

Statistical bulletin

# National life tables – life expectancy in the UK: 2018 to 2020

Trends in period life expectancy, a measure of the average number of years people will live beyond their current age, analysed by age and sex for the UK and its constituent countries.



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# 1 . Main points

- Life expectancy at birth in the UK in 2018 to 2020 was 79.0 years for males and 82.9 years for females; this represents a fall of 7.0 weeks for males and almost no change for females (a slight increase of 0.5 weeks) from the latest non-overlapping period of 2015 to 2017.
- Life expectancy at age 65 years was 18.5 years for males and 21.0 years for females; these estimates are very similar to those for 2015 to 2017 with a slight decline of 1.0 weeks for males and an increase of 3.1 weeks for females.
- Across the UK, life expectancy at birth in 2018 to 2020 was estimated to be 79.3 years for males and 83.1 years for females in England, 76.8 years for males and 81.0 years for females in Scotland, 78.3 years for males and 82.1 years for females in Wales, and 78.7 years for males and 82.4 years for females in Northern Ireland.
- These life tables cover mortality in the UK for the period from 2018 to 2020 and are the first to include the higher mortality observed in 2020 during the coronavirus (COVID-19) pandemic.
- In the UK the median age at death was 82.3 years for males and 85.8 years for females and the modal (most common) age at death was 86.7 years for males and 89.3 years for females in 2018 to 2020; these show the typical ages at which death occurs and were very similar to the estimates for 2015 to 2017.

## Statistician's comment

"Life expectancy has increased in the UK over the last 40 years, albeit at a slower pace in the last decade.

"However, the coronavirus pandemic led to a greater number of deaths than normal in 2020. Consequently, in the latest estimates, we see virtually no improvement in life expectancy for women compared to 2015 to 2017 at 82.9 years, while for men life expectancy has fallen back to levels reported for 2012 to 2014, at 79 years. This is the first time we have seen a decline when comparing non-overlapping time periods since the series began in the early 1980s.

"These estimates rely on the assumption that current levels of mortality, which are unusually high, will continue for the rest of someone's life. Once the coronavirus pandemic has ended and its consequences for future mortality are known, it is possible that life expectancy will return to an improving trend in the future."

Pamela Cobb, Centre for Ageing and Demography, Office for National Statistics

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## 2 . Life expectancy at birth

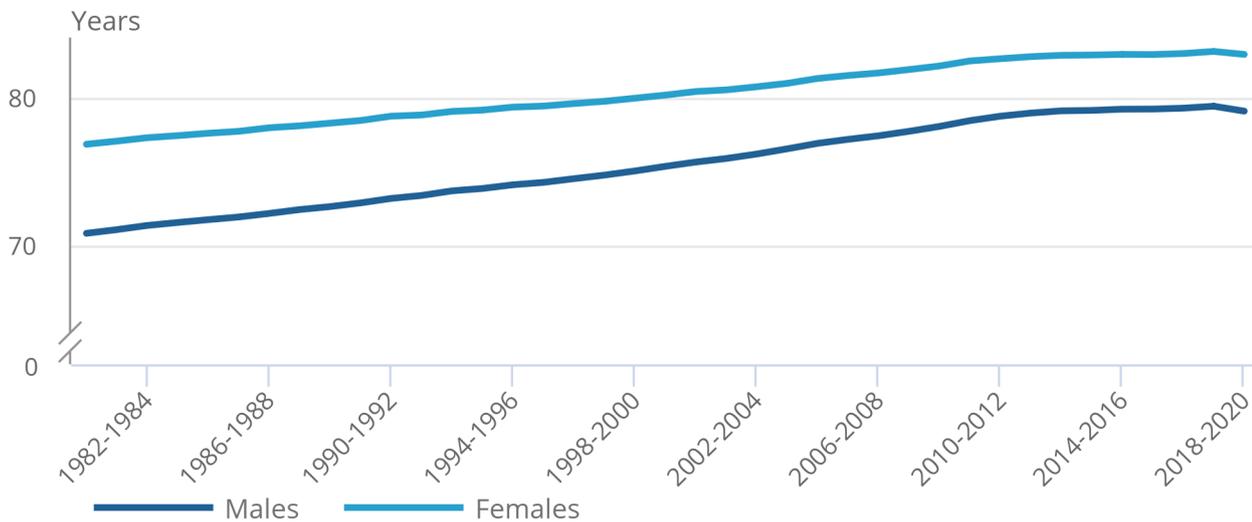
Over the last 40 years life expectancy in the UK has been increasing, albeit at a slower pace in the last decade. This increase has been primarily because of improvements in mortality at older ages driven by advances in health care, and improvements in living and working conditions. In the latest period, 2018 to 2020, life expectancy at birth in the UK was 79.0 years for males and 82.9 years for females.

