

Life expectancy in Scottish areas 2016-2018

Published on 11 December 2019



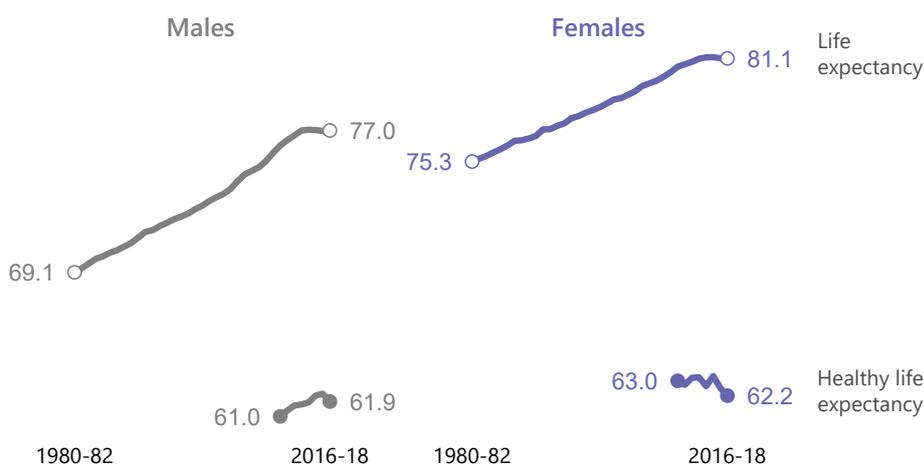
This statistical report details life expectancy and healthy life expectancy estimates for areas within Scotland including council areas and NHS health boards. It also includes break-downs of life expectancy and healthy life expectancy by deprivation and rurality

Life expectancy has grown since the 1980s but stalled recently

Since the early 1980s life expectancy has grown and the gap between females and males has narrowed. But since 2012-14* that growth has stalled.

* We use a rolling 3 year average to smooth out unusual years.

Life expectancy and healthy life expectancy



A low life expectancy predicts an even lower healthy life expectancy

People in areas with low life expectancy will likely spend fewer years of their life in good health. They are also likely to live a smaller percent of that shorter life in good health.

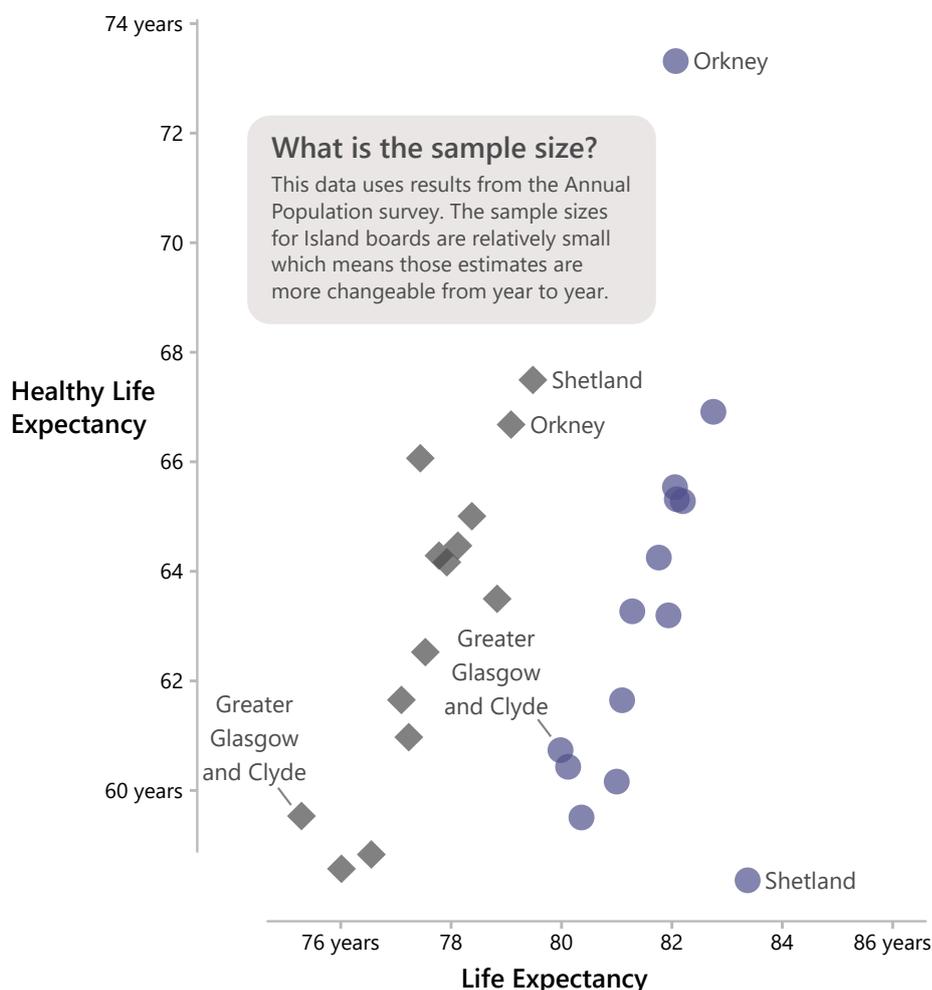
Across the health boards there is more variation in healthy life expectancy than life expectancy.

Females can expect to live longer than males. But the number of years they are expected to live in good health doesn't grow proportionately.

Females in Orkney can expect the most years in good health. But the small sample size means this could change quite a lot next year.

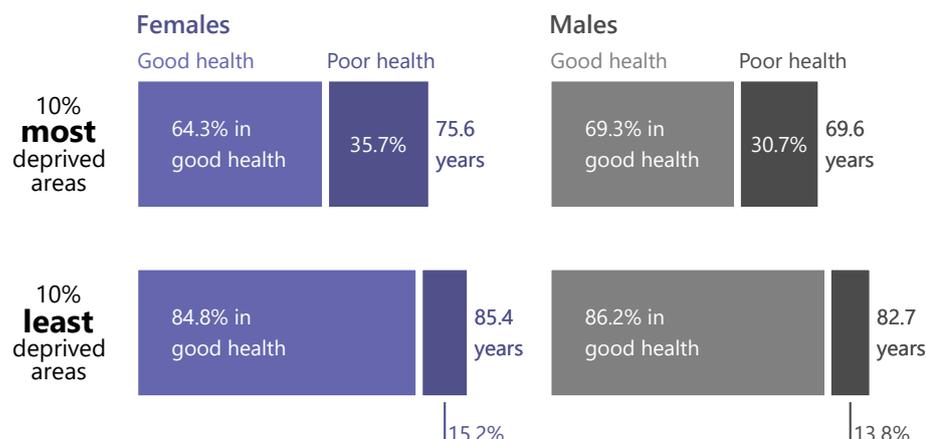
Healthy life expectancy and life expectancy

- ◆ **Baby boys** born between 2016 and 2018
- **Baby girls** born between 2016 and 2018



