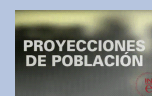


## Videos



## Causes of death two years after the beginning of the pandemic

Updated with the final data for 2022 (12/19/2023)



### In this number...

- Main causes of death by disease group
- Deaths attributed to COVID-19 since the beginning of the pandemic
- Increase in mortality and high temperatures
- Euthanasia reported in the medical death certificate
- Rising trend of suicide
- Mortality due to traffic accidents
- Drownings

Information on causes of death has enormous potential as a tool for public health decision-making. Its analysis allows us to work out the mortality pattern associated with each sex, age and geographical areas, as well as its evolution over time.

Traditionally, the pattern of mortality did not change from year to year, but it was necessary to analyse a long series to observe changes in the patterns of certain diseases. For example, four decades ago, cardiovascular diseases were the main cause of almost half of deaths, but since then, their relative preponderance has been declining and, although they remain the leading cause of death, they have gradually given way to other causes such as tumours, dementia and Alzheimer's disease.

The outbreak of the pandemic and the notable increase in mortality in 2020 have resulted in changes in the causes that lead to death.

Health research experts and epidemiologists predicted that in the years after 2020 we would possibly see a decline in mortality because many people had come to the end of their life cycle earlier than usual due to COVID-19. However, provisional data for 2022 continue to show, for the second consecutive year, an excess in the number of deaths compared to pre-pandemic years.

One of the main aims of the publication of the provisional data for 2022 is to provide information to shed light on excess mortality and to facilitate research and preventive decision-making by experts in the field of health.

**Source:** The Deaths Statistics by Cause of Death is an annual set of statistics included in the National Statistical Plan and carried out under the umbrella of European Regulation 328/2011 of the Commission of 5 April 2011.

## What did people die of most in 2022?

In 2022, the number of deaths recorded in Spain was 464,417, which is 13,673 more than the previous year (3.0% more). Of them, 234,362 were men and 230,055 were women. A larger increase was observed compared to 2021 among women (4.9% more) than among men (1.3%).

The group of diseases of the circulatory system and tumours were the cause of half of the deaths that occurred in 2022, ranking as the main causes. Diseases of the respiratory system were the third leading cause of death, accounting for 9.3% of deaths.

Although the number of deaths from the three main causes increased compared to 2021, there is a notable increase in diseases of the respiratory system (21.0% more).

### Deaths by disease groups. 2022

Absolute values and percentages

| ICD-10 Chapters   | 2022           | 2021           | Variation %<br>2022/2021 |
|---|----------------|----------------|--------------------------|
| <b>Total Deaths</b>   | <b>464,417</b> | <b>450,744</b> | <b>3.0</b>               |
| Diseases of the circulatory system  | 121,341        | 119,196        | 1.8                      |
| Neoplasm  | 114,828        | 113,662        | 1.0                      |
| Diseases of respiratory system  | 43,024         | 35,543         | 21.0                     |
| Infectious and parasitic diseases (1)   | 38,589         | 46,001         | -16.1                    |
| Diseases of nervous system  | 26,765         | 25,014         | 7.0                      |
| Diseases of digestive system  | 23,266         | 22,563         | 3.1                      |
| Mental and behavioural disorders  | 22,744         | 20,512         | 10.9                     |
| External causes   | 18,574         | 16,831         | 10.4                     |
| Diseases of the genitourinary system  | 18,019         | 16,458         | 9.5                      |
| Endocrine, nutritional and metabolic diseases   | 15,924         | 15,124         | 5.3                      |
| Symptoms, signs and abnormal clinical and laboratory findings                                       | 10,030         | 9,129          | 9.9                      |
| Diseases of the musculoskeletal system  | 5,549          | 5,113          | 8.5                      |
| Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism | 2,335          | 2,205          | 5.9                      |
| Diseases of the skin and subcutaneous tissue  | 2,043          | 2,021          | 1.1                      |
| Congenital malformations, deformations and chromosomal abnormalities                                | 862            | 833            | 3.5                      |
| Certain conditions originating in the perinatal period  | 513            | 528            | -2.8                     |
| Pregnancy, childbirth and the puerperium  | 11             | 11             | 0.0                      |

