

# Healthy Life Expectancy 2018-2020



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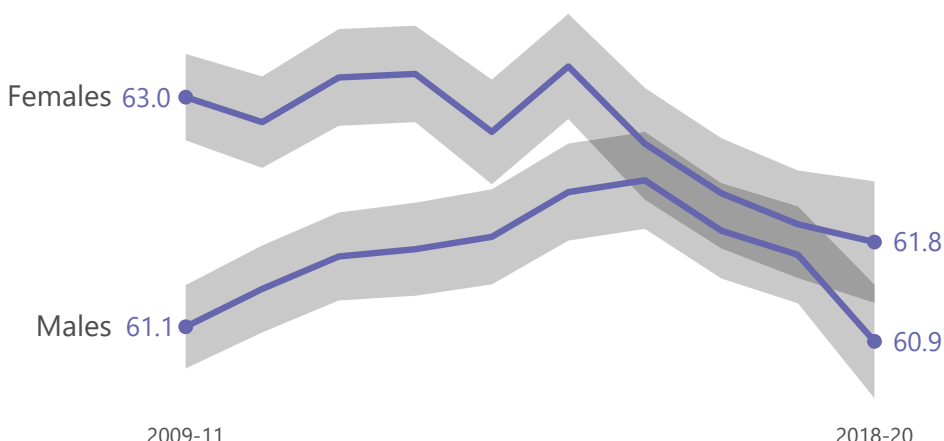
This statistical report details healthy life expectancy (HLE) estimates for areas within Scotland including council areas and NHS health boards. It also includes breakdowns by deprivation and rurality.

## Healthy life expectancy has changed over time

In the last few years healthy life expectancy has decreased for both males and females. It is now lower in 2018-2020 than it was in 2009-2011 for both males and females.

\* The shaded area shows the upper and lower 95% confidence intervals.

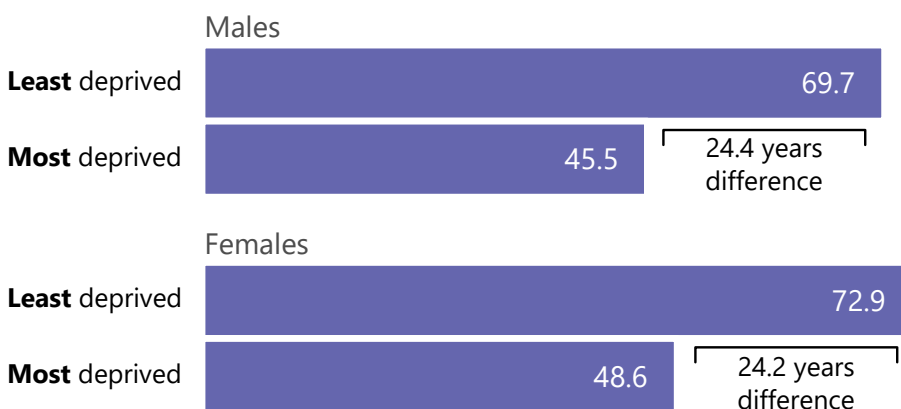
Healthy life expectancy at birth (years)



## Deprivation has a large impact on healthy life expectancy

Healthy life expectancy for females is 24.2 years more in the least deprived areas compared to the most deprived areas in Scotland. For males that difference increases to 24.2 years.

