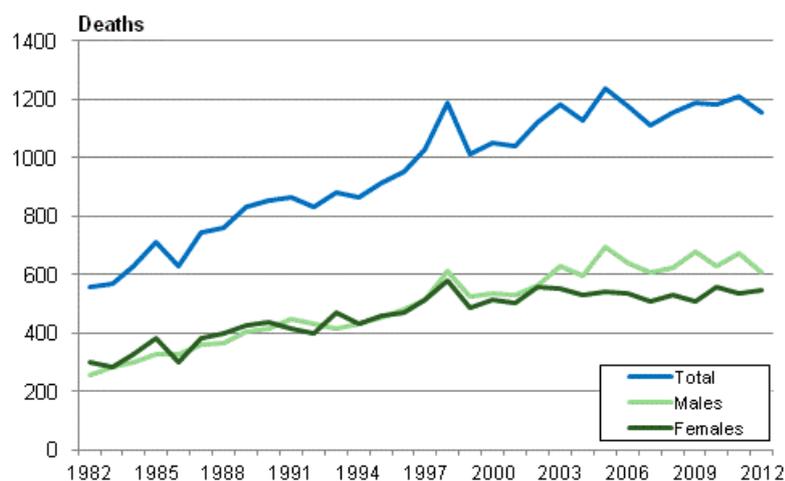


# Causes of death 2012

## Three out of four of those who died from stumbles were aged over 70

According to Statistics Finland's statistics on causes of death, a total of 1,156 persons died as a result of accidental stumbles and falls in 2012, 609 men and 547 women. The cases have increased in absolute numbers by 40 per cent in the past twenty years. In addition, stumbling or falling was a contributing factor in over 800 deaths. Three-quarters of stumbles resulting in death occurred to persons aged over 70.

### Deaths caused by accidental stumbles or falls in 1982 to 2012

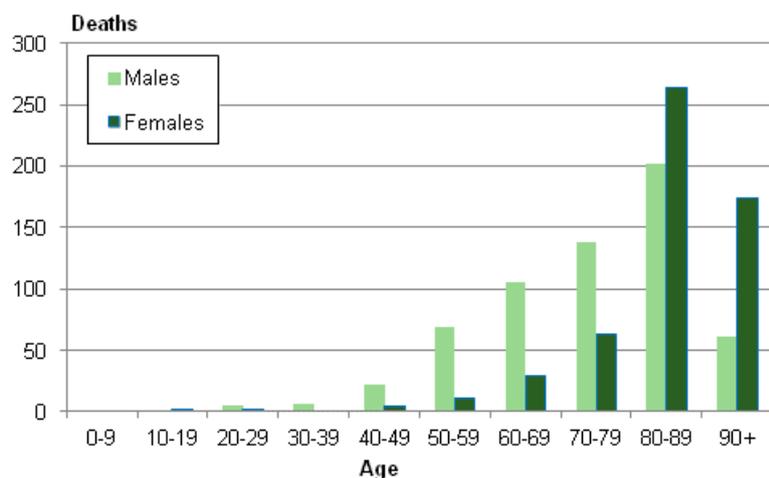


Accidental stumbles and falls resulting in death are rare among young people aged under 30. In the past few years, less than ten such cases have occurred per year. In 2012, one-fifth of those who died as a result of stumbling were aged 40 to 69. Among this age group, eight out of ten victims of stumbling accidents were men and over one-third were intoxicated. A majority of accidental stumbles resulting in death occurred to persons aged over 70. In absolute numbers, more deaths among aged people occurred for women than for men. Relative to the number of living women and men, there were more stumbles resulting in death in relative terms among aged men than among women. Stumbles are the commonest cause of accidental deaths among aged persons and they cause more deaths per year than, for example, suicides.

Around half of stumbling accidents took place inside the home or in its immediate vicinity, and one-fifth in care institutions. Altogether, 902 stumbling accidents resulting in death occurred for people aged over

70 and of these 505 took place in the home and 242 in care institutions. According to the data collected from death certificates, stumbles and falls were also a contributing factor in the deaths of 770 aged persons even though the actual cause of death in the death certificate was recoded as something else. Typical injuries caused by stumbling and leading to death were intracranial injuries and femur fractures.

### Age distribution of persons that died from accidental stumbles or falls in 2012



### Dementia mortality has increased by 40 per cent in the past five years

Altogether 51,737 persons died in 2012. The number is over two per cent higher than twelve months earlier. The longer life expectancy is visible in the age distribution of deaths. Nearly two out of three of the deceased were over 75 and every third person was over 85. Increased mortality of aged people is visible in causes of death primarily as a growing number of deaths from dementia and diseases of the circulatory system.

Altogether, 39 per cent of deaths in 2012 were caused by diseases of the circulatory system. The second highest number of deaths, 23 per cent, were caused by neoplasms. Dementia (inclusive of Alzheimer's disease) caused 14 per cent of deaths in 2012. The share of dementia as a cause of death has increased quickly over the past few years. By contrast, the number of suicides decreased further in 2012. In 2012, 873 persons committed suicides, which is 39 persons fewer than in the previous year. The figure was at its highest in 1990, when there were over 1,500 suicides in Finland. The decrease in the number of alcohol-related deaths that had continued for a few years made an upturn in 2012. The number of alcohol-related deaths grew by close on four per cent from 2011. Nearly 2,000 persons died of alcohol-related reasons and a majority of them, three out of four, were men.

### Causes of death 2012 (time series classification)

	Total	Males	Females	Total	Males	Females
	Number	Number	Number	%	%	%
Diseases of the circulatory system	20 210	9 691	10 519	39	38	40
Neoplasms	12 070	6 326	5 744	23	25	22
Dementia, Alzheimer's disease	7 056	2 153	4 903	14	8	19
Accidents	2 273	1 426	847	4	6	3
Disease of the respiratory system	2 026	1 238	788	4	5	3
Alcohol related diseases and accidental poisoning by alcohol	1 960	1 518	442	4	6	2
Suicides	873	655	218	2	3	1
Other causes of death	5 269	2 639	2 630	10	10	10
<b>Deaths total</b>	<b>51 737</b>	<b>25 646</b>	<b>26 091</b>	<b>100</b>	<b>100</b>	<b>100</b>

# Contents

1. Causes of death in 2012.....	5
Biggest cause of death category for persons of working age was neoplasms .....	5
Main cause of death category for aged people was diseases of the circulatory system.....	6
2. Ischaemic heart disease causes more than every fifth death .....	7
3. Deaths from dementia and Alzheimer's disease are increasing .....	9
4. Alcohol-related causes of death made an upturn.....	10
5. Stumbling the most common cause of accidental deaths.....	12
Contribution of intoxication to fatal accidents has decreased.....	13
More than 200 drug-related deaths in 2012.....	13
6. The number of suicides continued decreasing .....	15
7. There is around ten cot deaths per year.....	16