1. COVID-19 is included in the group of infectious and parasitic diseases.

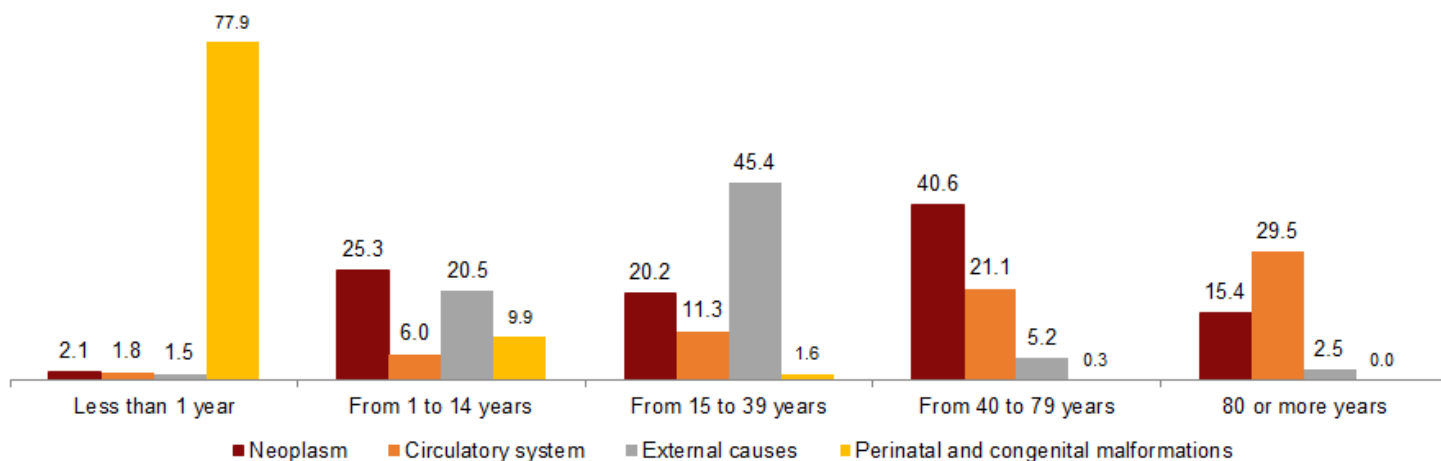
## Does the cause of death vary according to age?

61.8% of deaths were among people aged 80 and over. Main causes of death differ depending on age. Although diseases of the circulatory system are responsible for many deaths in the elderly, tumours and external causes (traffic accidents, suicide, etc.) are among the main causes of deaths in people under 80 years of age.

Specifically, diseases of the circulatory system (29.5% of the total) were the main causes of death among those over 80 years of age, while for people between 40 and 79 years of age it was tumours (40.6% of the total). External causes (45.4% of the total) were the main causes in the 15-39 age group. For people between one and 14 years old, it was tumors (25.3% of the total). Finally, among children under one year of age, the main reasons were perinatal conditions and congenital malformations (77.9% of the total; 56.3% and 21.6% respectively).

### Main causes of dead by age. 2022

Percentage of total deaths





### Is the number of deaths from COVID-19 still high?

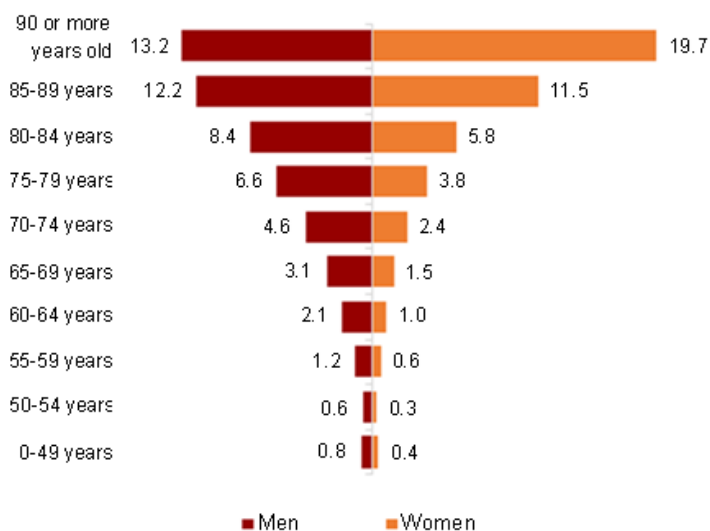
When analysing the causes of death in more detail, not by disease groups but by specific diseases, the identified COVID-19 virus ranks as the disease that caused the most deaths in 2022 (31,606 in total), followed by ischemic heart disease (29,068) and cerebrovascular diseases (24,688).