**Figure 1: Life expectancy in the UK in 2018 to 2020 fell to the level of 2012 to 2014 for males and was similar to 2015 to 2017 for females**

Life expectancy at birth for males and females, UK, between 1980 to 1982 and 2018 to 2020

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Life expectancy at birth for males and females, UK, between 1980 to 1982 and 2018 to 2020



**Source: Office for National Statistics – National life tables – life expectancy in the UK: 2018 to 2020**

In the first decade of the 21st century, we saw improvements for males of between 42 weeks and 53 weeks, and improvements for females of between 29 weeks and 42 weeks, when comparing life expectancy at birth in one three-year period with the previous non-overlapping three-year period (Figure 2). However, in the last 10 years, improvements in life expectancy at birth have slowed. Since 2010 to 2012, the improvements for each period when compared with the previous non-overlapping period have been declining for both males and females, with the exception of 2017 to 2019 when improvements increased slightly.

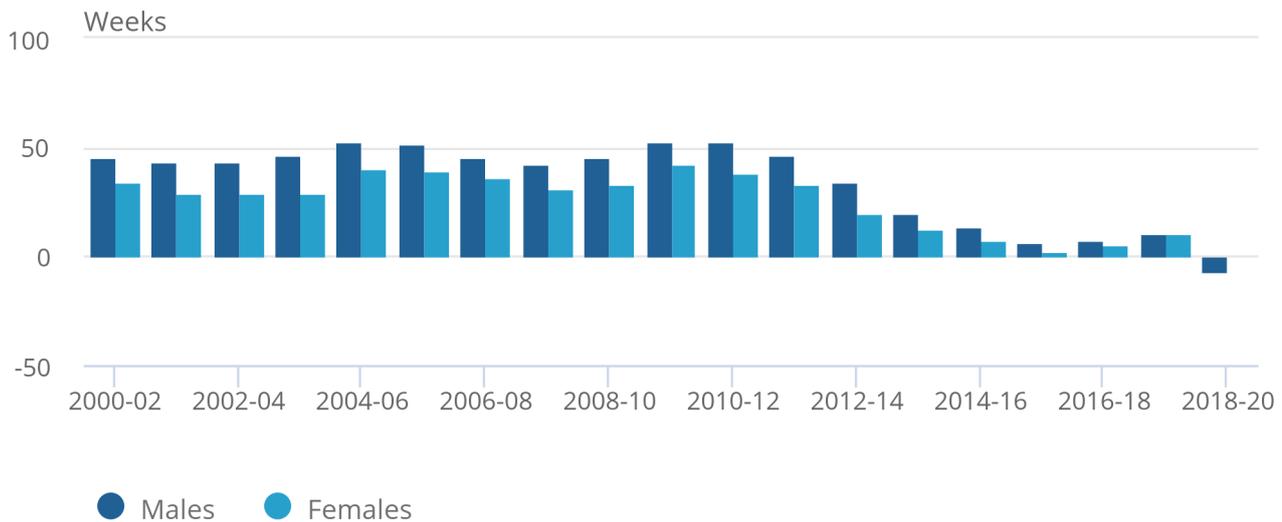
In contrast, excess mortality because of winter flu led to particularly low improvements in 2015 to 2017. The changes observed in 2018 to 2020 when compared with 2015 to 2017 are the lowest we have seen, with a decline of 7.0 weeks for males, and almost no change (an increase of 0.5 weeks) for females, notwithstanding the relatively low improvements in 2015 to 2017 itself.

**Figure 2: The period 2018 to 2020 saw the smallest improvement in life expectancy for males and females since the series began in 1980 to 1982**

Change in life expectancy at birth for each period, in weeks, compared with previous non-overlapping time period, UK, 1997 to 1999, to 2018 to 2020

Figure 2: The period 2018 to 2020 saw the smallest improvement in life expectancy for males and females since the series began in 1980 to 1982

Change in life expectancy at birth for each period, in weeks, compared with previous non-overlapping time period, UK, 1997 to 1999, to 2018 to 2020



Source: Office for National Statistics – National life tables – life expectancy in the UK: 2018 to 2020

Across the UK, mortality increased in 2020, in a large part because of the impact of the coronavirus (COVID-19) pandemic. [In England and Wales, there was a 14.5% increase in the number of deaths compared with 2019.](#) Taking into account the population size and age structure, age-standardised mortality rates (ASMRs) in England and Wales increased significantly, by 14.6% for males and 11.9% for females. ASMRs for 2020 were significantly higher than every year back to 2010 in males and 2009 in females.