Healthy life expectancy by deprivation

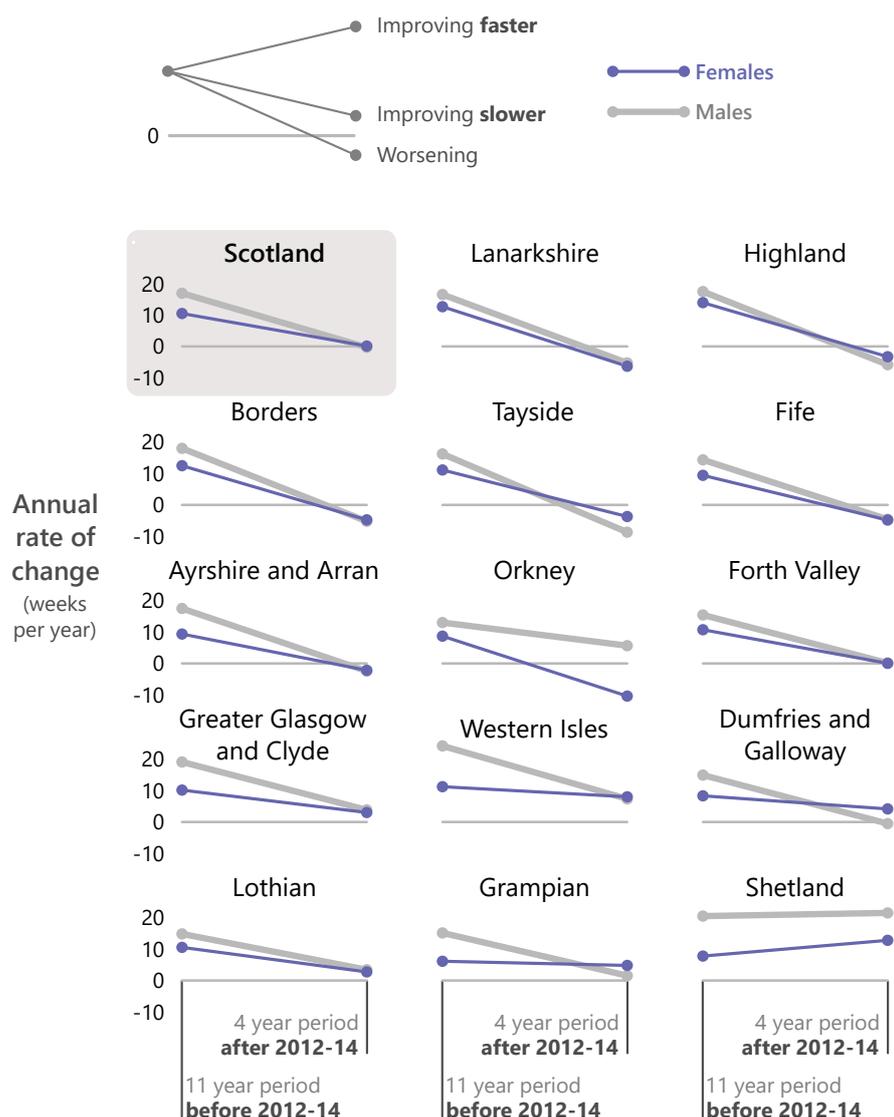
For those born between 2016 and 2018



Deprivation impacts life expectancy and especially healthy life expectancy

There is a big gap in life expectancy between the most and least deprived areas. The gap is roughly 13 years for males and around 10 years for females. This gap is bigger for healthy life expectancy: around 24 years for females and 23 years for males.

Annual rate of change in life expectancy by health board



Almost all health boards saw a slow in life expectancy growth

Before 2012-14* life expectancy for females was growing by about 11 weeks a year. This means a girl could expect to live about 11 weeks longer than a girl born the year before.

At the same time life expectancy for males was growing even faster: around 17 weeks per year.

After 2012-14 life expectancy stopped growing in Scotland.

In some health boards life expectancy has fallen. In others there is still growth, although it has slowed down in most areas.

* We use a rolling 3 year average to smooth out unusual years.

Table of Contents

1. Main Points.....	3
2. Introduction	4
3. Life expectancy in Scotland	4
4. Life expectancy in Council areas.....	7
5. The stall in life expectancy growth across Scotland’s council areas	8
6. Life expectancy in NHS health boards.....	9
7. The relationship between life expectancy and healthy life expectancy	10
8. Life expectancy by deprivation.....	12
9. Life expectancy by deprivation within council areas	13
10. Life expectancy in urban and rural areas.....	14
11. Scottish Parliamentary constituencies	15
12. Related statistics.....	16
13. Notes on statistical publications.....	16

1. Main Points

- Life expectancy in Scotland for people born between 2016 and 2018 was 77.0 years for males and 81.1 years for females.
- A boy born between 2016 and 2018 could expect to spend 61.9 years of his life in good health while a girl born at the same time could expect to spend 62.2 years of her life in good health.
- For both males and females born in 2016-2018, life expectancy was highest in East Renfrewshire and lowest in Glasgow City.
- 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.
- Areas of Scotland with higher life expectancy also had higher healthy life expectancy and people in those areas could expect to spend a greater proportion of their lives in good health.
- The gap in life expectancy between the most and least deprived areas was 13.1 years for males and 9.8 years for females. In recent years, the life expectancy gap between most and least deprived has widened.
- The gap in healthy life expectancy between the most and least deprived areas of Scotland was 23.0 years for males and 23.9 years for females.

2. Introduction

This report gives estimates of life expectancy and healthy life expectancy based on the years 2016, 2017 and 2018 for areas within Scotland. The detailed estimates for all areas and age groups can be found in the accompanying tables.

Definitions

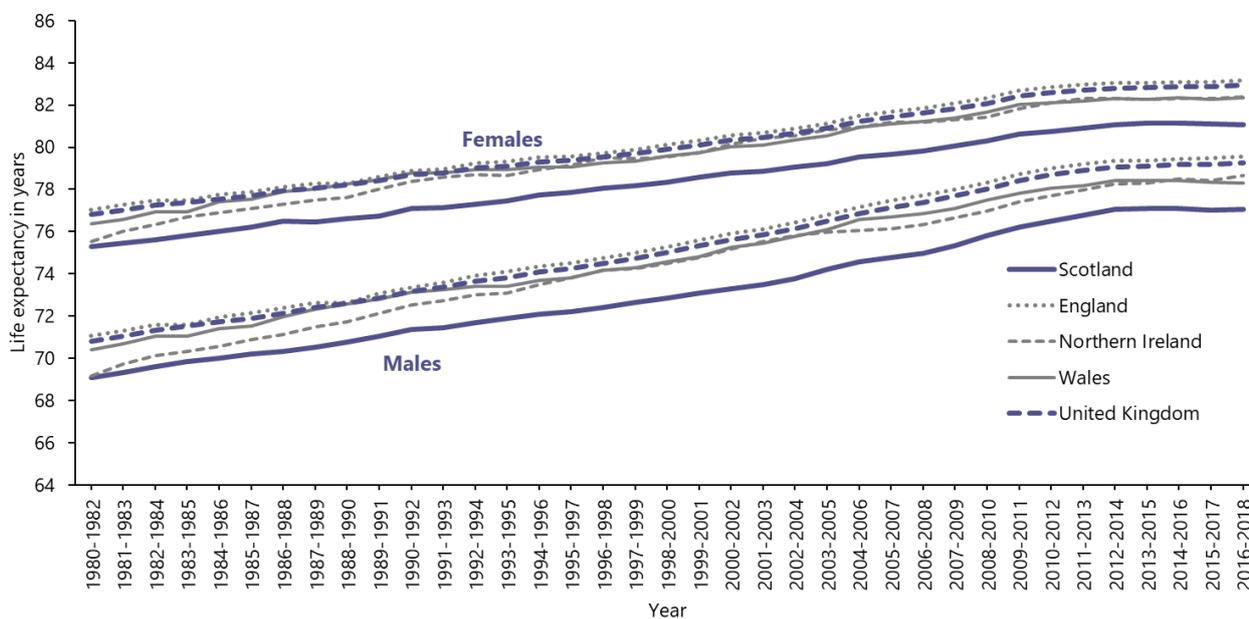
- **Life expectancy:** The number of years a person could expect to live from the age they are now. This is calculated using the number of people and the number of deaths in each area.
- **Period life expectancy:** A measure of life expectancy that is calculated assuming that mortality rates for each age group in the time period (here 2016-2018) 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. All life expectancy estimates in this publication are period life expectancy.
- **Healthy life expectancy (HLE):** The number of years a person could expect to spend in good health from the age they are now. This is calculated using life expectancy estimates and self-reported health from the annual population survey (APS).
- **Self-reported health:** The APS asks people to rate their own health as 'very good', 'good', 'fair', 'bad' or 'very bad'. To work out the proportion of the population in good health, we group the 'very good' and 'good' answers together in 'good health' and the 'fair', 'bad' and 'very bad' into 'not good health'. We then feed this into the HLE calculations.
- **95% confidence intervals:** This is a measure of the uncertainty around the life expectancy and HLE 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.

