

Statistical bulletin

# Alcohol-specific deaths in the UK: registered in 2021

Deaths caused by diseases known to be a direct consequence of alcohol, by age, sex, and region.



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# 1 . Main points

- In 2021, there were 9,641 deaths (14.8 per 100,000 people) from alcohol-specific causes registered in the UK, the highest number on record.
- The number recorded in 2021 was 7.4% higher than in 2020 (8,974 deaths; 14.0 per 100,000) and 27.4% higher than in 2019 (7,565 deaths; 11.8 per 100,000), the last pre-coronavirus (COVID-19) pandemic year.
- Between 2012 and 2019, rates of alcohol-specific deaths in the UK had remained stable, with no statistically significant changes in the age-standardised rate.
- Consistent with previous years, the rate of alcohol-specific deaths for males in 2021 remained around double the rate for females (20.1 and 9.9 deaths per 100,000 people, respectively).
- Scotland and Northern Ireland had the highest rates of alcohol-specific deaths in 2021 (22.4 and 19.3 deaths per 100,000 people, respectively).
- Comparing with 2019, there have been statistically significant increases in the alcohol-specific death rate in England, Wales, and Scotland.

## Statistician's comment

"Alcohol-specific deaths have risen sharply since the onset of the coronavirus (COVID-19) pandemic, with alcoholic liver disease the leading cause of these deaths. This rise is likely to be the result of increased alcohol consumption during the pandemic.

Research has suggested that people who were already drinking at higher levels before the pandemic were the most likely to have increased their alcohol consumption during this period."

James Tucker, Data & Analysis for Social Care and Health Division, Office for National Statistics Follow James Tucker on Twitter [@ONSJames](https://twitter.com/ONSJames)

## 2 . Alcohol-specific deaths in the UK

There were 9,641 deaths related to alcohol-specific causes registered in the UK in 2021, equivalent to 14.8 deaths per 100,000 people. That was 667 more deaths (a 7.4% increase) than in 2020, when there were 8,974 deaths, equivalent to 14.0 deaths per 100,000 people.

Alcohol-specific deaths have risen sharply since 2019. The 9,641 deaths registered in 2021 were 2,076 more than the 7,565 deaths registered in 2019, which is a rise of 27.4%. The alcohol-specific death rate rose from 11.8 to 14.8 per 100,000 over the same period. The number of deaths in 2021 is a record high in our data time series (beginning in 2001).

Between 2012 and 2019, rates of alcohol-specific deaths in the UK had remained stable, with no statistically significant differences in the year-on-year rates. However, the rates seen in 2020 and 2021 are statistically significantly higher than 2019 and any other year since the start of our time series in 2001.

Alcohol-specific deaths only include those health conditions where each death is a direct consequence of alcohol (that is, wholly attributable causes such as alcoholic liver disease). It does not include all deaths that can be attributed to alcohol. See the [glossary](#) for more information.

The latest estimates, as set out in the [Office for Health Improvement and Disparities data](#), suggest that alcohol-specific causes account for roughly a third of all deaths that can be attributed to alcohol.

