

Life Expectancy in Scotland 2017-2019



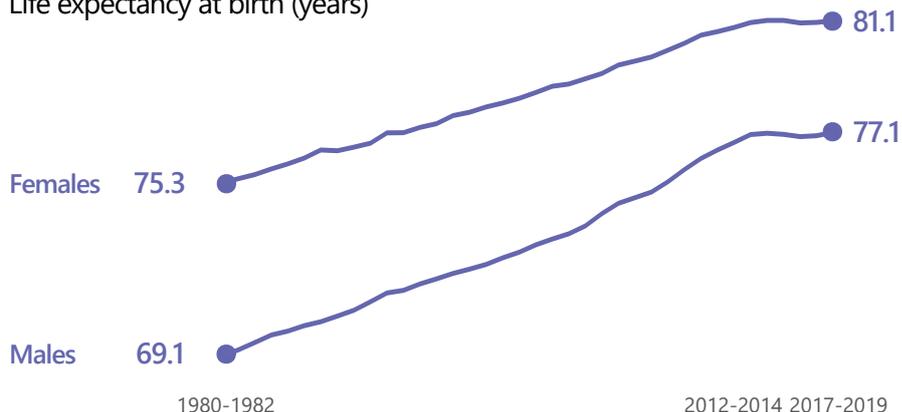
Published on 24 September 2020

This statistical report details life expectancy estimates for Scotland and comparisons with estimates for the rest of the UK. It also includes life expectancy estimates for councils, health boards and other areas within Scotland

Life expectancy remains virtually unchanged since 2012-2014

Between 2000-2002 and 2012-2014, life expectancy increased by 16.3 weeks per year for males and 9.9 weeks per year for females. But between 2012-2014 and 2017-2019, life expectancy increased by 0.8 weeks per year for males and 0.7 weeks per year for females.

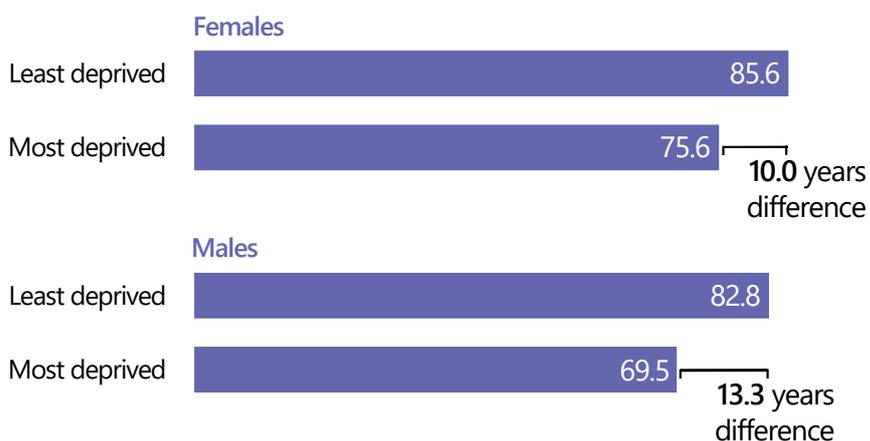
Life expectancy at birth (years)



Deprivation has a big impact on life expectancy

Life expectancy for females is 10.0 years more in the least deprived areas compared to the most deprived areas in Scotland. For males that difference increases to 13.3 years.

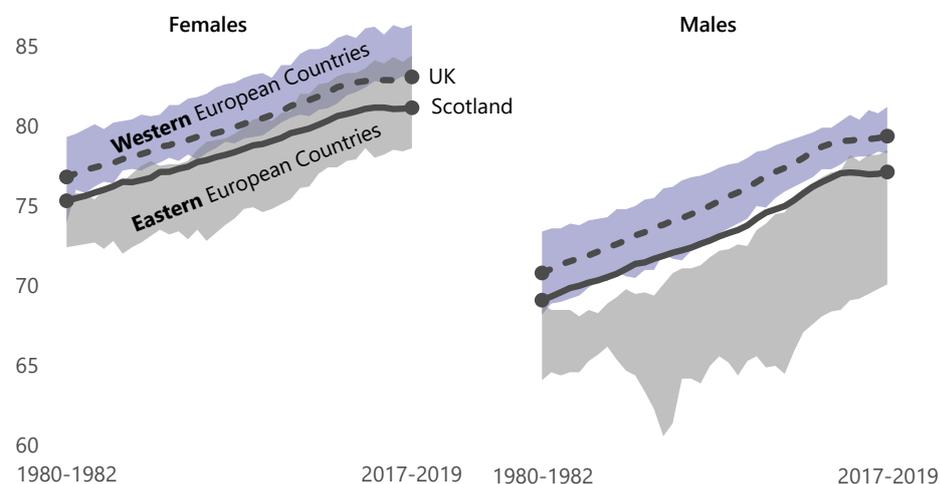
Life expectancy at birth by deprivation (years)



Scotland has the lowest life expectancy in western Europe.

Life expectancy in Scotland has always been lower than or among the lowest in western Europe, when looking at EU data from Eurostat. Here, eastern Europe is defined as EU8 countries as well as EU2 and Croatia. Western Europe is made up of the other sixteen EU nations.

Life expectancy at birth (years)



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Key findings

- In Scotland in 2017-2019, life expectancy at birth was 77.1 years for males and 81.1 years for females. This is a small increase of around 0.1 years for both males and females since the 2016-2018 figures published last year.
- Life expectancy in Scotland has increased since the early 1980s but has now remained virtually unchanged since 2012-2014.
- Life expectancy at age 65 in 2017-2019 was 17.7 years for males and 19.8 years for females in Scotland.
- Scotland has the lowest life expectancy at birth of all UK countries. Average life expectancy in the UK was 79.4 years for males and 83.1 years for females.
- Female life expectancy at birth was highest in East Renfrewshire (84.0 years) and lowest in Glasgow City (78.5 years).
- Male life expectancy at birth was highest in East Dunbartonshire (80.5 years) and lowest in Glasgow City (73.6 years)
- The majority of Scotland's council areas have experienced a slow-down or a stall in life expectancy growth since 2012-2014 and many areas now have decreasing life expectancy.
- The gap in life expectancy between the most and least deprived areas was 13.3 years for males and 10.0 years for females.

Do these statistics take into account the effect of COVID-19 on life expectancy?

The life expectancy statistics in this publication cover the three year period 2017-2019, and do not include any data on deaths involving COVID-19, which was first mentioned on a Scottish death certificate in the week beginning 16 March 2020. Future statistics will be able to show some of the effects of the pandemic on life expectancy in Scotland.

The latest statistics on deaths involving COVID-19 can be found at www.nrscotland.gov.uk/covid19stats

1. Introduction

This publication summarises the life expectancy figures for Scotland for the years 2017-2019. It also includes estimates of life expectancy in different areas of Scotland

How national life expectancy is calculated

The latest life expectancy figures are calculated from the mid-year population estimates for Scotland and the number of deaths registered in Scotland during 2017, 2018 and 2019. Life expectancy for Scotland is calculated for each year of age, and represents the average number of years that someone of that age could expect to live if death rates for each age group remained constant. Life expectancy in Scotland is calculated as a three year average, produced by combining deaths and population data for the three year period. Three years of data are needed to provide a large enough sample size to make these figures accurate and also to lessen the effect of very 'good' or 'bad' years. Throughout this publication, the latest life expectancy figures refer to the 2017-2019 period.

What is 'period' life expectancy?

All of the estimates presented in this report are 'period' life expectancy. They are calculated assuming that mortality rates for each age group in the time period (here 2017-2019) are constant throughout a person's life. This means that future changes in things such as medicine and legislation are not taken into consideration. While this means that period life expectancy is not an accurate prediction of how long a person will actually live, it is a useful measure of population health.