3. Life expectancy in Scotland

Life expectancy for males born in Scotland between 2016 and 2018 was 77.0 years while life expectancy for females born at the same time was 81.1 years. Figure 1 shows that life expectancy in Scotland is the lowest of all UK countries for both males

and females and has been the lowest since the early 1980s. Life expectancy in all UK countries increased at a steady rate from 1980-1982, however, in recent years, the rate of increase has stalled. Since 2012-2014, life expectancy in Scotland has remained virtually unchanged for both males and females.

Figure 1. Life expectancy at birth in the UK and constituent countries, 1980-1982 to 2016-2018.



Source: Office for National Statistics (National Life Tables for UK and constituent countries)

Why are there two male life expectancy estimates for Scotland?

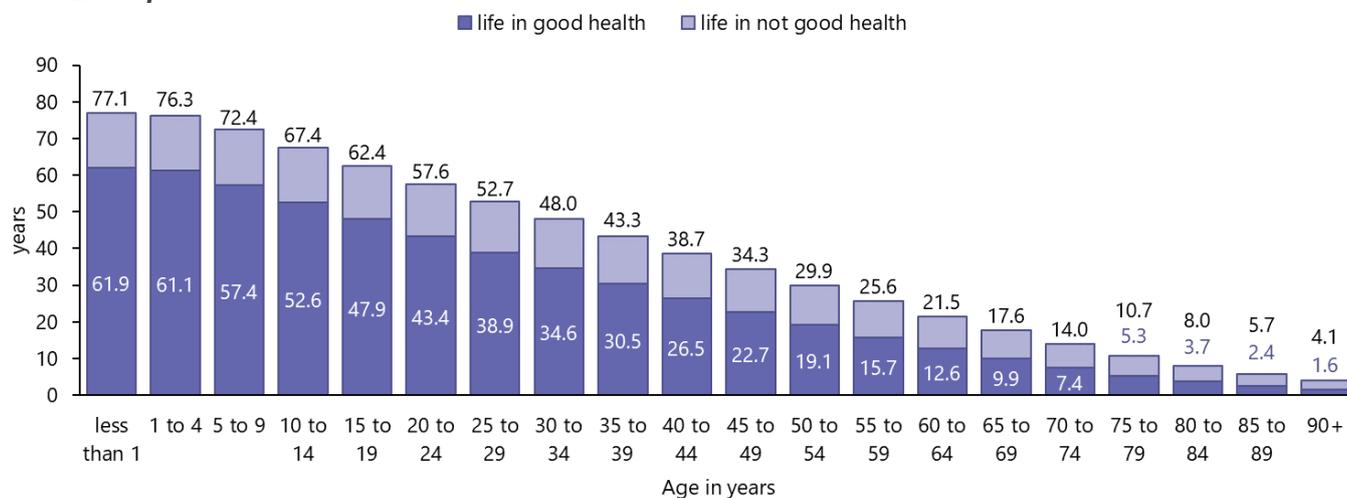
The headline life expectancy figure comes from the published national life tables for Scotland, where estimates are calculated using single year of age data. However, life expectancy for subnational areas and HLE are both calculated using 5 year age groups ('abridged life tables'). We also produce a Scotland level estimate using abridged life tables so that it can be properly compared with HLE and subnational life expectancy.

So, if we want 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 or HLE (as in figure 2), we use the abridged life tables. The figures are always very similar, but this year male life expectancy at birth rounds to **77.0** in the national life tables and **77.1** in the abridged life tables.

Healthy life expectancy (HLE) in Scotland for 2016-2018 was 61.9 years for male and 62.2 years for females. This means that a boy born between 2016-2018 could expect to live for 61.9 years in good health followed by 15.2 years in 'not good health' until he was 77.1 years old. Similarly a girl born at the same time would live 62.2 years in

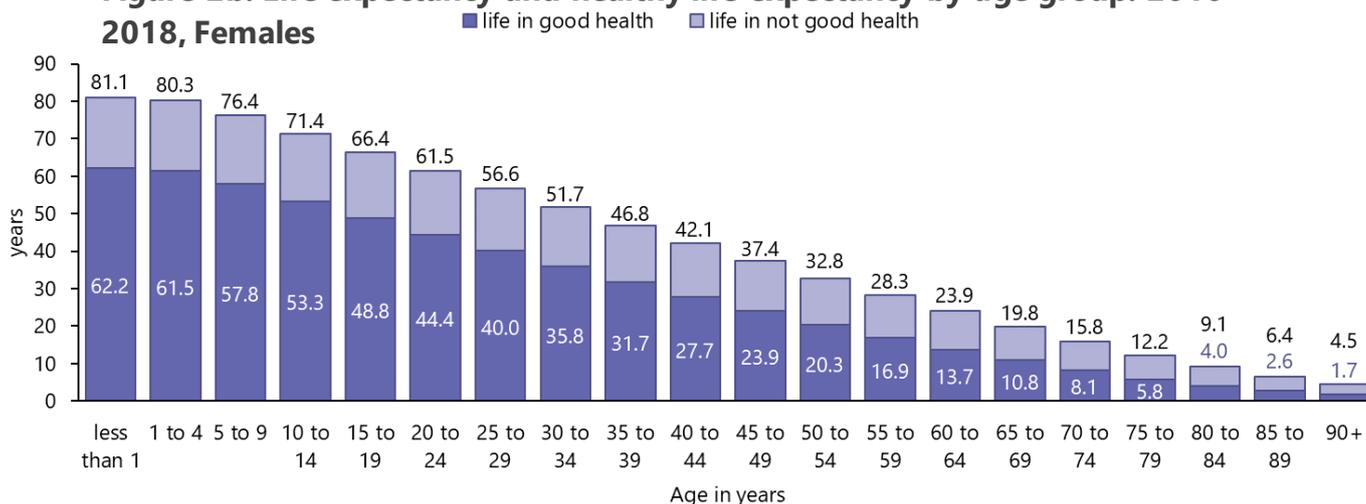
good health and then 18.9 years in 'not good health' until she was 81.1. This means males spend on average 80.3% of their life in good health and females spend 76.7% of their lives in good health. Figure 2a and Figure 2b show life expectancy and healthy life expectancy for males and females in Scotland at 5 year age intervals.

