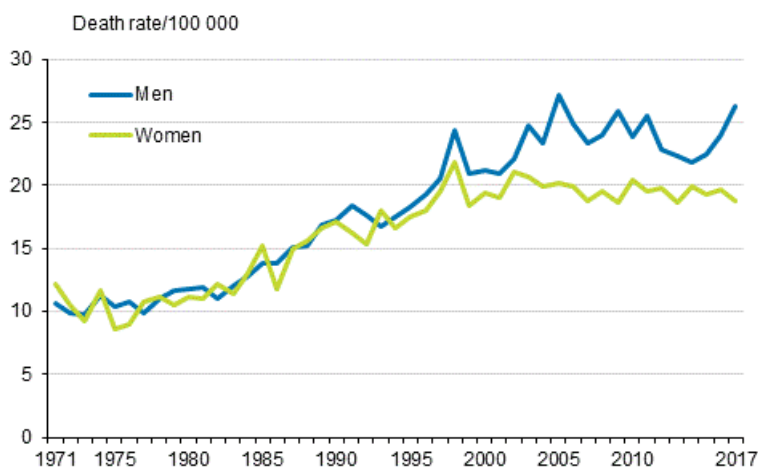


Causes of death in 2017

Over 1,200 died from accidental falls – the majority aged over 75

According to Statistics Finland's statistics on causes of death, a total of over 1,200 persons died as a result of accidental stumbles and falls in 2017. This was more than half of all accidental deaths. In recent years, the number of accidental falls especially among men has increased. Four out of five falls resulting in death occurred to persons aged over 75. The most common place where accidents happened was at home.

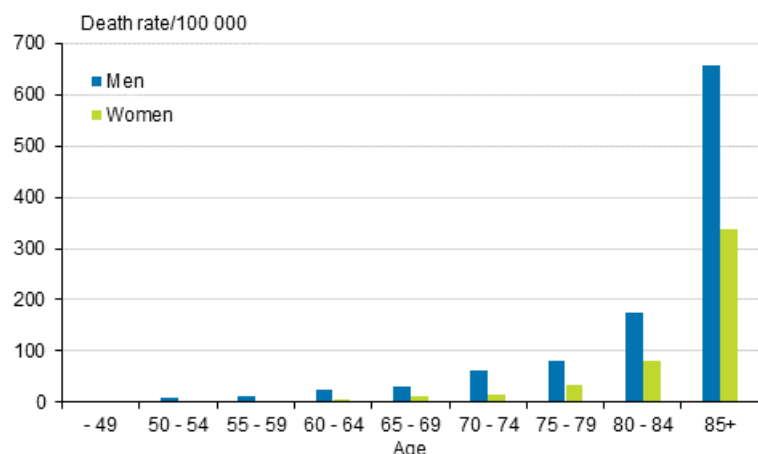
Men's and women's fatal accidental falls 1971 to 2017



Deaths from accidental falls have increased significantly. In the 1970s they caused the death of around 500 persons yearly in Finland, whereas 1,200 persons died, 700 men and 500 women in 2017. Relative to population size, the number of deaths caused by falls has more than doubled in forty years. During the last ten years men's mortality from accidental falls has increased by over 10 per cent, whereas correspondingly women's mortality has remained the same.

Falls resulting in death increase with age. Fewer than 10 persons aged under 35 died from stumbles or falls in 2017. The majority of stumbling accidents occurred to persons aged over 75. The average age at death caused by falls was 81 years for men and 88 years for women. Relative to the population, the older the age group in question, the more deaths caused by falls occurred, for both women and men. Furthermore, in relative terms, clearly more falls leading to death occurred to men than to women in all age groups.

Men's and women's mortality from accidental falls by age in 2017



The number of fatal accidental falls has increased during the last decades mostly due to the population's ageing age structure. When taking into account the population size and the change in age structure, fatal falling accidents among women have in fact decreased since the 1970s and especially in the 2000s. On the contrary, for men the age-standardised mortality adjusted for age structure has not developed as favourably, but mortality was slightly higher in 2017 compared to mortality in the 1970s and at the beginning of the 1980s.

Alcohol plays a small part in fatal falling accidents among the elderly

Around one-third of persons under 65 who suffered fatal falls were under the influence of alcohol at the time of the accident. In contrast, the part played by alcohol in falling accidents among persons over 65 was very small, only a few per cent.

In 2017, around one-half of fatal falling accidents occurred at home and slightly more than one-third in social welfare and health care service entities. The statistics include cases where the person has died immediately after the accidental falling or several weeks later due to different complications from the stumble. Typical injuries leading to death were intracranial injuries and femur fractures. Head injuries were more common among men than among women, who in relative terms correspondingly suffered more hip and femur fractures. In the analysis based on months of death, there were no signs that there are clearly more deaths due to accidental falls in the winter months than in other seasons.

Number of persons that died from alcohol decreased in 2017

Compared to the previous year, the number of persons that died from alcohol-related causes decreased in 2017. Just under 1,600 persons died from alcohol, which was almost 200 persons fewer than in 2016.

Alcohol mortality has decreased in recent years, especially in younger age groups. In contrast, alcohol mortality among women aged 65 and over and men aged 75 and over has increased during the past five years. The majority of persons who died of alcohol-related causes are still of working age but the share of persons aged over 65 has grown from 17 to 37 per cent over the past ten years. In 2017, the average age for men who died of alcohol-related causes was 61 years and that of women 62 years.

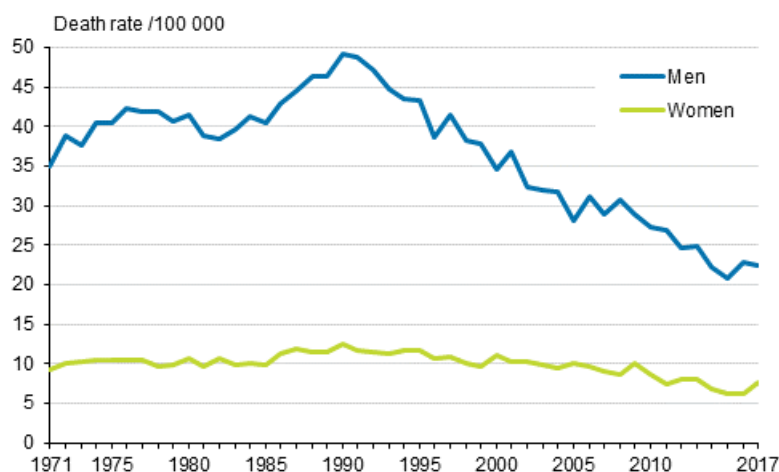
The number of deaths from alcohol has followed the changes in alcohol consumption, even though alcohol-related deaths usually call for long-term harmful use of alcohol that lasts for several years. Several different alcohol-related diseases used as primary causes of death and accidental alcohol poisonings have been collected into alcohol-related causes of death. Diseases related to alcohol use, such as liver and heart diseases, cause a majority of deaths from alcohol-related causes. The share of alcohol poisonings in deaths

from alcohol-related causes has decreased from 26 to 14 per cent over a ten-year period. In 2017, altogether 213 persons died from alcohol poisoning.

Increase in the number of suicides from previous years

The number of deaths from suicide has increased in two successive years. In 2017, altogether 824 persons committed suicide. This was over 30 suicides more than in the year before and over 90 more than in 2015. Despite the development in recent years, suicide mortality has decreased by over 20 per cent in ten years, by 22 per cent for men and 16 per cent for women.

Suicides mortality 1971 to 2017



The number of suicides has decreased relatively evenly since 1990, when more than 1,500 suicides were committed in Finland. Men’s suicide mortality has decreased more than women’s. However, men still commit clearly more suicides than women. Three out of four persons who committed suicide were men.

During the last ten years the decrease in suicide mortality is most clearly visible among middle-aged persons. In contrast, the suicide mortality among persons aged under 25 has not decreased in a similar way. The average age of those who committed suicide was 49 for women and 46 for men in 2017. More than 100 persons aged under 25 committed suicide.

Causes of death 2017

54-group time series classification	Total	Males	Females	Total	Age-standardised mortality rate	Age-standardised mortality rate
	Number	Number	Number	%	Change 2016–2017, %	Change 2007–2017, %
Deaths total	53 670	26 859	26 811	100	-2,8	-13,9
Diseases of the circulatory system	19 077	9 553	9 524	36	-5,5	-27,9
Neoplasms	12 949	6 905	6 044	24	-1,2	-5,4
Dementia, Alzheimer's disease	9 390	3 059	6 331	17	-0,6	+41,9
Accidents	2 325	1 519	806	4	+2,2	-20,3
Disease of the respiratory system	2 084	1 263	821	4	-5,0	-29,4
Alcohol related diseases and accidental poisoning by alcohol	1 558	1 160	398	3	-10,5	-32,3
Suicides	824	611	213	2	+4,2	-20,6
Other causes of death	5 463	2 789	2 674	10	-	-

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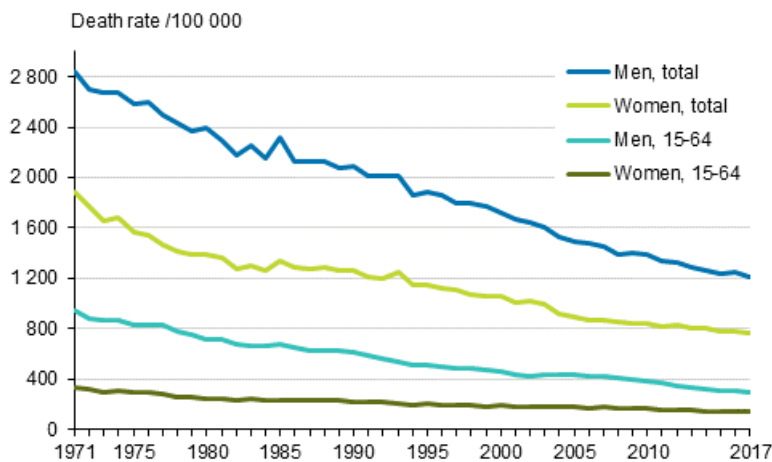
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1. Causes of death in 2017

In 2017, altogether 53,670 persons died, which is almost 300 fewer than the year before. The shares of men and women in deaths were almost equal.