## Tables

Table 1. Main causes of death among working-age population (aged 15 to 64) in 2012.....	5
Table 2. Drug-related mortality 2000 to 2012.....	14
Table 3. Causes of death among children under the age of one 2002, 2009 and 2012.....	16

## Appendix tables

Appendix table 1a. Deaths by underlying cause of death and by age in 2012, both sexes.....	17
Appendix table 1b. Deaths by underlying cause of death and by age in 2012, males.....	19
Appendix table 1c. Deaths by underlying cause of death and by age in 2012, females.....	21
Appendix table 2. Deaths from accidents by external cause and deaths from alcohol intoxication 2012.....	22
Appendix table 3. Mortality during infant and perinatal period 1987–2012.....	23
Appendix table 4. Mean population 2012 by age and sex.....	24
Appendix table 5. Standard population used in calculating age-standardised figures.....	24

## Figures

Figure 1. Age-standardised mortality from ischaemic heart disease in 1970 to 2012.....	7
Figure 2. Age-standardised carcinoma of the larynx, carcinoma of the tracheitis and lung cancer 1970 to 2012.....	8
Figure 3. Age-standardised prostate cancer mortality for men and breast cancer mortality for women 1970 to 2012 .....	8
Figure 4. Age-standardised dementia mortality (incl. Alzheimer's disease) 1970 to 2012.....	9
Figure 5. Age-standardised mortality from alcohol-related diseases and accidental poisonings by alcohol and total consumption of alcohol in 1970 to 2012.....	10
Figure 6. Age-standardised mortality from alcohol-related diseases and accidental poisonings by alcohol in 1970 to 2012.....	11
Figure 7. Accident mortality and separately deaths from accidental stumbles and falls in 1970 to 2012.....	12
Figure 8. Mortality from drowning accidents 1998 to 2012.....	13
Figure 9. Suicide mortality 1970 to 2012.....	15
Figure 10. Mortality during infant and perinatal period in 1992-2012 .....	16

Quality Description, Causes of death 2012.....25

## 1. Causes of death in 2012

In 1992, the average life expectancy at birth for boys was 71.7 years and for girls, 79.4 years. Twenty years later, life expectancy has lengthened considerably: the life expectancy for a boy born in 2012 is 77.5 years and 83.4 years for a girl.

The number of deaths in 2012 was 51,710, of whom 25,646 were men and 26,091 women. If the war years are not taken into consideration, the number of deaths was last higher than this in the 1920s. The number of deaths was over 1,000 higher in 2012 than in 2011. In 2012, nearly two out of three of the deceased were over 75 and every third person was over 85.

Of the deceased, 39 per cent died from diseases of the circulatory system. The second highest number of deaths, 23 per cent, were caused by neoplasms. The most common disease of the circulatory system, ischaemic heart disease, was the cause of only about one fifth of all deaths in 2012. The commonest types of cancer leading to death for men were still lung cancer and prostate cancer, and correspondingly for women breast cancer and lung cancer.

Dementia and Alzheimer's caused around 14 per cent of deaths, 19 per cent of women's deaths and eight per cent of men's. The number of deaths caused by dementia has grown rapidly in the past decade partly due to the ageing of the population. Dementia mortality is clearly higher among women than among men, which may mainly be due to the fact that women live longer than men (Figure 4).

The share of working-age people (aged 15 to 64) among the deceased has decreased. Of the deceased in 2012, 18 per cent were working-age people (9,554 persons), while twenty years ago the proportion was 23 per cent.

### *Biggest cause of death category for persons of working age was neoplasms*

In 2012, every fourth man that died was of working age and every tenth woman. The main cause of death for working-age people was neoplasms and the second largest cause was diseases of the circulatory system. More than half of working-age people that died during the year died of these two causes. One in ten died in accidents. There were slightly more deaths caused by alcohol-related reasons or accidental poisoning by alcohol, 16 per cent.

**Table 1. Main causes of death among working-age population (aged 15 to 64) in 2012**

54-group time series classification	Total	Males	Females	Total	Males	Females
	Number	Number	Number	%	%	%
Neoplasms	2 748	1 471	1 277	29	23	42
- Neoplasms	536	361	175	6	6	6
- Neoplasms	325	0	325	3	0	11
- Neoplasms	219	131	88	2	2	3
Diseases of the circulatory system	2 172	1 691	481	23	26	16
- Diseases of the circulatory	1 131	964	167	12	15	6
Alcohol related diseases and accidental poisoning by alcohol	1 484	1 155	329	16	18	11
Accidents	884	708	176	9	11	6
Suicides	711	523	188	7	8	6
Disease of the respiratory system	219	154	65	2	2	2
Other causes of death	1 336	823	513	14	13	17
<b>Deaths total</b>	<b>9 554</b>	<b>6 525</b>	<b>3 029</b>	<b>100</b>	<b>100</b>	<b>100</b>

Working-age men were killed by diseases of the circulatory system (26%), neoplasms (23%) and alcohol (18%). The most common diseases of the circulatory system for working-age men was ischaemic heart disease. The number of deaths from ischaemic heart disease have halved over the past two decades. The number of accidents among working-age men has also contracted by one-third compared to 1992. Over the same time period, alcohol-related diseases and alcohol poisonings have grown 1.5-fold. In 2012, the

number of suicides among working-age men was 523, which is almost one-half less than twenty years earlier.

The main cause of death for working-age women was neoplasms. As many as 42 per cent of women dying at working age died from neoplasms and in particular from breast cancer, 11 per cent. The other main causes were diseases of the circulatory system and alcohol-related causes. Women's deaths from alcohol-related causes has doubled over the past 20 years, and their number was the same as women's deaths from breast cancer in 2012. The number of suicides among working-age women has slowly decreased over the past few decades. In 2012, the number of suicides among working-age women was 188, which is good 60 fewer than twenty years ago.

### ***Main cause of death category for aged people was diseases of the circulatory system***

Of all deaths among persons aged 65 or over, most were caused by diseases of the circulatory system (43%). The biggest disease group in diseases of the circulatory system was ischaemic heart disease of which nearly one in four aged people died. For aged men, the second most common cause of death was neoplasms and the third was dementia. The most common type of neoplasms for men was lung cancer and prostate cancer. For aged women dementia was the second most common cause of death, killing every fifth aged woman. The third commonest reason was neoplasms. For women the commonest types of cancer were lung cancer and breast cancer.