How sub-national life expectancy is calculated

We calculate life expectancy for areas within Scotland using a very similar method to the national figures but with a few key differences. Firstly, we use age groups rather than single year of age. This is to increase the sample size of each age and make sure we are calculating accurate mortality rates. Secondly, we use a maximum age group of 90+ whereas the national figures are calculated up to age 100. These are known as 'abridged life tables.' You can read more information about the methods in this publication in our [methodology guide](#) on the NRS website.

Uses of life expectancy

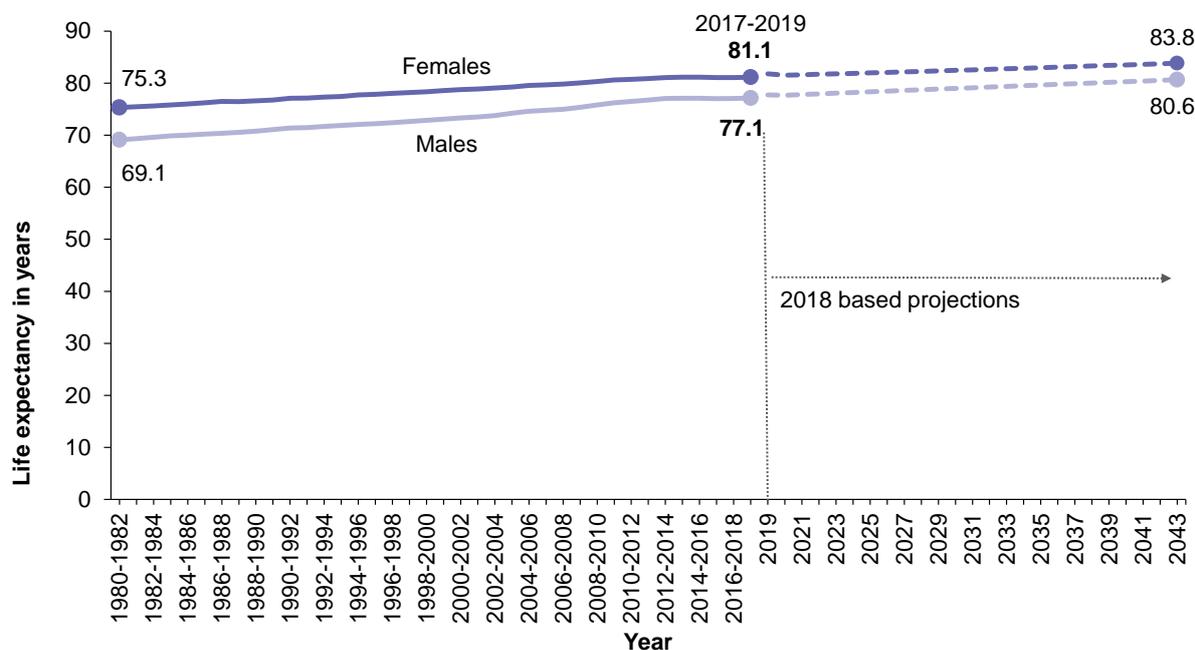
Life expectancy at birth is a very useful indicator of mortality conditions across a population at a particular point in time. It also provides an objective means of comparing trends in mortality over time, between areas of a country and with other countries. This is used to monitor and investigate health inequalities and to set public health targets. Life expectancy is also used to inform pensions policy, research and teaching.

2. Life expectancy at birth

Life expectancy at birth was 77.1 years for males and 81.1 years for females in 2017-2019. This means that a baby boy born in Scotland between 2017 and 2019 could expect to live for just over 77 years while a baby girl born at the same time could expect to live until she was just over 81 years. For both males and females, there was a small change of around 0.1 years of life expectancy at birth since the previous estimate for 2016-2018.

Figure 1 shows that life expectancy in Scotland has increased over the past few decades. A boy born in 1980-1982, could have expected to live for 69.1 years while a girl could have expected 75.3 years. This represents an increase of 8.0 years for males and 5.8 years for females. In recent years, increases in life expectancy have stalled, but Figure 1 shows that it is projected to increase to 80.6 years for males and 83.8 years for females by the year 2043.

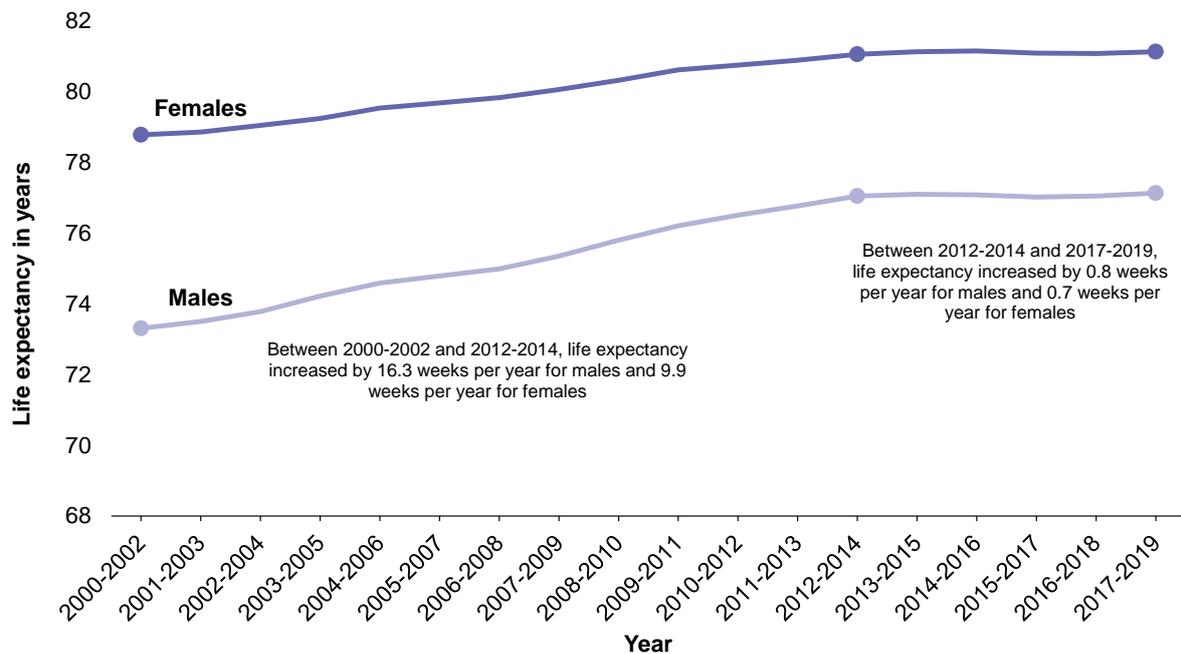
Figure 1. Life expectancy at birth, Scotland, 1980-1982 to 2043



Source: Figures to 2017-2019 are from National Life Tables for Scotland (NRS) based on three years of data. Figures from 2020 are projected single year life expectancies (2018 based, NRS)