Age-standardised mortality decreased in 2017 by 2.8 per cent from the previous year. Men's age-standardised mortality decreased slightly more than women's. Men's and women's age-standardised mortality has decreased relatively evenly since the 1970s and the favourable development still continued in 2017 (Figure 1). In addition to the population, the age-standardised mortality rate takes into account the changes in the population's age structure. The standardisation is necessary so that changes in mortality not due to the ageing of the population structure can be highlighted.

Figure 1. Age-standardised mortality in 1971 to 2017



In 2017, two out of three dead persons had turned 75 and more than one third had turned 85. More than 400 of the deceased had turned 100. The average age at death (median) was 85 years for women and 77 years for men, while ten years ago the average ages were 83 for women and 74 for men. The median describes the middle value, that is, one-half of all persons that died, died at a younger age than the median age and one-half at an older age than the median age.

Due to the age structure of persons who died, the typical causes of death of older age groups dominate the causes of death distribution of the entire population (Table 1). In 2017, thirty-six per cent of deaths of Finns were caused by diseases of the circulatory system and 24 per cent by neoplasms. The most common disease of the circulatory system was ischaemic heart disease, which caused one-fifth of all deaths. The commonest cancers causing death were lung cancer and pancreatic cancer. Even though the number of deaths due to pancreatic cancer has increased during the past ten years, age-standardised mortality from pancreatic cancer has not increased, but remained unchanged. The most common types of cancer leading to death for men were still lung cancer and prostate cancer, and correspondingly for women breast cancer and lung cancer.

Altogether 9,400 persons died from dementia, including Alzheimer's disease, which represented 17 per cent of all deaths. The number of deaths caused by dementia has grown rapidly in the past decade partly due to the ageing of the population. One in four deaths among women and one in ten deaths among men were caused by dementia. More than double the number of women die from dementia than the number of men, which is mainly because women live longer than men. There are no clear differences in age-standardised dementia mortality among sexes (Figure 6).

Fewer deaths of alcohol-related causes and more suicides than in the year before

Close on 1,600 persons died of alcohol-related diseases and alcohol poisonings in 2017, which was nearly 200 fewer than in the previous year. The share of alcohol-related causes in all causes of death was three per cent. In the past five years, mortality from alcohol-related causes has decreased by one fifth. Among men the mortality from alcohol has decreased more than among women. At the same time, mortality from alcohol among both women aged 65 or over and men aged 75 or over has grown, while correspondingly in younger age groups mortality from alcohol has decreased.

In 2017, suicides were committed by more than 800 persons, which was over 30 more than in the year before. The number of suicides was at its highest in 1990, when there were over 1,500 suicides in Finland. Since then, suicide mortality has decreased clearly (Figure 12). During the past five years men's suicide mortality has decreased by around 10 per cent, while correspondingly women's suicide mortality is on level with five years ago. Three out of four of the persons who committed suicide were men, and their average age was 46 years. The average age for women who committed suicide was 49 years.

In 2017, over 2,300 persons died in accidents, being four per cent of all deaths, when alcohol poisonings are included in alcohol-related deaths in the time series classification. The number of fatalities from accidents has increased in the past few years. In 2017, there were almost 100 more fatalities from accidents than in the year before. Accident mortality is clearly lower than ten years ago, but compared with the figures five years ago the development has not been as favourable. Men's accident mortality was nearly on the same level (+1.1%) in 2017 as five years ago, while women's accident mortality had decreased by over 10 per cent.

Table 1. Causes of death 2017

54-group time series classification	Total	Males	Females	Total	Males	Females	Age-standardised mortality rate	Age-standardised mortality rate
	Number	Number	Number	%	%	%	Change 2016–2017, %	Change 2007–2017, %
Deaths total	53 670	26 859	26 811	100	100	100	-2,8	-13,9
Diseases of the circulatory system	19 077	9 553	9 524	36	36	36	-5,5	-27,9
Neoplasms	12 949	6 905	6 044	24	26	23	-1,2	-5,4
Dementia, Alzheimer's disease	9 390	3 059	6 331	17	11	24	-0,6	+41,9
Accidents	2 325	1 519	806	4	6	3	+2,2	-20,3
Disease of the respiratory system	2 084	1 263	821	4	5	3	-5,0	-29,4
Alcohol related diseases and accidental poisoning by alcohol	1 558	1 160	398	3	4	1	-10,5	-32,3
Suicides	824	611	213	2	2	1	+4,2	-20,6
Other causes of death	5 463	2 789	2 674	10	10	10	-	-

A total of 2,400 working-age persons died of neoplasms

During 2017, close on 8,000 persons of working-age (15 to 64 years) died, which is 15 per cent of all deaths. Every fifth man and every tenth woman that died was of working-age. The number of deaths among people of working-age has decreased clearly. Ten years ago still, almost 3,000 more persons of working-age died annually.

The age-standardised mortality of working-age persons from all causes of death has decreased by more than one-quarter in ten years. The mortality of working-age men is still more than double compared to women, even though the mortality of men has diminished faster than that of women, which has decreased the difference in mortality between sexes.

Working-age people died most from neoplasms and from diseases of the circulatory system (Table 2). More than one-half of deceased working-age people died of these two causes. Forty-four per cent of women who died in working-age died from neoplasms. The share of diseases of the circulatory system of deaths was 16 per cent for women in 2017, while twenty years ago the share was still one-fifth. For working-age men, the importance of diseases of the circulatory system in causes of death is still slightly higher than that of neoplasms.

The most common cancer resulting in death for women was breast cancer, which caused the death of around 270 working-age women in 2017 (Appendix table 1c). For working-age men, the most common cancer resulting in death was lung cancer (Appendix table 1b).

In 2017, around 1,000 working-age persons died from alcohol-related causes. This was more than 100 fewer than the year before. The mortality from alcohol for working-age men and women has declined clearly from the record level of 2007, when there were 1,800 deaths. Clearly more working-age men die of alcohol-related causes than women of the same age.

Table 2. Main causes of death among working-age population (aged 15 to 64) in 2017

54-group time series classification	Total	Males	Females	Total	Males	Females
	Number	Number	Number	%	%	%
Deaths total	7 936	5 358	2 578	100	100	100
Neoplasms	2 441	1 300	1 141	31	24	44
Diseases of the circulatory system	1 809	1 404	405	23	26	16
Disease of the respiratory system	190	129	61	2	2	2
Alcohol related diseases and accidental poisoning by alcohol	988	752	236	12	14	9
Accidents	766	606	160	10	11	6
Suicides	634	474	160	8	9	6
Other causes of death	1 108	693	415	14	13	16

Persons aged over 65 died most from diseases of the circulatory system

Ninety per cent of women and 80 per cent of men who died in 2017 had turned 65. The causes of death structure for older age groups differs from that of the working-age population, for example, the relative share of suicides, accidents and alcohol-related causes of death is smaller than among working-age people.

Persons aged over 65 died most from diseases of the circulatory system that caused 38 per cent of deaths. The share of diseases of the circulatory system in causes of death grows with age: For those aged 65 to 69 they caused the death of under one-third and for those aged over 95 nearly one-half (Figure 2).

Correspondingly, the share of neoplasms in causes of death diminishes after the age of 70. The share of neoplasms for persons aged 65 to 69 was 40 per cent and for those aged over 95 it was only six per cent.

The importance of dementia, including Alzheimer's disease, as a cause of death has grown strongly. In 2017, dementia was the third most common cause of death category for elderly people after diseases of the circulatory system and neoplasms. During 2017, one in five deceased persons aged 65 or over died from dementia and more than one-third of those aged 95 or over.

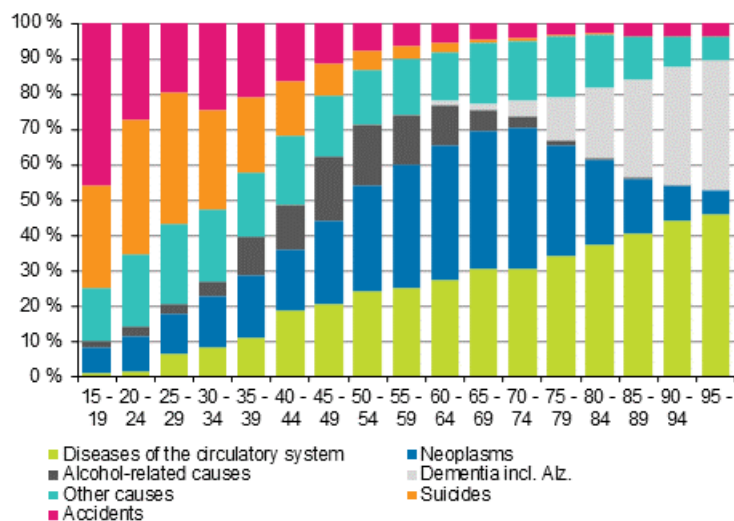
In 2017, more than one in five persons who committed suicide were aged 65 or over. The share of suicides in causes of death for elderly people is, however, very low, under one per cent. In an international comparison, the suicide mortality of Finns aged over 65 did not differ from the average for EU countries in 2015.

Additional information on the causes of death of persons of different ages can be found in Appendix tables 1a to 1c and database tables.

Table 3. Main causes of death among persons aged 65 or over in 2017

54-group time series classification	Total	Males	Females	Total	Males	Females
	Number	Number	Number	%	%	%
Deaths total	45 552	21 404	24 148	100	100	100
Diseases of the circulatory system	17 266	8 148	9 118	38	38	38
Neoplasms	10 484	5 591	4 893	23	26	20
Dementia, Alzheimer's disease	9 346	3 037	6 309	21	14	26
Disease of the respiratory system	1 893	1 134	759	4	5	3
Diseases of the digestive system (excl. alcohol-related diseases)	1 042	466	576	2	2	2
Alcohol related diseases and accidental poisoning by alcohol	570	408	162	1	2	1
Accidents	1 544	903	641	3	4	3
Suicides	185	135	50	0	1	0
Other causes of death	3 222	1 582	1 640	7	7	7

Figure 2. Proportions of causes of death by age groups in 2017



2. Ischaemic heart disease still the cause of one in five deaths for men

During 2017, most Finns died from diseases of the circulatory system. Their importance as a cause of death has decreased, however, over the past twenty years from 44 to 36 per cent. Simultaneously, men's and women's age-standardised mortality from diseases of the circulatory system has decreased by over 40 per cent. In 2017, mortality from diseases of the circulatory system relative to the number and age structure of the population decreased for both women and men compared to the previous year (Appendix figure 1).