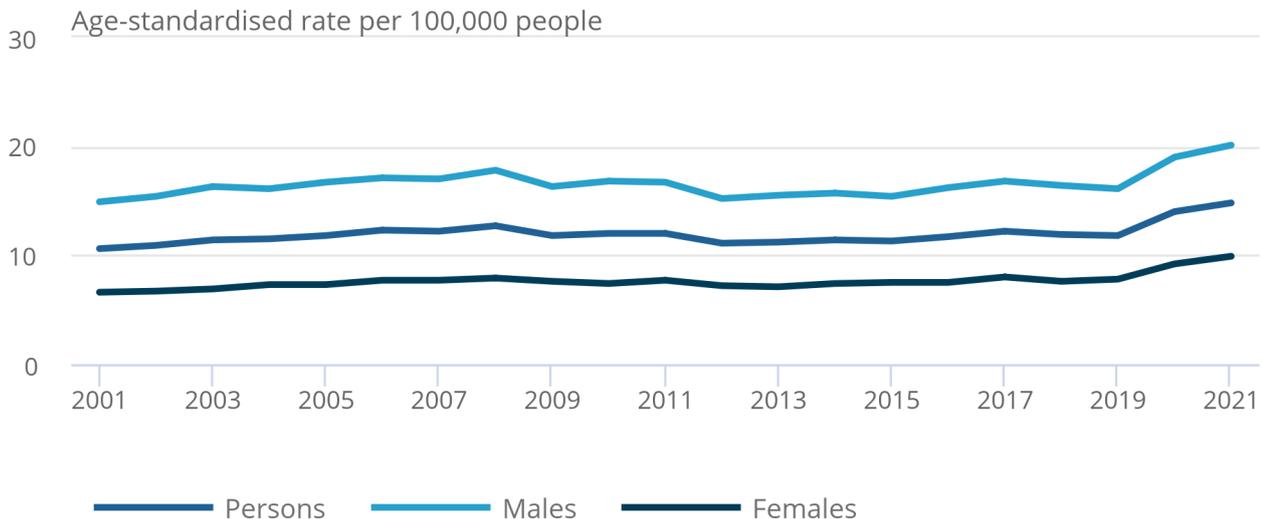
Alcohol-specific deaths are not a perfect proxy measure for alcohol-attributable mortality. Evidence suggests that the risk of alcoholic liver disease, which accounts for the majority of alcohol-specific deaths, has an exponential relationship with alcohol consumption. Meanwhile, the risk of alcohol-related causes, such as cancer or heart disease, has a more linear relationship with consumption. This means that the alcohol-specific measure is skewed towards the heaviest drinkers. Studies show that there is no safe level of alcohol consumption, as shown in [this article from The Lancet](#).

## Figure 1: The alcohol-specific death rate for 2021 was 25.4% higher than 2019

Age-standardised alcohol-specific death rates per 100,000 people, by sex, UK, deaths registered between 2001 and 2021

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Age-standardised alcohol-specific death rates per 100,000 people, by sex, UK, deaths registered between 2001 and 2021



Source: Office for National Statistics – Alcohol-specific deaths in the UK: registered in 2021, National Records of Scotland and the Northern Ireland Statistics and Research Agency

#### Notes:

1. Rates are expressed per 100,000 population and standardised to the 2013 European Standard Population.
2. Deaths of non-residents are included in figures for the UK.
3. Figures are for deaths registered in each calendar year.

## Rates of male alcohol-specific death are twice those of females

Consistent with previous years, the alcohol-specific death rate for males in 2021 (20.1 deaths per 100,000 males; 6,348 deaths) was around twice the rate for females (9.9 deaths per 100,000 females; 3,293 deaths).

## Most alcohol-specific deaths are attributed to alcoholic liver disease

The National Statistics definition of alcohol-specific deaths includes only those health conditions where each death is a direct consequence of alcohol (that is, wholly attributable deaths; see Section 8 of the [QMI](#)). Figure 2 shows the number of alcohol-specific deaths by five-year age group and the following three individual causes, which caused 95.9% of all alcohol-specific deaths registered in 2021:

