

Statistical bulletin

# Estimates of the very old, including centenarians, UK: 2002 to 2017

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



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# 1 . Main points

- In 2017 there were 579,776 people aged 90 years and over living in the UK, including 14,430 centenarians.
- The 90 years and over population continues to increase despite a decline in births in England and Wales 90 years ago; this reflects improvements in mortality going back many decades.
- The number of centenarians decreased slightly between 2016 and 2017, reflecting low numbers of births during World War One, but is expected to continue to increase again from 2019.
- The number of centenarians has increased by 85% over the last 15 years, although centenarians still make up only 2.5% of those aged 90 years and over.
- The sex ratio at older ages continues to narrow, with two women aged 90 to 94 years for every man in that age group, and fewer than five women for every male centenarian.
- Across the UK, Wales has the highest proportion of residents aged 90 years and over, and the highest proportion of centenarians.

## 2 . Statistician's comment

"We are continuing to see higher numbers of people aged 90 years and over in the UK due to improvements in mortality going back many decades. While we have seen growing numbers of centenarians in recent years, there has been a slight decrease between 2016 and 2017. This is due to lower numbers of births during World War One. The number of centenarians is likely to increase again from 2019 in line with historic birth patterns."

Ngaire Coombs, Centre for Ageing and Demography, Office for National Statistics

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

These are annual mid-year estimates by sex and single year of age for people aged 90 to 104 years and for the 105 years and over age group. Figures for 2002 to 2016 update the figures previously published in September 2017 for England, Wales and for the UK. Corresponding estimates for Scotland and for Northern Ireland for 2002 to 2017 are also published today by [National Records of Scotland \(NRS\)](#) and the [Northern Ireland Statistics and Research Agency \(NISRA\)](#) respectively.

To provide users with a consistent set of estimates by single year of age for people aged up to 105 years and over, the Estimates of the very old (including centenarians) series is constrained to the age 90 years and over totals in the mid-year population estimates.

## 4 . The number of people aged 90 years and over continues to increase

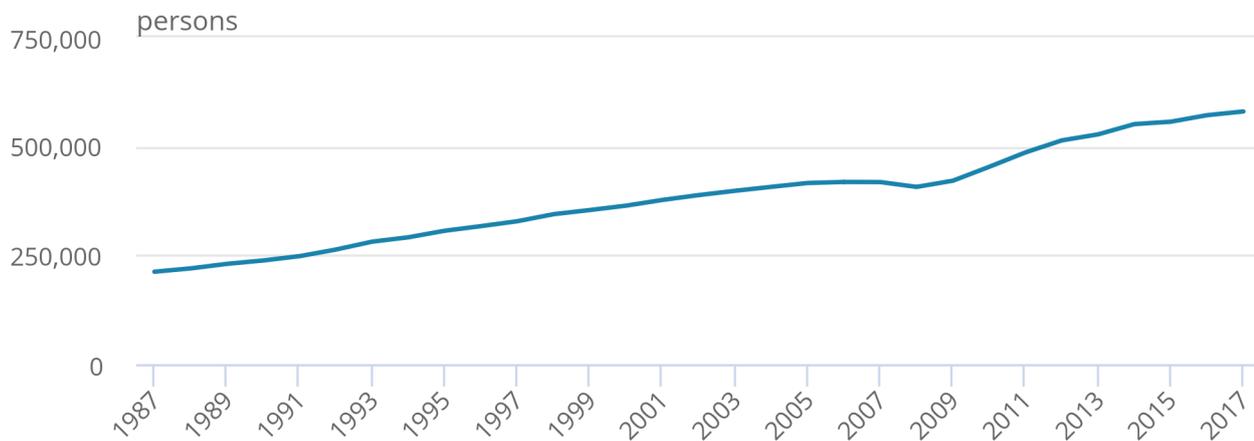
There were 579,776 people aged 90 years and over living in the UK in 2017. As shown in Figure 1, this reflects a steady increase in the size of this population over the last few decades, with the exception of decreases in 2007 and 2008. The dip in the population aged 90 years and over in these years reflects low birth numbers 90 years previously, during World War One.

