

Statistical bulletin

# National life tables, UK: 2015 to 2017

Trends in the average number of years people will live beyond their current age measured by period life expectancy, 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 did not improve in 2015 to 2017 and remained at 79.2 years for males and 82.9 years for females.
- Within the UK, life expectancy at birth declined by 0.1 years in 2015 to 2017 for males and females in Scotland and Wales, and for males in Northern Ireland; life expectancy at birth remained unchanged from 2014 to 2016 for females in Northern Ireland and males and females in England.
- Life expectancy at age 65 years in the UK did not improve for males and females in 2015 to 2017 and remained at 18.6 years for males and 20.9 years for females.
- Across all four UK countries, life expectancy at age 65 years remained the same in 2015 to 2017 except for males in Northern Ireland where a decline of 0.1 years was seen.
- Around one in five newborn males and one in three newborn females in the UK in 2015 to 2017 could expect to live to at least age 90 years; the chance of survival to age 90 years has remained virtually unchanged since 2012 to 2014.
- Life expectancy in the UK remained lower than in many other comparable countries internationally.

## 2 . Statistician's comment

“The slowdown in life expectancy improvements in the UK has continued, as 2015 to 2017 saw the lowest improvements in life expectancy since the start of the series in 1980 to 1982. Some decreases in life expectancy at birth have been seen in Scotland, Wales and Northern Ireland whilst in England life expectancy has remained unchanged from 2014 to 2016. This slowing in improvements is reflected in the chances of surviving to age 90 years from birth, which has also seen virtually no improvement since 2012 to 2014.”

Sophie Sanders, Centre for Ageing and Demography, Office for National Statistics

## 3 . Things you need to know about this release

National life tables are produced annually by Office for National Statistics (ONS) for the UK and constituent countries; this latest release for 2015 to 2017 follows on from the 2014 to 2016 life tables published last year. National life tables are based on three consecutive years of data (in this case 2015, 2016 and 2017) to reduce the effect of annual fluctuations in the number of deaths caused by seasonal events such as “flu”.

The national life tables are “period” life tables and all figures referred to in this bulletin are “period” life expectancies. Period life expectancy is the average number of additional years a person would live if he or she experienced the age-specific mortality rates of the given area and time period for the rest of their life.

## 4 . No improvement in UK life expectancy at birth

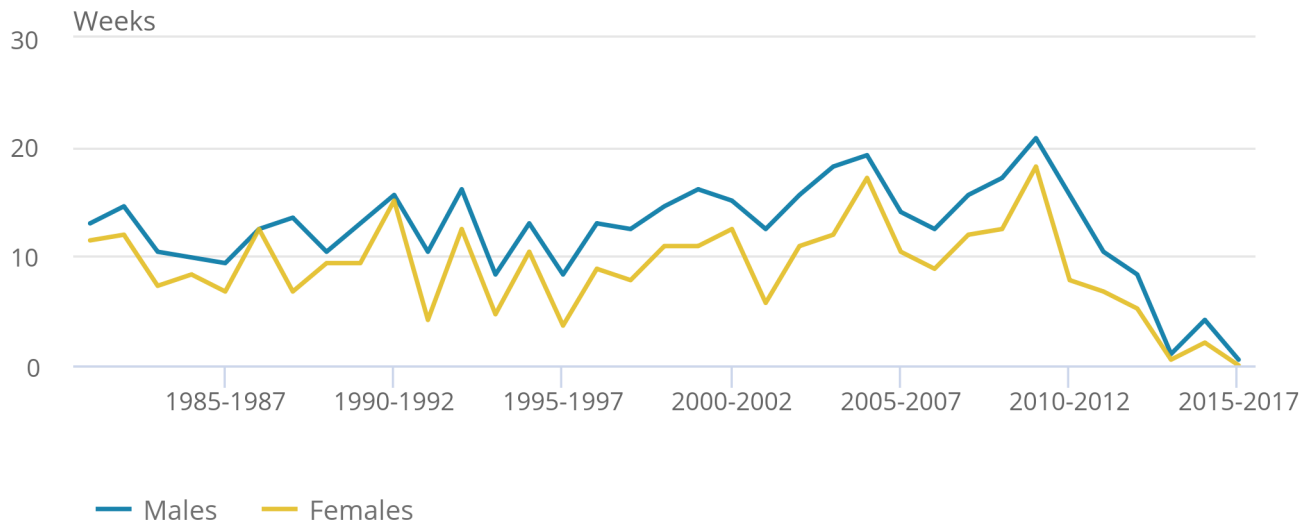
After decades of steady improvements in life expectancy in the UK, we've recently reported on the [slowdown in increases in life expectancy since 2011](#). In 2015 to 2017, life expectancy at birth in the UK saw no improvement from the previous 2014 to 2016 national life tables and remained at 79.2 years for males and 82.9 years for females. Figure 1 shows the annual increases in life expectancy at birth measured in weeks per year between 1981 to 1983 and 2015 to 2017.