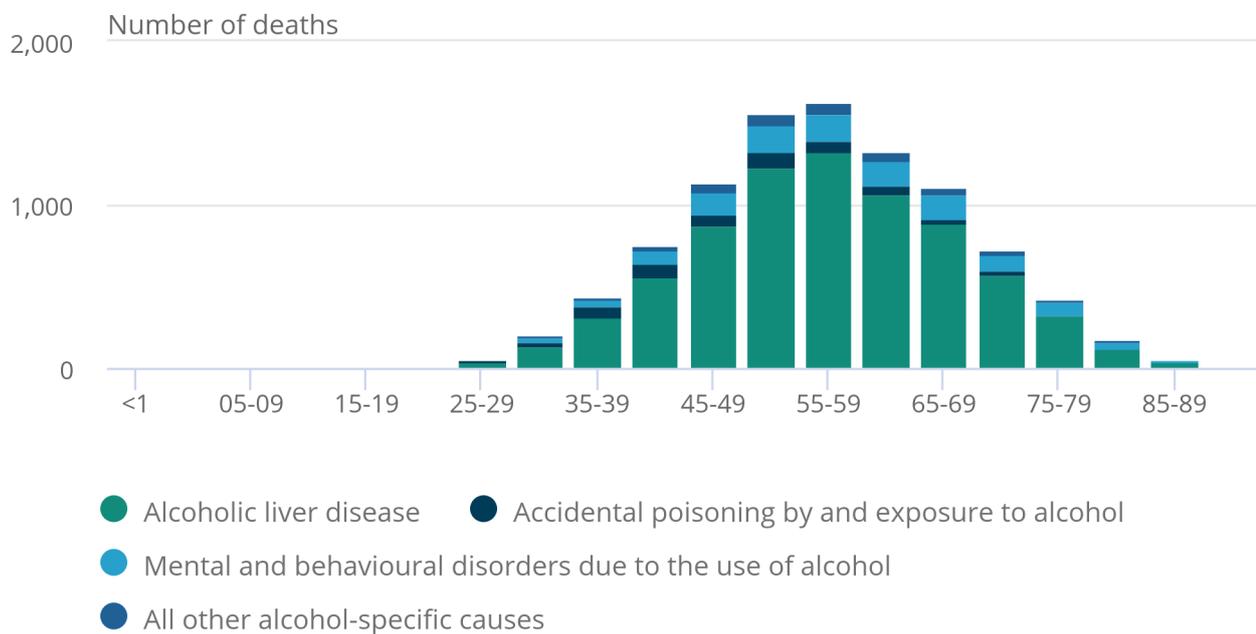
- alcoholic liver disease (International Classification of Diseases: ICD-10 code K70; 78.0% of alcohol-specific deaths)
- mental and behavioural disorders because of the use of alcohol (ICD-10 code F10; 12.1% of deaths)
- accidental poisoning by, and exposure to, alcohol (ICD-10 code X45; 5.8% of deaths)

**Figure 2: Around three-quarters of alcohol-specific deaths were caused by alcoholic liver disease**

Numbers of alcohol-specific deaths, by five-year age group and individual cause, UK, deaths registered in 2021

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Numbers of alcohol-specific deaths, by five-year age group and individual cause, UK, deaths registered in 2021



Source: Office for National Statistics – Alcohol-specific deaths in the UK: registered in 2021, National Records of Scotland and the Northern Ireland Statistics and Research Agency

Notes:

1. Deaths of non-residents are included in figures for the UK.
2. Figures are for deaths registered in each calendar year.

### 3 . Alcohol-specific deaths by UK constituent country

## Rates of alcohol-specific death rose in England, Wales and Scotland, compared with 2020

Scotland and Northern Ireland were the UK constituent countries with the highest alcohol-specific death rates in 2021, with 22.4 and 19.3 deaths per 100,000 persons, respectively.

England and Wales continue to have lower rates of alcohol-specific deaths, with 13.9 and 15.0 deaths per 100,000 persons, respectively. When compared with the 2019 registrations, the last pre-coronavirus (COVID-19) pandemic year, the largest increases in rates were seen in Wales and England (increases of 27.1% and 27.5%, respectively).

### Figure 3: Compared with the pre-coronavirus pandemic period, alcohol-specific death rates have risen in all four UK countries

Age-standardised alcohol-specific death rates per 100,000 people, UK constituent countries, deaths registered between 2001 and 2021

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Age-standardised alcohol-specific death rates per 100,000 people, UK constituent countries, deaths registered between 2001 and 2021



Source: Office for National Statistics – Alcohol-specific deaths in the UK: registered in 2021, National Records of Scotland and the Northern Ireland Statistics and Research Agency

#### Notes:

1. Rates are expressed per 100,000 population and standardised to the 2013 European Standard Population.
2. Figures for Scotland and Northern Ireland include deaths of non-residents. However, figures for England and Wales (separately) exclude deaths of non-residents.
3. Figures are for deaths registered in each calendar year.

## 4 . Alcohol-specific deaths by English region

## Rates of alcohol-specific death have risen in every region of England since 2019

For deaths registered in 2021, regional age-standardised rates of alcohol-specific deaths ranged from 10.2 deaths per 100,000 people in London to 20.4 deaths per 100,000 in the North East. For the eighth consecutive year, the North East had the highest rate of any English region.