Figure 2a. Life expectancy and healthy life expectancy by age group. 2016-2018, Males



Upper numbers represent total life expectancy in years, lower numbers represent HLE in years.
Source: Life expectancy in Scottish areas 2016-2018 (NRS)

Figure 2b. Life expectancy and healthy life expectancy by age group. 2016-2018, Females



Upper numbers represent total life expectancy in years, lower numbers represent HLE in years.
Source: Life expectancy in Scottish areas 2016-2018 (NRS)

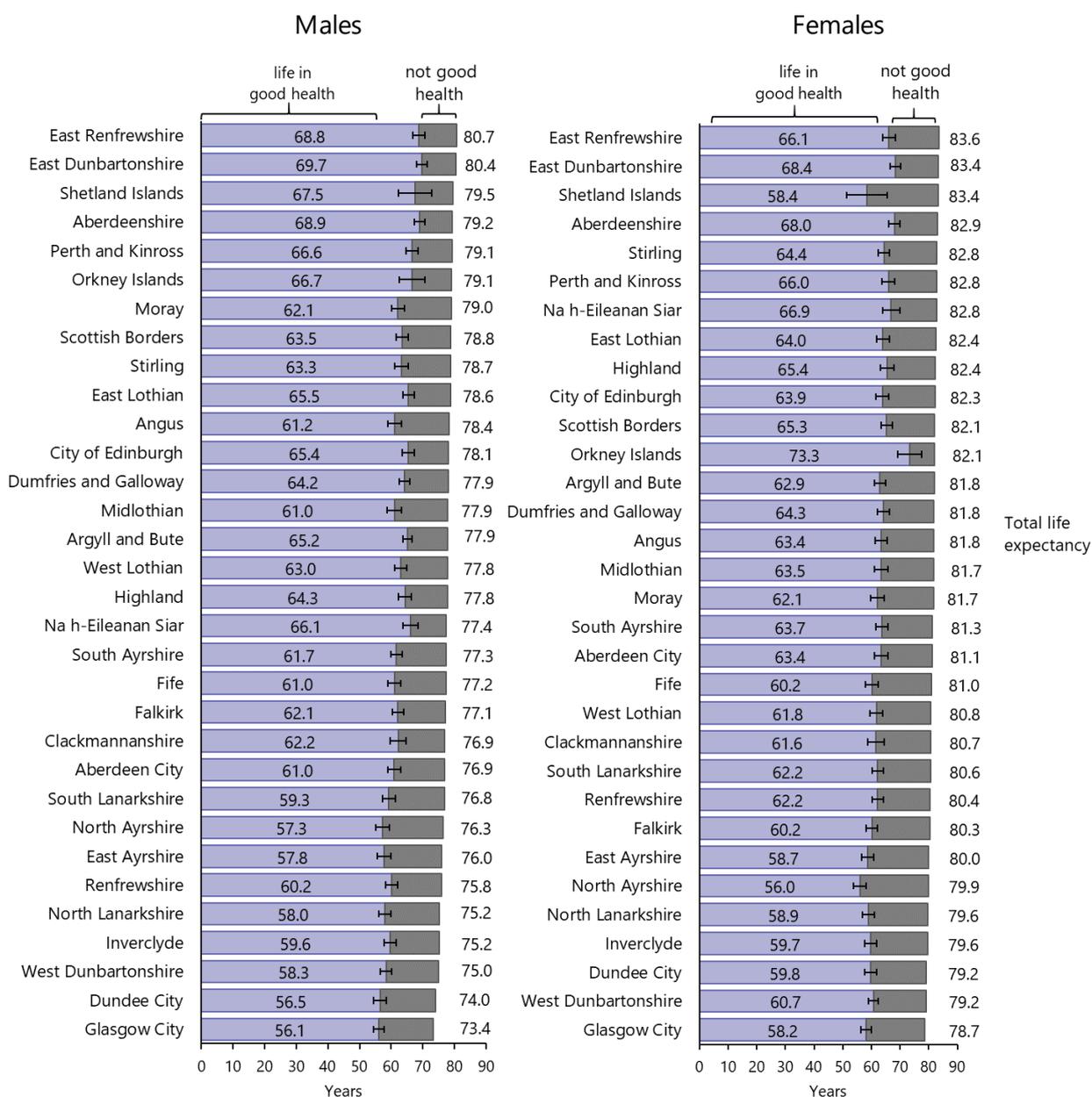
Why do we report life expectancy for three year periods?

Official life expectancy statistics for Scotland are calculated by aggregating the latest three years of deaths and population estimates. This is to increase the sample size and improve the reliability of the results. It also reduces the effect of more 'extreme' years on the data.

4. Life expectancy in Council areas

The council area where life expectancy at birth was highest for both males and females was East Renfrewshire. Here, a boy born in 2016-2018 could expect to live for 80.7 (± 0.7) years while a girl could expect to live for 83.6 (± 0.6) years. In contrast, life expectancy was lowest in Glasgow City, where males could expect to live for 73.4 (± 0.3) years and females for 78.7 (± 0.3) years. This represents 7.3 fewer years of life for males and 4.9 fewer years of life for females compared with East Renfrewshire.

Figure 3. Life expectancy and healthy life expectancy at birth in Scotland's Council areas. 2016-2018



Numbers in the bar represent HLE in years, numbers outside the bar represent total life expectancy in years. Black error bars represent confidence intervals around HLE estimates

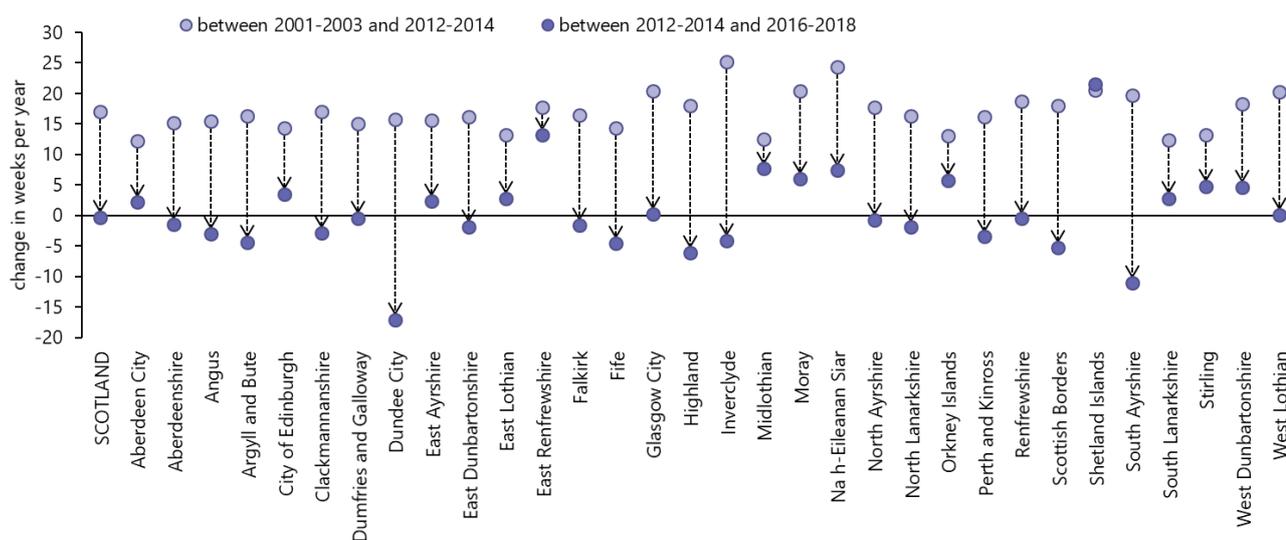
Source: Life expectancy in Scottish areas 2016-2018 (NRS)

HLE was highest for males in East Dunbartonshire at 69.7 (± 1.6) years and highest for females in Orkney Islands at 73.3 (± 4.2) years. It should be noted that the confidence intervals around the Orkney HLE estimate are very large. This is due to the small population and also the small sample size of the APS in Orkney. If Orkney Islands was excluded, then East Dunbartonshire would also have the highest HLE for females at 68.4 (± 1.8) years. Figure 3 shows life expectancy and healthy life expectancy in all of Scotland's council areas.