**Figure 1: Number of people aged 90 years and over**

UK, 1987 to 2017

Figure 1: Number of people aged 90 years and over

UK, 1987 to 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

[Increases in life expectancy at age 90 years have stalled in recent years, as have the chances of surviving from birth to age 90 years](#); yet we are still seeing an increase in the number of people aged 90 years and over. This is because of previous improvements in mortality going back many decades, which have resulted in an increasing proportion (and number) of people reaching age 90 years over time.

The chances of surviving from birth to age 90 years today are based on current mortality levels, and represent the proportion of people born today who would reach age 90 years if current mortality levels stay the same throughout their lives. We would have to wait for 90 years to see any impact of this on the size of the population aged 90 years and over.

The number of centenarians in the UK was slightly lower in 2017 than it was in 2016 (down to 14,430 from 14,510). This corresponds with low numbers of births during World War One, with births dropping sharply 100 years ago, between 1916 and 1917. The number of centenarians is expected to decrease further in 2018 before increasing again from 2019, in line with the pattern shown 10 years earlier for those aged 90 years and over (Figure 1).

## 5 . The 90 years and over population is getting older

Among those aged 90 years and over, three quarters (76.8%) were aged under 95 years old, a fifth (20.7%) were aged 95 to 99 years, while the number of centenarians is still very small, making up only 2.5% of those aged 90 years and over.

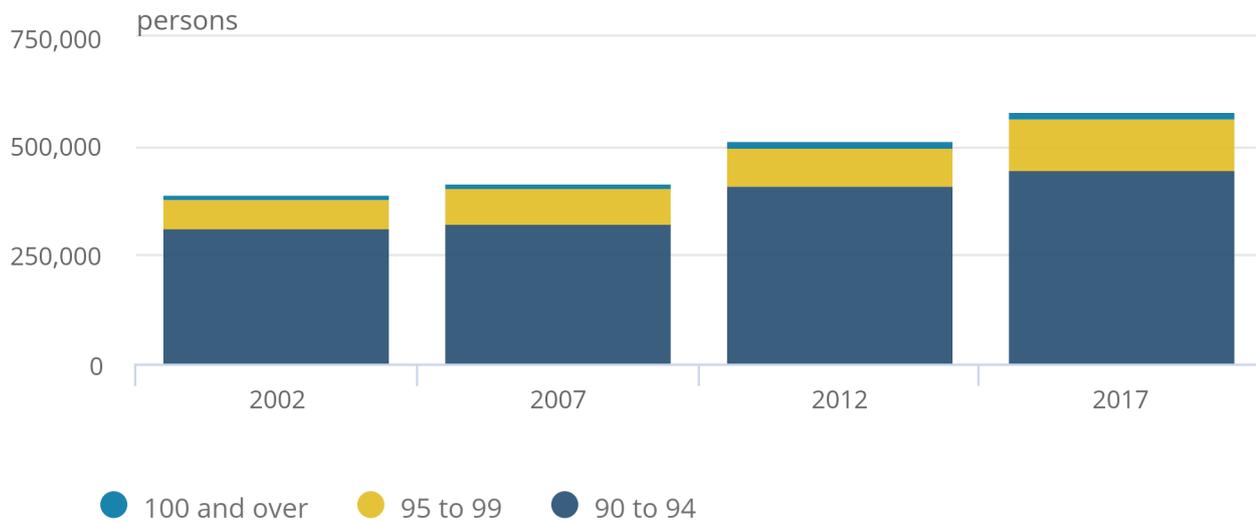
The growth of the population aged 90 years and over in recent years has largely been driven by increases in the number of people aged under 95 years, as shown in Figure 2. However, the proportions at the oldest ages have increased faster than at the younger ages. Since 2002, the number of centenarians has grown twice as quickly as the number of people aged 90 to 94 years, increasing by 85% compared with 43%.