**Figure 1: Annual change in life expectancy at birth in weeks, males and females**

UK, between 1981 to 1983 and 2015 to 2017

## Figure 1: Annual change in life expectancy at birth in weeks, males and females

UK, between 1981 to 1983 and 2015 to 2017



Source: Office for National Statistics

The highest annual improvements in life expectancy at birth in the UK were in 2009 to 2011 at 21 weeks for males and 18 weeks for females. Prior to this, improvements in life expectancy at birth were typically between 10 and 15 weeks per year for males and 7 and 12 weeks per year for females. After 2009 to 2011, there was a sharp drop in annual improvements and the most recent 2015 to 2017 life tables show improvements close to zero, the smallest improvement in life expectancy since the start of the series. Improvements in life expectancy at birth in the UK in 2013 to 2015 were almost as low, as males saw life expectancy at birth increase by one week from 2012 to 2014 and females no increase.

### Why have improvements been so low?

As people have tended to live longer, the population has been increasing in both size and age over time, therefore the number of deaths is expected to increase. However, the three-year period from 2015 to 2017 saw particularly high numbers of deaths across the UK in comparison with the years before. In England and Wales, 2015 saw the largest annual percentage increase in deaths since 1968. In 2016, deaths were slightly lower but remained high in comparison with the majority of the 2000s. In 2017, deaths spiked again as the highest number of deaths were registered in England and Wales since 2003, a 1.6% increase compared with 2016 and a 0.7% increase on 2015.

Deaths have also been high in Scotland and Northern Ireland over this period. In 2017, Scotland also saw the highest number of deaths registered since 2003 and provisional figures suggest Northern Ireland saw the largest number of death registrations since 1986.

This analysis explores [the increase in death registrations in 2015](#) in more detail. Our [quarterly mortality surveillance reports](#) also contain additional analysis of mortality patterns in England since 2016. Whilst we previously showed that there has been [a significant slowdown of the improvements to mortality rates](#), there is much ongoing debate about the reasons behind this and what direction the trend may take in the future.