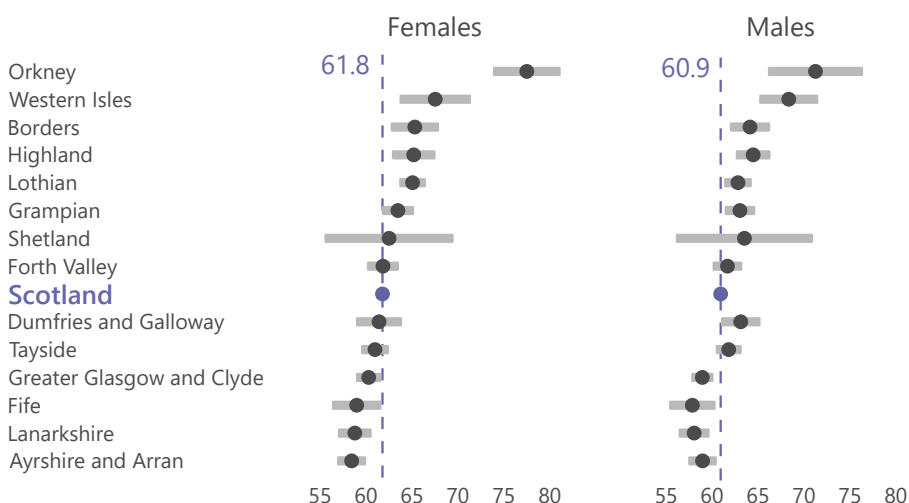
Healthy life expectancy at birth by deprivation (years)



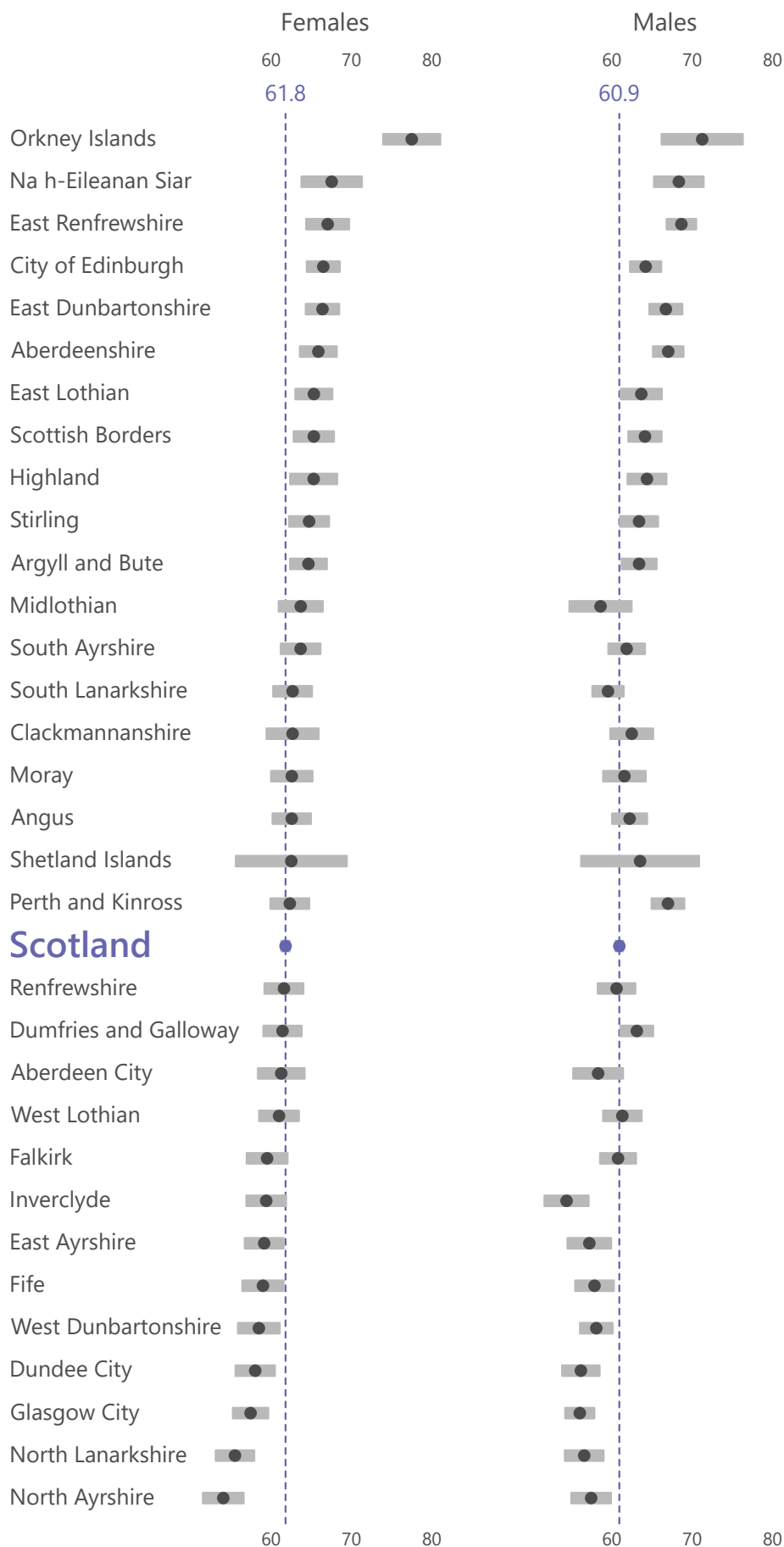
## Healthy life expectancy varies by health board