3. Recent trends in life expectancy

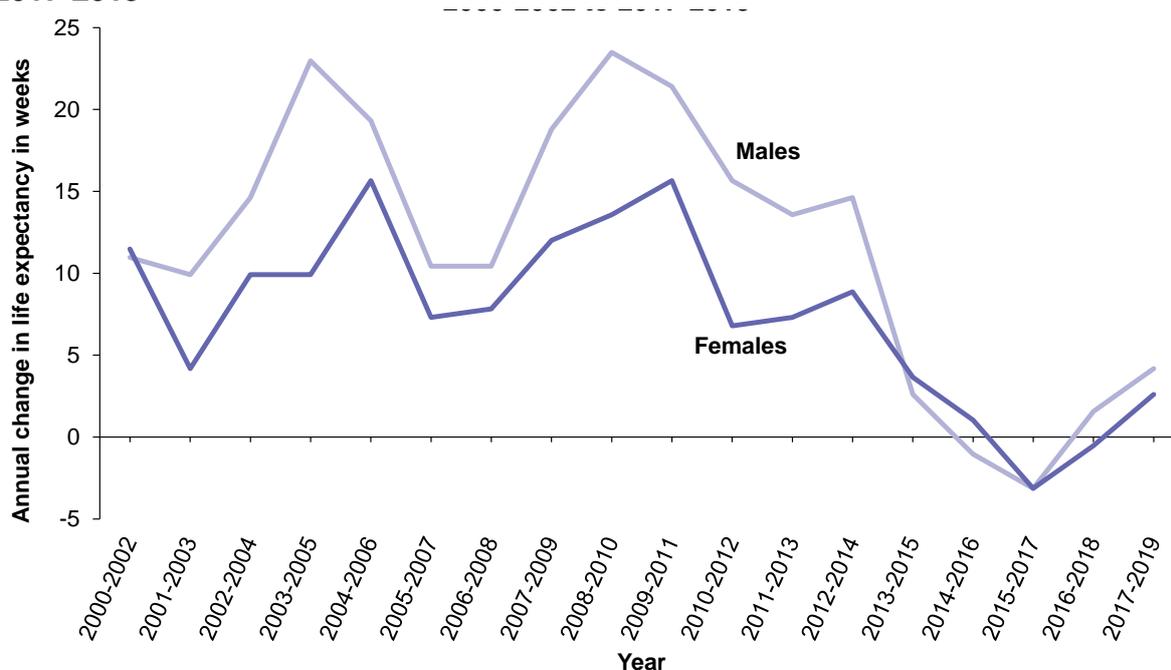
Figure 2. The slowing rate of improvement in life expectancy in Scotland. 2000-2002 to 2017-2019



Source: National Life Tables for Scotland (NRS)

Figure 2 shows the more recent changes in life expectancy at birth in Scotland. Between the estimate in 2000-2002 and the one in 2012-2014, life expectancy increased on average 9.9 weeks a year for females and 16.3 weeks a year for males. Between 2012-2014 and 2017-2019, however, life expectancy increased by less than one week per year for both females and males. Figure 3 shows the annual change in weeks of life expectancy at birth. While this has risen and fallen several times since 2000-2002, it has stayed close to zero in the years following 2012-2014.

Figure 3. Annual change in life expectancy at birth in Scotland, 2000-2002 to 2017-2019



Source: National Life Tables for Scotland (NRS)

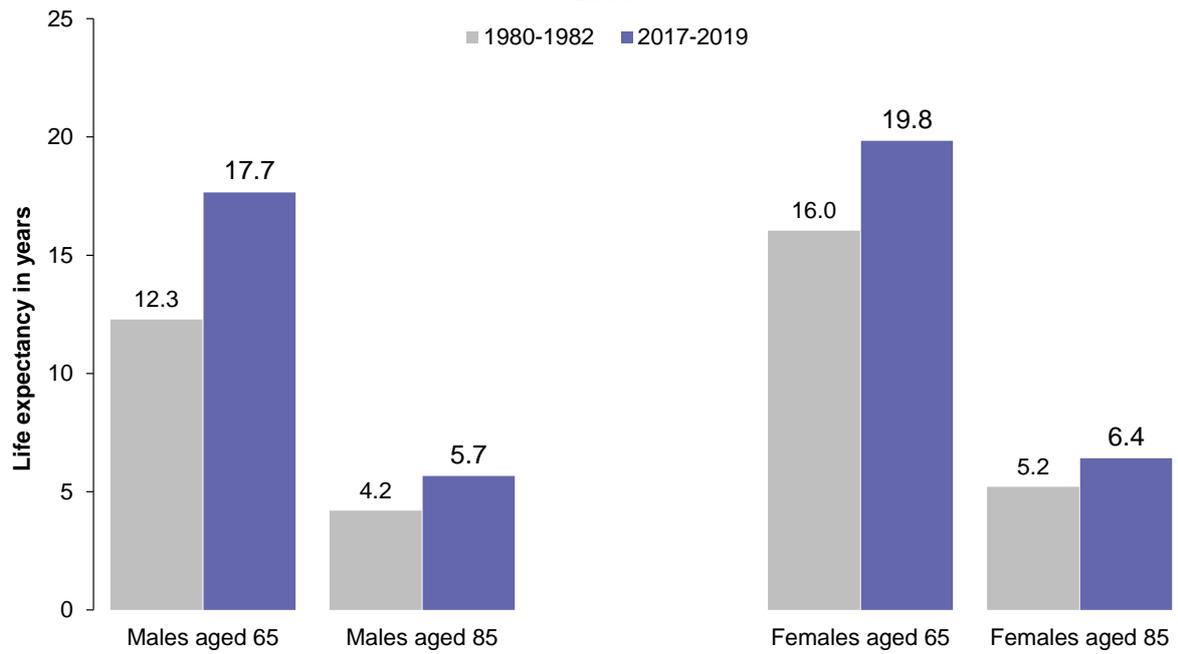
4. Life expectancy at older ages

Between 2017-2019, a man aged 65 in Scotland could expect to live on average for another 17.7 years. A woman of the same age could expect to live 19.8 more years. At age 85, males could expect to live for a further 5.7 years and females for a further 6.4 years. Figure 4 shows how life expectancy at older ages has changed since 1980-1982. Men aged 65 in 2017-2019 can expect to live 5.4 years longer than they would have done in 1980-1982 and men aged 85 can expect to live 1.5 years longer. For women, those aged 65 and 85 in 2017-2019 can expect to live 3.8 years and 1.2 years longer respectively than they would have done in 1980-1982. Since 2012-2014, the rate of increase of life expectancy at age 65 and 85 has been much slower than it was prior to 2012-2014.

What is 'life expectancy at older ages'?

Life expectancy at older ages can be quite a confusing concept—how can a man aged 65 expect to live 17.7 years when life expectancy at birth is 77.1 years? The best explanation for this is that life expectancy is an average which is affected by people dying at younger ages as well as in old age. While the average number of years a baby boy might live is 77, if he makes it to 65 without dying, then the average number of years left is 17.7.

Figure 4. Life expectancy at older ages in Scotland. 1980-1982 and 2017-2019



Source: National Life Tables for Scotland (NRS)

5. Scotland's life expectancy compared internationally

Life expectancy in UK countries

Scotland has the lowest life expectancy of all UK countries for both males and females. Figure 5 shows that average life expectancy at birth in the UK was 83.1 years for females and 79.4 years for males in 2017-2019. This is higher than the Scottish figure by 1.9 years for females and 2.2 years for males. Figure 6a and Figure 6b show how this gap between Scotland and the whole of the UK has increased since 1980-1982. It also shows that the slowing in life expectancy increase has happened in the UK as a whole. Table 1 also shows a comparison of life expectancy in the UK constituent countries at birth and at age 65.