[Similarly, in Scotland the number of deaths rose by 10% and the ASMR increased by 9% in 2020, taking the rate back to the 2009 level. Provisional estimates for Northern Ireland show that the total number of deaths in 2020 was 11.0% higher than the five-year average \(2015 to 2019\).](#)

The national life tables provide estimates of "period life expectancy", which is the average number of additional years a person would expect to live if they experienced the age-specific mortality rates of a particular time and place throughout their lives. When producing the national life tables we average mortality observed over three years in order to smooth out the impact of exceptional events, such as a flu epidemic, on reported life expectancy.

Despite this smoothing, the excess mortality observed in 2020 has led to estimates of life expectancy at birth for females in the UK for 2018 to 2020 which are virtually unchanged from 2015 to 2017, and estimates for males falling to levels reported for 2012 to 2014. The impact was slightly greater for males than for females, reflecting the larger increase in male mortality rates in 2020.

This does not mean that a baby born in 2018 to 2020 will go on to live a shorter life. The reported life expectancies assume that the higher-than-average mortality that we observed in 2018 to 2020 will continue. It is possible that life expectancy will return to an improving trend in the future, once the coronavirus pandemic has ended and its consequences for future mortality are known.

We have also published [single-year life tables](#) for the UK. These show that life expectancy at birth was 78.4 for males and 82.4 for females in 2020, a decline of 63 weeks and 45 weeks for males and females respectively compared with 2019, reflecting the higher mortality observed in 2020. Single-year life tables are volatile and a less robust indicator of mortality trends than three-year life tables. For more information see [Strengths and limitations](#).

## Other measures of lifespan

We can also look to [other measures of lifespan](#), such as the modal (or most common) age at death, or the median age at death (the age at which exactly half the deaths in a time period were below and half were above). These measures give values more closely associated with "typical" ages of death and are always values higher than life expectancy at birth, as they are less influenced by deaths at younger ages and are more sensitive to improvements in mortality at older ages.

Table 1: Average lifespan in years, Males

	2015-17			2018-20		
	Life Expectancy at birth	Median age at death	Modal age at death	Life Expectancy at birth	Median age at death	Modal age at death
<b>UK</b>	79.2	82.4	86.5	79	82.3	86.7
<b>England</b>	79.5	82.7	86.8	79.3	82.6	86.8
<b>Wales</b>	78.3	81.7	85.8	78.3	81.6	84.6
<b>Scotland</b>	77	80.3	83.9	76.8	80.3	83.9
<b>Northern Ireland</b>	78.4	81.8	86.9	78.7	82.2	87.3

Source: Office for National Statistics – National life tables – life expectancy in the UK: 2018 to 2020

Table 2: Average lifespan in years, Females

	2015-17			2018-20		
	Life Expectancy at birth	Median age at death	Modal age at death	Life Expectancy at birth	Median age at death	Modal age at death
<b>UK</b>	82.9	85.8	89	82.9	85.8	89.3
<b>England</b>	83.1	86	89.2	83.1	86.1	89.3
<b>Wales</b>	82.3	85.3	88.9	82.1	85.2	89.6
<b>Scotland</b>	81.1	84.1	88.4	81	84.1	87
<b>Northern Ireland</b>	82.3	85.4	88.8	82.4	85.5	87.5

Source: Office for National Statistics – National life tables – life expectancy in the UK: 2018 to 2020

The modal age at death in the UK in 2018 to 2020 was 86.7 years for males and 89.3 years for females, in comparison with 86.5 years and 89.0 years respectively in 2015 to 2017.

The median age at death was 82.3 years for males and 85.8 years for females, in comparison with 82.4 years and 85.8 years in 2015 to 2017.

These measures show that the age at which death typically occurred in 2018 to 2020 was very similar to 2015 to 2017, and in fact the modal age at death increased between the two periods.

Another measure of lifespan are cohort life expectancies which allow for projected improvement in mortality over time. Our [Past and projected life tables](#) include both period and cohort life expectancies and will be updated in December 2021, alongside the [2020-based interim national population projections](#).