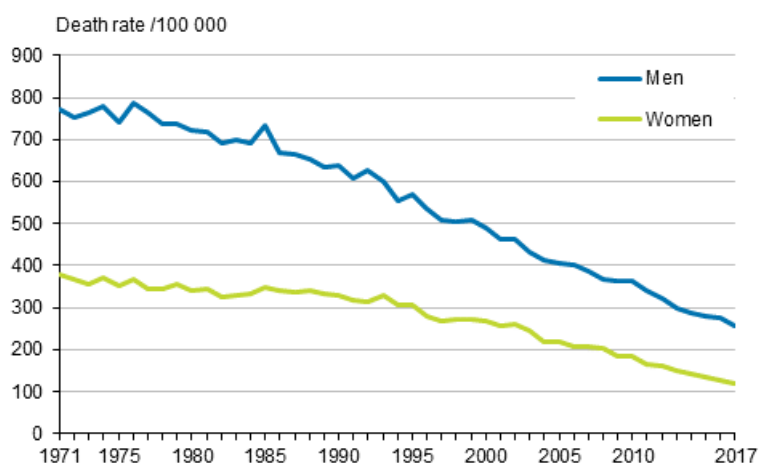
Among diseases of the circulatory system, ischaemic heart disease is still one of the most common causes of death for Finns, even though mortality from ischaemic heart disease has decreased clearly in Finland. Ischaemic heart disease still caused every fifth death for men and every sixth death for women. Almost 10,000 persons died of ischaemic heart disease.

Persons dying of ischaemic disease ever older

Persons dying of this disease are ever older. In 1971, nearly four out of ten persons that died of ischaemic heart disease were of working-age, while in 2017 fewer than one in ten was of working-age. The median average age for those dying of ischaemic heart disease in 1971 was 65 years for men and 73 years for women, while the corresponding figures in 2017 were 79 and 88 years.

Figure 3 shows age-standardised ischaemic heart disease mortality. In age standardisation, the effect of the age structure of the population and its changes are eliminated. Then 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. The new standard population of Eurostat is used as the standard population in age-standardisation. 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. In 2017, ischaemic heart disease mortality decreased further for both men and women.

Figure 3. Age-standardised mortality from ischaemic heart disease in 1971 to 2017



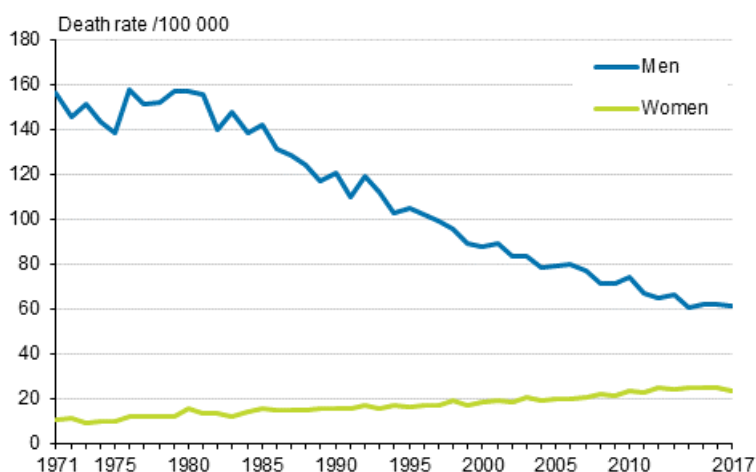
Difference between genders in lung cancer mortality has decreased in 10 years

Of the main cause of death categories, second most Finns died of neoplasms. In 2017, they caused nearly one in four deaths. Persons who died of neoplasms were on average almost 10 years younger than those who died of diseases of the circulatory system. Over the past ten years, age-standardised neoplasm mortality has decreased by ten per cent for men and less for women, that is, by four per cent (Appendix figure 2). In 2017, neoplasm mortality decreased further for both men and women compared to the previous year.

The most common type of cancer resulting in death was lung cancer and prostate cancer for men and breast cancer and lung cancer for women.

In 2017, a total of 1,500 men and 800 women died from carcinoma of the larynx, carcinoma of the tracheitis and lung cancer. The difference between men and women in lung cancer mortality has narrowed since the 1980s as men’s lung cancer mortality has decreased while it has grown among women. Over the past ten years, women’s age-standardised lung cancer mortality has grown by 15 per cent while men’s has decreased by more than 20 per cent. In 2017, age-standardised lung cancer mortality decreased for both men and women compared to the year before (Figure 4).

Figure 4. Age-standardised mortality from carcinoma of larynx, trachea and lung in 1971 to 2017

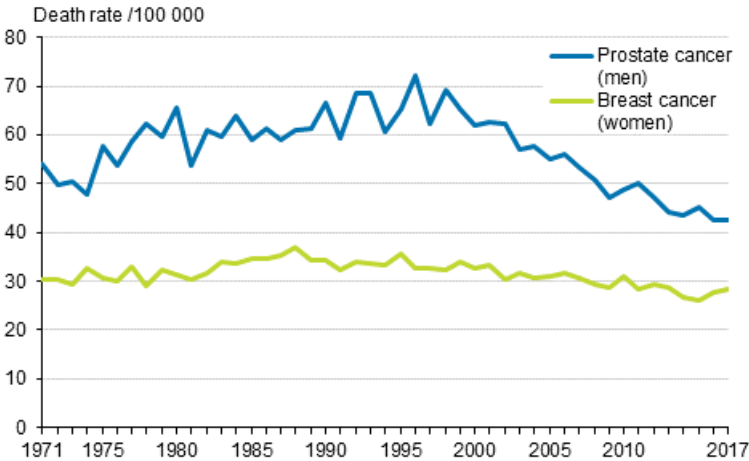


The most common type of cancer causing death among women is breast cancer. In 2017, more than 900 women died from breast cancer, which was around 30 more than in the year before. Breast cancer mortality was 33 deaths per 100,000 women. The average age of women that died of breast cancer was 72 and almost one-third were aged under 65. In 2017, the number of women that died of breast cancer was slightly higher than ten years ago but age-standardised breast cancer mortality relative to the number and age structure of the population has decreased by seven per cent in ten years (Figure 5).

After lung cancer, prostate cancer is the second most common type of cancer resulting in death among men. In 2017, around 900 men died of prostate cancer, that is, as many as women of breast cancer. Men’s non-age-standardised prostate cancer mortality is almost on level with women's breast cancer mortality, that is, 33 deaths per 100,000 men.

Above all, prostate cancer is a common cause of death for aged men: more than nine out of ten of the deceased were over 65 and the average age of the deceased was 81. Men's age-standardised prostate cancer mortality has decreased clearly in the 2000s.

Figure 5. Age-standardised prostate cancer mortality for men and breast cancer mortality for women 1971 to 2017



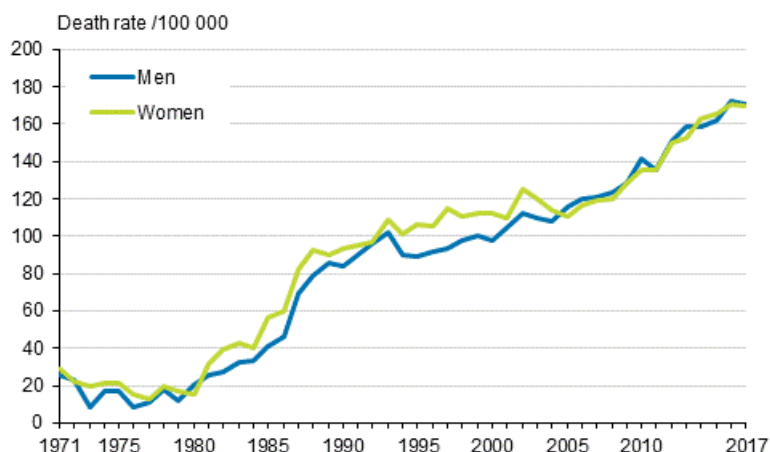
3. Every fifth person aged over 65 died of dementia and Alzheimer's disease

In 2017, nearly 9,400 Finns died of dementia and Alzheimer's disease, which is almost 200 persons more than in 2016. The number of deaths from dementia has nearly doubled over the past ten years. The growth is also visible in the age-standardised figures (Figure 6), 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, causes of death statistics have adopted an international guideline that limits the use of pneumonia as a underlying cause of death in connection with several chronic diseases. If a person, in addition to pneumonia, is suffering from, for example, dementia, dementia is selected as the underlying cause of death.

Dementia mortality has developed in a similar fashion for both men and women. A majority, or two-thirds, of those who die from this disease group are, however, women. The higher share of deaths from dementia among women than men is caused by women living longer than men. The average age at death of persons that died from dementia was 86 years for men and 89 years for women.

Dementia mortality of Finnish men and women (incl. Alzheimer's disease) was the highest in EU countries relative to the population in 2015. By contrast, pneumonia mortality was the lowest in EU countries in Finland. Pneumonia is a common immediate cause of death but a rarer underlying cause of death in Finland than in other EU countries.

Figure 6. Age-standardised dementia mortality (incl. Alzheimer's disease) 1971 to 2017

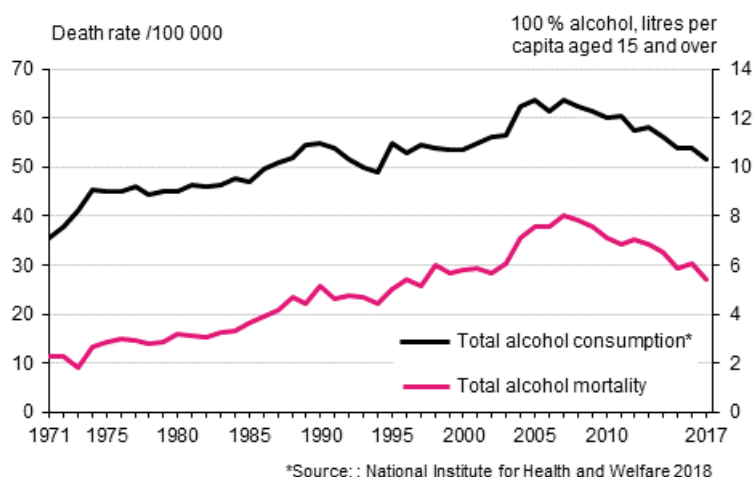


4. Number of deaths from alcohol decreased in 2017

The decrease in the number of deaths from alcohol-related causes that started in 2008 continued again in 2017. In 2017, almost 1,600 persons died from alcohol-related diseases and alcohol poisonings. Of them, around 1,200 were men and 400 women. Their number decreased by 172 from the year before. The share of alcohol-related causes in all deaths was three per cent.