Orkney had the highest healthy life expectancy at birth for both females (77.5 years) and males (71.2 years) of all Scottish health boards. Whilst Ayrshire and Arran had the lowest healthy life expectancy for females (58.4 years) and Fife had the lowest for males (57.8 years).

Healthy life expectancy at birth by health board (years)



## Healthy life expectancy at birth by council area (years)



## Healthy life expectancy varies by council area

The council area with the highest female healthy life expectancy estimate at birth was Orkney Islands (77.5 years). The council area with the lowest female healthy life expectancy estimate at birth was North Ayrshire (54.0 years).

For males, the council area with the highest estimate was also Orkney Islands (71.2 years) and the lowest was Inverclyde (54.4 years).

There was greater variation in the female healthy life expectancy estimates across council areas.

The difference between the council areas with the highest and lowest female healthy life expectancy estimates was 23.5 years. The difference between the council areas with the highest and lowest male healthy life expectancy estimates was 16.9 years.

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## 1. Main Points

In Scotland between 2018-2020:

- Male healthy life expectancy was 60.9 years.
- Female healthy life expectancy was 61.8 years.
- For males, healthy life expectancy at birth was highest in Orkney Islands (71.2 years) and lowest in Inverclyde (54.4 years).
- For females, healthy life expectancy at birth was highest in Orkney (77.5 years) and lowest in North Ayrshire (54.0 years).

How this compares to previous years:

- Both males and females experienced a decrease in healthy life expectancy from the previous year (2017-2019).
- For males, healthy life expectancy at birth increased between 2009-2011 and 2015-2017 but has fallen over the last three estimates.
- For females, healthy life expectancy at birth remained fairly similar between 2009-2011 and 2014-2016 but has decreased every year since.

How this compares across Scotland:

- Healthy life expectancy in the most deprived areas of Scotland was more than 24 years lower than in the least deprived areas for both males and females.
- In the most deprived areas, both males and females spend more than a third of their life in poor health.
- In the least deprived areas, they both spend around 15% of their life in poor health.

## 2. Introduction

This report gives estimates of healthy life expectancy based on the years 2018-2020 for areas within Scotland. A more detailed breakdown of the estimates for all areas and age groups can be found in the accompanying tables.

### **What is healthy life expectancy?**

Healthy life expectancy (HLE) is an estimate of the number of years lived in 'very good' or 'good' general health, based on how individuals perceive their state of health at the time of completing the annual population survey (APS).

### **How are the statistics calculated?**

Statistics are drawn from the annual population survey (APS) where participants indicate their general health. The HLE estimates are derived from the good health prevalence rate (calculated from the APS survey data) and deaths and population data, through which the average number of remaining years in good health can be calculated for each age group and geography. See [methodology](#) for more detailed breakdown of the process.

### **Why is it useful to analyse healthy life expectancy?**

Healthy life expectancy provides insight into the proportion of life expectancy spent in good health. HLE estimates are important to analyse alongside the life expectancy estimates, to understand the state of health the population is in, as well as their years of life expectancy.

Most importantly, it is important to understand how the two estimates are changing over time and relative to each other as this can determine the future health state of the population. For this reason, HLE is of particular use in monitoring and investigating the health inequalities across Scotland and directing public health targets.

