as time series in the database. The variables in the time series file are described on the home pages of the cause of death statistics under [Tietoluettelot](#) (in Finnish only). Tailored statistics and research data can be made from the file for customer needs. A licence to use Statistics Finland's data files is required for research data and statistics produced by municipality. An application for a licence to use the data can be found on [Statistics Finland's home page](#). The cause of death data can also be combined with other data files, such as longitudinal data of population censuses and employment statistics.

The cause of death data is published also in interational databases:

— in Health statistics in nordic countries, <http://nomesco-da.nom-nos.dk/>

— in Eurostat Public Health database

[http://epp.eurostat.ec.europa.eu/portal/page/portal/health/public\\_health/data\\_public\\_health/database](http://epp.eurostat.ec.europa.eu/portal/page/portal/health/public_health/data_public_health/database)

— in WHO databases, for example European Health for All database, <http://www.euro.who.int/en/what-we-do/data-and-evidence/databases/>

Statistics Finland maintains the Finnish archive of death certificates. The archive contains the death certificates of Finnish residents since 1936. Copies of death certificates and unit level data on causes of death are released from the archives for the purposes specified in the Act on the Inquest into the Cause of Death (459/1973). These purposes cover the releasing of data to 1) the deceased person's next of kin, 2) a pension institution or to the authorities, 3) for scientific research or statistical surveys.

Instructions for requesting death certificates and on the procedures of requesting a license to use statistical data are available on the [home page](#) of Statistics Finland's archive of death certificates.

## 6. Comparability of statistics

Statistics on cause of death have been compiled since 1936; the years 1936 to 1968 exist only in printed publications. The classification of causes of death has changed several times. The classifications of causes of death used in the classification of the basic data and the existing comparable shortened classifications are described on the home page of the cause of death statistics under Classifications.

The longest comparable time series classification (54 categories) is from 1969 onwards. Statistics following this classification are available in Statistics Finland's StatFin database under the topic Health.

Other Statistics Finland's statistics describing the mortality rate and causes of death are vital statistics, statistics on road traffic accidents and occupational accident statistics.

**In vital statistics** the numbers of deaths are presented i.a. by gender, age and area. The number of deaths differs by some ten cases yearly from their number in the cause of death statistics. The difference is due i.a. to the fact that the vital statistics data do not include deaths registered after the compilation time of the statistics concerned (after January of the following year). On the other hand, the vital statistics can also contain deaths from the five previous years on which information about the death is obtained during the compilation time of the vital statistics (in January of the following year).

**Statistics on road traffic accidents** concern the number of deaths in road traffic. The data are obtained from the information system of the police. The coverage of these statistics is checked against the data of the cause of death statistics. The numbers of the statistics on road traffic accidents deviate from those in the cause of death statistics by some tens of cases each year. The deviation is caused by the following differences in statistical criteria:

- The statistics on road traffic accidents contain all deaths in traffic in the area of Finland, whereas the cause of death statistics include all deaths of the permanent population of Finland occurring either in Finland or abroad.
- The cause of death statistics are compiled on the basis of the day of the death, but the time period of the statistics on road traffic accidents is the day of the accident and at most the 30 following days.
- In the cause of death statistics suicides committed in traffic are included in suicides, in the statistics on road traffic accidents they are regarded as road traffic accidents.

**Occupational accident statistics** are compiled on the basis of information on insurance activities and the statistics include all those accidents at work on which insurance institutions have paid compensation. By contrast, in the cause of death statistics the information on occupational accidents is derived from death certificates as defined by the physician. The number of deaths from occupational accidents differs very little from the figures in the cause of death statistics.

## 7. Coherence and consistency/uniformity

The cause of death statistics are the only comprehensive statistics on causes of death in Finland. Statistics Finland's vital statistics are exhaustive statistics on the numbers of deaths.

When using the cause of death statistics it should be noted that mortality and the frequency of causes of death are strongly dependent on age. For that reason age standardisation is used in the statistics when

comparing mortality differences between different time periods and areas. In the cause of death statistics the age-standardised mortality figure is calculated most often per 100,000 persons.



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