**Figure 2: Number of people aged 90 years and over**

by age group, selected years, UK, 2002 to 2017

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by age group, selected years, UK, 2002 to 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

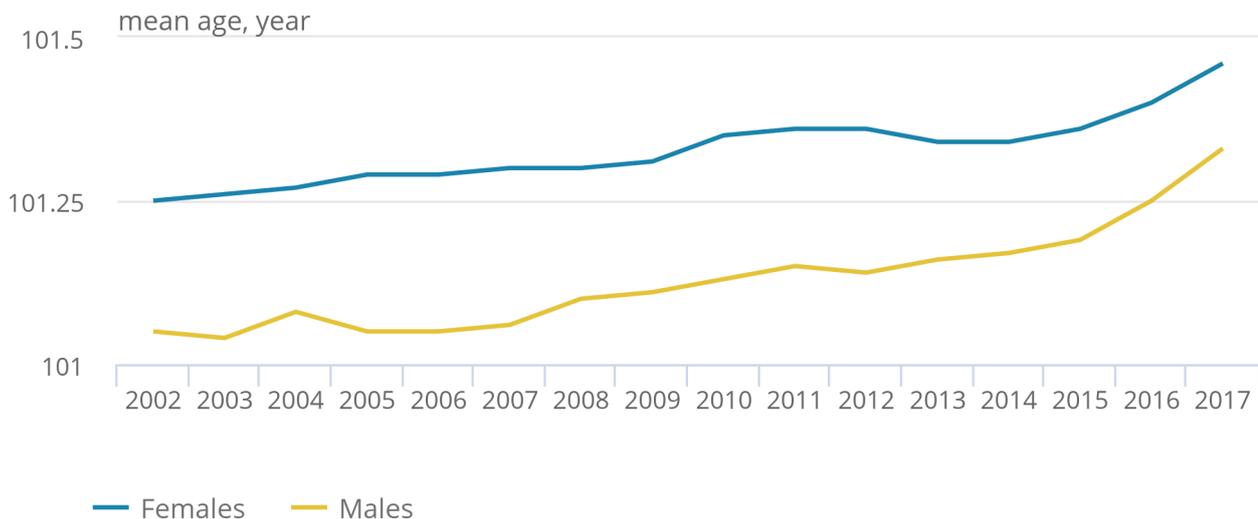
Even at the highest ages, the population is getting older. Figure 3 shows the increase in the average age of centenarians over recent years, with an upturn since 2015, accompanied by a narrowing of average age between men and women.

### Figure 3: Mean age of centenarians

by sex, 2002 to 2017, UK

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by sex, 2002 to 2017, UK



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

## 6 . More men are reaching old age

The narrowing in average age between male and female centenarians is reflected in the steadily decreasing sex ratio at older ages, as shown in Figure 4.

Women have higher life expectancy than men, and as a result there are more women than men at the oldest ages. But faster improvements in mortality for men than for women going back many decades mean that men have been more likely to survive to age 90 years and beyond than in the past.