### 3 . Life expectancy at birth in UK countries

England consistently has the highest life expectancy at birth for males and females, and Scotland the lowest. Since 2011 to 2013, improvements in life expectancy across the UK have been minimal; however, Northern Ireland has performed slightly better than the other nations in recent periods, with life expectancy at birth for both males and females increasing above the equivalent estimates for Wales.

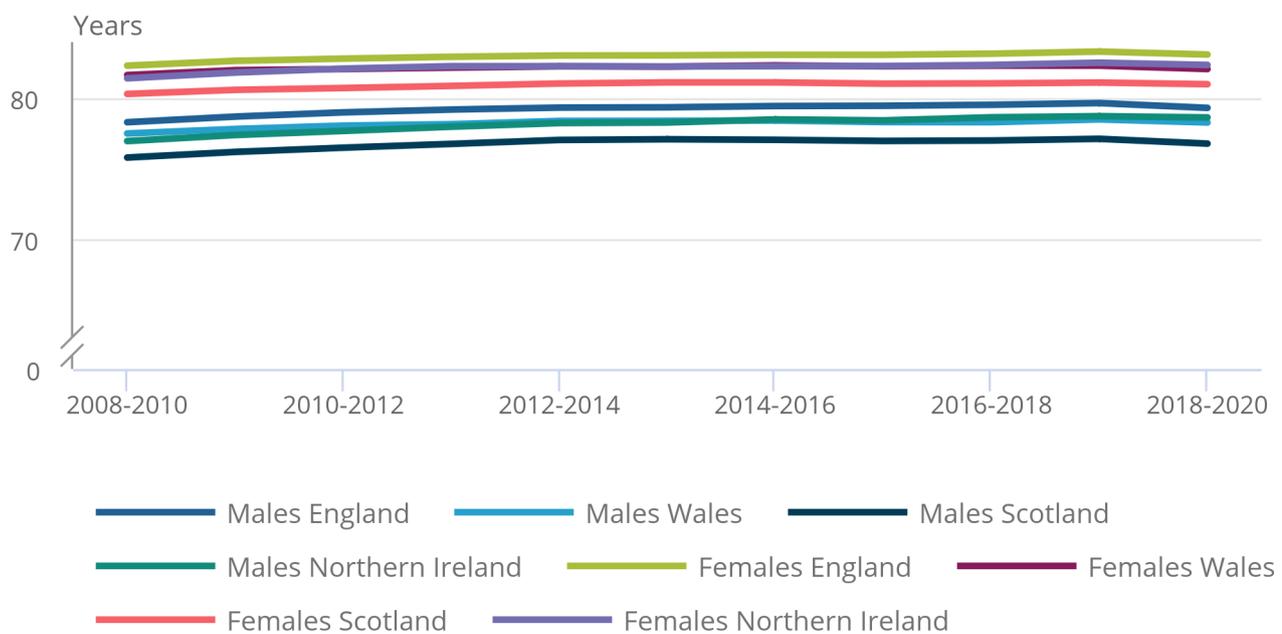
Life expectancy at birth in 2018 to 2020 was estimated to be 79.3 years for males and 83.1 years for females in England, 76.8 years for males and 81.0 years for females in Scotland, 78.3 years for males and 82.1 years for females in Wales, and 78.7 years for males and 82.4 years for females in Northern Ireland.

**Figure 3: Life expectancy at birth in the UK constituent countries has been increasing more slowly since 2011**

Life expectancy at birth, males and females, UK countries, between 2008 to 2010 and 2018 to 2020

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Life expectancy at birth, males and females, UK countries, between 2008 to 2010 and 2018 to 2020



Source: Office for National Statistics – National life tables – life expectancy in the UK: 2018 to 2020