These figures are also used to help deliver local and national services in addition to use for teaching and research purposes.

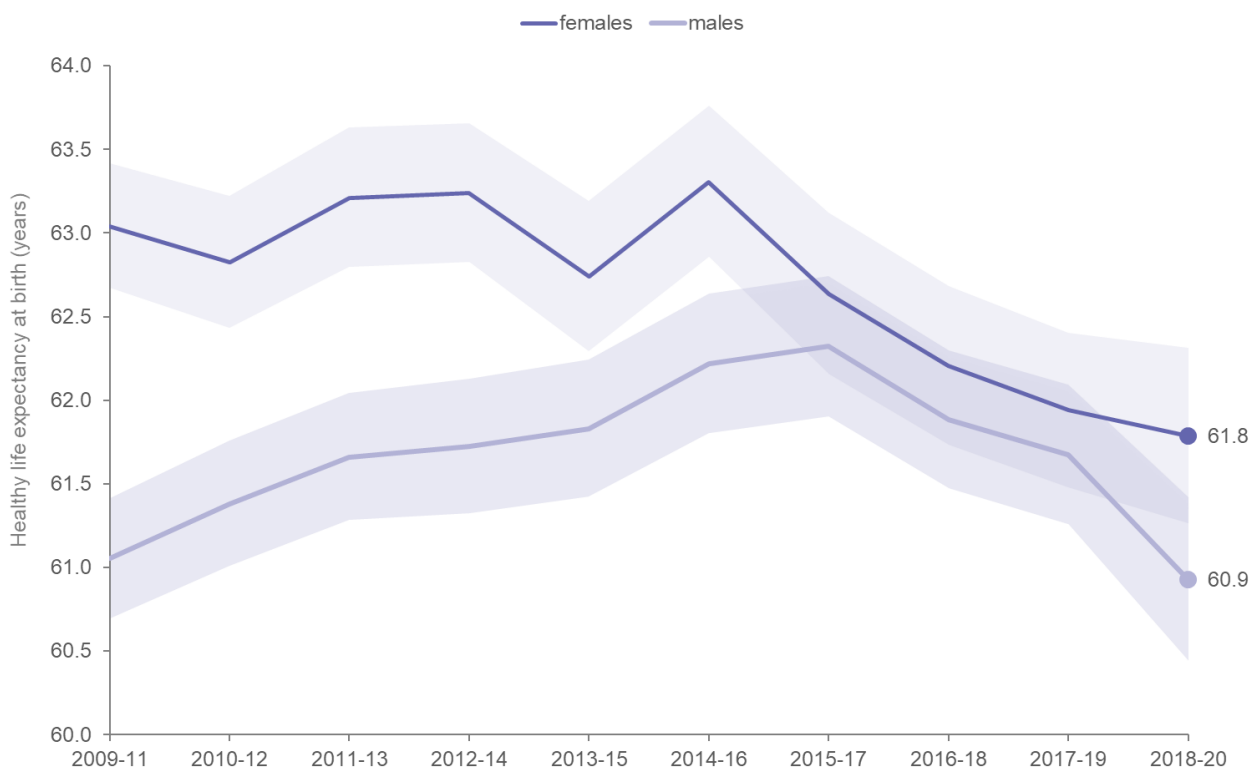
### Why do we report confidence intervals?

95% confidence intervals are included to measure the uncertainty around the estimates. In this report, the confidence intervals are quoted in brackets, for example 65 ( $\pm 0.7$ ) years. These represent the range of values the true value is 95%-likely to lie between. The wider the confidence interval, the less accurate the estimate is.

Estimates from larger populations (such as health boards) will have smaller confidence intervals and therefore provide more accurate estimates, than from smaller populations (such as intermediate zones) with larger confidence intervals.

## 3. Healthy life expectancy in Scotland

**Figure 1: Healthy life expectancy at birth in Scotland, 2009-2011 to 2018-2020**



In 2018-2020:

- The estimated healthy life expectancy of a female was 61.8 ( $\pm 0.5$ ) years.
- The estimated healthy life expectancy of a male was 60.9 ( $\pm 0.5$ ) years.