Figure 5. Life expectancy at birth in UK constituent countries 1980-1982 to 2016-2018, males and females

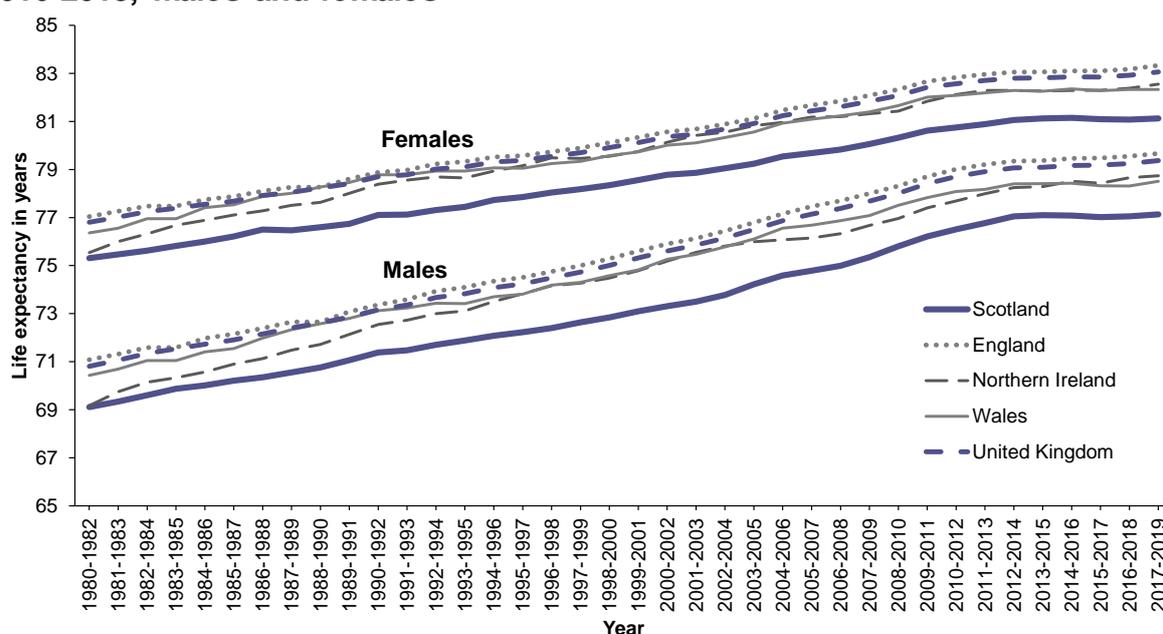


Table 1. Life expectancy at birth and age 65 in UK and constituent countries, 2017-2019

	at birth		at age 65	
	Males	Females	Males	Females
United Kingdom	79.37	83.06	18.76	21.12
England	79.67	83.33	18.91	21.30
Wales	78.51	82.33	18.31	20.68
Scotland	77.13	81.13	17.65	19.84
Northern Ireland	78.74	82.55	18.47	20.81

Source: National life tables (ONS)

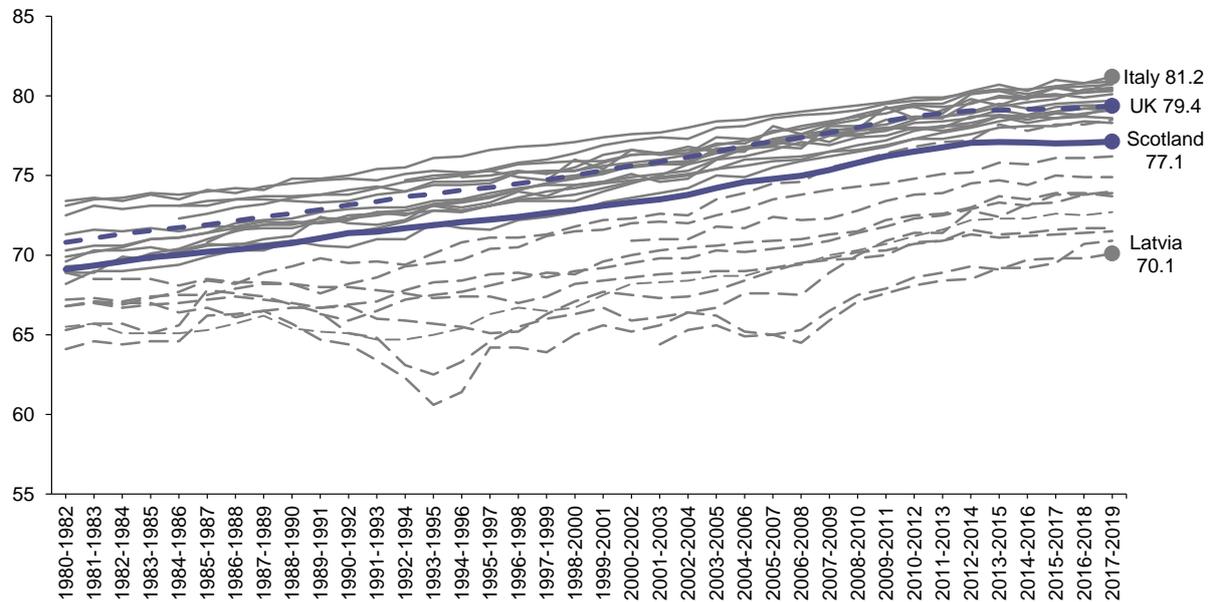
Life expectancy in EU countries

Figure 6a and Figure 6b show life expectancy at birth in Scotland and the UK compared with countries in the EU. In 2017-2019, life expectancy for males was highest in Italy (81.2 years) and lowest in Latvia (70.1 years). For females, life expectancy at birth was highest in Spain (86.3 years) and lowest in Bulgaria (78.6 years). The majority of European countries have experienced a slowing in the rate of

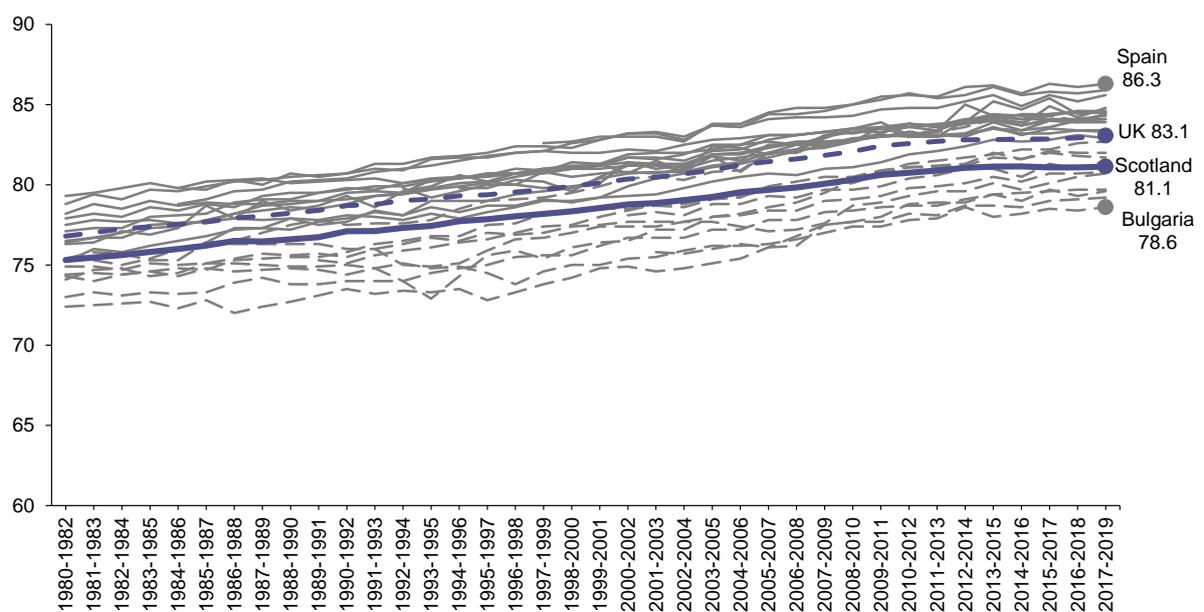
life expectancy increase from 2012-2014 onwards and a few have effectively stalled. This trend is not universal however with some countries such as the Republic of Ireland continuing to see increases in life expectancy at a similar rate before and after 2012-2014.