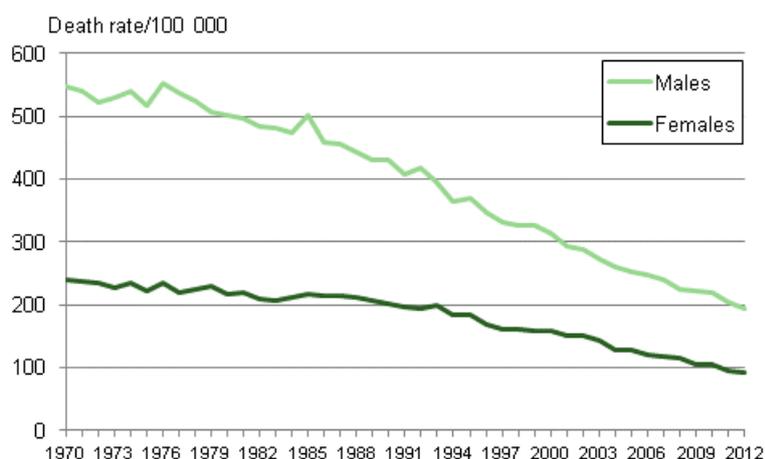
Over the past twenty years, the ischaemic heart disease mortality of women and men aged 65 or over has decreased and dementia mortality has increased as life expectancy has grown. Dementia mortality has developed over the past twenty years in a similar fashion for both men and women (Figure 4). Additional information on the causes of death of persons aged 65 or over can be found in Appendix tables 1a-c.

## 2. Ischaemic heart disease causes more than every fifth death

Of the main causes of death, most Finns die of diseases of the circulatory system. The share has, however, decreased from 47 per cent to 39 per cent in the past twenty years. Among diseases of the circulatory system, ischaemic heart disease is still one of the most common causes of death for Finns. Ischaemic heart disease causes more than every fifth death (21%). In 2012, 11,099 persons died from ischaemic heart disease. Of these, 5,832 or 53 per cent were men. Persons that die of this disease have become older than before. In 1970, four out of ten persons that died of ischaemic heart disease were aged 15 to 64 while in 2012 only one in ten of such deaths occurred among working-age people. The number of deaths caused by ischaemic heart disease continued decreasing in 2012.

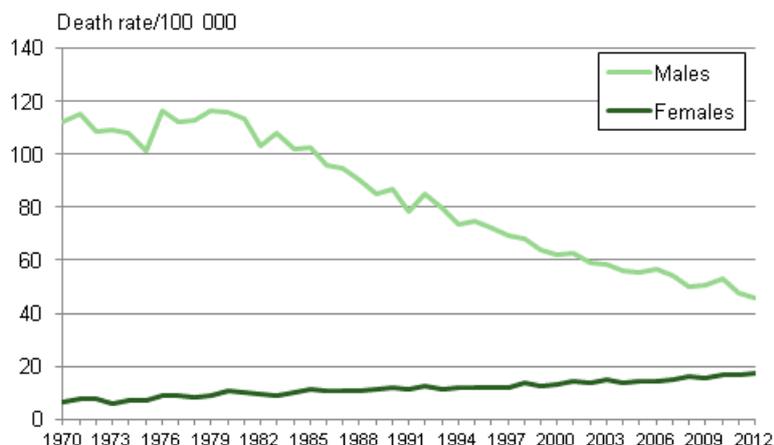
Figure 1 shows ischaemic heart disease mortality age-standardised. In age standardisation, the effect of the age structure of the population and its changes are eliminated. In this case, it shows at what level mortality from ischaemic heart disease would be if the age structure of the population remained 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 1. Age-standardised mortality from ischaemic heart disease in 1970 to 2012**



The second highest number of deaths, 23 per cent, were caused by neoplasms. Men's age-standardised mortality from neoplasms has decreased clearly in the past five years but that of women has remained unchanged. The commonest type of cancer causing death for men is still lung cancer. Women's mortality from lung cancer has increased over the past four decades but for men it started decreasing already in the 1980s. In 2012, a total of 1,467 men and 736 women died from carcinoma of the larynx, carcinoma of the tracheitis and lung cancer.

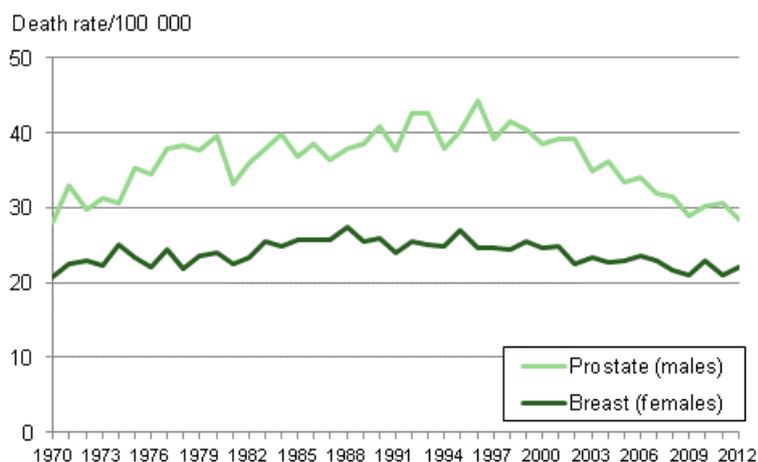
**Figure 2. Age-standardised carcinoma of the larynx, carcinoma of the tracheitis and lung cancer 1970 to 2012**



The commonest type of cancer causing death of working-age women is breast cancer. In 2012, four out of ten women that died from breast cancer were under the age of 65. In 2012, breast cancer was as common a cause of death for working-age women as alcohol-related causes were. In 2012, the number of deaths from breast cancer totalled 876, that is, 30 deaths per 100,000 women. Breast cancer mortality has grown in the past few decades but age-standardised breast cancer mortality has remained almost unchanged since the 1970s (Figure 3).

After lung cancer, prostate cancer is the second most common type of cancer resulting in death. In 2012, the number of deaths from prostate cancer for men was 852, while in 2011 it was 879. Above all, it was a common cause of death for aged men, more than nine out of ten of the deceased are over 65. Prostate cancer mortality was in 2012 on level with women's breast cancer mortality, that is, 33 deaths per 100,000 men. Men's age-standardised prostate cancer mortality has decreased clearly in the 2000s.