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

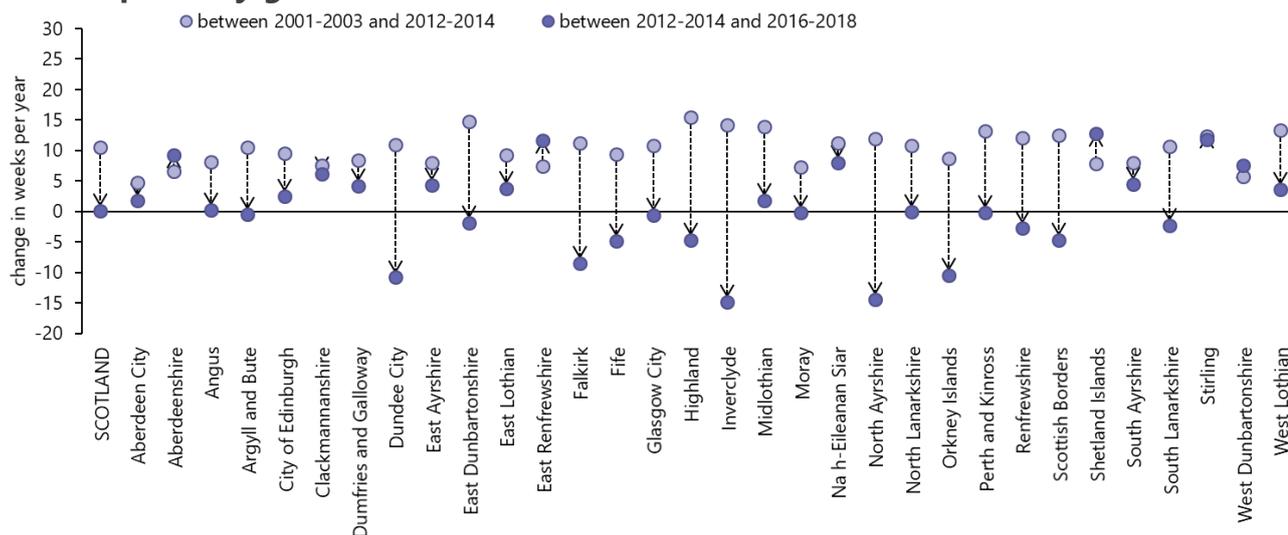
Between 2001-2003 and 2012-2014, life expectancy in Scotland increased by around 17 weeks each year for males and 10.5 weeks each year for females. Between 2012-2014 and 2016-2018, life expectancy in Scotland fell by around 0.3 weeks each year for males and increased by 0.1 week each year for females. This stall in life expectancy growth has been seen all across Scotland, however, in some areas the change has been greater than others. Figure 4a and Figure 4b show 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 4a and 4b also show 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 4a. Almost all council areas of Scotland experienced a stalling in life expectancy growth after 2012-2014, Males



Source: Life expectancy in Scottish areas 2016-2018 (NRS)

Figure 4b. Almost all council areas of Scotland experienced a stalling in life expectancy growth after 2012-2014, Females

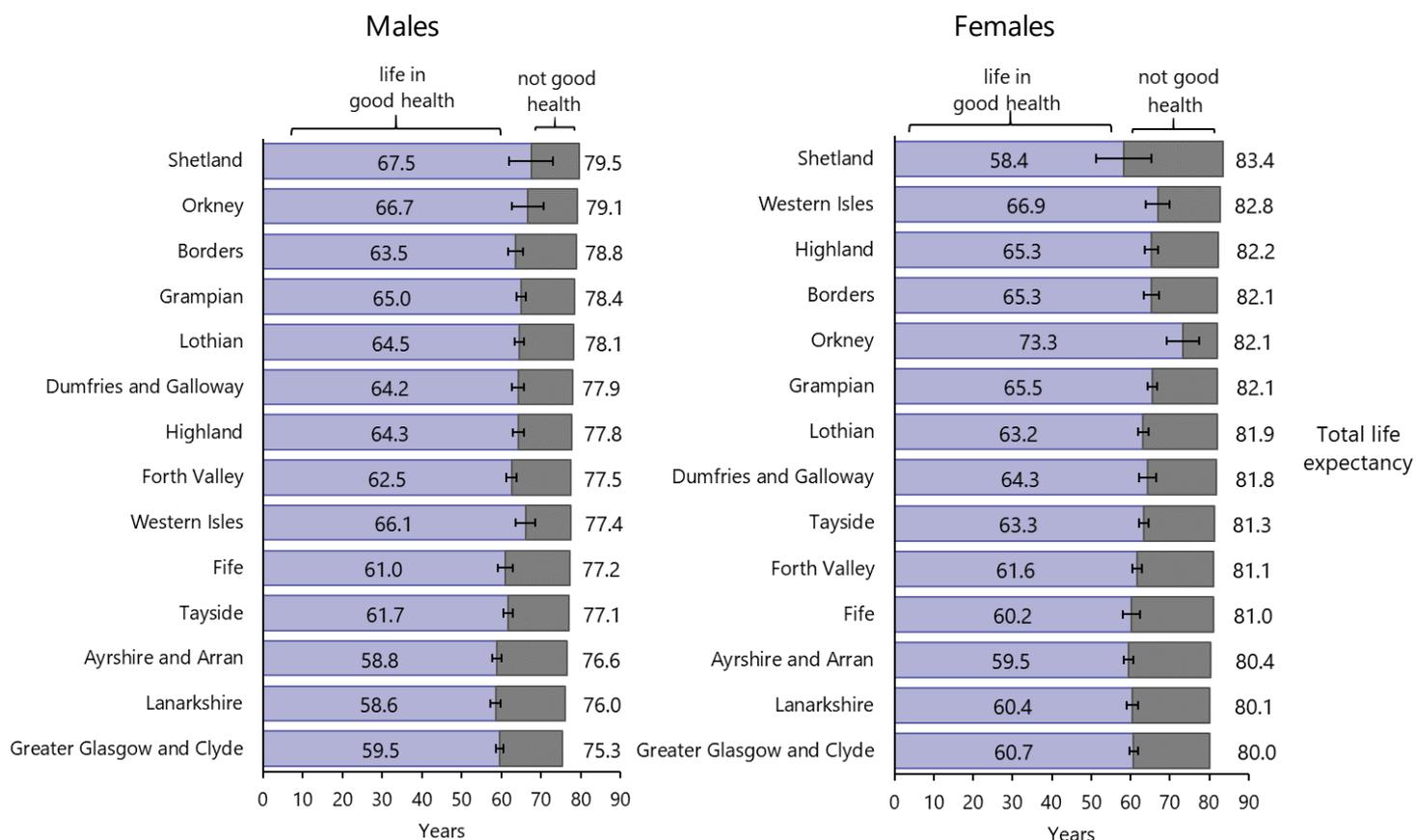


Source: Life expectancy in Scottish areas 2016-2018 (NRS)

6. Life expectancy in NHS health boards

Figure 5a and figure 5b show life expectancy and healthy 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 2016 and 2018 had a life expectancy of 79.5 (± 1.3) years while females born in Shetland at the same time had a life expectancy of 83.4 (± 1.1) years. Healthy life expectancy was also highest for males in Shetland (67.5 ± 5.3 years) but highest for females in Orkney health board (73.3 ± 4.2 years). The health board with the lowest life expectancy was Greater Glasgow and Clyde, where males could expect to live 75.3 (± 0.2) years and females could expect to live 80.0 (± 0.2) years. Healthy life expectancy was lowest for males in Lanarkshire 58.6 (± 1.3) years and lowest for females in Shetland 58.4 (± 7.0) years. As with the council level estimates, please note the very large confidence intervals around both the Shetland and Orkney estimates.