## Decreases in life expectancy at birth within the UK

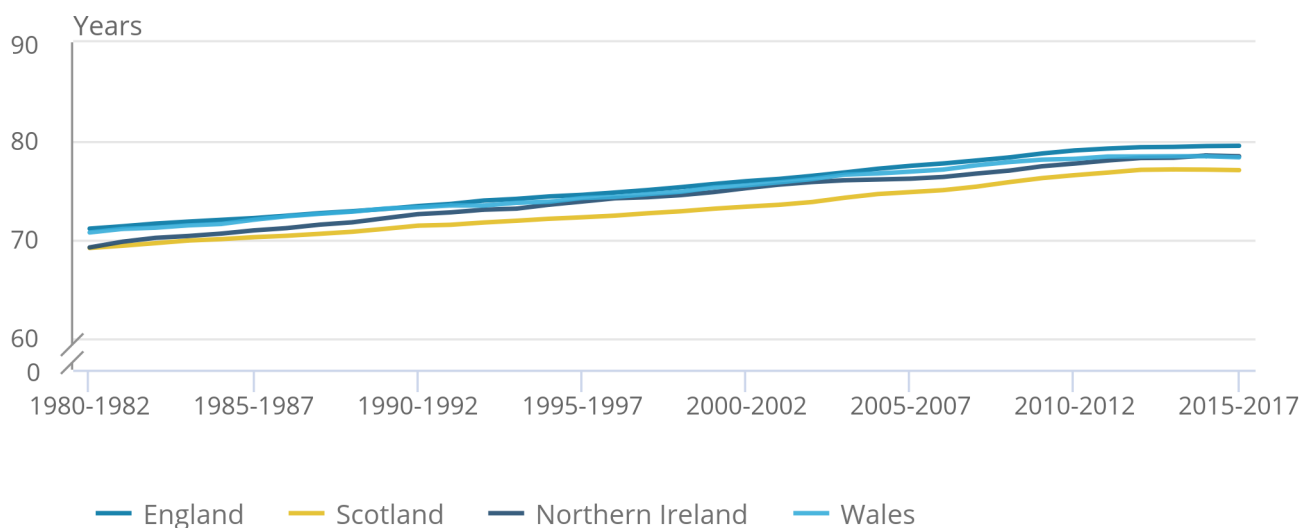
Some of the UK countries saw a decrease in life expectancy at birth in 2015 to 2017 compared with 2014 to 2016. Life expectancy at birth declined by 0.1 years for males and females in Scotland and Wales, and for males in Northern Ireland. Life expectancy at birth remained unchanged from 2014 to 2016 for females in Northern Ireland and males and females in England (Figures 2 and 3).

**Figure 2: Life expectancy at birth, males**

UK countries, between 1980 to 1982 and 2015 to 2017

### Figure 2: Life expectancy at birth, males

UK countries, between 1980 to 1982 and 2015 to 2017



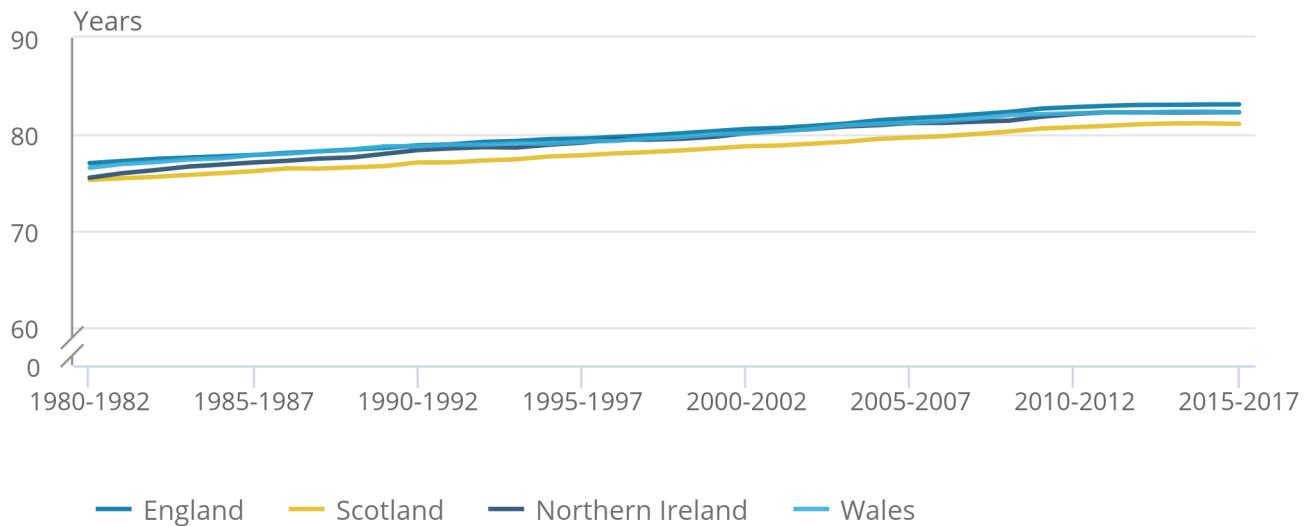
Source: Office for National Statistics

### Figure 3: Life expectancy at birth, females

UK countries, between 1980 to 1982 and 2015 to 2017

### Figure 3: Life expectancy at birth, females

UK countries, between 1980 to 1982 and 2015 to 2017



Source: Office for National Statistics

Figure 4 shows the change in life expectancy at birth in weeks between 2014 to 2016 and 2015 to 2017 for the UK and UK countries. Wales saw the biggest decline in life expectancy at birth from 2014 to 2016 for both males (six weeks) and females (four weeks). Scotland also saw life expectancy decline by three weeks for males and females.