Figure 6: Life expectancy at birth in EU countries. 1980-1982 to 2017-2019

Males



Females

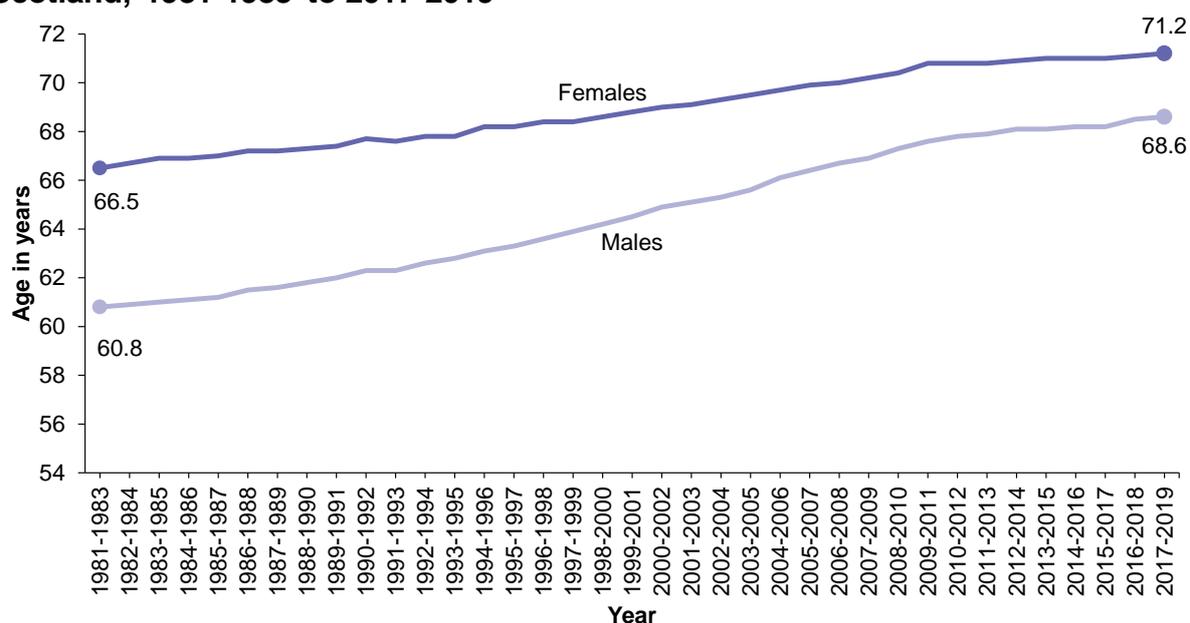


Source: National life tables for Scotland (NRS), National life tables for the UK (ONS), Eurostat (tps00025)
 Dashed lines represent Eastern European countries which have historically lower life expectancy. Life expectancy for non-UK countries is based on one year of data, e.g. 2017-2019 is based on population and deaths in the year 2018

6. Life expectancy and population dynamics: time to death statistics

Life expectancy estimates can also be used to look at population ageing. As life expectancy increases, the age at which a person is ‘elderly’ or approaching death changes. [Figure 7](#) shows the average age at which males and females in Scotland have only 15 years of life remaining. This age has risen from age 66.5 in females in 1981-1983 to 71.2 in 2017-2019. For males, the average age at which 15 years of life remains has risen from 60.8 to 68.6 over the same period.

Figure 7. Age at which a person has 15 years remaining life expectancy in Scotland, 1981-1983 to 2017-2019



Source: National Life Tables for Scotland (NRS)

Why does ‘time to death’ matter?

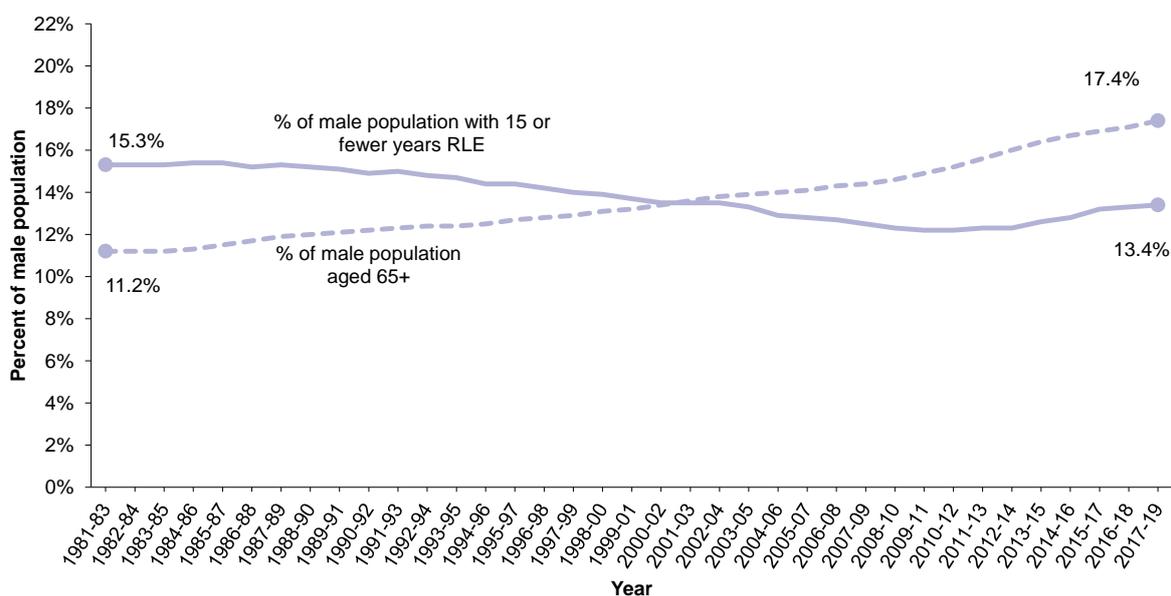
Often, we define the ‘elderly’ population as those aged over 65. However, studies show that a lot of the health problems related to old age are more closely associated with how long someone has left to live rather than how long they have already lived. This means it may be more useful for health and social care policy to look at how many people have only 15 years of life expectancy remaining, rather than the number of people aged 65 and over.

[Figure 8a](#) and [Figure 8b](#) show the percentage of the male and female population of Scotland that has on average 15 or fewer years of remaining life expectancy. In both cases, the percentage has fallen between 1981-1983 and 2010-2012, by 3.1% for males and 2.7% for females. [Figure 8a](#) and [Figure 8b](#) also show that the percentage of male and female population aged 65 and above has grown over the same period. As the large birth cohorts from the baby boom years have become older and life expectancy has increased, the number of people over 65 has increased in Scotland. At the same time, from the 1980s until around 2011, life expectancy was