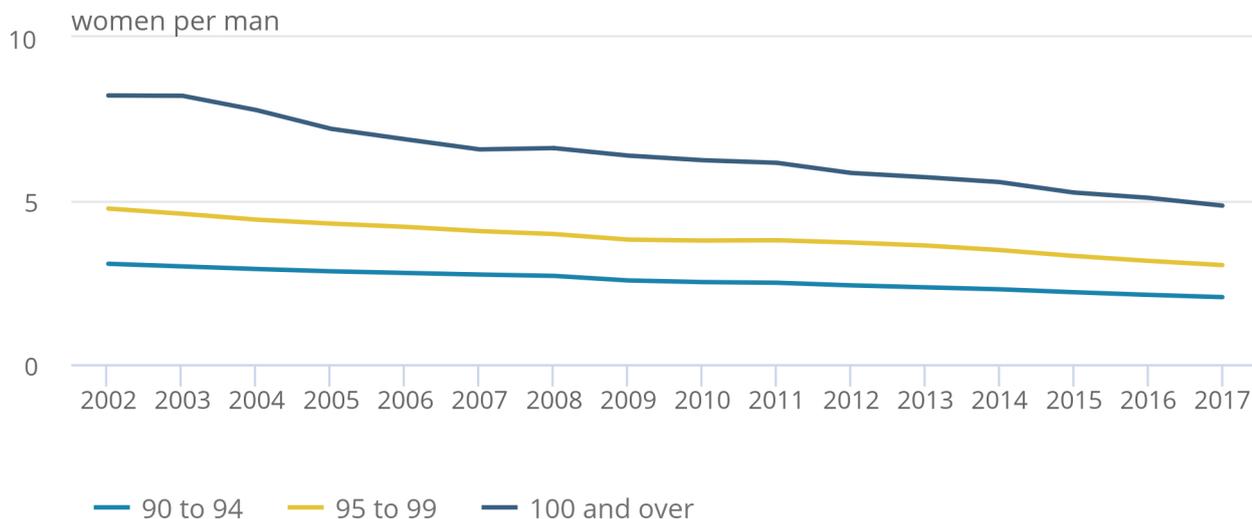
This has led to decreases in the number of women for every man (the sex ratio) at older ages. Among centenarians there were fewer than five women for every man in 2017, down from over eight in 2002. Among those aged 90 to 94 years, there are now only twice as many women as men.

**Figure 4: Sex ratio (number of women per man)**

by age group, UK, 2002 to 2017

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by age group, UK, 2002 to 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

## 7 . The number of 90-year-olds continues to grow, despite a decrease in births 90 years ago

People aged 90 years today were born 90 years ago. It would seem reasonable to assume that patterns in births 90 years previously would be reflected in the number of 90-year-olds in the population 90 years later.

Figures 5 and 6 respectively show the number of 90-year-old men and women in England and Wales alongside the number of male and female births 90 years previously. The dip (1917 to 1919) and subsequent spike (1920) in births are a result of the low number of births during World War One and the post-war spike in births. This is matched by a similar (although less pronounced) pattern in the number of men and women aged 90 years between 2007 and 2010.

Following the post-war spike there was a sustained decline in births from 1921 onwards. However, increased survival of people (particularly men) born following World War One meant that despite this drop in births, the number of women aged 90 years has only decreased slightly since 2011 before levelling off, and the number of men aged 90 years has actually increased.

**Figure 5: Number of men aged 90 years in 2002 to 2017, and male births 90 years previously**

## England and Wales

[Download the data](#)

### Notes:

1. The number of people aged 90 are estimated at mid-year, and the number of births 90 years previously are estimated on a calendar year basis. This results in a mis-match of up to 6 months. For example, someone aged 90 in mid-2017 was not necessarily born in 1927, they may have been born in either 1926 or 1927.

## Figure 6: Number of women aged 90 years in 2002 to 2017, and female births 90 years previously

## England and Wales

[Download the data](#)

### Notes:

1. The number of people aged 90 are estimated at mid-year, and the number of births 90 years previously are estimated on a calendar year basis. This results in a mis-match of up to 6 months. For example, someone aged 90 in mid-2017 was not necessarily born in 1927, they may have been born in either 1926 or 1927.

## Notes about The number of 90-year-olds continues to grow, despite a decrease in births 90 years ago

1. Please note that these assumptions do not take into account migration. Someone born in England and Wales 90 years ago who emigrated would not be represented among people aged 90 today. Conversely, someone born elsewhere who later moved to England and Wales would not be counted in the births 90 years previously.