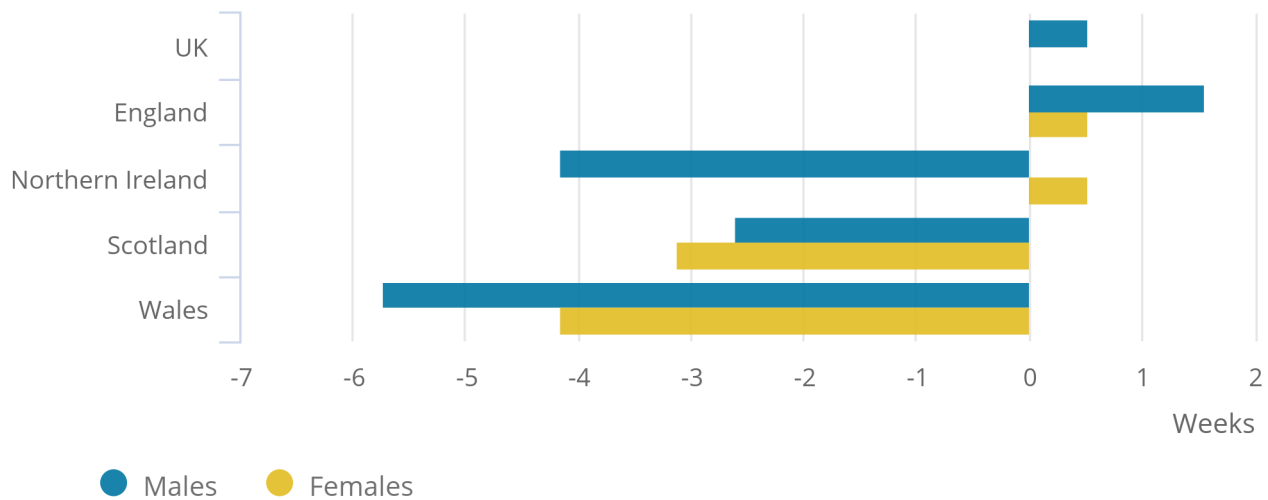
In England and Northern Ireland, life expectancy at birth for females remained virtually unchanged from 2014 to 2016. Males in Northern Ireland saw life expectancy at birth reduce by four weeks, whilst in England life expectancy at birth for males had a small positive increase (two weeks). This has slightly widened the gap in life expectancy at birth between the UK countries.

## Figure 4: Change in life expectancy at birth in weeks

UK and UK countries, between 2014 to 2016 and 2015 to 2017

### Figure 4: Change in life expectancy at birth in weeks

UK and UK countries, between 2014 to 2016 and 2015 to 2017



Source: Office for National Statistics

## Has life expectancy at birth declined before in the national life tables?

Life expectancy at birth in the UK and England has not declined since 1980 to 1982 when the national life tables began. However, in Scotland, Northern Ireland and Wales, there have been slight annual declines in life expectancy at birth observed in the past for males and females. Up until 2015 to 2017, annual declines observed in life expectancy at birth have been very small at less than 0.04 years. In 2015 to 2017, decreases in life expectancy at birth observed in the UK countries were the largest since the start of the series in 1980 to 1982, ranging from 0.05 years (males in Scotland) to 0.11 years (males in Wales).

## 5 . No improvement in UK life expectancy at older ages

Life expectancy at birth can be sensitive to changes in infant mortality at the youngest ages. However, improvements in life expectancy at older ages have also slowed in the UK in recent years. In 2015 to 2017, life expectancy at age 65 years and age 90 years were both unchanged for males and females in the UK. A male aged 65 in 2015 to 2017 could expect to live on average a further 18.6 years and a male aged 90 a further 4.0 years. A female aged 65 could expect to live on average a further 20.9 years and a female aged 90 a further 4.6 years.