Although COVID-19 remained the disease causing the most deaths in 2022, the number of deaths decreased by 19.9% compared to 2021, with 7,838 fewer people dying than in the previous year.



### Distribution of deaths due to COVID-19 by sex and age group. 2022

Percentage



### It affects all ages, although not all in the same way

These deaths were concentrated in the elderly: 92.9% of those who died from COVID-19 were 65 years and older. As in previous years, more men died from this cause (16,708) than women (14,898). Specifically, the number of men who died from COVID-19 was higher than the number of women in all age groups except the age group of 90 years and over.

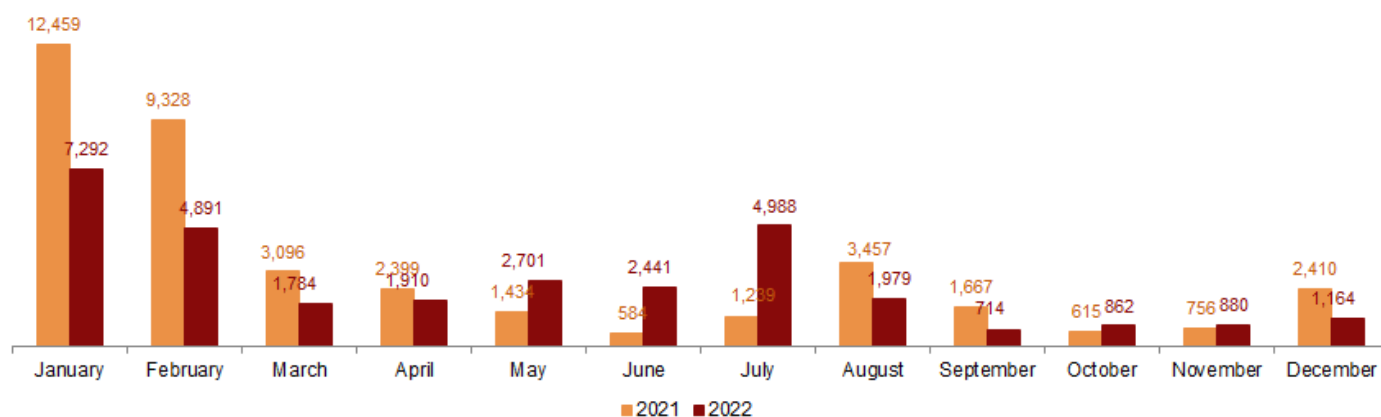
### The non-seasonal nature of COVID-19

Since the beginning of the pandemic, we have known that, unlike other diseases such as influenza, COVID-19 does not behave seasonally; its incidence is explained by other factors.

In 2020, the months with the highest mortality were those at the beginning of the pandemic, that is, March and April.

If we look at the following two years, while in 2021 January and February were the months with the highest number of deaths from this cause, in 2022 the highest mortality occurred in January and July.