Figure 5. Life expectancy and healthy life expectancy at birth in NHS health boards. 2016-2018



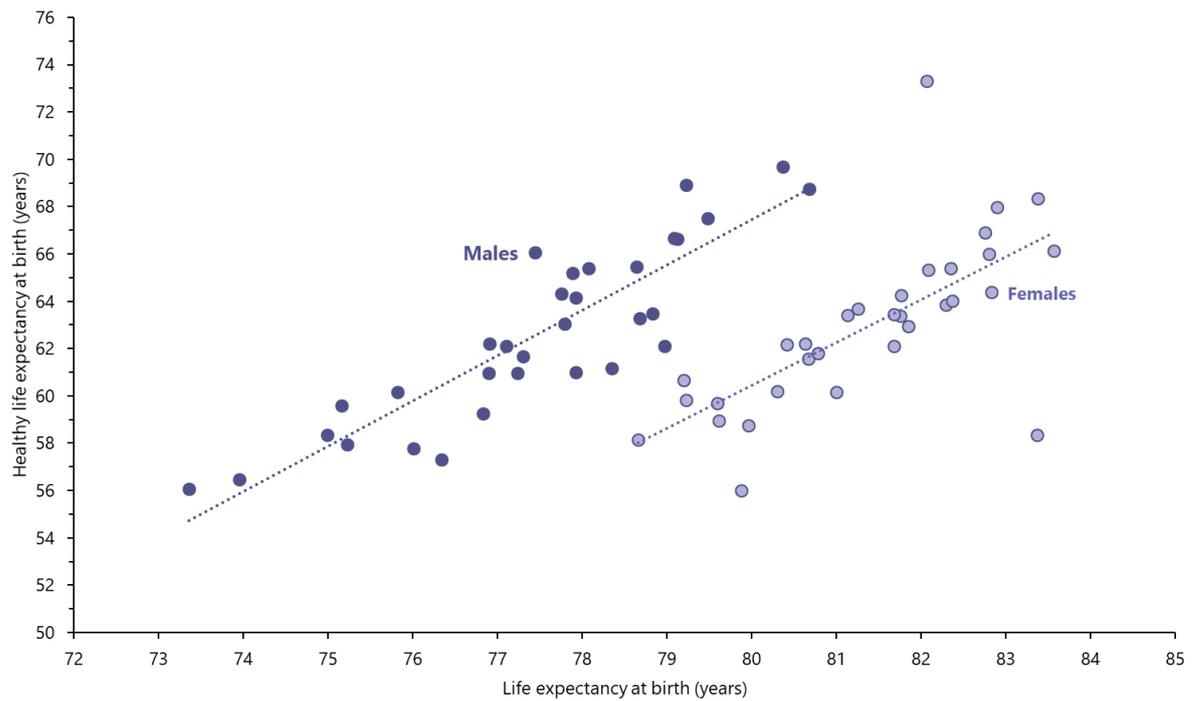
Numbers in the bar represent HLE in years, numbers outside the bar represent total life expectancy in years. Black error bars represent confidence intervals around HLE estimates

Source: Life expectancy in Scottish areas 2016-2018 (NRS)

7. The relationship between life expectancy and healthy life expectancy

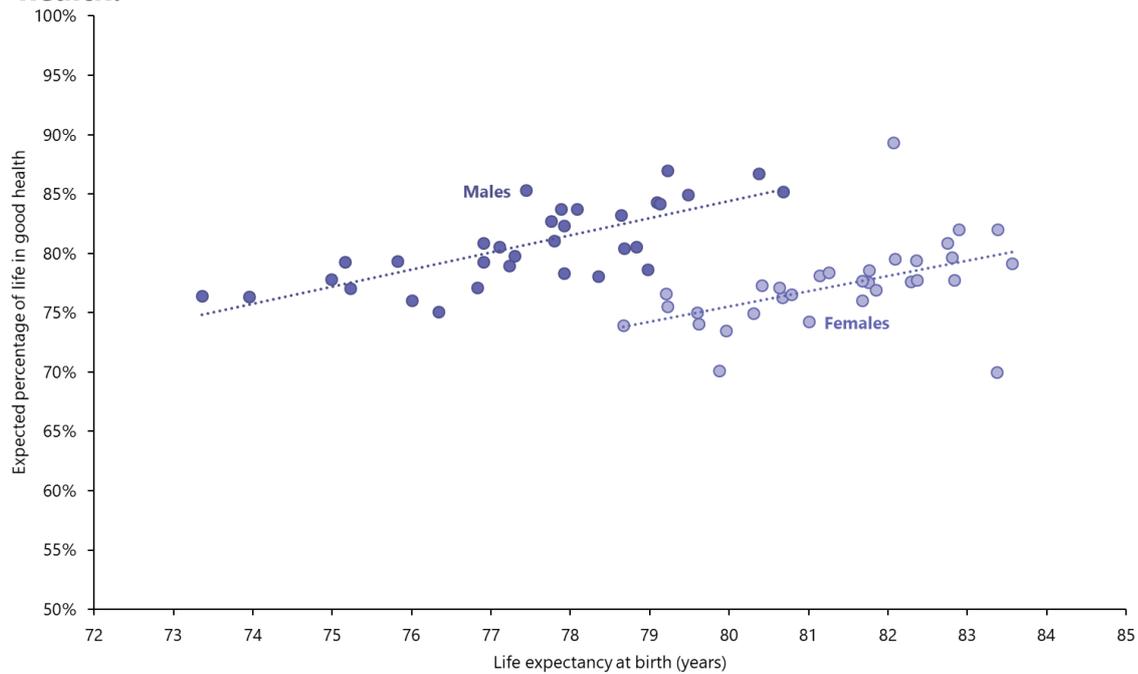
People who live in Scottish areas that have higher life expectancy are also likely to have higher healthy life expectancy. Figure 6a shows the positive relationship between life expectancy and HLE in Scotland's council areas. It also illustrates that females tend to have higher life expectancy than males, but males and females have similar HLE. Figure 6b shows that people in areas with higher life expectancy are also likely to spend a greater proportion of their lives in good health. This means that someone born in an area with low life expectancy could expect to have lower HLE both in years and as a percentage of their total life.

Figure 6a. Councils areas with higher life expectancy at birth in 2016-2018 also had higher healthy life expectancy



Source: Life expectancy in Scottish areas 2016-2018 (NRS)

Figure 6b. In 2016-2018, people born in council areas with higher life expectancy could also expect to spend a greater proportion of their life in good health.