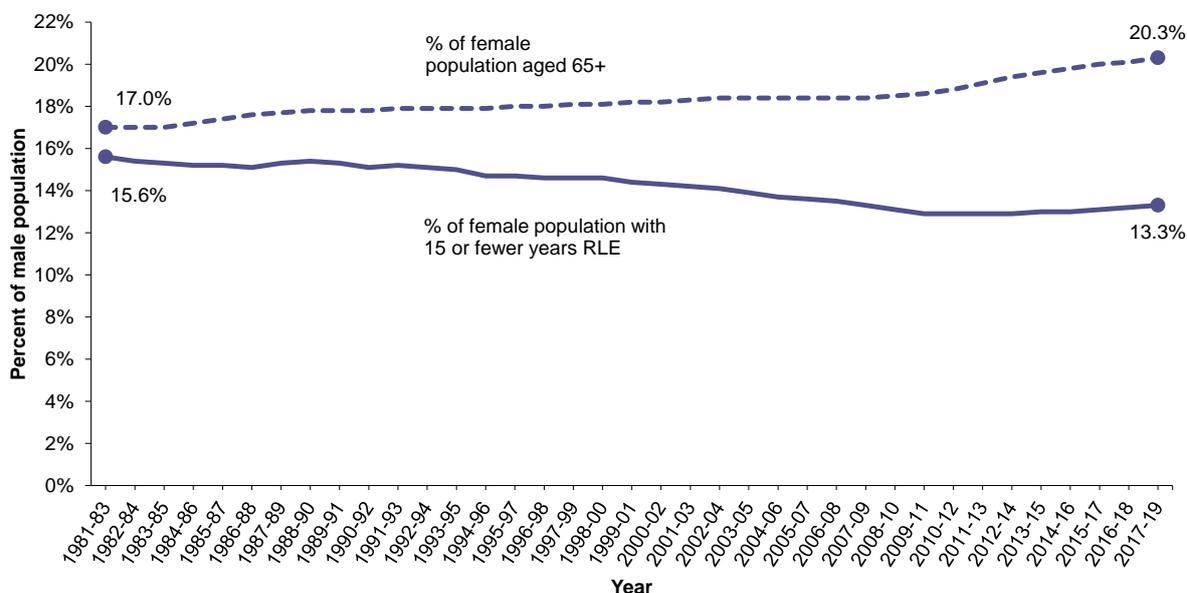
increasing, so the average age at death was also increasing. This means that although the elderly population was growing, the number of people close to death was decreasing. Figure 8a and Figure 8b show that when improvements to life expectancy began to slow, the percent of the population with 15 or fewer years remaining life expectancy stopped decreasing, indicating that the number of people approaching the end of their lives is no longer decreasing in Scotland. Since 2012-2014, this group has begun to increase slightly.

Figure 8: Percent of population aged 65 years or older and with 15 or fewer years of remaining life expectancy. 1981-1983 to 2017-2019

Males



Females



Source: National Life Tables for Scotland (NRS)

What are 95% confidence intervals?

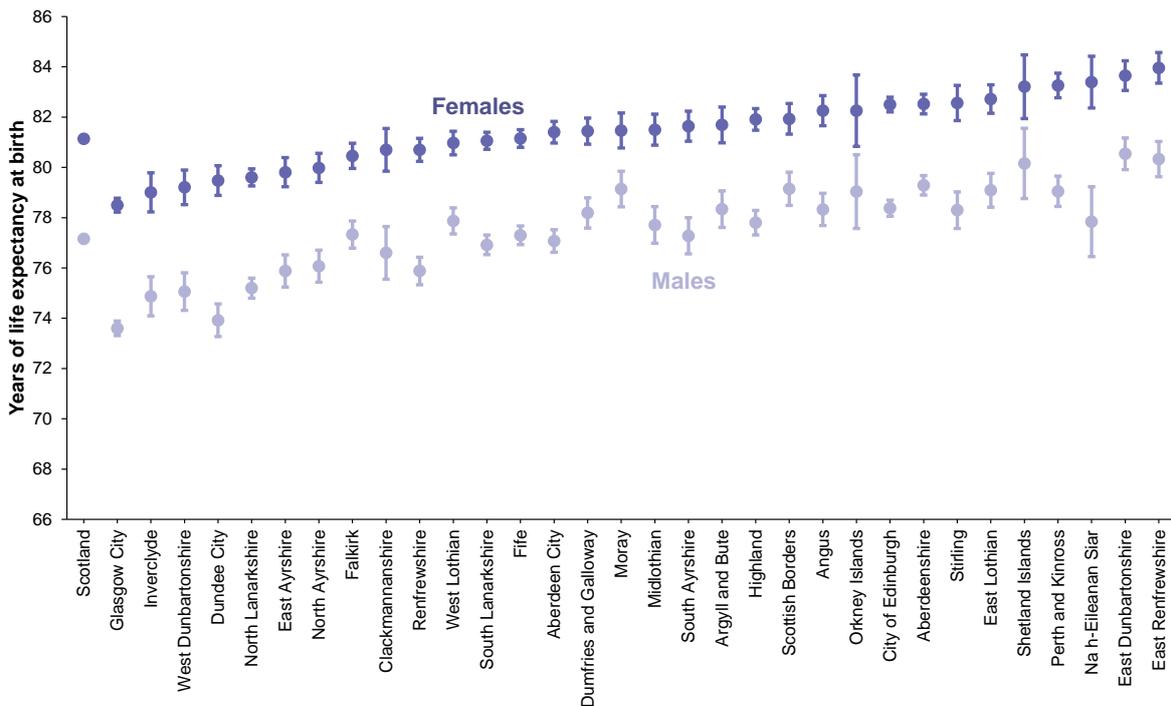
This is a measure of the uncertainty around the subnational life expectancy estimates. In this report, confidence intervals are quoted in brackets, for example: 81 (± 0.7) years. These represent the range of values that the actual value is likely to lie within. The wider the confidence intervals, the less accurate the estimate is.

Estimates from larger populations (such as health boards) will have smaller confidence intervals and therefore be more accurate than estimates from smaller populations (such as parliamentary constituencies) which have large confidence intervals.

7. Life expectancy in council areas

Figure 9 shows that the council area where life expectancy at birth was highest for females was East Renfrewshire. Here, a girl born in 2017-2019 could expect to live for 84.0 (± 0.6) years. The council area where life expectancy was highest for males was East Dunbartonshire where a boy born in 2017-2019 could expect to live for 80.5 (± 0.6) years. In contrast, life expectancy was lowest in Glasgow City, where females could expect to live for 78.5 (± 0.3) years and males for 73.6 (± 0.3) years. This represents 5.5 fewer years of life for females and 6.9 fewer years of life for males compared with East Renfrewshire and East Dunbartonshire respectively.

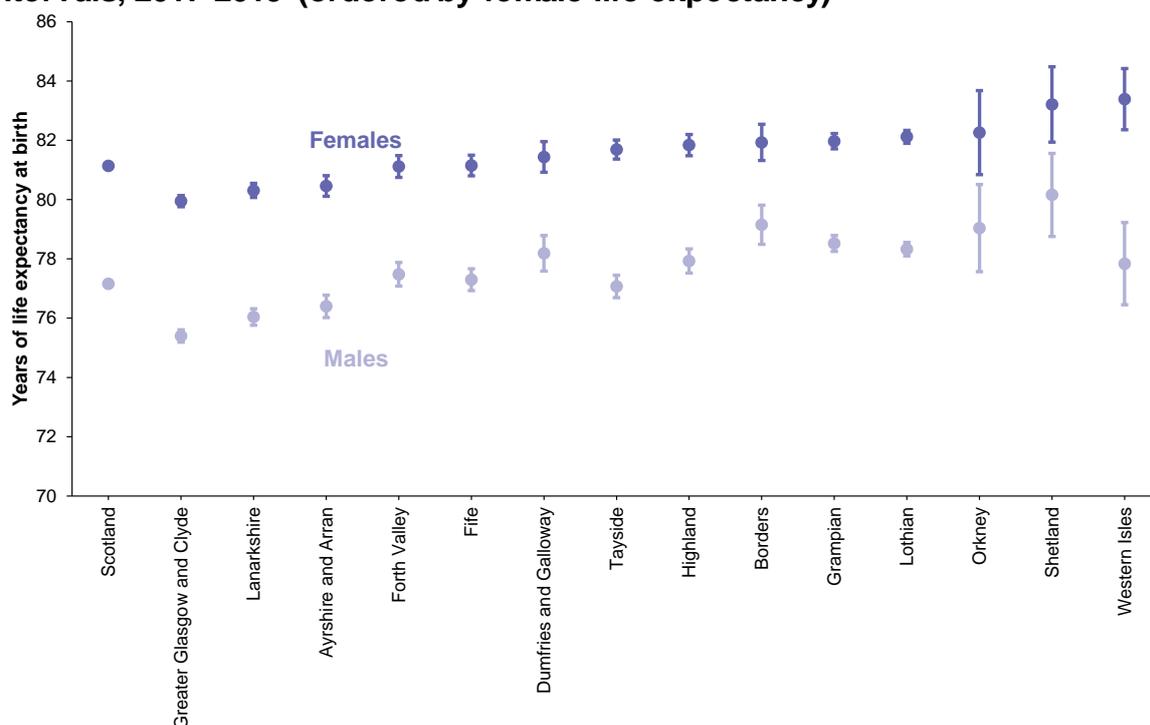
Figure 9. Life expectancy at birth in council areas with 95% confidence intervals, 2017-2019 (ordered by female life expectancy)