### Deaths attributed to COVID-19 by month. 2021 and 2022





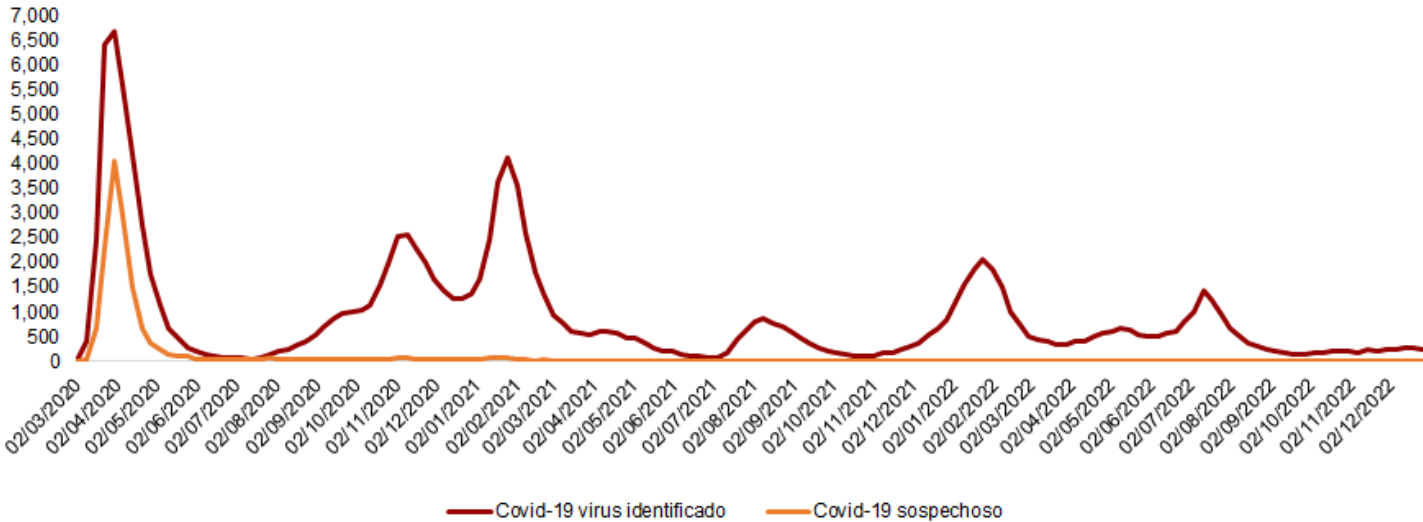
**Deaths attributed to COVID-19 since the beginning of the pandemic**

The overall consideration of the annual figures of deaths from COVID-19 over the last three years allows us to work out the scale of the pandemic in terms of mortality, in terms of the number, age and sex of the people who died directly due to this disease.

From the beginning of the pandemic in March 2020 to December 31, 2022, 146,619 people died from COVID-19 and the average age was 82.14 years. Of those, 69 died from multisystem inflammatory syndrome associated with COVID-19 and 15,142 died from suspected COVID, having symptoms compatible with the disease. 87.2% of these suspected cases were certified mainly during the first three months of the pandemic, when the critical situation and the absence of PCRs prevented testing.

The three-year period saw several waves of high mortality from this cause, with the highest incidence being at the beginning of the pandemic, followed by that of early 2021.

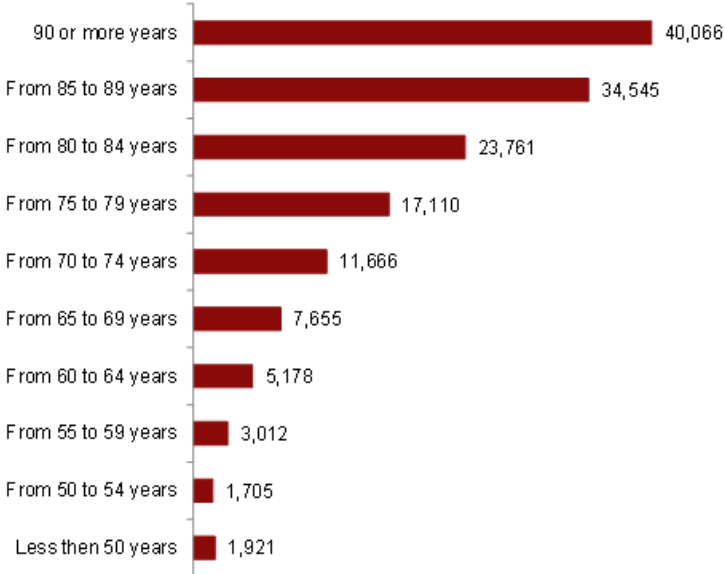
**Deaths due to COVID-19 from the beginning of the pandemic to December 2022**



53.5% of the total deaths from COVID-19 were men.