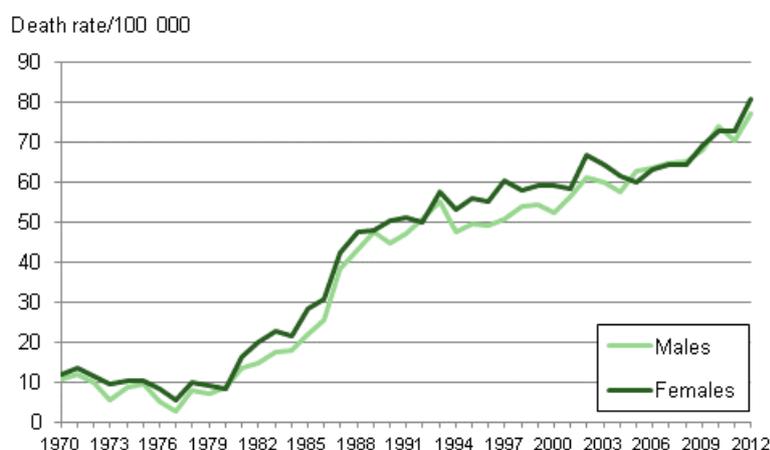
**Figure 3. Age-standardised prostate cancer mortality for men and breast cancer mortality for women 1970 to 2012**



### 3. Deaths from dementia and Alzheimer's disease are increasing

In 2012, every fourth death at the age of 85 or over was caused by dementia or Alzheimer's disease. The number of deaths from this disease group has nearly tripled over the past twenty years. The growth is also visible in the age-standardised figures, where the effects of the population structure are taken into consideration. The growth is in part the result of more specific diagnostics and changes in the definitions of causes of death (WHO guidelines). From 2005, cause of death statistics have adopted an international guideline that limits the use of pneumonia as a primary cause of death in connection with several chronic diseases. If a person is, in addition to pneumonia, suffering from, for example, dementia, dementia is selected as the statistical primary cause of death.

**Figure 4. Age-standardised dementia mortality (incl. Alzheimer's disease) 1970 to 2012**



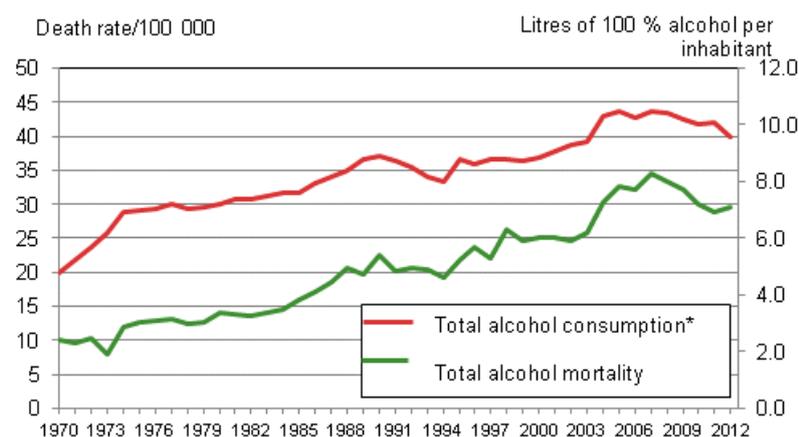
Because dementia very steeply becomes more common with age, along with the lengthening of life expectancy, more people get dementia and die as a result of it. This concerns particularly women, because women live longer than men, on average. In 2012, a total of 7,056 persons died of dementia and Alzheimer's disease, which was 856 persons more than in 2011. Sixty-nine per cent of the persons that died from this disease group were women. A majority (72%) of the deaths were caused by Alzheimer's disease.

## 4. Alcohol-related causes of death made an upturn

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

The most significant reason for high alcohol mortality is increased consumption of alcohol over the past decades. Since 2007, total alcohol consumption has decreased, however. In 2012, it was for the first time in nearly a decade below 10 of 100% alcohol per capita (National Institute for Health and Welfare 2013). Changes in alcohol-related mortality has followed fairly regularly the graph for total consumption of alcoholic beverages even though alcohol-related deaths usually call for long-term detrimental use of alcohol that lasts for several years. The decrease in the number of alcohol-related deaths that had continued for a few years stopped in 2012, and the number of persons that died from alcohol-related causes grew by close on four per cent from 2011. A total of 1,960 persons died from alcohol-related causes, 1,518 men and 442 women. The changes in the number of deaths from alcohol-related causes between 2009 and 2012 were mainly caused by changes in men's deaths from alcohol-related causes.

**Figure 5. Age-standardised mortality from alcohol-related diseases and accidental poisonings by alcohol and total consumption of alcohol in 1970 to 2012**



\*Source: National Institute for Health and Welfare 2012.

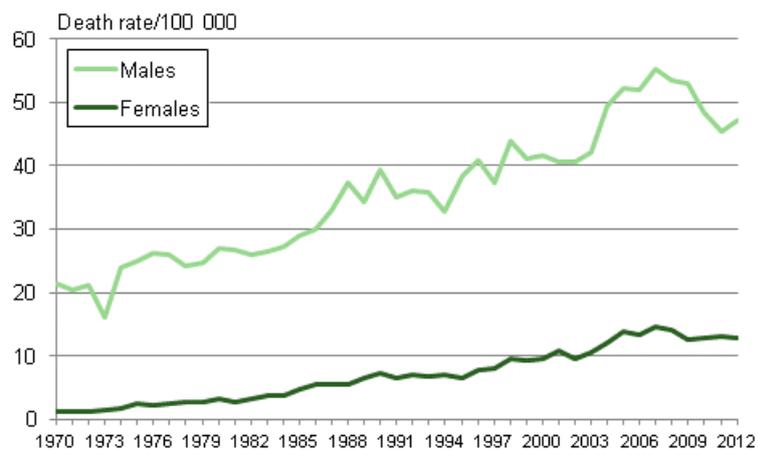
Men's mortality from alcohol-related causes is clearly more common than that of women (Figure 6). Men's mortality has also more closely followed changes in total alcohol consumption. Female mortality has, however, risen evenly along with men over several decades.

One-fifth of all alcohol-related deaths (375 persons) were caused by alcohol poisoning and the rest from diseases caused by alcohol (1,585 persons), mainly liver and heart disease. Seventy-six per cent of those dying from alcohol poisonings were men. The biggest group of people that die from alcohol-related causes are middle-aged men: of deceased men aged 45 to 49, the cause of death of one in four was alcohol.

A majority of those who died from alcohol-related causes were of working age and only one in four (24%) were over the age of 65. The share of aged people among deaths from alcohol-related causes is increasing. In 2012, the share was seven percentage points higher than ten years ago. In the past twenty years, the mortality from alcohol-related causes among those aged 65 or over has nearly doubled.