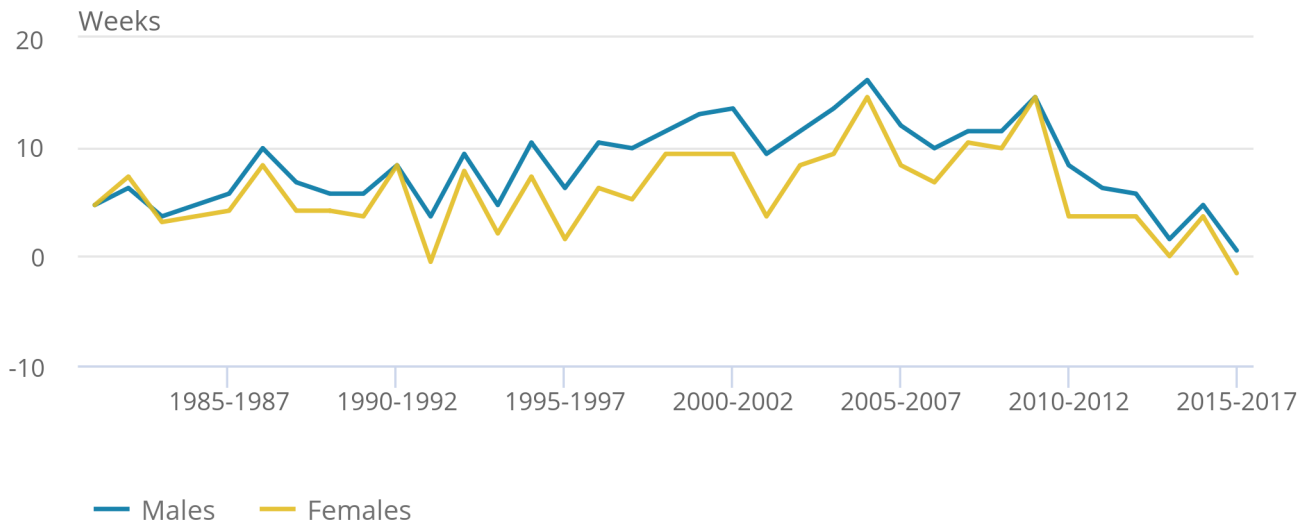
Figure 5 shows the annual increases in life expectancy at age 65 years measured in weeks per year between 1981 to 1983 and 2015 to 2017.

**Figure 5: Annual change in life expectancy at age 65 years in weeks, males and females**

UK, between 1981 to 1983 and 2015 to 2017

## Figure 5: Annual change in life expectancy at age 65 years in weeks, males and females

UK, between 1981 to 1983 and 2015 to 2017



Source: Office for National Statistics

Improvements in life expectancy at age 65 years in the UK peaked in 2004 to 2006, five years earlier than for life expectancy at birth, although 2009 to 2011 also saw high improvements. A similar period of declining improvements followed and in 2015 to 2017 life expectancy at age 65 years in the UK reduced slightly (by two weeks) for females and remained virtually unchanged for males.

Life expectancy at age 65 years in 2015 to 2017 remained the same across all four UK countries for males and females with the exception of males in Northern Ireland where it declined by 0.1 years.

## 6 . No improvements in the chances of surviving to older ages

In the past, a consequence of increasing life expectancy has been an increase in the proportion of the population expected to survive to older ages. Whilst the population aged 90 years and over in the UK is still increasing due to previous improvements in mortality going back many decades, as improvements in life expectancy have recently slowed in the UK, increases in the chances of surviving to older ages from birth have also slowed.

The chances of survival to age 90 years for newborns have remained virtually unchanged since 2012 to 2014. Almost one in three (32%) newborn girls in the UK in 2015 to 2017 could expect to live to age 90 years and just over one in five newborn boys (21%).