On the other hand, the number of deaths increases as ages increase, ranging from 1.3% of deaths for people under 50 years of age to 27.3% for those over 90 years of age.

**Deaths due to COVID-19. Years 2020-2022**





The 2022 climate report published by the AEMET classifies this year as the warmest since records began in 1961. The months of May, June, July and August were extremely warm, with May 2022 ranking as the second warmest May on record and the summer of 2022 being the warmest since records began.

### July, the month with the highest excess mortality

High temperatures coincide with an increase in mortality. During May and August of 2022, 18,107 deaths more than in the same months of the previous year were registered (12.9% more). If we make a comparison with 2019, as it was the year before the pandemic, the excess mortality amounts to 20.7% with 27,168 more deaths.

Compared with both years, the month of July recorded the highest excess mortality (26.4% compared with July 2021 and 33.1% compared with July 2019).

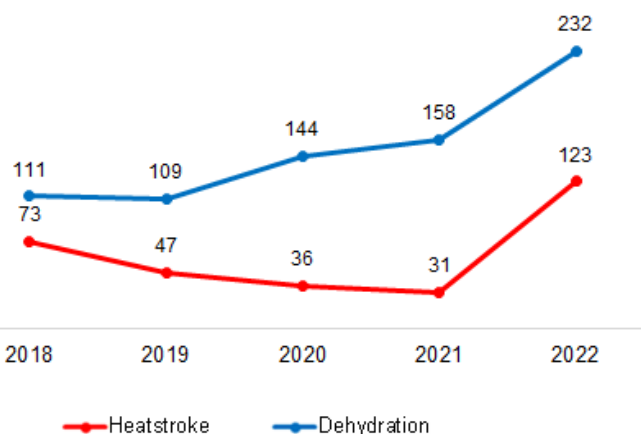
This increase in mortality occurred mainly among people aged 75 and over, dying 16.5% more than in the same period of the previous year and affecting women of this age to a greater extent (18.3% more) than men (14.2% more).



Deaths from May to August. Years 2018-2022

|            | May-August 2018 | May-August 2019 | May-August 2020 | May-August 2021 | May-August 2022 | Variation May-August 2022/2019 (%) | Variation May-August 2022/2021 (%) |
|------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------------------------|------------------------------------|
| May-August | 130,783         | 130,961         | 136,634         | 140,022         | 158,129         | 20.7                               | 12.9                               |
| May        | 33,421          | 33,866          | 35,073          | 34,183          | 37,975          | 12.1                               | 11.1                               |
| June       | 31,970          | 31,873          | 30,755          | 32,379          | 36,988          | 16.0                               | 14.2                               |
| July       | 32,215          | 33,551          | 34,768          | 35,313          | 44,641          | 33.1                               | 26.4                               |
| August     | 33,177          | 31,671          | 36,038          | 38,147          | 38,525          | 21.6                               | 1.0                                |

Deaths due to heatstroke and dehydration. 2018-2022



### Heat aggravates certain pathologies and becomes a risk factor for mortality

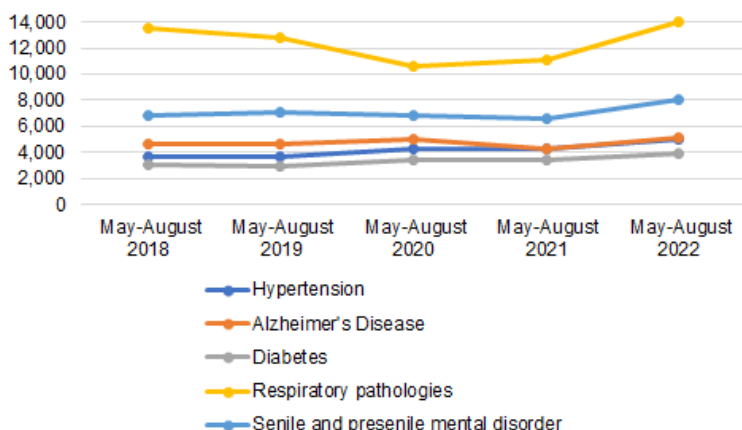
Of the causes directly related to heat, 123 deaths from heat stroke and 232 from dehydration stood out. The highest values if we compare with previous years.