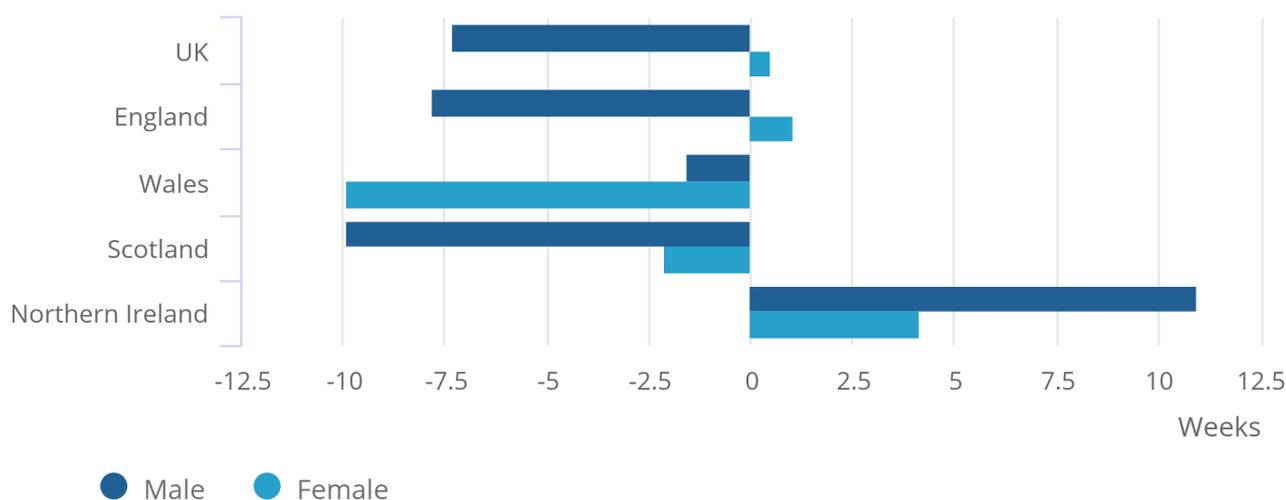
When measured in weeks, life expectancy at birth declined for males in England and for males and females in Scotland and Wales in 2018 to 2020 when compared with 2015 to 2017. There were improvements in life expectancy at birth for females in England and for males and females in Northern Ireland.

**Figure 4: Improvements in life expectancy at birth were slightly greater in Northern Ireland than in the other constituent countries of the UK**

Change in life expectancy at birth in weeks, UK and UK countries, between 2015 to 2017 and 2018 to 2020

Figure 4: Improvements in life expectancy at birth were slightly greater in Northern Ireland than in the other constituent countries of the UK

Change in life expectancy at birth in weeks, UK and UK countries, between 2015 to 2017 and 2018 to 2020



Source: Office for National Statistics – National life tables – life expectancy in the UK: 2018 to 2020

As well as variation between the UK countries, life expectancy at birth varies sub-nationally and is affected by a number of localised factors. This is examined in [Life expectancy for local areas of the UK: 2001 to 2003 to 2018 to 2020](#).

## 4 . Life expectancy at older ages

Improvements in life expectancy at age 65 years have also slowed over the last decade. In 2018 to 2020, life expectancy at age 65 years in the UK is 18.5 years for males and 21.0 years for females. These estimates are very similar to those for 2015 to 2017 with a slight decline of 1.0 week for males and an increase of 3.1 weeks for females.

UK life expectancy at age 90 years was 4.0 years for males and 4.6 years for females in 2018 to 2020. Life expectancy at age 90 years fluctuates slightly each year. While improvements in life expectancy at age 90 years have been low for several years, we are still seeing an increasing number of people aged 90 years and over in the UK. This is because previous improvements in mortality over many decades have resulted in an increasing proportion (and number) of people reaching age 90 years over time.

2020 was a notable year for the number of centenarians living in the UK, which reached 15,120 people, an increase of nearly one-fifth (18%) compared with 2019. This increase in centenarians includes a 52% increase in the number of those aged 100 years, which in turn is driven by historical birth patterns; those people turning 100 last year were part of the spike in births following the end of World War One. Further analysis on this topic is available in [Estimates of the very old, including centenarians, UK: 2002 to 2020](#).

## 5 . National life tables - life expectancy in the UK: 2018 to 2020 data

### [National life tables: UK](#)

Dataset | Released 23 September 2021

Period life expectancy by age and sex for the UK. Each national life table is based on population estimates, births and deaths for a period of three consecutive years. Tables are published annually.

### [National life tables: England](#)

Dataset | Released 23 September 2021

Period life expectancy by age and sex for England. Each national life table is based on population estimates, births and deaths for a period of three consecutive years. Tables are published annually.

### [National life tables: Wales](#)

Dataset | Released 23 September 2021

Period life expectancy by age and sex for Wales. Each national life table is based on population estimates, births and deaths for a period of three consecutive years. Tables are published annually.

### [National life tables: Scotland](#)

Dataset | Released 23 September 2021

Period life expectancy by age and sex for Scotland. Each national life table is based on population estimates, births and deaths for a period of three consecutive years. Tables are published annually.