Source: National Life Tables for Scotland (NRS)

8. Life expectancy in NHS health boards

Figure 10: Life expectancy at birth in NHS health boards with 95% confidence intervals, 2017-2019 (ordered by female life expectancy)



Source: National Life Tables for Scotland (NRS)

Why are there two male life expectancy estimates for Scotland?

The headline life expectancy figure comes from the national life tables for Scotland, where estimates are calculated using single year of age data. However, life expectancy for subnational areas are calculated using 5 year age groups ('abridged life tables'). We also produce a Scotland level estimate using abridged life tables so that it can be properly compared with subnational life expectancy. So, if we want to talk just about Scottish life expectancy (as in figure 1), we use the figure from the national life tables. If we are comparing with subnational life expectancy (as in figure 9), we use the abridged life tables. The figures are always very similar, but this year male life expectancy at birth rounds to **77.1** in the national life tables and **77.2** in the abridged life tables.

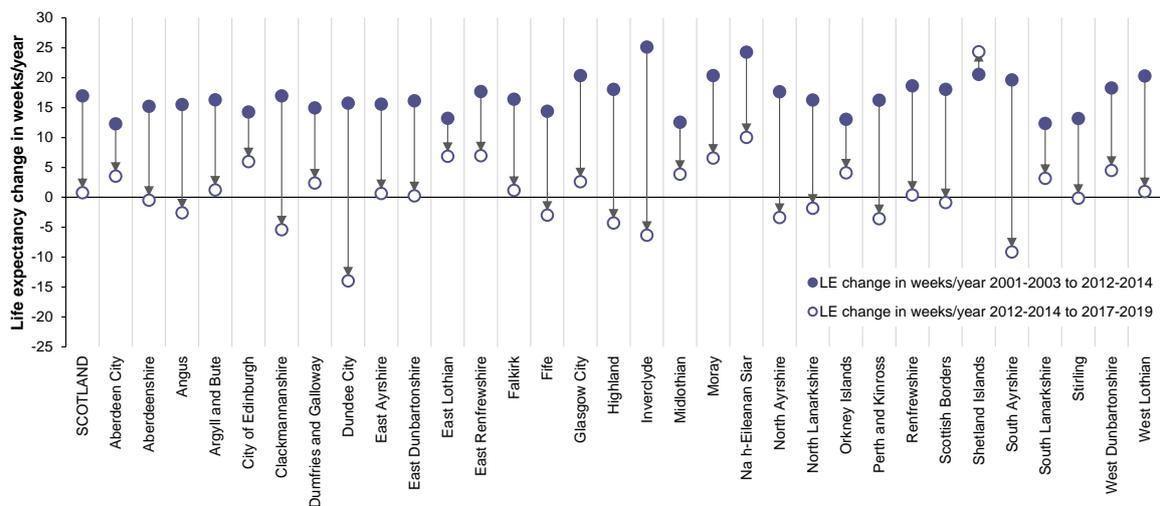
Figure 10 shows life expectancy at birth in NHS health boards in Scotland. Shetland health board had the highest life expectancy at birth for both males and females. Males born in Shetland between 2017 and 2019 had a life expectancy of 80.2 (± 1.4) years while females born in Western Isles at the same time had a life expectancy of 83.4 (± 1.0) years. The health board with the lowest life expectancy was Greater Glasgow and Clyde, where males could expect to live 75.4 (± 0.2) years and females could expect to live 80.0 (± 0.2) years. As with the council level estimates, please note the very large confidence intervals around the estimates for the smallest communities, especially the island health boards.

9. The stall in life expectancy growth across Scotland's council areas

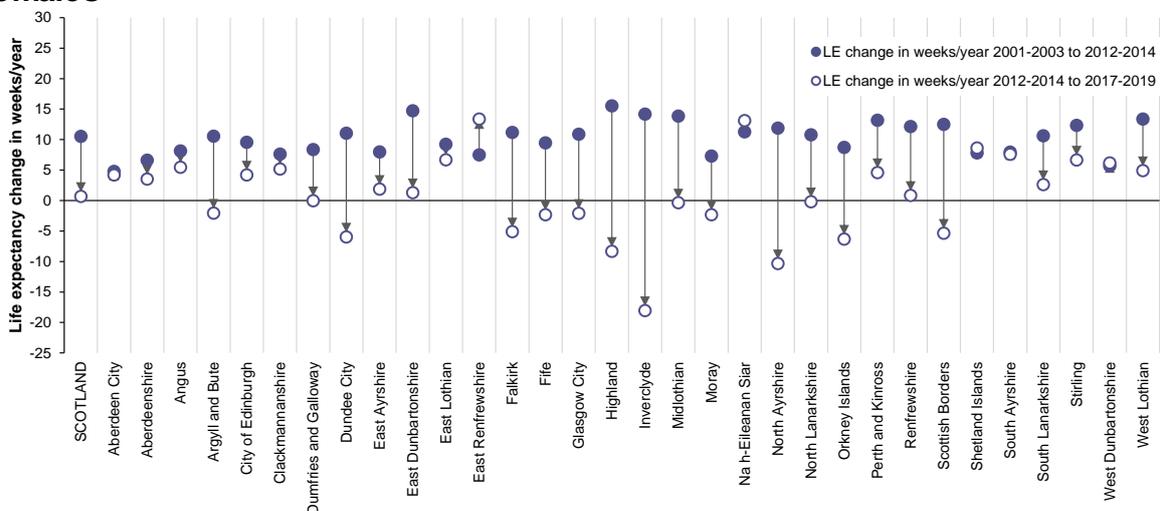
As can be seen in Figure 3, the rate of life expectancy change has stalled over the last few years in Scotland. This stall in life expectancy growth has been seen all across Scotland, however, in some areas the change has been greater than others. Figure 11 shows that in some council areas, for example Dundee City and Inverclyde, the rate of growth has fallen dramatically from before 2012-2014 to after 2012-2014. Figure 11 also shows that while some council areas have seen modest increases in the rate of change (for example, Shetland Islands), the vast majority of areas are now experiencing a slower rate of growth in life expectancy and many areas now have decreasing life expectancy.