Compared with 2019, where the mortality pattern was not affected by the impact of the pandemic, in addition to the causes directly related to heat, it is worth highlighting the impact of other causes of death that rose compared with the same months in 2019 and that involve previous chronic pathologies considered at risk in situations of high temperatures. These causes were hypertensive diseases (which increased by 37.9%), diabetes (31.8%), senile and pre-senile disorder (13.0%) and respiratory pathologies, which also increased by 9.8%. In addition, deaths from Alzheimer's disease increased by 9.0%.

The number of deaths from these 5 causes during the months of May to August 2022 are the highest during the same period in the last 5 years.

Observing the variations compared with the previous year, the deaths due to risk pathologies due to high temperatures that increased the most in May-August 2022 compared with May-August 2021 were respiratory pathologies (25.8% more), senile and pre-senile disorder (23.0% more) and Alzheimer's disease (19.1%).

Deaths from heat-related risk pathologies 2018-2022



## In the summer period, all the most frequent diseases rose

During the months of extreme heat, deaths due to the rest of the most frequent diseases also increased, with 12,109 deaths due to COVID-19 standing out, this cause being the one that showed the greatest increase compared with the same period of the previous year (80.4% more).

If we compare this with the mortality pattern of May-August 2019, we also observe that all deaths from all the most frequent diseases increased, except for cancer of the colon, which decreased by 3.0%. The disease that increased the most was hypertensive disease (37.9% more).

## Deaths according to the most frequent causes of death. May-August 2022, 2021 and 2019

|                                    | May-August 2022 | May-August 2021 | May-August 2019 | Variation May-August 2022/2021 (%) | Variation May-August 2022/2019 (%) |
|------------------------------------|-----------------|-----------------|-----------------|------------------------------------|------------------------------------|
| All diseases                       | 158,129         | 140,022         | 130,961         | 12.9                               | 20.7                               |
| Covid-19 virus identify            | 12,109          | 6,714           | 0               | 80.4                               | 0.0                                |
| Pneumonia                          | 2,862           | 2,040           | 2,419           | 40.3                               | 18.3                               |
| Dementia                           | 8,039           | 6,534           | 7,117           | 23.0                               | 13.0                               |
| Alzheimer disease                  | 5,113           | 4,294           | 4,690           | 19.1                               | 9.0                                |
| Hypertensive disease               | 5,022           | 4,256           | 3,641           | 18.0                               | 37.9                               |
| Diabetes mellitus                  | 3,858           | 3,375           | 2,927           | 14.3                               | 31.8                               |
| Acute lower respiratory infections | 3,976           | 3,546           | 3,954           | 12.1                               | 0.6                                |
| Renal insufficiency                | 2,635           | 2,383           | 2,199           | 10.6                               | 19.8                               |
| Ischaemic heart disease            | 9,471           | 8,782           | 8,804           | 7.8                                | 7.6                                |
| Breast cancer                      | 2,251           | 2,090           | 2,046           | 7.7                                | 10.0                               |
| Cerebrovascular disease            | 8,195           | 7,855           | 8,047           | 4.3                                | 1.8                                |
| Cardiac insufficiency              | 6,529           | 6,349           | 5,787           | 2.8                                | 12.8                               |
| Cancer of lung and bronchus        | 7,634           | 7,448           | 7,137           | 2.5                                | 7.0                                |
| Cancer of pancreas                 | 2,662           | 2,625           | 2,422           | 1.4                                | 9.9                                |
| Colon cancer                       | 3,748           | 3,724           | 3,862           | 0.6                                | -3.0                               |

## Euthanasia reported in the medical death certificate

### Euthanasia was regulated in 2021

Organic Law 3/2021 of 24 March, on the regulation of euthanasia, was enacted in March 2021. According to its Article 1, its purpose is to regulate the right of all eligible persons to request and receive the necessary assistance in dying, the procedure to be followed and the guarantees to be observed. Following its approval and publication in the Official State Gazette, it came into force on 25 June 2021.