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

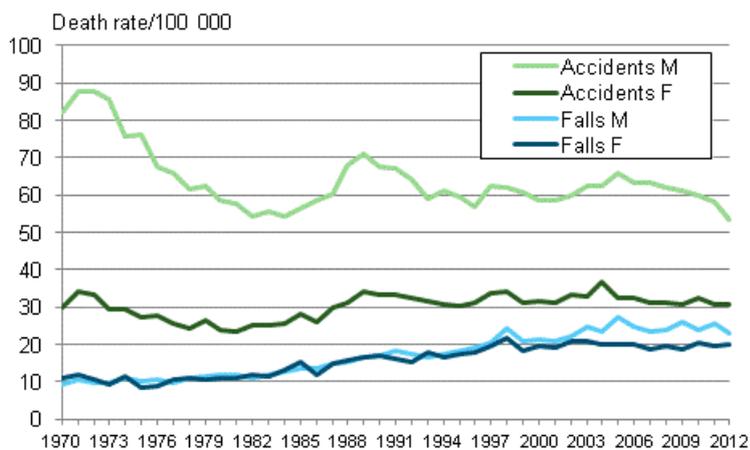
**Figure 6. Age-standardised mortality from alcohol-related diseases and accidental poisonings by alcohol in 1970 to 2012**



## 5. Stumbling the most common cause of accidental deaths

Fatal accidents include such as fatal traffic accidents, fatal falls and stumbles, drownings, fatal fires and alcohol and drug poisonings. In the time series classification of the statistics on causes of death, alcohol poisonings are classified as alcohol-related causes. In 2012, accidents (excl. alcohol poisonings) caused good four per cent of all deaths. A total of 2,273 persons died in accidents in 2012, of whom 1,426 were men and 847 women. Men die in accidents more often than women. Men's mortality from accidents has, however, decreased while that of women has remained unchanged. The decrease in mortality from accidents is mainly the result of a drop in fatal traffic accidents and drowning accidents.

**Figure 7. Accident mortality and separately deaths from accidental stumbles and falls in 1970 to 2012**



In 2012, the most common accident leading to death both among men and women was stumbling or falling. Stumbling was the cause of death for every second accident mortality and 1,156 persons died from stumbling. Stumbling accidents have increased in absolute numbers by 40 per cent in the past 20 years. A majority of stumbles resulting in death occurred to people aged over 70.

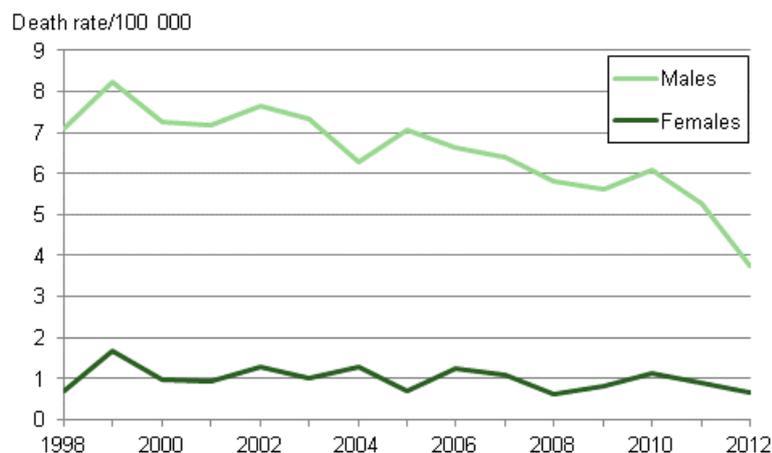
The next most common accidents leading to death both for men and women were poisoning accidents (excl. alcohol) and transport accidents.

In 2012, a total of 243 persons died in transport accidents (excl. drowning accidents in water traffic), three-quarter of whom were men. For men, more than one in ten accidents took place in traffic (transport), for women there was slightly less.

Drowning accidents include drowning from falling into water and drowning while swimming or boating. In 2012, 117 persons died from drowning of which 31 in water traffic. Most drowning victims were men. Men's mortality from drowning accidents has decreased clearly over the past few years (Figure 8).

Fires claimed 84 lives. Of these three out of four were men. There were six carbon monoxide poisonings that resulted in death. There were 58 deaths caused by the heat of sauna. Seventy-five persons died of cold.

**Figure 8. Mortality from drowning accidents 1998 to 2012**



### ***Contribution of intoxication to fatal accidents has decreased***

In 2012, alcohol was a contributing factor on average in one in six fatal accidents. Seventeen per cent of persons that died in fatal accidents were intoxicated, i.e. 332 persons (Appendix table 2). Ten years ago the corresponding proportion was 23 per cent of fatal accidents. In fatal accidents intoxication means that the doctor signing the death certificate mentions that alcohol had contributed to the death. The figures exclude alcohol and drug poisonings where alcohol or drugs have not directly caused the death.

Intoxication was most common in sauna deaths. More than half of the people that died in a sauna were under the influence of alcohol at the time of death. Nearly half of the persons that died in fires or by drowning were also intoxicated. More than one in four of the persons that died of cold were intoxicated. Less than one in five of those who died in traffic were intoxicated. By contrast, in stumbling accidents, of which a majority occurred among persons aged over 70, less than one in ten were under the influence of alcohol.

### ***More than 200 drug-related deaths in 2012***

In 2012, there were 213 deaths in Finland that were caused by drugs. When calculating drug-related deaths, Statistics Finland uses a classification compiled by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) that publishes statistics and reports on its Internet site: [www.emcdda.europa.eu](http://www.emcdda.europa.eu).

According to EMCDDA, cases where the underlying cause of death is drug psychoses, accidental poisoning, self-inflicted poisoning, and poisoning with undetermined intent are calculated as drug-related deaths. Deaths caused by drug psychoses are usually a result of drug addiction and long-term drug use. Accidental drug poisonings are cases where the death occurs shortly after the consumption of the substance. They can often also be referred to as overdoses. Self-inflicted poisonings with drugs are suicides. In 2012, forty suicides were committed with drugs. In poisonings with undetermined intent the intent remains unclear.

**Table 2. Drug-related mortality 2000 to 2012**

	Total	Males	Females	Total	Males	Females
	Number	Number	Number	Per 100 000 mean population	Per 100 000 mean population	Per 100 000 mean population
2000	134	109	25	2,6	4,3	0,9
2001	110	78	32	2,1	3,1	1,2
2002	97	69	28	1,9	2,7	1,1
2003	101	76	25	1,9	3,0	0,9
2004	135	96	39	2,6	3,8	1,5
2005	126	95	31	2,4	3,7	1,2
2006	138	107	31	2,6	4,2	1,2
2007	143	116	27	2,7	4,5	1,0
2008	169	120	49	3,2	4,6	1,8
2009	175	130	45	3,3	5,0	1,7
2010	156	117	39	2,9	4,4	1,4
2011	197	156	41	3,7	5,9	1,5
2012	213	161	52	3,9	6,1	1,9

The drugs referred to in EMCDDA's classification are mainly opioids. In addition to opioids, drugs also refer to cannabis and cannabinoids, other hallucinogens, and stimulants suitable for abuse, such as amphetamine and its derivatives. In 2012, 64 per cent of drug-related deaths were associated with accidental overdoses of opioids (137 cases).

The statistics have been compiled in accordance with WHO's recommendation based on the substance judged as most influential. In many cases the death is actually the result of multiple substance poisoning where the person has also digested other substances like alcohol and/or psychopharmacons.