### [National life tables: Northern Ireland](#)

Dataset | Released 23 September 2021

Period life expectancy by age and sex for Northern Ireland. Each national life table is based on population estimates, births and deaths for a period of three consecutive years. Tables are published annually.

View all data used in this statistical bulletin on the [related data page](#).

## 6 . Glossary

### **Life table**

A life table is a demographic tool used to analyse death rates and calculate life expectancies at various ages. We calculate life tables separately for males and females because of their different mortality patterns.

### **Life expectancy**

This is a population-based statistical measure of the average number of years a person has before death. Life expectancies can be calculated for any age and give the further number of years a person can on average expect to live given the age they have attained.

### **Life expectancy improvements**

These refer to the differences in life expectancy by age and sex calculated between one year and the next. These differences are referred to as "improvements" because life expectancy typically increases year on year. Worsening life expectancy would be shown as a negative improvement. Life expectancy improvements are presented in this bulletin in weeks.

### **Modal age at death**

The most common age at death.

## Median age at death

The age at which half of deaths occur before, and half of deaths occur after.

## 7 . Measuring the data

National life tables are period life tables and are based on three consecutive years of data (in this case 2018, 2019 and 2020) to reduce the effect of annual fluctuations in the number of deaths caused by seasonal events such as flu.

Period life expectancy is the average number of additional years a person would expect to live if he or she experienced the age-specific mortality rates of the given area and time period for the rest of their life. Further explanation of the methodology used to create the national life tables is available in our [guide to calculating national life tables](#).

Figures in the commentary in this bulletin are rounded to one decimal place. Calculations in this bulletin have been made using unrounded figures, and life expectancy estimates to two decimal places can be found in the datasets for this release.

The [National life tables Quality and Methodology Information report](#) contains important information on:

- the strength and limitations of the data
- the quality of the output, including the accuracy of the data and how it compares with related data
- uses and users
- how the output was created

## 8 . Strengths and limitations

The national life tables use a complete life table methodology and should be used by anyone making national comparisons of life expectancy. The Office for National Statistics (ONS) also publishes sub-national life expectancies which use an abridged life table method. National life expectancy estimates are produced as part of the sub-national life expectancy release. These will differ slightly to those published in the national life tables because of the different methodologies used and are published to allow users to compare sub-national and national life expectancies produced on the same basis. This [guide](#) provides more information on the various ONS life expectancy releases and their uses.

We have also published [single-year life tables](#) alongside our three-year life tables. These have been published as a result of evidence of user need for single-year data. Single-year life tables are suited for analyses that require annual data and need more detailed information about mortality patterns. They can give a more granular and up-to-date perspective on whether mortality patterns are improving, worsening or staying in equilibrium than three-year average life tables.

However, single-year life tables show figures which are typically more volatile than three-year average life tables. This is particularly the case for the 2020 single-year life tables because of the mortality associated with the coronavirus (COVID-19) pandemic. This makes single-year life tables a less robust indicator of mortality trends. For this reason, they should not be used alone to draw conclusions about longer-term trends. Furthermore, smaller populations such as the UK constituent nations other than England are more prone to short-term volatility as single events can have a large effect on an already small population.

## 9 . Related links

### [Life expectancy for local areas of the UK: between 2001 to 2003 and 2018 to 2020](#)

Bulletin | Released 23 September 2021

Subnational trends in the average number of years people will live beyond their current age measured by "period life expectancy".

### [Past and projected period and cohort life tables, 2018-based, UK: 1981 to 2068](#)

Bulletin | Released 2 December 2019

Life expectancy (e), probability of dying (q) and numbers surviving (l) from the period and cohort life tables, past and projected, for the UK and constituent countries.

### [Estimates of the very old, including centenarians, UK: 2002 to 2020](#)

Bulletin | Released 23 September 2021

Annual mid-year population estimates for people aged 90 years and over by sex and single year of age (90 to 104 years) and 105 years and over, and comparisons between UK countries.

### [Deaths registered in England and Wales: 2020](#)

Bulletin | Released 06 July 2021

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.

### [Where to find statistics on UK deaths involving the coronavirus \(COVID-19\) and infection rates by country](#)

Article | Released 19 May 2020

Links to statistics on coronavirus (COVID-19) deaths and infection rates published by the different constituent countries of the UK.

### [Changing trends in mortality: a cross-UK comparison, 1981 to 2016](#)

Article | Released 07 August 2018

Analysis of age-specific and age-standardised mortality rates for the UK, England, Wales, Scotland and Northern Ireland from 1981 to 2016.