## 8 . Wales has the highest proportion of residents aged 90 years and over

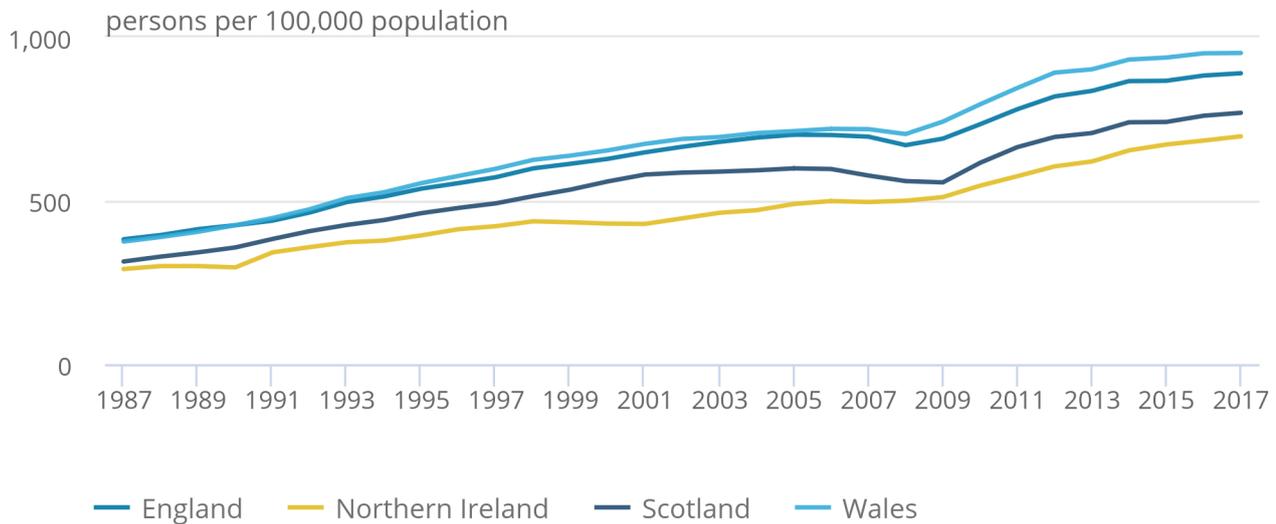
The proportion of the population aged 90 years and over has been increasing in all UK countries in recent years. In 2017, Wales had the highest proportion of those aged 90 years and over in the population at 952 per 100,000, followed by England at 890, Scotland at 769, and Northern Ireland with the lowest at 697 (Figure 7).

## Figure 7: Number of people aged 90 years and over

per 100,000 population, by country, 1987 to 2017

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per 100,000 population, by country, 1987 to 2017



Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency

The same pattern is seen for centenarians, with Wales having the highest proportion at 26 per 100,000, followed by England at 22, Scotland at 17, and Northern Ireland having the lowest at 15 (Figure 8).

## Figure 8: Number of people aged 100 years and over

per 100,000 population, by country, 1987 and 2017

[Download the data](#)

## 9 . Links to related statistics

More information on the topic of the UK population is available:

- [Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2017](#)
- [Overview of population statistics](#)
- [National life tables](#)

## 10 . Quality and methodology

In 2011, the estimates were assessed by the UK Statistics Authority and have since been published as National Statistics. The estimates were re-assessed in 2016 and their National Statistics status was retained.

Estimates for the UK, England and for Wales are produced by Office for National Statistics (ONS) while estimates for Scotland and Northern Ireland are produced by the [National Records of Scotland \(NRS\)](#) and the [Northern Ireland Statistics and Research Agency \(NISRA\)](#) respectively. The 2017 deaths data used in the production of the Northern Ireland 90 years and over single year of age estimates are provisional. Although the estimates for each country are produced using a comparable methodology, a comparison paper has been published to explain any [differences](#).

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 aged 90 years and over population too small and the population of those aged 81 to 89 years too large. The revised 90 years and over NRS estimates for Scotland for those years have been used in the production of the Estimates of the very old for the UK. NRS have published [further information](#).

The [Population estimates of the very old \(including centenarians\) Quality and Methodology Information report](#) contains important information on:

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

We published an [evaluation of official high age population estimates](#) in December 2016.