The "Euthanasia best practices manual", published by the Ministry of Health, specifically indicates, in section 5.4, how to certify the death of a patient as a result of the provision of assistance in dying. The certifying doctor must report as the immediate cause the provision of assistance in dying (Organic Law 3/2021) and as the initial or fundamental cause the underlying pathology that generates a "serious and incurable disease" or a "serious, chronic and disabling condition".

This guideline established by the Ministry of Health makes it possible to obtain information through certificates on the illness of people who requested euthanasia, as well as their age and sex.



### Which people have received assistance in dying?

In 2022, doctors informed in medical death certificates that 260 persons ended their life using this procedure, of whom 134 were men and 126 were women. 78.1% of the people were over 60 years of age. Diseases of the nervous system were the most frequent causes among those who were euthanised (117 deaths). Among this group, 41.9% of the persons had amyotrophic lateral sclerosis (ALS), 11.1% had multiple sclerosis and 8.5% had Parkinson's Disease. The average age of those who died from these three causes was 63.4 years, 59.5 years and 79.2 years, respectively.

74 people who received assistance in dying in 2022 had cancer, and the average age was 71.2 years.

The information available in the death certificates of 2021 reveals that 59 people were euthanised the first year in which the Law came into force. Of those, 16 had cancer, 12 had ALS and 7 had multiple sclerosis.







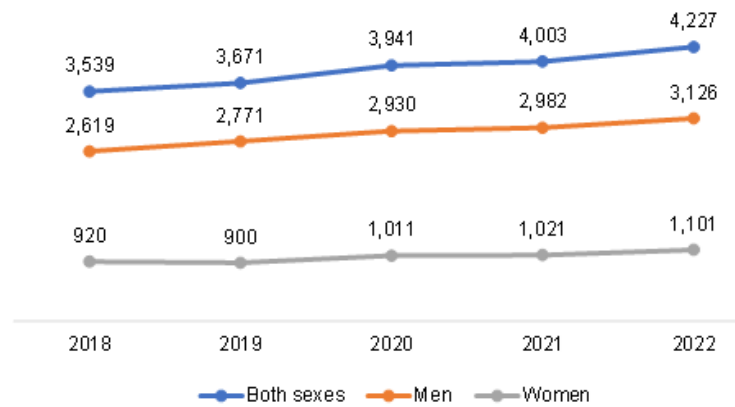
### More cases than in 2021

The upward trend in the number of suicides is confirmed according to definitive data from the 2022 Statistics of Deaths by Cause of Death.

Last year, 4,227 people took their own lives, 5.6% more than the previous year. Of those, almost three out of four were men.



Number of suicides by sex. 2018-2022

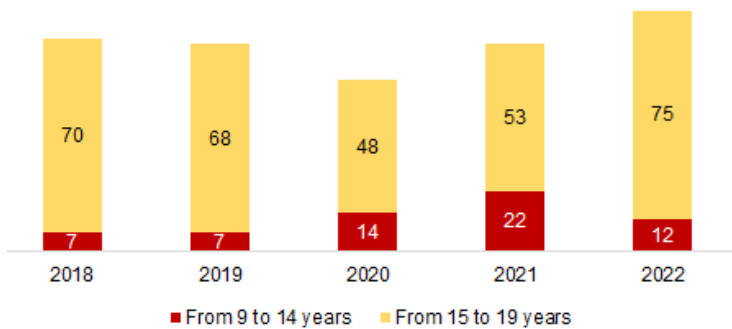


### It affects all ages, young people too

44.4% of the men who committed suicide were between 40 and 64 years old. The age group with the highest incidence among women was between 45 and 60 years old (35.4% of female suicides).