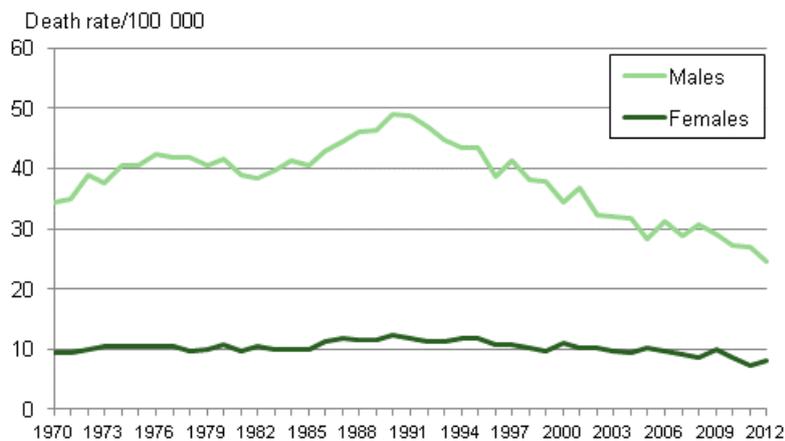
Considerably more men than women die of drugs. In 2012, the share of women in drug-related deaths was 24 per cent. However, in suicides committed with drugs, the share of women is clearly higher, 43 per cent. In 2012, most drug-related deaths in absolute numbers occurred among persons aged 30 to 34. For persons aged over 65, opioids have been in medicinal use while in younger age groups these drugs have mainly been used as intoxicants.

## 6. The number of suicides continued decreasing

The number of suicides was at its highest in 1990, when there were a total of over 1,500 suicides in Finland. Since then, suicide mortality has decreased by over 40 per cent in twenty years. The declining trend continued in 2012. Altogether, 873 persons committed suicide, which was 39 fewer than in 2011. Men's suicide mortality is much higher than women's. In 2012, three out of four of the people that committed suicides were men. Suicide mortality or the number of suicides a year per 100,000 population was 16.1, 24.6 for men and 7.9 for women. Women's suicide mortality has remained more or less unchanged for decades. The decrease in suicide mortality is mostly the result of a drop in the number of suicides among men. In 2012, the number of suicides among men was still triple compared to that among women.

Compared with other EU countries, the suicide mortality of Finns aged under 65 was around 1.5 times as high as the EU average in 2010. By contrast, for persons aged 65 and over, the suicide mortality in Finland did not differ from the EU average.

**Figure 9. Suicide mortality 1970 to 2012**



## 7. There is around ten cot deaths per year

In Finland, infant mortality is one of the lowest in the world. In 2012, 141 children died in infancy, that is, under the age of one. Infant mortality was 2.4 per 1,000 live-born children. The main causes of death among children under the age of one were perinatal reasons and inborn malformations (Table 3). Infectious diseases, accidents and violence are rare causes of death for infants.

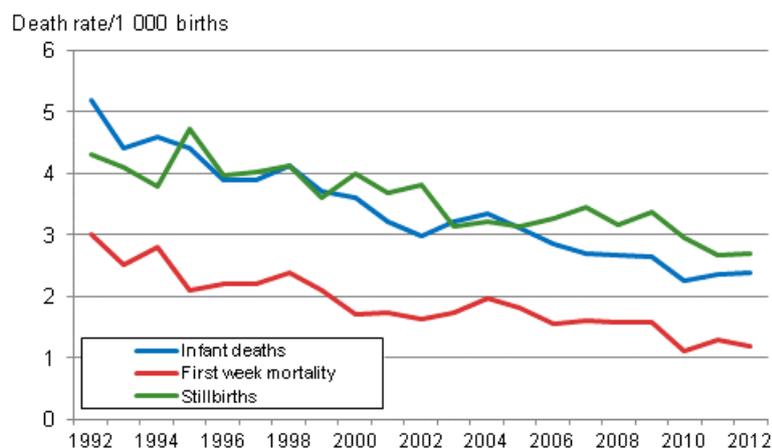
The number of stillborns was the same as last year, i.e. 161. Perinatal mortality (deaths during the first week and stillborn) was 3.9 per thousand births. Around one-half of children dying during their first year of life die during their first week of life (in the early neonatal period) and 60 per cent during the first four weeks of life (in the neonatal period). The main causes of death after the neonatal period are inborn malformations and cot deaths. In 2012, there were 12 cot deaths. Cot deaths mostly occur to children over the age of one month.

The mortality of children aged 1 to 14 has halved over the past twenty years. In 2012, there were 98 deaths among children. This corresponds with approximately 12 deaths per 100,000 population. The commonest cause of death among children aged 1 to 14 was accidents and the second most common was neoplasms.

In the past twenty years, there has usually been a total of one to seven maternal deaths per year. 2011 was the first year in the history of the statistics on causes of death when there was no maternal deaths. In 2012, there were two maternal deaths, which meant that maternal mortality was 3.4 deaths per 100,000 live-born children.

More information about mortality during infant and perinatal period can be found in Appendix Table 3.

**Figure 10. Mortality during infant and perinatal period in 1992-2012**



**Table 3. Causes of death among children under the age of one 2002, 2009 and 2012**

	2002	2009	2012
Total deaths	165	160	141
Certain conditions originating in the perinatal period (P00–P96)	75	74	51
Congenital malformations and chromosomal abnormalities (Q00–Q99)	51	52	43
Sudden infant death syndrome (R95)	13	15	12
Diseases of circulatory system and respiratory system (J00–J99, I00–I99)	4	5	7
Endocrine, nutritional and metabolic diseases (E00–E90)	0	5	5
Other diseases and unknown	17	4	19
Accidents and assault (V01–X44, X46–Y89)	5	5	4