Changes in alcohol-related mortality has followed regularly the graph for total consumption of alcoholic beverages even though alcohol-related deaths usually call for long-term harmful use of alcohol that lasts for several years. Several different alcohol-related diseases used as underlying causes of death and accidental alcohol poisonings have been collected into alcohol-related causes of death. Diseases related to long-term alcohol use, such as liver and heart diseases, cause a majority of deaths from alcohol-related causes. Alcoholic liver diseases cause more than one-half of deaths from alcohol-related causes. The share of alcohol poisonings in deaths from alcohol-related causes has decreased from 26 to 14 per cent over a ten-year period. In 2017, altogether 213 persons died from alcohol poisonings, three out of four of them were men.

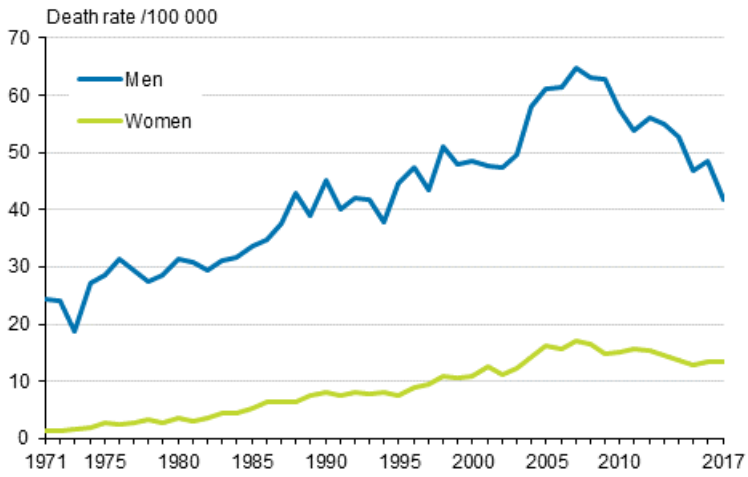
Figure 7. Age-standardised mortality from alcohol-related diseases and accidental poisonings by alcohol and total consumption of alcohol in 1971 to 2017



Men die from alcohol-related causes considerably more often than women (Figure 8). Male mortality has also followed changes in total consumption of alcohol more closely. Women are lagging behind in alcohol statistics but women's mortality from alcohol-related causes has also risen over several decades following men's mortality from alcohol-related causes. Women's mortality from alcohol-related causes has not decreased in recent years in the same way as men's mortality from alcohol-related causes either. In 2017, men's mortality from alcohol-related causes was one-fifth lower than in 2014 and women's almost on the same level as in 2014.

Persons who died of alcohol-related causes are older than before. In the past five years, mortality from alcohol-related causes among women aged 65 or over and men aged 75 or over has increased, while mortality from alcohol-related causes among younger age groups has decreased. Almost two-thirds of persons who died of alcohol-related causes are still of working age but alcohol mortality of persons aged over 65 has grown from 17 to 37 per cent over the past ten years. In 2017, the average age for men who died of alcohol-related causes was 61 years and that of women 62 years.

Figure 8. Age-standardised mortality from alcohol-related diseases and accidental poisonings by alcohol in 1971 to 2017



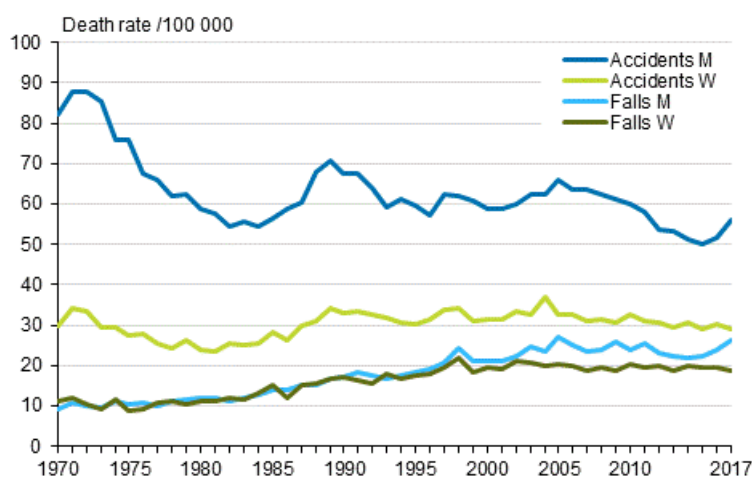
5. Altogether 2,300 died as a result of accidents

In addition to stumbling and falling, other typical fatal accidents are poisonings, traffic, drownings, asphyxiations and fires. Here all other poisonings apart from alcohol poisonings, which belong to alcohol-related causes in the national time series classification, are considered accidents.

In 2017, accidents caused the death of more than 2,300 persons, of whom 1,500 were men and 800 women. Accidents caused four per cent of all deaths.

From 2004 the number of accidental deaths relative to the population decreased almost continuously for ten years. Fatal traffic accidents have particularly decreased. However, since 2016 the number of fatal accidents has increased. Growth is visible especially in the number of stumbling and falling accidents among men. The favourable development of men's accident mortality seems to have come to a halt for the time being and the difference in mortality between men's and women's accident mortality has widened again.

Figure 9. Accident mortality and separately deaths from accidental falls in 1970 to 2017



The commonest accident leading to death is stumbling or falling. In 2017, more than 1,200 persons died from stumbles or falls, which is one-half of all fatal accidents. The majority, or nine out of ten, of fatal falls happened to persons aged over 65. The average age at death caused by falls was 81 years for men and 88 years for women. Relative to the number of living people, elderly men had clearly more fatal falls than women.

In 2017, a total of 291 persons died of accidental poisoning (excl. alcohol poisoning). Of them, 202 were men and 89 women. Men die of poisonings at a younger age than women. The average age of those dying of accidental poisonings was 39 years for men and 49 years for women. Compared with the previous year, poisoning deaths increased by around 50 cases. However, the number of poisoning deaths has decreased by more than 10 per cent in ten years.

The majority of accidental poisonings are poisonings from multiple substances, possibly involving several different pharmaceuticals as well as alcohol and/or drugs. The statistics have been compiled based on the substance judged as most influential.

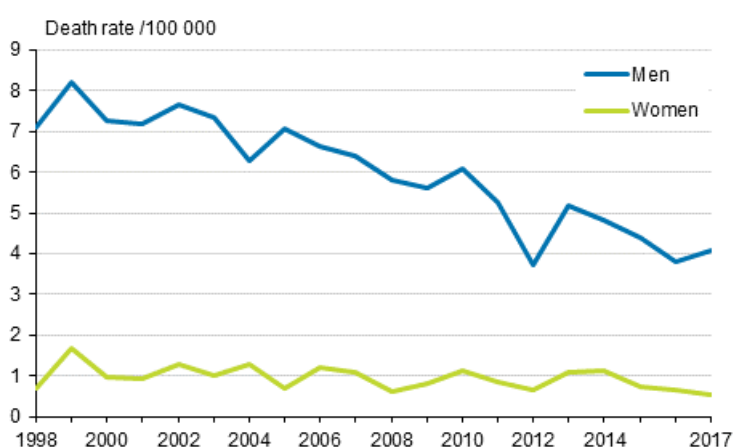
One-half of accidental poisoning deaths were drug-related deaths as defined by the EMCDDA. In the majority of these, some kind of opioid (for example, buprenorphine, tramadol, codein, fentanyl) was judged to be the most influential substance. Compared to the previous year, the number of accidental drug poisonings increased to some extent in 2017. Accidental poisonings, where the most influential substances most often were tranquillisers and sleeping medicine (for example, benzodiazepines) increased more than drug poisonings in 2017. Deaths caused by benzodiazepines (38 cases) doubled from the year before. Most growth occurred in the under 40 age group.

The second most common fatal accidents were transport accidents. There were 244 deaths in transport accidents (excl. drowning accidents in water traffic) in 2017. The number of deaths has almost halved in the last ten years. Suicides committed in traffic are not included in deaths in transport accidents but in suicides in the statistics.

Drowning accidents include drowning from falling into water and drowning while swimming or boating. In 2017, altogether 126 persons drowned, 35 of whom in water traffic. The majority of drowning victims, nine out of ten, were men. Deaths by drowning have decreased clearly since the beginning of the 2000s when there were over 200 drowning victims per year (Figure 10).

In 2017, altogether 54 persons died in accidental fires while in 2016 the number of deaths was 77. The majority, or three out of four, of the victims were men. Deaths in accidental fires do not include deaths in deliberately lit fires. There were 11 persons that committed suicide with fire or smoke. There were 61 deaths caused by the heat of sauna and 69 deaths caused by hypothermia.

Figure 10. Mortality from drowning accidents in 1998 to 2017



More than one-half of those that died in accidental fires or drowned were intoxicated

In 2017, alcohol was a contributing factor in one in six fatal accidents, on average. Sixteen per cent of those who died in fatal accidents were alcohol intoxicated, i.e. 319 persons (Appendix table 2). Ten years ago, the corresponding share was 23 per cent of fatal accidents. In the statistics on causes of death, alcohol intoxication is determined from the death certificate. The figures exclude alcohol and drug poisonings where alcohol or drugs have directly caused the death.