Source: Life expectancy in Scottish areas 2016-2018 (NRS)

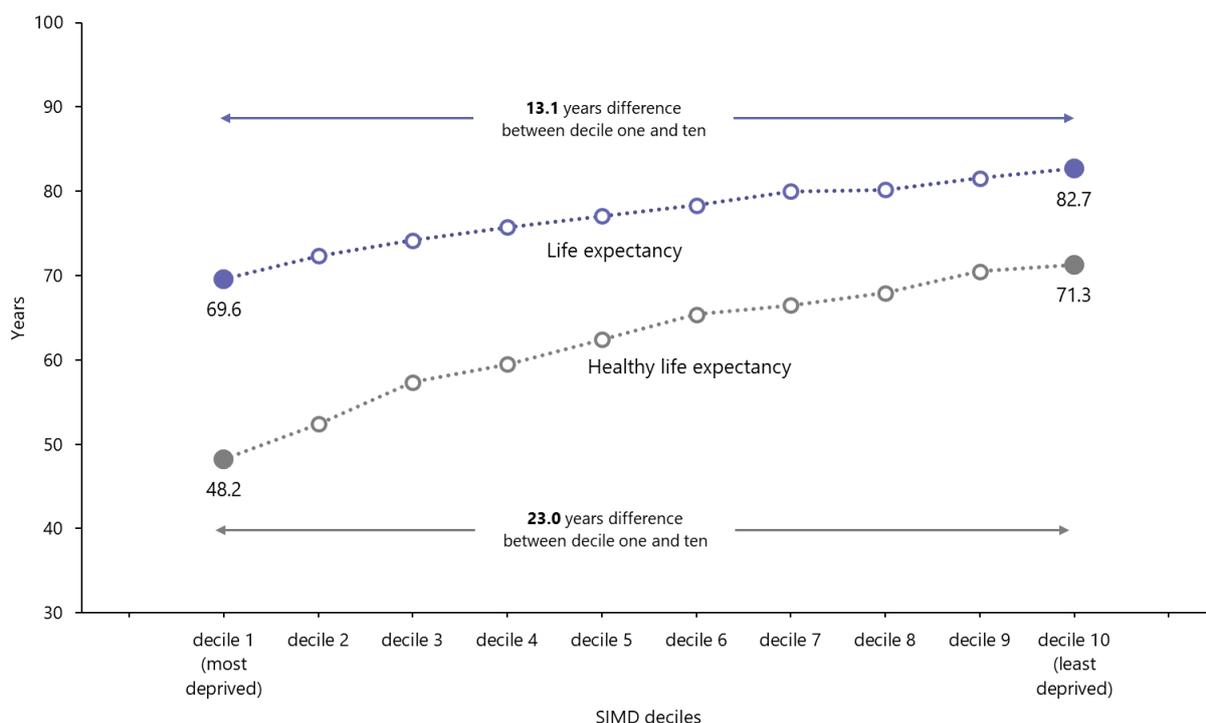
8. Life expectancy by deprivation

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 7a and figure 7b show life expectancy and healthy life expectancy at birth in SIMD (Scottish index of multiple deprivation) deciles. For males born in 2016-2018, life expectancy at birth was 69.6 (± 0.3) years in deprivation decile 1 (the 10% most deprived areas) compared with 82.7 (± 0.3) years in decile 10 (the 10% least deprived areas), a gap of 13.1 years. For females born at the same time, life expectancy was 75.6 (± 0.3) years in decile 1 and 85.4 (± 0.2) years in decile 10, a gap of 9.8 years.

For HLE, the difference between the most and least deprived areas is even greater. For males there was a difference of 23.0 years between decile 1 and decile 10 and for females, there was a difference of 23.9 years. This means that males in decile 1 spend 69.3% of their life in good health compared to 86.2% in decile 10. Females in decile 1 spend 64.3% of their lives in good health compared with 84.8% in decile 10.

Because the boundaries of deprivation deciles change with different iterations of SIMD, it is complicated to compare across periods of time. However, the last four life expectancy estimates have all used SIMD 2016 and these show that the gap between the most and least deprived areas has grown in recent years. Between the 2013-2015 and 2016-2018 estimates, the difference in life expectancy between decile one and ten has grown from 12.2 to 13.1 years for males and 8.6 to 9.8 years for females.

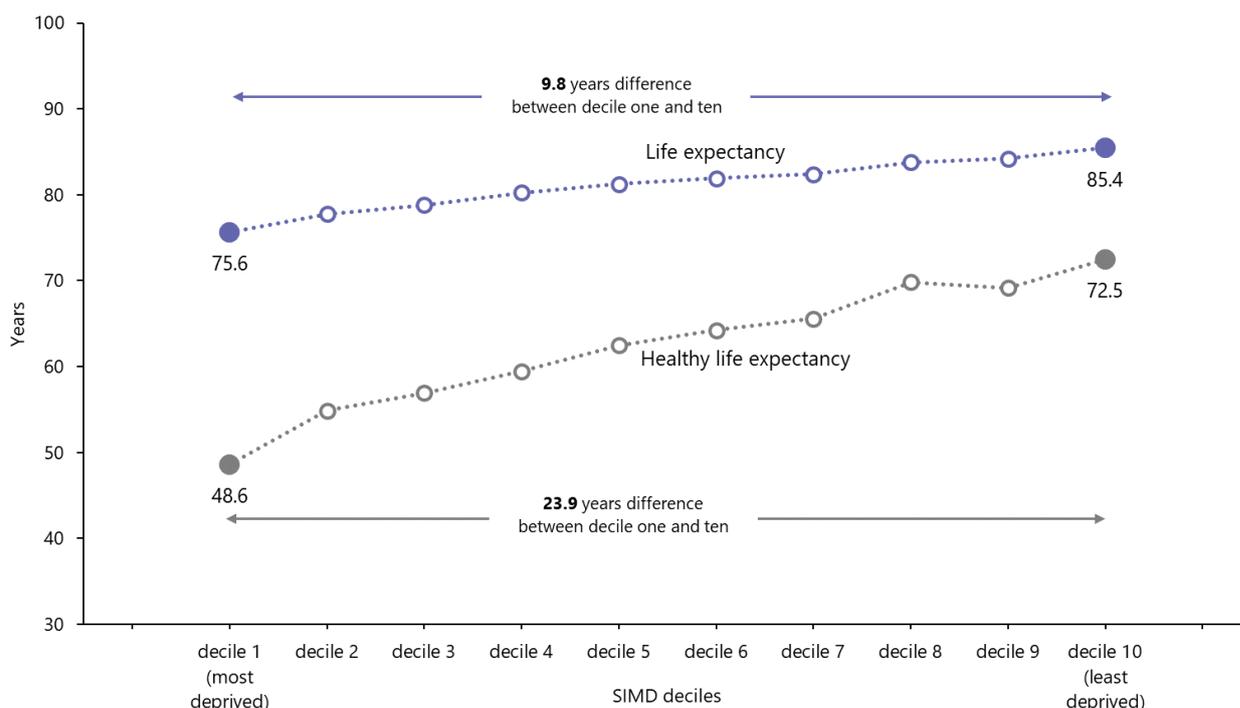
Figure 7a. Life expectancy and healthy life expectancy at birth by SIMD¹ deciles. Males 2016-2018



1. Scottish Index of Multiple Deprivation (2016 based)

Source: Life expectancy in Scottish areas 2016-2018 (NRS)

Figure 7b. Life expectancy and healthy life expectancy at birth by SIMD¹ deciles. Females 2016-2018



1. Scottish Index of Multiple Deprivation (2016 based)
 Source: Life expectancy in Scottish areas 2016-2018 (NRS)

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](#).