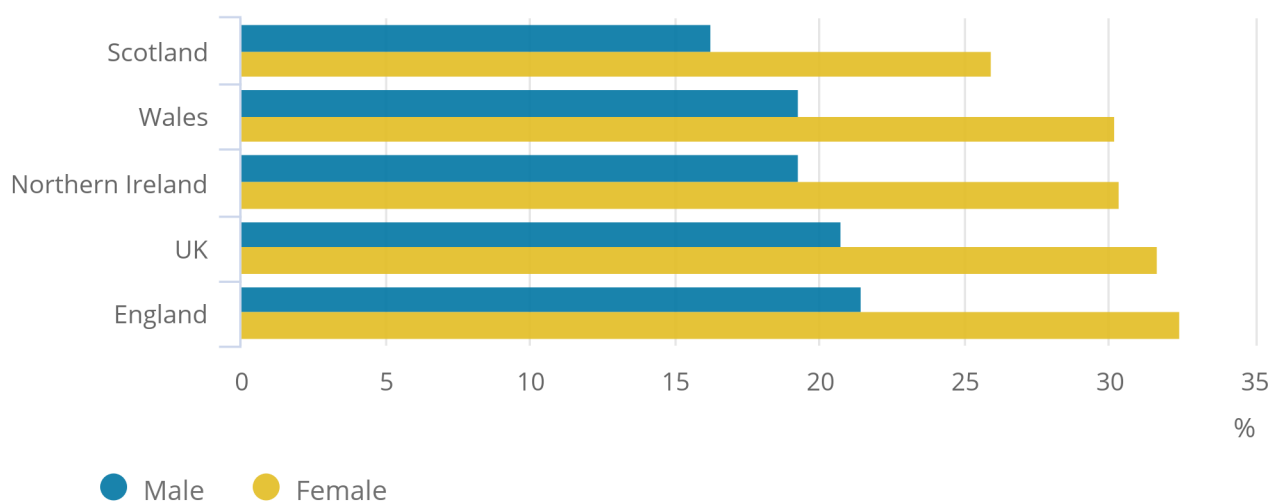
There are differences in the chances of survival to older ages between the UK countries, which reflect the differences in life expectancy. In Scotland, where life expectancy is lowest, the chances of survival to age 90 years were lowest of the four UK countries at 16% for newborn males and 26% for newborn females in 2015 to 2017. The chances of surviving to age 90 years were slightly higher in Wales and Northern Ireland at 19% for males and 30% for females in both. In England, where life expectancy is highest, the chances of surviving to age 90 years were greatest at 32% for females and 21% for males.

**Figure 6: Chances of surviving to age 90 years, newborn males and females**

UK and UK countries, 2015 to 2017

Figure 6: Chances of surviving to age 90 years, newborn males and females

UK and UK countries, 2015 to 2017



Source: Office for National Statistics

## 7 . Life expectancy in the UK remained lower than in other comparable countries internationally

Our recent analysis looking into trends in mortality internationally showed [the slowdown in life expectancy improvements seen in the UK since 2011 is also evident in a number of countries across Europe, North America and Australia](#). However, the UK has experienced one of the largest slowdowns in life expectancy at birth and at age 65 years for males and females.

Tables 1 and 2 show comparisons of male and female life expectancy at birth and at age 65 years in the UK in 2015 to 2017 with those from selected other countries' life tables. The countries included are those considered to be high-income countries and economically similar to the UK and have data available for 2015 or later. In each table the countries have been ordered by life expectancy at birth from highest to lowest.



**Table 1: Life expectancy in selected countries, males, 2015 to 2017**

	Latest year	At birth	At age 65
Switzerland	2016	81.5	19.8
Norway	2017	80.9	19.2
Japan	2015	80.8	19.4
Singapore	2017	80.7	19.1
Sweden	2017	80.7	19.1
Iceland	2017	80.6	19
Italy	2016	80.6	19.1
Spain	2016	80.3	19.1
The Netherlands	2017	80.1	19
New Zealand	2015 to 2017	80	19.4
France	2017	79.5	19.4
UK	2015 to 2017	79.2	18.6
Belgium	2017	79	18.3
Denmark	2016 to 2017	79	18.1
USA	2015	76.3	18
Poland	2017	74	15.9

Source: Office for National Statistics

Notes:

1. The latest year of available data for each country has been used therefore the reference years shown vary between countries.