Figure 11: Change in the rate of life expectancy growth in council areas, before and after 2012-2014

Males



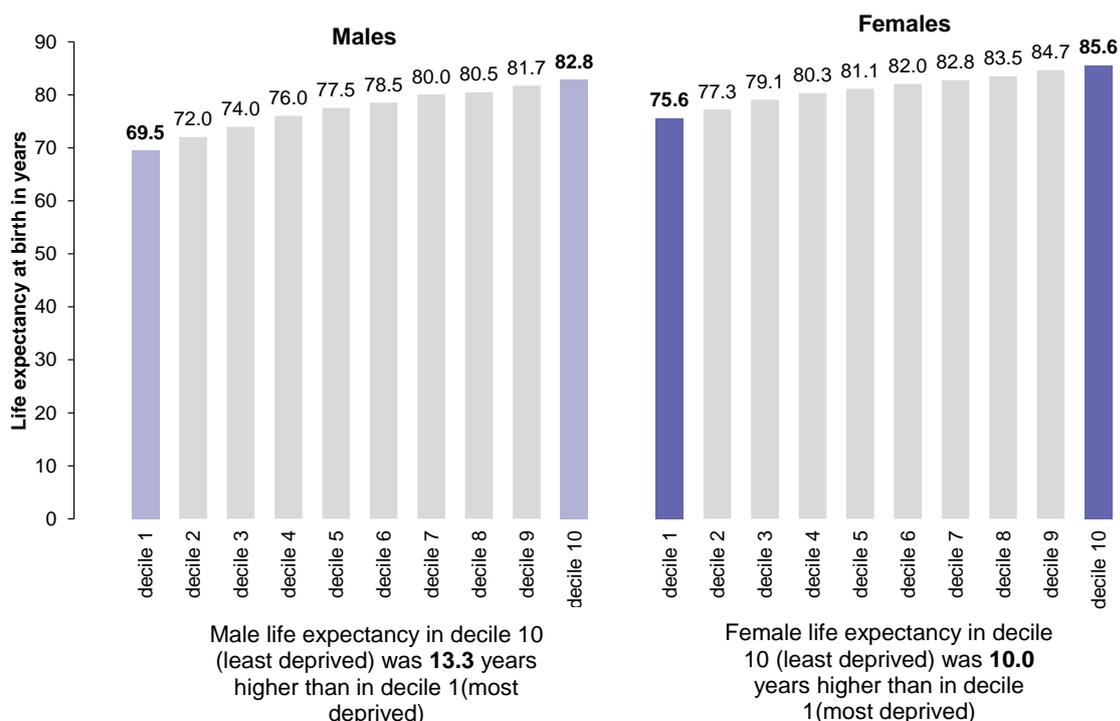
Females



10. Life expectancy by deprivation

While life expectancy varies between geographical areas like council areas and health boards, the difference in life expectancy is far greater when we split Scotland by deprivation. **Figure 12** shows life expectancy at birth in SIMD (Scottish index of multiple deprivation) deciles. For males born in 2017-2019, life expectancy at birth was 69.5 (± 0.3) years in deprivation decile 1 (the 10% most deprived areas) compared with 82.8 (± 0.3) years in decile 10 (the 10% least deprived areas), a gap of 13.3 years. For females born at the same time, life expectancy was 75.6 (± 0.3) years in decile 1 and 85.6 (± 0.3) years in decile 10, a gap of 10.0 years.

Figure 12: Life expectancy at birth by SIMD decile, 2017-2019



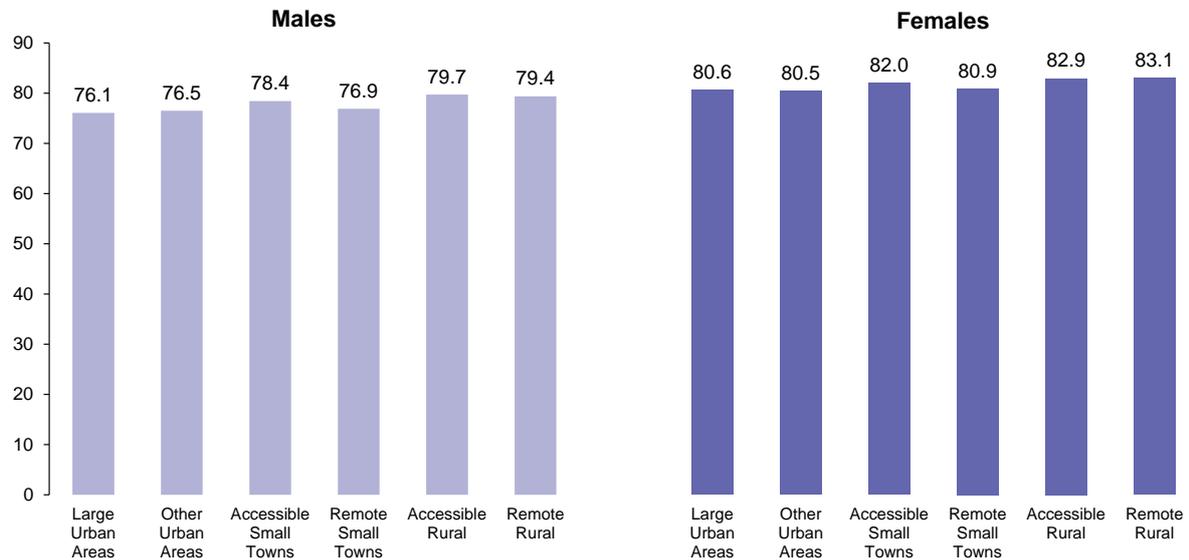
SIMD

The Scottish index of multiple deprivation is a measure of how deprived an area is. A score is given to all of Scotland's datazones based on several indicators of deprivation. The datazones are then ranked 1 to 6,976 based on their score. The rankings are split into 10 equally sized groups for SIMD deciles and five groups for SIMD quintiles. More information can be found on the [Scottish Government website](#).

11. Life expectancy in urban and rural areas

Life expectancy also varies by rurality across Scotland with people living in more rural areas generally living longer and spending more years in good health than those in more urban areas. Figure 13 shows life expectancy by Urban-Rural 2018 based classification. For males life expectancy was highest in 'Accessible Rural' areas at 79.7 (± 0.3) years and for females it was highest in 'Remote Rural' areas at 83.1 (± 0.3) years. Life expectancy was lowest for males in 'Large Urban' areas (76.1 ± 0.2 years) and lowest for females in 'Other Urban' areas (80.5 ± 0.1 years).

Figure 13: Life expectancy at birth by urban-rural classification 2017-2019



12. Related statistics, methodology and background

- Life tables for the UK and constituent countries are available on the [Office for National Statistics website](#).
- Healthy Life expectancy for Scotland and areas within Scotland are available on the [National Records of Scotland website](#). This includes Scottish council areas, health boards and areas split by Scottish index of multiple deprivation. The next release will be in December 2020.
- The number and causes of deaths registered in Scotland each year are published on the [National Records of Scotland website](#).

Methodology and comparisons across the UK

The National Records of Scotland website has a guide that describes the [methodology](#) used to produce the life expectancy statistics for Scotland. This methodology is similar to that used to produce life expectancy estimates in other UK constituent countries.

Quality of administrative data sources

Life expectancy is calculated using mid-year population estimates and deaths data as inputs. Information about the quality of deaths data is available on the [Vital Events section](#) of the NRS website.

Information on background and source data

Further details on data source(s), timeframe of data and timeliness, continuity of data, accuracy, etc. can be found in the [About this Publication document](#) that is published alongside this publication on the NRS website.

13. Notes on statistical publications

The United Kingdom Statistics Authority (UKSA) has designated these statistics as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics (available on the [UKSA website](#)).

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is National Records of Scotland's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

National Records of Scotland

We, the National Records of Scotland, are a non-ministerial department of the devolved Scottish Administration. Our aim is to provide relevant and reliable information, analysis and advice that meets the needs of government, business and the people of Scotland. We do this as follows:

- Preserving the past – We look after Scotland's national archives so that they are available for current and future generations, and we make available important information for family history.
- Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.

- Informing the future – We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce statistics on the population and households.

You can get other detailed statistics that we have produced from the Statistics section of our website. Scottish Census statistics are available on the [Scotland's Census website](#).

We also provide information about future publications on our website. If you would like us to tell you about future statistical publications, you can register your interest on the [Scottish Government ScotStat website](#).

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