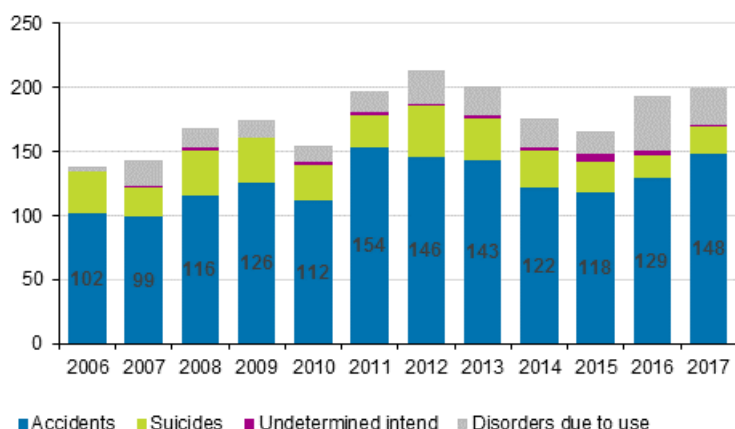
In 2017, intoxication was most common in drownings and accidental fire deaths, where more than one-half of victims were under the influence of alcohol. Almost one-half of those who died in the sauna or outdoors from hypothermia were also intoxicated. In traffic deaths, one in five was intoxicated at the time of death. By contrast, in stumbling accidents, of which a majority occurred among persons aged over 70, fewer than one in ten were under the influence of alcohol.

Altogether 200 died from drugs

In 2017, the number of persons that died from drugs was 200 in Finland. This was six more than the previous year and 34 more than in 2015. The majority of those who died from drugs were men, only one in four was a woman. The average age at death (median) from drugs was 35 years for men and 46 years for women. Most drug-related deaths occurred among men aged 30 to 34. There were 3.6 drug-related deaths per 100,000 inhabitants.

Drug-related deaths have been calculated using the definition (Selection B¹) compiled by the European Monitoring Centre for Drugs and Drug Addiction [EMCDDA](#). According to the classification, 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, as well as mental and behavioral disorders due to use of drugs. In addition to opioids, the definition classifies cannabis and cannabinoids, other hallucinogens, and stimulants suitable for abuse, such as amphetamine and its derivatives as drugs. The majority of drug-related deaths are accidental poisonings. In 2017, there were 148 accidental overdoses. The number is higher than in previous years. Self-inflicted poisonings with drugs are suicides. In 2017, a total of 22 suicides were committed with drugs, over one-half of them by women. Deaths related to mental and behavioral disorders due to use of drugs are usually a result of drug addiction or long-term drug use.

Figure 11. Drug-related deaths 2006 to 2017 (EMCDDA definition)



Drug-related deaths are classified based on the substance judged as most influential. The majority are poisonings from multiple substances, where the person has used other substances in addition to drugs, such as psychopharmacocons and/or alcohol. In drug poisonings resulting in death, combined use of drugs and pharmaceuticals was most common.

In 2017, three out of four drug-related deaths in Finland were associated with overdoses of opioids. The most influential substances were mostly synthetic medicinal opioids (the most common buprenorphine). Causes of death data are classified in accordance with the WHO’s International Classification of Diseases (ICD-10), where several drugs are classified under the same code. Therefore, the statistics on causes of death offer limited possibilities for substance-specific examinations. More detailed information is available from the Forensic Toxicology Unit of the National Institute for Health and Welfare that performs the forensic toxicology tests related to determining the cause of death.

1) ICD-10 codes F11-F12, F14-F16, F19 and X41, X42, X61, X62, Y11 and Y12 together with T codes (T40.0-9,T43.6.)

Table 4. Drug-related mortality 2000 to 2017

	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
2013	201	148	53	3,7	5,5	1,9
2014	176	141	35	3,2	5,2	1,3
2015	166	127	39	3,0	4,7	1,4
2016	194	152	42	3,5	5,6	1,5
2017	200	147	53	3,6	5,4	1,9

6. Increase in the number of suicides from previous years

The number of suicides has decreased relatively evenly since 1990, when more than 1,500 suicides were committed in Finland. The decrease in suicides has been clearer among men than among women. However, the number of deaths from suicide has increased in the past two years. In 2017, altogether 824 persons committed suicide, which was over 30 cases more than in the previous year and over 100 cases more than in 2015. Despite the increase in the number of suicides in recent years, suicide mortality has decreased by over 20 per cent in ten years, by 22 per cent for men and 16 per cent for women.

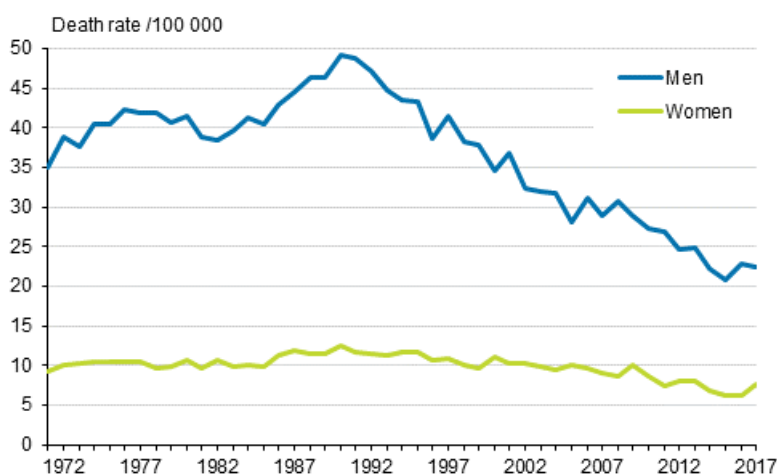
Men still commit clearly more suicides than women. Three-quarters of suicides were committed by men. In 2017, suicide mortality or the number of suicides a year per 100,000 population was 15, being 22 for men and 8 for women (Figure 12).

During the last ten years the decrease in suicide mortality is most clearly visible among middle-aged persons. In contrast, the suicide mortality among persons aged under 25 has not decreased in a similar way. The average age of those who committed suicide was 49 for women and 46 for men in 2017.

Suicides are a central cause of death for young people. Among the causes of death for young people aged 15 to 24, the share of suicides was over one third. The share of suicides in the causes of death for young people is high because other mortality among young people is low. Of all those who committed suicide, slightly more than one in ten was under 25.

Young people's suicide mortality in Finland is high by European comparison. According to Eurostat's statistics for 2015, suicide mortality among young people aged 15 to 24 was higher than in Finland only in five EU countries. By contrast, for persons aged 65 and over, suicide mortality in Finland did not differ from the EU average.

Figure 12. Suicides mortality 1971 to 2017



7. Number of deaths of children has halved in 20 years

In 2017, altogether 101 children died under the age of one, when the corresponding number 20 years ago was over 200. In 2017, infant mortality was 2.0 per 1,000 live-born children (1997:3.9). The main causes of death among children under the age of one were perinatal reasons and congenital malformations (Table 5). In contrast, infectious diseases, accidents and violence were rare causes of death for children under the age of one.

In 2017, there were 143 stillbirths. The number of stillbirths has decreased clearly since the 1990s. Perinatal mortality (deaths during the first week and stillborn) was 3.9 per one thousand births. More than one-half of children dying during their first year of life died during their first week of life and nearly three out of four during the first four weeks of life (in the neonatal period). The main causes of death after the neonatal period are congenital malformations and cot deaths. The number of cot deaths has decreased in the 2000s. In 2017, five children suffered cot death, whereas in 2000 the corresponding number was 18. Cot deaths mostly occur to children over the age of one month.

The number of children who died aged 1 to 14 has also halved over the past twenty years. Fatal accidents (traffic accidents, drownings), in particular, occur to children less often than before. In 2017, the number of deaths among children was 81, which was almost the same number as in the previous year. This corresponds with approximately 10 deaths per 100,000 children. The most common causes of death among children were cancers and accidents.

Over the past ten years, an average of three women per year have died from reasons related to pregnancy or childbirth. The year 2011 was the first year in the history of the statistics on causes of death when there were no maternal deaths. In 2017, there were four maternal deaths, which meant that maternal mortality was 7.9 deaths per 100,000 live-born children.

More information about mortality during the infant and perinatal periods can be found in Appendix table 3.

Figure 13. Mortality during infant and perinatal period in 1992 to 2017

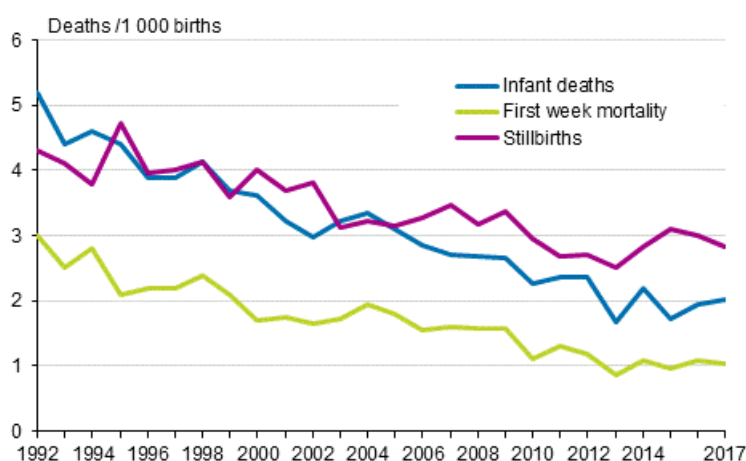


Table 5. Causes of death among children under the age of one 2000, 2005, 2010, 2015 and 2017

	2000	2005	2010	2015	2017
Total deaths	205	179	138	96	101
Certain conditions originating in the perinatal period (P00-P96)	84	77	58	49	47
Congenital malformations and chromosomal abnormalities (Q00-Q99)	78	61	40	30	30
Sudden infant death syndrome (R95)	18	19	17	6	5
Diseases of circulatory system and respiratory system (J00-J99, I00-J99)	4	5	5	1	1
Endocrine, nutritional and metabolic diseases (E00-E90)	5	6	3	2	7
Other diseases and unknown	13	9	11	8	9
Accidents and assault (V01-Y89)	3	2	4	0	2

Appendix tables

Appendix table 1a. Deaths by underlying cause of death and by age in 2017, both sexes