When comparing the rates of alcohol-specific death in 2021 with deaths registered in 2019, Table 1 shows eight out of nine English regions have observed statistically significant increases in rates.

The ratio between male and female rates of death was greatest in London, as has been the case for 16 consecutive years. In 2021, the male rate for London was 14.8 deaths per 100,000, more than double the female rate of 5.8 deaths per 100,000.

Table 1: Two-year changes in age-standardised alcohol-specific death rates per 100,000 people, regions of England, 2019 to 2021

Region of England	Alcohol-specific mortality rate in 2019	Alcohol-specific mortality rate in 2021	Change in rate from 2019 to 2021
South West	8.7	12.0	37.9%
East Midlands	11.1	14.7	32.4%
West Midlands	12.1	15.9	31.4%
North West	14.4	18.9	31.3%
London	7.9	10.2	29.1%
South East	9.2	11.6	26.1%
North East	16.6	20.4	22.9%
Yorkshire and The Humber	13.9	16.7	20.1%
East	8.9	10.4	+16.9% (non-sig.)

Source: Office for National Statistics – Alcohol-specific deaths in the England and Wales

### Notes

1. The increase recorded in the East of England was not statistically significant.
2. Figures exclude deaths of non-residents.,Figures are based on deaths registered in each calendar year.

## Figure 4: Alcohol-specific death rates rose in every region of England between 2019 and 2021.

Age-standardised alcohol-specific death rates per 100,000, by sex, English regions, deaths registered between 2001 and 2021

### Notes:

1. Rates are expressed per 100,000 population and standardised to the 2013 European Standard Population.
2. Figures for English regions exclude deaths of non-residents.
3. Figures are for deaths registered in each calendar year.

Download the data

[.xlsx](#)

## 5 . Factors behind the rise in alcohol-specific deaths

[Evidence from survey data](#) collected by the Department of Health and Social Care (DHSC) suggested that respondents were more likely to report increasing their alcohol consumption during the coronavirus (COVID-19) pandemic compared with previous years, with "a step-change around the time the pandemic began".

Alcoholic liver disease typically takes many years to develop. However, increases in alcohol consumption among those who have already been consuming alcohol at higher-risk levels can lead to rises in mortality in a short period of time, from what is known as "acute-on-chronic" liver failure. The DHSC's survey data suggested people who were already drinking at higher levels before the pandemic were the most likely to report increases in their alcohol consumption in 2020.

The most recent survey data on alcohol consumption were published as part of the Office for Health Improvement and Disparities' [Wider Impacts of COVID-19 on Health \(WICH\) monitoring tool](#). It showed that, as of March 2022, "increasing and higher risk drinking" had remained at heightened levels. [Research commissioned by the National Institute for Health Research](#) suggested that, if these consumption patterns persist, there could be hundreds of thousands of additional cases of alcohol-related diseases, and thousands of extra deaths as a result.

## 6 . Alcohol-specific deaths in the UK data

[Alcohol-specific deaths in the UK](#) Dataset | Released 8 December 2022 Annual data on age-standardised and age-specific alcohol-specific death rates in the UK, its constituent countries and regions of England, by sex, age group and deprivation quintile in England and Wales.

[Alcohol-specific deaths by sex, age group and individual cause of death](#) Dataset | Released 8 December 2022 Annual data on number of alcohol-specific deaths by sex, age group and individual cause of death, UK constituent countries.

## 7 . Glossary

### Alcohol-specific death

This bulletin uses the National Statistics definition of alcohol-specific deaths; it includes those health conditions where each death is a direct consequence of alcohol misuse (that is, wholly attributable deaths). This is explored in greater detail in Section 8: Concepts and definitions of the [QMI](#).

Figures are based on deaths registered in each calendar year, rather than the date on which the death occurs. On a national level, trends are broadly similar, whether the data are analysed by year of occurrence or year of registration. Registration delays can have greater influence on smaller geographical areas.