9. Life expectancy by deprivation within council areas

NRS also produce life expectancy by deprivation estimates within council areas which are published in table 8 in the accompanying tables. In order to calculate these figures from small populations, we pool five years of data (in this publication, 2014-2018) and use SIMD quintiles rather than deciles. In spite of this, great caution should be exercised in interpreting these data especially for smaller council areas, as the confidence intervals are very large.

For males, some of the largest differences between the 20% most deprived and 20% least deprived are found in Dundee City, Glasgow City, City of Edinburgh and Inverclyde, all of which had gaps of greater than 12 years. For females, some of the

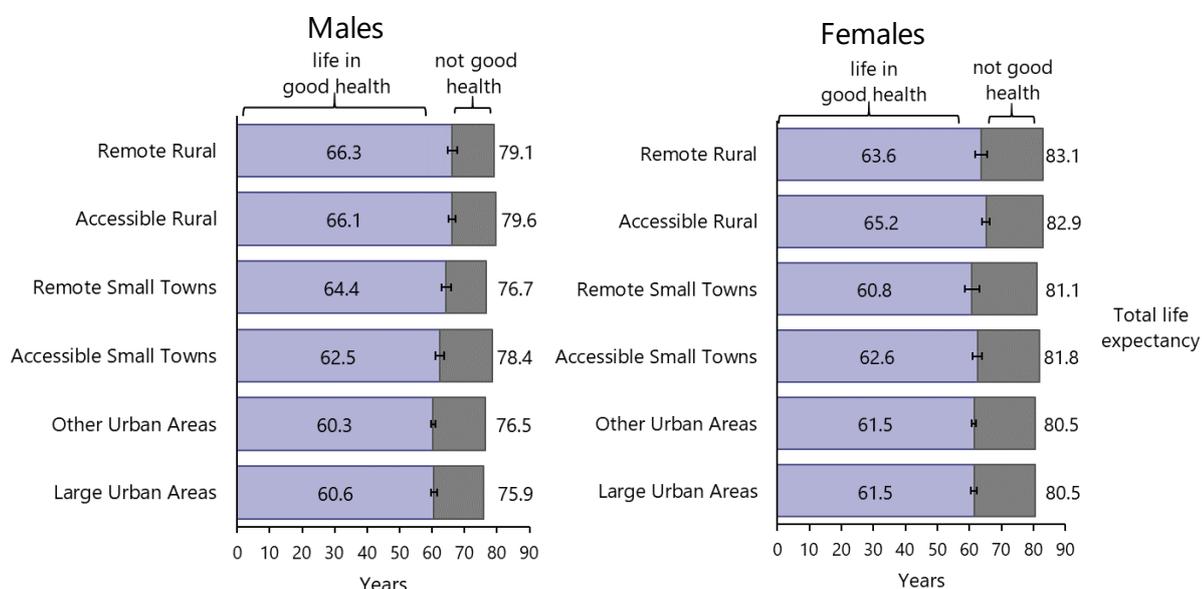
largest differences were found in Renfrewshire, Inverclyde, North Ayrshire, Glasgow City and City of Edinburgh which all had deprivation gaps greater than eight years. The equivalent differences for all of Scotland for 2014-2018 are 9.6 years for males and 7.0 years for females.

In some rural or sparsely populated areas there may be relatively little variation in deprivation so the difference between the most and least deprived areas are much smaller than they would be in a large city. For example, in the Shetland Islands and Na h-Eileanan Siar council areas, the confidence intervals overlap between the 20% most and least deprived areas. This indicates that it is not possible to compare life expectancies by deprivation in these more sparsely populated areas. We also do not produce HLE for council areas split by deprivation due to the small sample sizes.

10. Life expectancy in urban and rural areas

Life expectancy and healthy life expectancy also vary 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 8a and figure 8b show life expectancy and HLE by Urban-Rural 2016 based classification. For males life expectancy was highest in 'Accessible Rural' areas at 79.6 (± 0.3) years while 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 (75.9 ± 0.2 years) and joint lowest for females in 'Large Urban' and 'Other Urban' areas (80.5 ± 0.2 and 80.5 ± 0.1 years). HLE was highest for males in 'Remote Rural' areas (66.3 ± 1.4 years) and for females in 'Accessible Rural' areas (65.2 ± 1.3 years).

Figure 8. Life expectancy and healthy life expectancy at birth in urban rural areas¹. 2016-2018



Numbers in the bar represent HLE in years, numbers outside the bar represent total life expectancy in years. Black error bars represent confidence intervals around HLE estimates

Source: Life expectancy in Scottish areas 2016-2018 (NRS)

11. Scottish Parliamentary constituencies

NRS have also published life expectancy estimates for Scottish Parliamentary constituencies which can be found in table 7 in the accompanying tables. Please be aware that these are small areas and therefore the confidence intervals around the estimates are large.

How are life expectancy statistics used?

Statistics on life expectancy and healthy life expectancy are key indicators for monitoring health inequalities. They are used for providing comparisons within Scotland and internationally.

Healthy life expectancy is one of the 81 national indicators included in Scotland's [National Performance Framework](#).

NRS have used life expectancy statistics in a collaborative project with colleagues in the NHS to investigate why life expectancy is stalling across Scotland and in areas of deprivation. For more information, please read our [blog post](#).

The Scottish Government and COSLA have jointly published [public health priorities for Scotland](#), with the aim of organisations and communities working better together to focus on prevention, to reduce health inequality and increase healthy life expectancy.

The [Fairer Scotland Duty](#), Part 1 of the Equality Act 2010, came into force in Scotland from April 2018. It places a legal responsibility on particular public bodies in Scotland to actively consider how they can reduce inequalities of outcome caused by socio-economic disadvantage, when making strategic decisions. This includes any measurable differences between those who have experienced socio-economic disadvantage and the rest of the population – for example, in relation to health and life expectancy or educational attainment.

The United Nation's [Human Development Index](#) (HDI) is measured using life expectancy, educational attainment, and income.

12. Related statistics

- The [National Life Tables for Scotland](#) are published by NRS and contain estimates of life expectancy at Scotland level for three years of data based on populations and deaths at single year of age.
- The [National Life tables for the UK](#) are published by the ONS and contain estimates of life expectancy for the UK and constituent countries. These are also based on three years of data by single year of age.
- The ONS also produce [Health State Life expectancies](#) which contain life expectancy, healthy life expectancy and disability free life expectancy estimates for areas within the UK
- Prior to 2019, healthy life expectancy at birth was published by the NHS information services division. More information and analysis can be found on their [website](#).

13. Notes on statistical publications

National Statistics

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.

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.

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.

You can also follow us on twitter @NatRecordsScot

Enquiries and suggestions

Please contact our Statistics Customer Services if you need any further information.
Email: statisticscustomerservices@nrscotland.gov.uk

If you have comments or suggestions that would help us improve our standards of service, please contact:

Alan Ferrier
Senior Statistician
National Records of Scotland
Room 1/2/12
Ladywell House

Ladywell Road
Edinburgh
EH12 7TF

Phone: 0131 314 4530

Email: alan.ferrier@nrscotland.gov.uk