Life expectancy at birth for males in the UK (79.2 years) is lower than in many of the other countries shown where male life expectancy at birth exceeds 80 years. The same is true for life expectancy at age 65 (18.6 years in the UK), which exceeds 19 years in the majority of the countries shown. However, life expectancy at birth in the USA, which alongside the UK was shown to have seen one of the biggest slowdowns in life expectancy improvements internationally, is almost three years lower than the UK at 76.3 years.

The UK also has lower female life expectancies than the majority of the other countries shown. Japan is considered to have the highest female life expectancy in the world at 87.0 years, this is over four years higher than in the UK (82.9 years). Female life expectancy at birth is also above 85 years in a number of European countries including Spain, Switzerland, France and Italy. Denmark has the same female life expectancy at birth as the UK, whilst life expectancy at age 65 years is 0.1 years lower in Denmark than in the UK. Of the countries compared, only the USA and Poland have lower life expectancies at birth than the UK for females.

Our previous comparisons have shown [the UK's relatively low ranking for life expectancy among other countries with similar levels of economic development is not a recent phenomenon](#). The greater slowdown in life expectancy improvements since 2011 in the UK compared with other countries will also have prevented the UK's relative progress. However, the gap in life expectancy between the UK and other countries suggests there is still the potential for UK life expectancy to increase further and resume improvements in the future.

**Table 2: Life expectancy in selected countries, females, 2015 to 2017**

	Latest year	At birth	At age 65
Japan	2015	87	24.2
Spain	2016	85.8	23.1
Switzerland	2016	85.3	22.6
France	2017	85.3	23.2
Singapore	2017	85.2	22.5
Italy	2016	85	22.3
Norway	2017	84.3	21.6
Sweden	2017	84.1	21.4
Iceland	2017	83.9	21.1
Belgium	2017	83.6	21.5
New Zealand	2015 to 2017	83.4	21.5
The Netherlands	2017	83.3	21.5
Denmark	2016 to 2017	82.9	20.8
UK	2015 to 2017	82.9	20.9
Poland	2017	81.8	20.2
USA	2015	81.2	20.6

Source: Office for National Statistics

Notes:

1. The latest year of available data for each country has been used therefore the reference years shown vary between countries.

## 8 . Links to related statistics

[Recent analysis of changing trends in mortality in the UK](#) and [internationally](#).

[Experimental statistics](#) analysing the [slowdown in mortality improvements in England and Wales](#).

[Healthy life expectancies](#) and [life expectancy by deprivation deciles](#).

Today (25 September 2018) we have published the latest [Estimates of the very old \(including centenarians\)](#). They provide the estimated population by age group and sex for the ages 90 to 104 years and 105 years and over for the UK and England and Wales.

Past and projected life expectancies in the [period and cohort life tables](#).

Use our [calculator](#) to find out your life expectancy, your chance of living to 100 and how long you're likely to need to make your pension pot last.

Annual data on [death registrations in England and Wales](#).

[Quarterly mortality surveillance reports](#).

## 9 . Quality and methodology

National Records of Scotland (NRS) recently identified an error in the Scottish mid-year population estimates for 2002 to 2010 affecting the age distribution of older age groups, which made the 90 years and over population too small and the population of those aged 81 to 89 years too large. NRS has published [further information on the error](#). The national life tables for 2015 to 2017 are unaffected by this error, however, historic life tables between 2000 to 2002 and 2010 to 2012 will be affected. The historic life tables published in this release have not been revised using the corrected population estimates for Scotland. We have estimated that the impact on life expectancies at birth and at age 65 years are very small for Scotland although the impact on life expectancy at age 90 years is slightly larger.

The 2017 deaths data used in the production of the 2015 to 2017 life table for Northern Ireland are provisional.

Figures in the commentary in this bulletin are rounded to one decimal place. Calculations in this bulletin have been done using unrounded figures and life expectancy estimates to two decimal places can be found in the [datasets](#) for this release.

Explanation of the methodology used to create the national life tables is available in our [guide to calculating national life tables](#).

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