## Appendix tables

**Appendix table 1a. Deaths by underlying cause of death and by age in 2012, both sexes**

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	51 737	239	9 554	41 944
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	48 203	198	7 755	40 250
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	306	3	54	249
01 Tuberculosis (A15-A19, B90, J65)	49	0	4	45
02 Human immunodeficiency virus (HIV) disease (B20-B24)	7	0	6	1
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	250	3	44	203
04-22 Neoplasms (C00-D48)	12 070	20	2 748	9 302
04-21 Malignant neoplasms (C00-C97)	11 710	19	2 714	8 977
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	196	0	69	127
05 Malignant neoplasm of oesophagus (C15)	266	0	89	177
06 Malignant neoplasm of stomach (C16)	445	0	115	330
07 Malignant neoplasm of colon (C18, C19)	794	0	151	643
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	398	0	87	311
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	484	1	94	389
10 Malignant neoplasm of pancreas (C25)	1 029	0	219	810
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	2 203	0	536	1 667
12 Malignant melanoma of skin (C43)	213	0	66	147
13 Malignant neoplasm of breast (C50)	881	0	325	556
14 Malignant neoplasm of cervix uteri (C53)	51	0	20	31
15 Malignant neoplasm of uterus (C54-C55)	189	0	33	156
16 Malignant neoplasm of ovary (C56)	342	0	79	263
17 Malignant neoplasm of prostate (C61)	852	0	62	790
18 Malignant neoplasm of kidney (C64)	347	0	79	268
19 Malignant neoplasm of bladder (C67)	263	0	28	235
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	1 074	5	205	864
21 Other malignant neoplasms	1 683	13	457	1 213
22 Other neoplasms (D00-D48)	360	1	34	325
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	656	19	173	464
23 Diabetes mellitus (E10-E14)	491	1	126	364
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	165	18	47	100
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	7 056	0	57	6 999
26 Other diseases of the nervous system and sense organs	1 459	19	299	1 141
27-30 Diseases of the circulatory system (I00-I425, I427-I99)	20 210	5	2 172	18 033
27 Ischaemic heart diseases (I20-I25)	11 099	0	1 131	9 968
28 Other heart diseases excl. rheumatic and alcohol related (I30-I425, I427-I52)	1 971	5	375	1 591
29 Cerebrovascular diseases (I60-I69)	4 498	0	364	4 134
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	2 642	0	302	2 340
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	2 026	7	219	1 800
31 Influenza (J09-J11)	43	1	1	41
32 Pneumonia (J12-J18, J849)	308	0	38	270
33 Bronchitis and emphysema (J40-J44, J47)	1 178	0	134	1 044
34 Asthma (J45-J46)	106	0	10	96
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	391	6	36	349
36 Diseases of the digestive system excl. alcohol-related diseases	1 197	3	211	983
37 Diseases of the genitourinary system (N00-N99)	369	1	24	344

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
38 Congenital malformations (Q00-Q99)	185	52	89	44
39 Other diseases	569	66	135	368
40 Ill-defined and unknown causes of mortality (R96-R99)	140	3	90	47
41 Alcohol related diseases and accidental poisoning by alcohol	1 960	0	1 484	476
42-53 ACCIDENTS AND VIOLENCE (V01-X44, X46-Y89)	3 308	35	1 707	1 566
42-49 Accidents (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	2 273	25	884	1 364
42 Land traffic accidents	206	7	136	63
43 Other land transport accidents	28	2	16	10
44 Water transport accidents (V90-V94)	34	0	20	14
45 Others and unspecified transport accidents (V95-V99)	6	0	4	2
46 Accidental falls (W00-W19)	1 156	1	195	960
47 Accidental drownings (W65-W74)	86	5	44	37
48 Accidental poisonings excl. accidental poisonings by alcohol (X40-X44, X46-X49, Y10-Y15)	284	0	250	34
49 Other accidents and sequelae of accidents	473	10	219	244
50 Suicides (X60-X84, Y87.0)	873	0	711	162
51 Assault (X85-Y09, Y87.1)	73	8	56	9
52 Event of undetermined intent (Y16-Y34, Y87.2)	74	2	55	17
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	15	0	1	14
54 No death certificate	226	6	92	128

**Appendix table 1b. Deaths by underlying cause of death and by age in 2012, males**

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	25 646	121	6 525	19 000
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	23 316	106	5 143	18 067
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	159	3	32	124
01 Tuberculosis (A15-A19, B90, J65)	26	0	2	24
02 Human immunodeficiency virus (HIV) disease (B20-B24)	6	0	5	1
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	127	3	25	99
04-22 Neoplasms (C00-D48)	6 326	10	1 471	4 845
04-21 Malignant neoplasms (C00-C97)	6 179	10	1 460	4 709
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	130	0	56	74
05 Malignant neoplasm of oesophagus (C15)	180	0	68	112
06 Malignant neoplasm of stomach (C16)	248	0	65	183
07 Malignant neoplasm of colon (C18, C19)	381	0	68	313
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	231	0	59	172
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	303	0	65	238
10 Malignant neoplasm of pancreas (C25)	496	0	131	365
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	1 467	0	361	1 106
12 Malignant melanoma of skin (C43)	128	0	44	84
13 Malignant neoplasm of breast (C50)	5	0	0	5
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)	852	0	62	790
18 Malignant neoplasm of kidney (C64)	207	0	58	149
19 Malignant neoplasm of bladder (C67)	198	0	20	178
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	550	3	129	418
21 Other malignant neoplasms	803	7	274	522
22 Other neoplasms (D00-D48)	147	0	11	136
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	366	10	122	234
23 Diabetes mellitus (E10-E14)	278	0	95	183
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	88	10	27	51
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	2 153	0	28	2 125
26 Other diseases of the nervous system and sense organs	762	11	166	585
27-30 Diseases of the circulatory system (I00-I425, I427-I99)	9 691	3	1 691	7 997
27 Ischaemic heart diseases (I20-I25)	5 832	0	964	4 868
28 Other heart diseases excl. rheumatic and alcohol related (I30-I425, I427-I52)	972	3	296	673
29 Cerebrovascular diseases (I60-I69)	1 806	0	225	1 581
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	1 081	0	206	875
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	1 238	1	154	1 083
31 Influenza (J09-J11)	15	0	1	14
32 Pneumonia (J12-J18, J849)	147	0	30	117
33 Bronchitis and emphysema (J40-J44, J47)	818	0	97	721
34 Asthma (J45-J46)	35	0	4	31
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	223	1	22	200
36 Diseases of the digestive system excl. alcohol-related diseases	528	1	141	386
37 Diseases of the genitourinary system (N00-N99)	158	0	12	146
38 Congenital malformations (Q00-Q99)	87	29	40	18
39 Other diseases	248	36	75	137
40 Ill-defined and unknown causes of mortality (R96-R99)	82	2	56	24

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
41 Alcohol related diseases and accidental poisoning by alcohol	1 518	0	1 155	363
42-53 ACCIDENTS AND VIOLENCE (V01-X44, X46-Y89)	2 186	14	1 312	860
42-49 Accidents (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	1 426	13	708	705
42 Land traffic accidents	140	2	105	33
43 Other land transport accidents	24	1	15	8
44 Water transport accidents (V90-V94)	33	0	20	13
45 Others and unspecified transport accidents (V95-V99)	6	0	4	2
46 Accidental falls (W00-W19)	609	0	161	448
47 Accidental drownings (W65-W74)	68	2	39	27
48 Accidental poisonings excl. accidental poisonings by alcohol (X40-X44, X46-X49, Y10-Y15)	209	0	190	19
49 Other accidents and sequelae of accidents	337	8	174	155
50 Suicides (X60-X84, Y87.0)	655	0	523	132
51 Assault (X85-Y09, Y87.1)	37	0	34	3
52 Event of undetermined intent (Y16-Y34, Y87.2)	60	1	46	13
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	8	0	1	7
54 No death certificate	144	1	70	73