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	53 670	182	7 936	45 552
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	50 260	159	6 435	43 666
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	286	7	47	232
01 Tuberculosis (A15-A19, B90, J65)	35	0	2	33
02 Human immunodeficiency virus (HIV) disease (B20-B24)	6	0	4	2
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	245	7	41	197
04-22 Neoplasms (C00-D48)	12 949	24	2 441	10 484
04-21 Malignant neoplasms (C00-C97)	12 573	24	2 414	10 135
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	183	0	63	120
05 Malignant neoplasm of oesophagus (C15)	296	0	69	227
06 Malignant neoplasm of stomach (C16)	440	0	88	352
07 Malignant neoplasm of colon (C18, C19)	909	0	146	763
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	459	0	92	367
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	543	0	114	429
10 Malignant neoplasm of pancreas (C25)	1 168	0	209	959
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	2 310	0	446	1 864
12 Malignant melanoma of skin (C43)	226	0	59	167
13 Malignant neoplasm of breast (C50)	913	0	271	642
14 Malignant neoplasm of cervix uteri (C53)	55	0	27	28
15 Malignant neoplasm of uterus (C54-C55)	202	0	22	180
16 Malignant neoplasm of ovary (C56)	330	0	76	254
17 Malignant neoplasm of prostate (C61)	898	0	57	841
18 Malignant neoplasm of kidney (C64)	324	1	63	260
19 Malignant neoplasm of bladder (C67)	277	0	28	249
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	1 144	5	168	971
21 Other malignant neoplasms	1 896	18	416	1 462
22 Other neoplasms (D00-D48)	376	0	27	349
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	756	13	178	565
23 Diabetes mellitus (E10-E14)	566	0	116	450
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	190	13	62	115
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	9 390	0	44	9 346
26 Other diseases of the nervous system and sense organs excl. alcohol-related	1 785	11	234	1 540
27-30 Diseases of the circulatory system excl. alcohol-related (I00-I425, I427-I99)	19 077	2	1 809	17 266
27 Ischaemic heart diseases (I20-I25)	9 861	0	867	8 994
28 Other heart diseases excl. rheumatic and alcohol-related (I30-I425, I427-I52)	1 755	2	299	1 454
29 Cerebrovascular diseases (I60-I69)	4 044	0	301	3 743
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	3 417	0	342	3 075
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	2 084	1	190	1 893
31 Influenza (J09-J11)	256	0	11	245
32 Pneumonia (J12-J18, J849)	120	0	29	91
33 Bronchitis and emphysema (J40-J44, J47)	1 265	0	117	1 148
34 Asthma (J45-J46)	83	0	6	77
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	360	1	27	332
36 Diseases of the digestive system excl. alcohol-related diseases	1 231	0	189	1 042
37 Diseases of the genitourinary system (N00-N99)	207	0	18	189

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
38 Congenital malformations (Q00-Q99)	189	41	87	61
39 Other diseases excl. alcohol-related	551	56	111	384
40 Ill-defined and unknown causes of mortality (R96-R99)	197	4	99	94
41 Alcohol-related diseases and accidental poisoning by alcohol	1 558	0	988	570
42-53 ACCIDENTS AND VIOLENCE excl. accidental poisoning by alcohol (V01-X44, X46-Y89)	3 267	21	1 481	1 765
42-49 Accidents excl. accidental poisoning by alcohol (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	2 325	15	766	1 544
42 Land traffic accidents	198	7	122	69
43 Other land transport accidents	38	1	18	19
44 Water transport accidents (V90-V94)	41	1	22	18
45 Others and unspecified transport accidents (V95-V99)	2	0	2	0
46 Accidental falls (W00-W19)	1 237	0	137	1 100
47 Accidental drownings (W65-W74)	91	2	44	45
48 Accidental poisonings excl. accidental poisoning by alcohol (X40-X44, X46-X49, Y10-Y15)	291	0	253	38
49 Other accidents and sequelae of accidents	427	4	168	255
50 Suicides (X60-X84, Y87.0)	824	5	634	185
51 Assault (X85-Y09, Y87.1)	61	1	45	15
52 Event of undetermined intent (Y16-Y34, Y87.2)	51	0	35	16
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	6	0	1	5
54 NO DEATH CERTIFICATE	143	2	20	121

Appendix table 1b. Deaths by underlying cause of death and by age in 2017, males

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	26 859	97	5 358	21 404
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	24 588	84	4 211	20 293
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	145	6	23	116
01 Tuberculosis (A15-A19, B90, J65)	13	0	2	11
02 Human immunodeficiency virus (HIV) disease (B20-B24)	5	0	3	2
03 Other infectious and parasitic diseases (A00-A09, A20-B19, B25-B89, B91-B99)	127	6	18	103
04-22 Neoplasms (C00-D48)	6 905	14	1 300	5 591
04-21 Malignant neoplasms (C00-C97)	6 736	14	1 286	5 436
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	125	0	44	81
05 Malignant neoplasm of oesophagus (C15)	221	0	56	165
06 Malignant neoplasm of stomach (C16)	249	0	55	194
07 Malignant neoplasm of colon (C18, C19)	439	0	77	362
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	278	0	62	216
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	345	0	72	273
10 Malignant neoplasm of pancreas (C25)	577	0	130	447
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	1 535	0	294	1 241
12 Malignant melanoma of skin (C43)	152	0	42	110
13 Malignant neoplasm of breast (C50)	5	0	2	3
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)	898	0	57	841
18 Malignant neoplasm of kidney (C64)	185	0	47	138
19 Malignant neoplasm of bladder (C67)	199	0	20	179
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	655	4	109	542
21 Other malignant neoplasms	873	10	219	644
22 Other neoplasms (D00-D48)	169	0	14	155
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	412	8	117	287
23 Diabetes mellitus (E10-E14)	324	0	83	241
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	88	8	34	46
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	3 059	0	22	3 037
26 Other diseases of the nervous system and sense organs excl. alcohol-related	920	5	126	789
27-30 Diseases of the circulatory system excl. alcohol-related (I00-I425, I427-I99)	9 553	1	1 404	8 148
27 Ischaemic heart diseases (I20-I25)	5 486	0	745	4 741
28 Other heart diseases excl. rheumatic and alcohol-related (I30-I425, I427-I52)	923	1	224	698
29 Cerebrovascular diseases (I60-I69)	1 728	0	191	1 537
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	1 416	0	244	1 172
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	1 263	0	129	1 134
31 Influenza (J09-J11)	113	0	7	106
32 Pneumonia (J12-J18, J849)	62	0	19	43
33 Bronchitis and emphysema (J40-J44, J47)	839	0	77	762
34 Asthma (J45-J46)	20	0	4	16
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	229	0	22	207
36 Diseases of the digestive system excl. alcohol-related diseases	606	0	140	466
37 Diseases of the genitourinary system (N00-N99)	99	0	15	84
38 Congenital malformations (Q00-Q99)	90	19	44	27
39 Other diseases excl. alcohol-related	254	31	69	154
40 Ill-defined and unknown causes of mortality (R96-R99)	122	0	70	52

Underlying cause of death (54-group classification)	Ages total	0-14	15-64	65-
41 Alcohol-related diseases and accidental poisoning by alcohol	1 160	0	752	408
42-53 ACCIDENTS AND VIOLENCE excl. accidental poisoning by alcohol (V01-X44, X46-Y89)	2 204	12	1 133	1 059
42-49 Accidents excl. accidental poisoning by alcohol (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	1 519	10	606	903
42 Land traffic accidents	151	5	105	41
43 Other land transport accidents	34	1	16	17
44 Water transport accidents (V90-V94)	38	0	21	17
45 Others and unspecified transport accidents (V95-V99)	2	0	2	0
46 Accidental falls (W00-W19)	714	0	110	604
47 Accidental drownings (W65-W74)	79	2	39	38
48 Accidental poisonings excl. accidental poisoning by alcohol (X40-X44, X46-X49, Y10-Y15)	202	0	178	24
49 Other accidents and sequelae of accidents	299	2	135	162
50 Suicides (X60-X84, Y87.0)	611	2	474	135
51 Assault (X85-Y09, Y87.1)	34	0	30	4
52 Event of undetermined intent (Y16-Y34, Y87.2)	37	0	22	15
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	3	0	1	2
54 NO DEATH CERTIFICATE	67	1	14	52

Appendix table 1c. Deaths by underlying cause of death and by age in 2017, females

Underlying cause of death (54-group short list)	Ages total	0-14	15-64	65-
01-54 TOTAL DEATHS (A00-Y89)	26 811	85	2 578	24 148
01-41 DISEASES AND ACCIDENTAL POISONING BY ALCOHOL (A00-R99, X45)	25 672	75	2 224	23 373
01-03 Certain infectious and parasitic diseases (A00-B99, J65)	141	1	24	116
01 Tuberculosis (A15-A19, B90, J65)	22	0	0	22
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)	118	1	23	94
04-22 Neoplasms (C00-D48)	6 044	10	1 141	4 893
04-21 Malignant neoplasms (C00-C97)	5 837	10	1 128	4 699
04 Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	58	0	19	39
05 Malignant neoplasm of oesophagus (C15)	75	0	13	62
06 Malignant neoplasm of stomach (C16)	191	0	33	158
07 Malignant neoplasm of colon (C18, C19)	470	0	69	401
08 Malignant neoplasm of rectum, anus and anal canal (C20-C21)	181	0	30	151
09 Primary malignant neoplasm of liver and intrahepatic bile ducts (C22)	198	0	42	156
10 Malignant neoplasm of pancreas (C25)	591	0	79	512
11 Malignant neoplasm of larynx, trachea, bronchus and lung (C32-C34)	775	0	152	623
12 Malignant melanoma of skin (C43)	74	0	17	57
13 Malignant neoplasm of breast (C50)	908	0	269	639
14 Malignant neoplasm of cervix uteri (C53)	55	0	27	28
15 Malignant neoplasm of uterus (C54-C55)	202	0	22	180
16 Malignant neoplasm of ovary (C56)	330	0	76	254
17 Malignant neoplasm of prostate (C61)	0	0	0	0
18 Malignant neoplasm of kidney (C64)	139	1	16	122
19 Malignant neoplasm of bladder (C67)	78	0	8	70
20 Malignant neoplasm of lymphoid, haematopoietic and related tissue (C81-C96)	489	1	59	429
21 Other malignant neoplasms	1 023	8	197	818
22 Other neoplasms (D00-D48)	207	0	13	194
23-24 Endocrine, nutritional and metabolic diseases (E00-E90)	344	5	61	278
23 Diabetes mellitus (E10-E14)	242	0	33	209
24 Other endocrine, nutritional and metabolic diseases (E00-E09, E15-E90)	102	5	28	69
25 Dementia, Alzheimers disease (F01, F03, G30, R54)	6 331	0	22	6 309
26 Other diseases of the nervous system and sense organs excl. alcohol-related	865	6	108	751
27-30 Diseases of the circulatory system excl. alcohol-related (I00-I425, I427-I99)	9 524	1	405	9 118
27 Ischaemic heart diseases (I20-I25)	4 375	0	122	4 253
28 Other heart diseases excl. rheumatic and alcohol-related (I30-I425, I427-I52)	832	1	75	756
29 Cerebrovascular diseases (I60-I69)	2 316	0	110	2 206
30 Other diseases of the circulatory system (I00-I15, I26-I28, I70-I99)	2 001	0	98	1 903
31-35 Diseases of the respiratory system (J00-J64, J66-J99)	821	1	61	759
31 Influenza (J09-J11)	143	0	4	139
32 Pneumonia (J12-J18, J849)	58	0	10	48
33 Bronchitis and emphysema (J40-J44, J47)	426	0	40	386
34 Asthma (J45-J46)	63	0	2	61
35 Other diseases of the respiratory system (J00-J06, J20-J39, J60-J64, J66-J848, J85-J99)	131	1	5	125
36 Diseases of the digestive system excl. alcohol-related diseases	625	0	49	576
37 Diseases of the genitourinary system (N00-N99)	108	0	3	105
38 Congenital malformations (Q00-Q99)	99	22	43	34
39 Other diseases excl. alcohol-related	297	25	42	230
40 Ill-defined and unknown causes of mortality (R96-R99)	75	4	29	42