### Alcohol-attributable death

Alcohol-attributable deaths, also known as alcohol-related deaths, include deaths from any cause that can be attributed to alcohol. This includes alcohol-specific causes (those that can only be caused by alcohol), such as alcoholic liver disease. Also included are those which are made more likely by alcohol, but also occur in people who do not drink, such as heart disease or various types of cancer.

## Age-specific mortality rates

Age-specific mortality rates are used to allow comparisons between specified age groups.

## Age-standardised mortality rates

Age-standardised mortality rates allow for differences in the age structure of populations, and therefore allow valid comparisons to be made between geographical areas, the sexes, and over time. In this bulletin, age-standardised mortality rates are presented per 100,000 people and standardised to the 2013 European Standard Population.

## Statistical significance

The term "significant" refers to statistically significant changes or differences based on unrounded figures. Significance has been determined using the 95% confidence intervals, where instances of non-overlapping confidence intervals between figures indicate the difference is unlikely to have arisen from random fluctuation (or chance).

# 8 . Measuring the data

## Quality and methodology

Statistics on mortality are derived from the information provided when deaths are certified and registered. These statistics are assessed to be fully compliant with the [Code of Practice for Statistics](#), and are therefore designated as [National Statistics](#). The Office for National Statistics (ONS) holds mortality data for England and Wales. Figures for the UK include data provided by [National Records of Scotland](#) and the [Northern Ireland Statistics and Research Agency](#).

Numerous changes were made to death certification and registration under the [Coronavirus Act 2020](#). We have previously explored the [impact on the quality of death registration data](#) in England and Wales. Further information about the methods and quality of these statistics can be found in our [Mortality statistics in England and Wales QMI](#) and our [User guide to mortality statistics](#).

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in the [Alcohol-specific deaths in the UK QMI](#) report .

## Registration delay

Figures are for deaths registered, rather than deaths occurring in each calendar year.

The amount of time it takes to complete an inquest creates what is known as a "registration delay", which is a lag between the date of death and the date of death registration. For alcohol-specific deaths registered in 2021, the average (median) time between death occurrence and registration was seven days in England and six days in Wales, five days in Scotland, and six days in Northern Ireland.

## Populations

Mortality rates are calculated using the number of deaths and [mid-year population estimates](#) provided by the Office for National Statistics (ONS) Population Estimates Unit. Population estimates are based on the decennial UK census estimates and use information on births, deaths, and migration to estimate the mid-year population in non-census years. Provisional population projections have been used for 2021 in this bulletin, as Census 2021 data were unavailable.

# 9 . Strengths and limitations

## Strengths

- Consistent methodology across the UK, allowing for robust and comparable estimates of trends in alcohol mortality to be made.
- The precision of the alcohol-specific definition reduces the uncertainty that arises when estimating the total number of alcohol-attributable deaths.
- Using the alcohol-specific definition, figures can be produced regularly and reliably from routinely collected data.

## Limitations

- The alcohol-specific definition underestimates the true extent of alcohol-attributable mortality; for further information, please see [Section 7: Glossary](#) .
- The largely chronic nature of the conditions defined as wholly attributable to alcohol mean that there may be a delay between changes in alcohol consumption and behaviour and the resulting change in the number of alcohol-specific deaths.

## 10 . Related links

[Alcohol-specific deaths, Scotland](#) Statistics | Last updated 4 August 2022 National Records of Scotland (NRS) statistics on the most recent official death registration data available on alcohol-specific mortality across Scotland.

[Alcohol-specific deaths, Northern Ireland](#) Statistics | Published 13 October 2022 Northern Ireland Statistics and Research Agency (NISRA) statistics on the most recent official death registration data available on alcohol-specific mortality across Northern Ireland.

[Deaths registered in England and Wales: 2021](#) Bulletin | Released 1 July 2022 Registered deaths by age, sex, selected underlying causes of death and the leading causes of death. Contains death rates and death registrations by area of residence and single year of age.

[Alcohol-specific deaths in the UK: registered in 2020](#) Bulletin | Released 7 December 2021 Deaths caused by diseases known to be a direct consequence of alcohol misuse by sex, age, region and deprivation.

## 11 . Cite this statistical bulletin

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