**Appendix table 1c. Deaths by underlying cause of death and by age in 2012, females**

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	26 091	118	3 029	22 944
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	24 887	92	2 612	22 183
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	147	0	22	125
01 Tuberculosis (A15-A19, B90, J65)	23	0	2	21
02 Human immunodeficiency virus (HIV) disease (B20-B24)	1	0	1	0
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	123	0	19	104
04-22 Neoplasms (C00-D48)	5 744	10	1 277	4 457
04-21 Malignant neoplasms (C00-C97)	5 531	9	1 254	4 268
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	66	0	13	53
05 Malignant neoplasm of oesophagus (C15)	86	0	21	65
06 Malignant neoplasm of stomach (C16)	197	0	50	147
07 Malignant neoplasm of colon (C18, C19)	413	0	83	330
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	167	0	28	139
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	181	1	29	151
10 Malignant neoplasm of pancreas (C25)	533	0	88	445
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	736	0	175	561
12 Malignant melanoma of skin (C43)	85	0	22	63
13 Malignant neoplasm of breast (C50)	876	0	325	551
14 Malignant neoplasm of cervix uteri (C53)	51	0	20	31
15 Malignant neoplasm of uterus (C54-C55)	189	0	33	156
16 Malignant neoplasm of ovary (C56)	342	0	79	263
17 Malignant neoplasm of prostate (C61)	0	0	0	0
18 Malignant neoplasm of kidney (C64)	140	0	21	119
19 Malignant neoplasm of bladder (C67)	65	0	8	57
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	524	2	76	446
21 Other malignant neoplasms	880	6	183	691
22 Other neoplasms (D00-D48)	213	1	23	189
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	290	9	51	230
23 Diabetes mellitus (E10-E14)	213	1	31	181
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	77	8	20	49
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	4 903	0	29	4 874
26 Other diseases of the nervous system and sense organs	697	8	133	556
27-30 Diseases of the circulatory system (I00-I425, I427-I99)	10 519	2	481	10 036
27 Ischaemic heart diseases (I20-I25)	5 267	0	167	5 100
28 Other heart diseases excl. rheumatic and alcohol related (I30-I425, I427-I52)	999	2	79	918
29 Cerebrovascular diseases (I60-I69)	2 692	0	139	2 553
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	1 561	0	96	1 465
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	788	6	65	717
31 Influenza (J09-J11)	28	1	0	27
32 Pneumonia (J12-J18, J849)	161	0	8	153
33 Bronchitis and emphysema (J40-J44, J47)	360	0	37	323
34 Asthma (J45-J46)	71	0	6	65
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	168	5	14	149
36 Diseases of the digestive system excl. alcohol-related diseases	669	2	70	597
37 Diseases of the genitourinary system (N00-N99)	211	1	12	198
38 Congenital malformations (Q00-Q99)	98	23	49	26
39 Other diseases	321	30	60	231
40 Ill-defined and unknown causes of mortality (R96-R99)	58	1	34	23

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
41 Alcohol related diseases and accidental poisoning by alcohol	442	0	329	113
42-53 ACCIDENTS AND VIOLENCE (V01-X44, X46-Y89)	1 122	21	395	706
42-49 Accidents (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	847	12	176	659
42 Land traffic accidents	66	5	31	30
43 Other land transport accidents	4	1	1	2
44 Water transport accidents (V90-V94)	1	0	0	1
45 Others and unspecified transport accidents (V95-V99)	0	0	0	0
46 Accidental falls (W00-W19)	547	1	34	512
47 Accidental drownings (W65-W74)	18	3	5	10
48 Accidental poisonings excl. accidental poisonings by alcohol (X40-X44, X46-X49, Y10-Y15)	75	0	60	15
49 Other accidents and sequelae of accidents	136	2	45	89
50 Suicides (X60-X84, Y87.0)	218	0	188	30
51 Assault (X85-Y09, Y87.1)	36	8	22	6
52 Event of undetermined intent (Y16-Y34, Y87.2)	14	1	9	4
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	7	0	0	7
54 No death certificate	82	5	22	55

**Appendix table 2. Deaths from accidents by external cause and deaths from alcohol intoxication 2012**

External cause	Deaths from accidents	Of which under alcohol intoxication	
		Persons	%
Accidental deaths (excl. poisonings)	1 989	332	16,7
Transport accidents	243	34	14,0
Falls	1 156	114	9,9
Drowning	117	49	41,9
Eating, inhalation of food	59	19	32,2
Heat of sauna	58	33	56,9
Fire	84	41	48,8
Natural cold	75	21	28,0
Other accident	197	21	10,7

**Appendix table 3. Mortality during infant and perinatal period 1987–2012**

	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
2011	239	4,0	161	78	1,3	97	1,6	142	2,4
2012	232	3,9	161	71	1,2	85	1,4	141	2,4

1) Perinatal mortality = Stillborn (the duration of the mother's pregnancy at least 22 weeks or birth weight at least 500 g) 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 2012 by age and sex**

Age	Total	Males	Females
Age groups total	5 413 971	2 659 578	2 754 393
0	59 856	30 497	29 359
1 - 4	243 675	124 585	119 090
5 - 9	295 048	150 714	144 334
10 - 14	291 609	149 069	142 540
15 - 19	324 240	165 326	158 914
20 - 24	336 320	172 016	164 304
25 - 29	343 367	176 384	166 983
30 - 34	342 503	176 083	166 421
35 - 39	325 380	167 278	158 102
40 - 44	333 315	169 435	163 880
45 - 49	374 445	189 340	185 105
50 - 54	371 392	185 867	185 525
55 - 59	381 502	188 679	192 824
60 - 64	392 406	192 587	199 819
65 - 69	314 092	150 491	163 602
70 - 74	236 525	107 588	128 938
75 - 79	182 295	77 030	105 265
80 - 84	144 662	53 391	91 271
85 - 89	83 779	25 064	58 715
90 - 94	30 525	6 957	23 569
95 -	7 040	1 203	5 837

**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

# Quality Description, Causes of death 2012

## 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 (Implementation Regulation No 328/2011).

### Definitions

**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 newborn weighs is at least 500 grams.

Mote informations about definitions are available on the home page of the cause of death statistics under [concepts and definitions](#).

## 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. 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.

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.

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.

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

**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.

## 3. Correctness and accuracy of data

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 1000 cases yearly. Additional information is requested from the issuer of the death certificate in about 100 cases per year. Around 700 cases are handled by a medical expert every year. Additional information is obtained for around 200 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 100–250 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.

#### ***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. Cause of death data are available since 1936 in publications and from 1969 as time series in the database. 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***

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).

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.

## 7. Coherence and consistency/uniformity

The cause of death statistics are the only comprehensive statistics on causes of death in Finland. 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.

### Inquiries

Airi Pajunen 09 1734 3605

Kati Taskinen 09 1734 3297

Director in charge:

Riitta Harala

[kuolemansyyt@stat.fi](mailto:kuolemansyyt@stat.fi)

[www.stat.fi](http://www.stat.fi)

Source: Causes of death, Statistics Finland