Underlying cause of death (54-group short list)	Ages total	0-14	15-64	65-
41 Alcohol-related diseases and accidental poisoning by alcohol	398	0	236	162
42-53 ACCIDENTS AND VIOLENCE excl. accidental poisoning by alcohol (V01-X44, X46-Y89)	1 063	9	348	706
42-49 Accidents excl. accidental poisoning by alcohol (V01-X44, X46-X59, Y10-Y15, Y85-Y86)	806	5	160	641
42 Land traffic accidents	47	2	17	28
43 Other land transport accidents	4	0	2	2
44 Water transport accidents (V90-V94)	3	1	1	1
45 Others and unspecified transport accidents (V95-V99)	0	0	0	0
46 Accidental falls (W00-W19)	523	0	27	496
47 Accidental drownings (W65-W74)	12	0	5	7
48 Accidental poisonings excl. accidental poisoning by alcohol (X40-X44, X46-X49, Y10-Y15)	89	0	75	12
49 Other accidents and sequelae of accidents	128	2	33	93
50 Suicides (X60-X84, Y87.0)	213	3	160	50
51 Assault (X85-Y09, Y87.1)	27	1	15	11
52 Event of undetermined intent (Y16-Y34, Y87.2)	14	0	13	1
53 Other external causes and sequelae of other external causes (Y35-Y84, Y88-Y89)	3	0	0	3
54 NO DEATH CERTIFICATE	76	1	6	69

Appendix table 2. Deaths from accidents by external cause and deaths from alcohol intoxication 2017

External cause	Deaths from accidents	Of which under alcohol intoxication	
		Persons	%
Accidental deaths (excl. poisonings)	2 034	319	15,7
Transport accidents	244	52	21,3
Falls	1 237	79	6,4
Drowning	126	67	53,2
Eating, inhalation of food (W79)	63	22	34,9
Heat of sauna (W92)	61	28	45,9
Fire (X00–X09)	54	28	51,9
Natural cold (X31)	69	31	44,9
Other accident	180	12	6,,7

Appendix table 3. Mortality during infant and perinatal period 1987–2017

	Perinatal deaths (stillbirths and first week deaths)	Perinatal mortality/ 1000 births (incl. stillbirths) ¹⁾	Stillbirths	First week mortality	First week mortality/ 1,000 births	Neonatal deaths	Neonatal mortality ²⁾	Infant deaths	Infant mortality ³⁾
1987	505	8,4	311	194	3,2	252	4,2	370	6,2
1990	507	7,7	307	200	3,1	245	3,7	368	5,6
1997	369	6,2	240	129	2,2	165	2,8	233	3,9
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
2013	197	3,4	147	50	0,9	61	1,0	98	1,7
2014	225	3,9	163	62	1,1	81	1,4	125	2,2
2015	225	4,0	172	53	1,0	69	1,2	96	1,7
2016	216	4,1	159	57	1,1	70	1,3	103	2,0
2017	195	3,9	143	52	1,0	76	1,5	101	2,0

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 2017 by age and sex

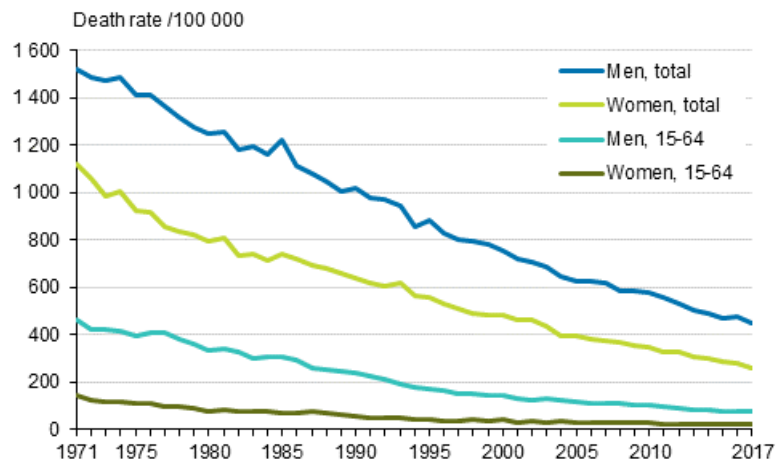
Age	Total	Males	Females
Total	5 508 213,5	2 715 729,0	2 792 484,5
0	51 871,5	26 406,0	25 465,5
1–4	231 152,0	118 344,0	112 808,0
5–9	309 480,5	158 126,5	151 354,0
10–14	299 797,0	153 174,5	146 622,5
15–19	297 359,5	152 714,5	144 655,0
20–24	331 396,0	169 905,5	161 490,5
25–29	351 082,0	180 383,5	170 698,5
30–34	354 416,0	182 840,0	171 576,0
35–39	348 551,0	179 517,0	169 034,0
40–44	328 780,0	168 858,0	159 922,0
45–49	333 853,5	169 148,0	164 705,5
50–54	371 245,5	186 625,5	184 620,0
55–59	365 111,0	181 216,5	183 894,5
60–64	369 471,5	180 302,0	189 169,5
65–69	372 610,0	179 277,0	193 333,0
70–74	291 216,0	135 756,0	155 460,0
75–79	209 402,5	91 240,0	118 162,5
80–84	146 897,0	58 159,0	88 738,0
85–89	96 125,5	31 952,0	64 173,5
90–94	39 364,0	10 147,5	29 216,5
95+	9 031,5	1 646,0	7 385,5

Appendix table 5. Standard population used in calculating age-standardised figures (Eurostat 2012)

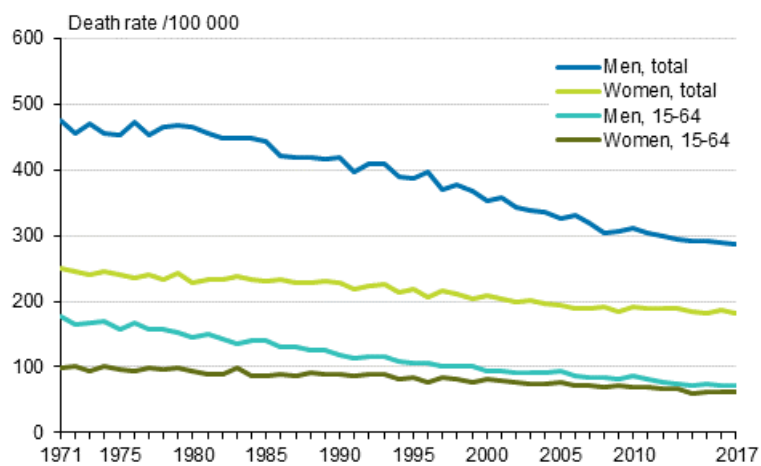
Age	Standard population
0	1 000
1–4	4 000
5–9	5 500
10–14	5 500
15–19	5 500
20–24	6 000
25–29	6 000
30–34	6 500
35–39	7 000
40–44	7 000
45–49	7 000
50–54	7 000
55–59	6 500
60–64	6 000
65–69	5 500
70–74	5 000
75–79	4 000
80–84	2 500
85–89	1 500
90–94	800
95+	200
Total	100 000

Appendix figures

Appendix figure 1. Age-standardised mortality from diseases of the circulatory system in 1971 to 2017



Appendix figure 2. Age-standardised mortality from neoplasms in 1971 to 2017



Quality Description: Causes of death 2017

1. Relevance of statistical information

In the statistics on causes of death, statistical data are produced annually on the causes of death of persons permanently resident in Finland. The statistics are compiled on the basis of death certificates. The data are supplemented with and verified against data on deaths from the Population Information System of the Population Register Centre. Statistics Finland has death certificates and data on causes of death from 1936 onwards.

Cause of death data are highly significant for general information systems describing the population's state of health. Cause of death data are used in various medical surveys, and by combining the data with other Statistics Finland's data files, it is possible to study, for instance, differences in mortality between different population groups.

Investigating the cause of death and the related procedures including the production of statistics and archiving of death certificates is based on the act (1973/459) and decree (1973/948) on the investigation of the cause of death. In April 2011, Commission Regulation (EC) No 1338/2008 was passed and it confirms the variables, specifications and metadata which the EU Member States have to supply as concerns statistics on causes of death.

Concepts

Causes of death are obtained from death certificates. Data on underlying causes of death have been collected in database tables from 1969 onwards and from 1987, in addition to the underlying cause of death, there are also data on **immediate, intermediate and contributing causes of death**:

- **The underlying cause of death** is the disease which has initiated the series of illnesses leading directly to death. In accidental or violent deaths, the underlying cause of death is the external reason which caused the injury or poisoning leading to death. The underlying cause of death issued by the physician's death certificate is not directly applied to statistics compilation, but it is used when forming the underlying cause of death in the statistics.
- **The 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). On their basis, the underlying cause of death is determined from the causes of death given by the physician in the death certificate. Annual causes of death statistics are made according to the underlying cause of death determined for the statistics. Other causes of death are mainly used in surveys.
- **The immediate cause of death** refers to the disease, failure or injury whose symptoms cause the person to die. However, the mechanisms of death, e.g. cardiac arrest, are not regarded as immediate causes of death.
- **The intermediate cause of death** refers the condition which leads from the underlying cause to the immediate cause of death.
- **The contributing cause of death** are other significant circumstances that contributed to the death recorded in the part II of the death certificate but are not related to the cause-consequence chain in part I of the death certificate.