At an early age, 87 children and young people under the age of 20 took their own lives in 2022.

Suicides among persons under the age of 20. 2018-2022



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### Fewer deaths than in the years before the pandemic

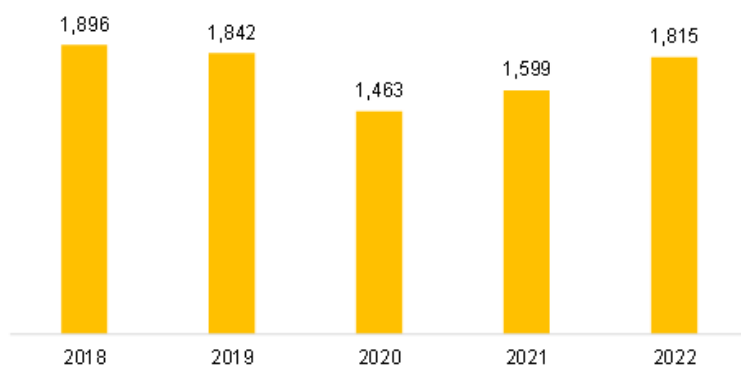
According to definitive data from the Statistics on Deaths by Cause of Death, in 2022 1,815 people died in traffic accidents, 13.5% more than in 2021, maintaining the upward trend since 2020, the year in which mortality from traffic accidents fell, presumably due to mobility restrictions due to the pandemic. However, the number of deaths recorded in 2022 is lower than in 2019 (1,842).

### Higher mortality in summer

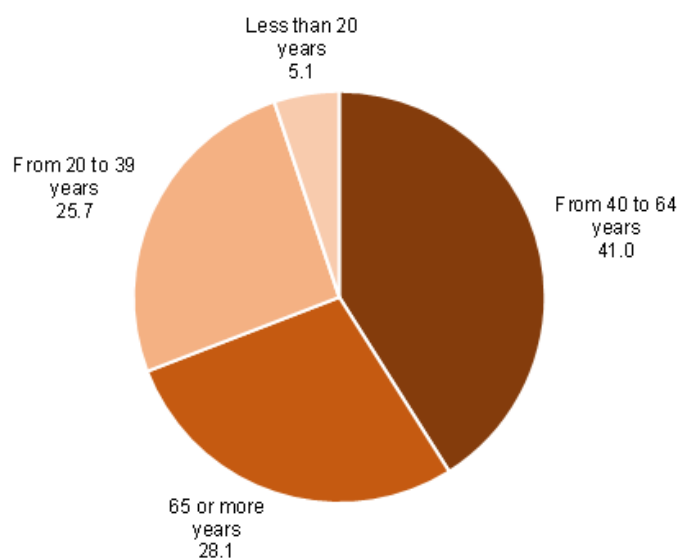
The month of July, with 202 deaths, and the month of August, with 162, were the months with the highest number of fatalities due to traffic accidents.

41.0% of the people who died in traffic accidents were between 40 and 64 years old and 28.1% were people aged 65 and over. Among the victims were 19 children under the age of 15. Eight out of every ten victims were men.

Deaths in traffic accidents. 2018-2022



Deaths in traffic accidents by age. 2022 (%)



### More than half the deaths were of pedestrians, motorcyclists and cyclists

Traffic deaths include pedestrians struck by cars, and cyclists and motorcyclists who were involved in a fatal accident.

In 2022, 410 pedestrians lost their lives due to being run over, three out of five were 60 years old or older. In addition, another 430 people lost their lives in motorcycle accidents, 94.0% of whom were men. There were also 74 cyclists, 97.3% of them men.



In 2022, 562 people lost their lives to accidental drownings in water, 10.2% more than in the previous year.

69.9% of these deaths were concentrated in the months of May to September. In addition, 78 more people died during these months than in the same months in the previous year, 24.8% more.



More than half of the victims (56.6%) were people aged 50 and over. Among the victims were 23 children under the age of 5.

**Drownings by age groups. 2022**