In the case of **stillbirths and infants dying before the age of 28 days** the statistical data include the child's main cause of death, the mother's main reason contributing to the child's death, and two other reasons contributing to the child's death.

Stillbirths include a foetus or a newborn who shows no signs of life at the time of birth after a pregnancy lasting at least 22 weeks or the newborn weighing at least 500 grams. This concept has been used in Finnish annual tables since 1987. In the earlier used definition, stillbirths were newborns or foetuses when the duration of pregnancy had been at least 28 weeks. The changed concept also influenced the definition of perinatal deaths for stillbirths. Terminations of pregnancy prior to the 22nd week of pregnancy are considered miscarriages. Terminations of pregnancy are not included in the cause of death statistics.

Infant mortality refers to the share of deaths in infancy (at under one year) per thousand live births. **Neonatal mortality** refers to the share of deaths during the four first weeks of life per thousand live births. The figure is often given in tables as per mil. **Early neonatal mortality** refers to the number of deaths during the first week of life relative to the live births. **Late neonatal mortality** refers to the number of deaths which occur at the age of 7 to 27 days relative to the live births.

Perinatal mortality refers to the share of stillbirths and deaths during the first week of life among all births (incl. stillbirths). The age during the first week is calculated in hours.

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.

More concepts of the cause of death statistics can be found at: http://tilastokeskus.fi/til/ksyyt/kas_en.html

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 statistical reference year. The statistics on stillbirths are supplemented with data from the birth register of the National Institute for Health and Welfare (THL).

Death certificates are issued by the physician establishing the death. 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 regional unit of the National Institute for Health and Welfare (THL) where the deceased was a resident. A forensic pathologist there verifies the correctness of the certificate and the certificates are sent on to Statistics Finland. In addition, the health care unit or the physician has to report the death to the Population Information System. 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.

Death certificates are received at Statistics Finland in paper form from THL. About 16 % of the 2017 death certificates was signed in an electric form and received electrically. Death certificates are scanned at Statistics Finland in picture format and part of the data is read optically to the database. Diagnosis texts and cause of death codes issued by physicians are checked with the help of an electronic dictionary. The 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 Organization (WHO). Some of the statistical underlying causes of death are coded automatically with the application and part manually utilising the description of events written by the physician.

Since 1996, causes of death have been coded according to the international ICD-10 classification (International Statistical Classification of Diseases and Related Health Problems). The ICD-10 classification is an international classification maintained by the World Health Organization (WHO) describing causes of death, illnesses, accidents and reasons for using health care services. The classification can be found on [WHO's pages](#). Causes of death are coded mainly in the most accurate level of the classification, the 3-digit level is the publication level. In certain cases, specifying codes according to the Finnish national classification of diseases are used. THL maintains the Finnish version of the ICD-10 classification of diseases.

In the publication, the mortality rate can be measured with the general mortality rate, where the number of deaths is divided by mean population and multiplied by one thousand or one hundred thousand. The mortality rate can also be calculated by age group, when deaths in each age group are expressed as a proportion to the population of corresponding age.

Age-standardised mortality rate refers to mortality where the effect of age structure is eliminated by age standardisation. The standardisation used in cause of death statistics is made by using direct age standardisation (standardised death rate, SDR), which means that mortality figures for the year in question

have been used to calculate how many people would die if the age structure of the population remained the same throughout time. The formula for direct standardisation is as follows:

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

m_i = mortality rate in age group i

P_i = standard population in age group i

P = standard population

Mortality and the generality of causes of death are heavily dependent on age. For this reason, age standardisation is used in the statistics when comparing mortality differences of different times and areas. In the publication on cause of death statistics, the 'new' standard population of Europe has been used since 1996 as the standard population when calculating age-standardised mortality rates (Appendix 5). Different standard population has been used in the age-standardised mortality figures published by Eurostat, for which reason the figures differ from those released by Statistics Finland.

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 a 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 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. Around 500 cases are handled by a medical expert every year. Additional information is requested from the issuer of the death certificate in about 50 cases per year. Additional information is obtained for some 120 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. The number of deaths on which no information on the cause of death is obtained has previously been 100 to 150 per year, but in the last few years the number of missing death certificates has been growing. In 2015, there were 143 missing death certificates, which was 0,3 per cent of the deaths. Of them, at least 14 were deaths abroad. Those 143 dead persons from whom a death certificate was not obtained before the statistics were compiled (31 Oct 2018) are included in the statistics with the code R999 (no death certificate). The data derived from late death certificates are combined to the survey database and death certificate archives.

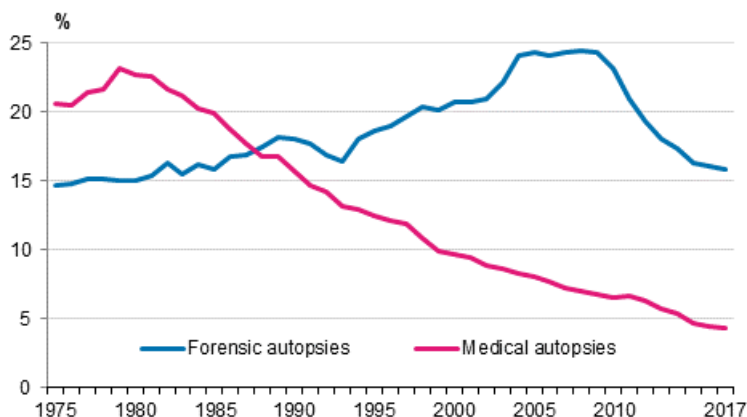
Number of death certificates missing from statistics yearly 2000–2017

Year	Number	Proportion of all deaths, %
2000	40	0,1
2005	118	0,2
2010	107	0,2
2011	132	0,3
2012	226	0,4
2013	267	0,5
2014	477	0,9
2015	356	0,7
2016	90	0,2
2017	143	0,3

Most causes of death are based on clinical data, but qualitatively better data for death certificates are derived from autopsies. The share of autopsies in all deaths were highest in Finland of all Nordic countries.

The number of forensic autopsies has decreased fast in Finland since 2010, however. In 2017, a forensic autopsy was performed for 16 per cent and a medical autopsy for 4 per cent of dead persons.

Share of forensic and medical autopsies in death cases in 1975 to 2017



4. Timeliness and promptness of published data

Cause of death data are produced yearly and they are completed at 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. After the data are published, death certificates are not added afterwards to the annual data of the statistics, but they are included in research data and death certificate archives.

5. Accessibility and transparency/clarity of data

The data of the cause of death statistics are published yearly under the topic Health on the home pages of the cause of death statistics and the tables are released in Statistics Finland's StatFin database. The tables of the cause of death statistics are made according to the underlying cause of death.

The cause of death statistics are available starting from 1936. The data for 1936 to 1968 are in table format in the paper publications. From 1969, there are data as a time series database. Tailored tables and research data can be made from unit-level data at Statistics Finland to customer needs. A licence is always needed for unit-level research data. The application for licence can be found on [Statistics Finland's home page](#). Cause of death data can also be combined to other datasets by means of the person number (e.g. with population census and employment statistics data).

Cause of death data are also published for international sources and databases, such as:

- The Nordic Statistical Yearbook "Health Statistics for the Nordic Countries" <http://nowbase.org/>
- Eurostat's database, e.g <http://ec.europa.eu/eurostat>
- WHO's databases, e.g European Health for All database, <http://www.euro.who.int/en/data-and-evidence>

Statistics Finland also maintains Finland's death certificate archive. The archive contains Finnish residents' death certificates from 1936 onwards. The death certificates from 1936 to 1965 are located in the National Archive. More recent death certificates are archived at Statistics Finland.

If it has been less than 50 years since the person died, the death certificate data are confidential. Copies of death certificates and unit-level cause of death data are released from the archive to the purposes prescribed in the act on the investigation of the cause of death (459/1973). They are mainly released to the dead person's next of kin, pension institutions and official use and for scientific research and statistical surveys. Instructions for applying for death certificates and on the licence procedure can be found on Statistics Finland's web pages.

6. Comparability of statistics

The classification of causes of death used in the statistics has changed a number of times. Since 1996, causes of death have been coded according to the ICD-10 classification (International Statistical Classification of Diseases and Related Health Problems). Between 1987 and 1995, the data were coded using the national classification of diseases 1987 and from 1969 to 1986, the international classification ICD-8 was in use.

To improve the comparability of cause of death data from different years, Statistics Finland has made time series classifications. The longest comparable national time series classification (54 categories) contains data from 1969 onwards. In addition, use is made of a 72-category classification where data are available from 1998. This classification complies in main aspects with the 65-category European shortlist classification used by the EU, which was used by Eurostat from 1998 to 2013. Since the beginning of 2014, an updated 86-category European shortlist 2012 classification has been available on Eurostat's website. This classification has also been available on the data of the causes of death statistics at Statistics Finland.

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](#).

The data on deaths published by Statistics Finland's vital statistics are comprehensive statistics on the number of deaths. The number of deaths per year differs somewhat from the number of deaths in the cause of death statistics. The difference is mainly caused by that the vital statistics do not contain deaths registered as deaths after the compilation time of the statistics (the end of the following year's January). In the vital statistics for 2017, the number of deaths was 53,722, which was 52 deaths more than in the cause of death statistics. The number of deaths under the age of one year was 102 in the vital statistics and 101 in the cause of death statistics. When calculating infant mortality, the number of deaths under the age of one in the vital statistics is used in official connections.

The statistics on road traffic accidents compile statistics on deaths in road traffic. Data are obtained from the information system of the police. The coverage of the data is checked against those of the cause of death statistics. The figures deviate from those in the cause of death statistics by some tens of cases each year. The deviation is due to the following differences in the 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 yearly very little from the figures in the cause of death statistics.

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Source: Causes of death, Statistics Finland