Healthy life expectancy (HLE) increased for males between 2009-2011 and 2015-2017. Since then it has been decreasing and is now lower than in 2009-2011.

Female HLE at birth did not change much between 2009-2011 and 2014-2016. Since then, the estimates have decreased each year up to 2018-2020.

Since the time series began, the HLE estimates of females has remained greater than that of males. However, since 2015-2017 the estimates for males and females have remained relatively similar. This can be seen in the overlapping confidence intervals illustrated by the shaded areas in figure 1.

### How are these figures impacted by COVID-19?

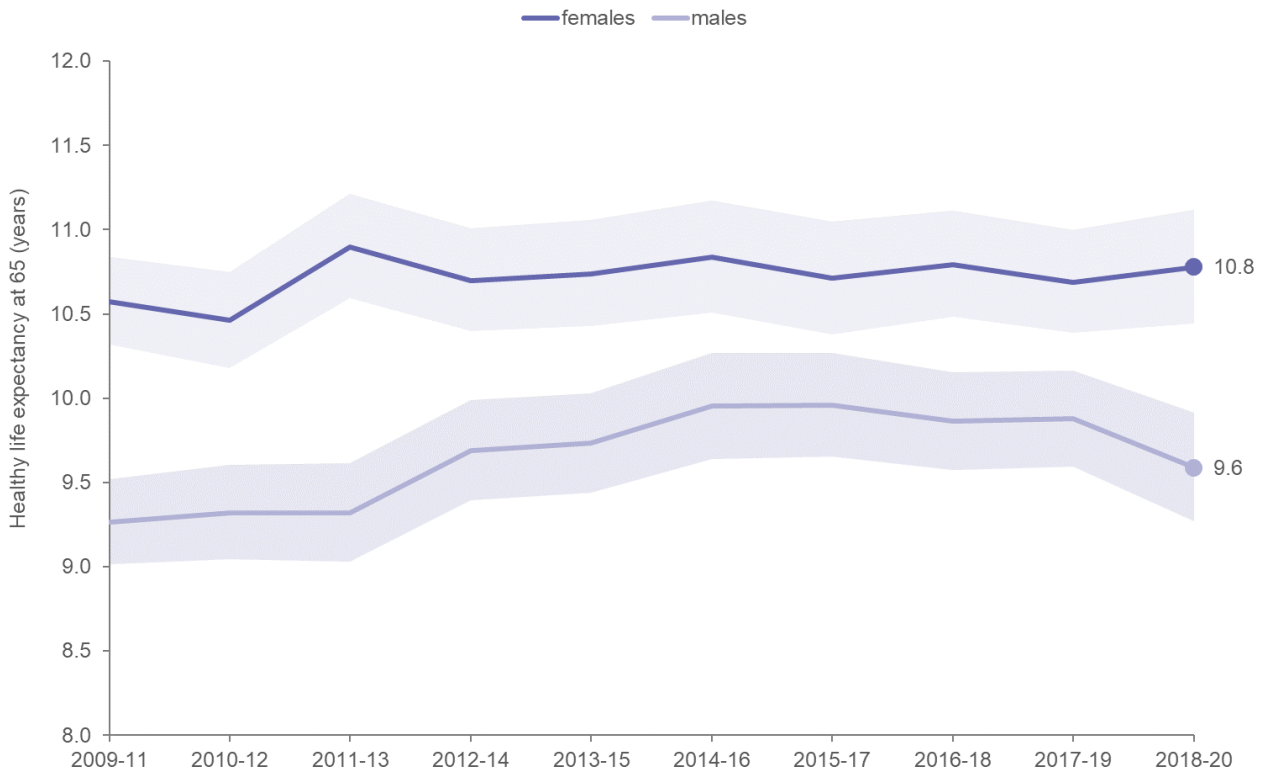
These HLE figures are calculated with data from 2018, 2019 and 2020. This means that nine months of the COVID-19 pandemic are included in the data so we might expect to see some effect on the estimates.

Because HLE estimates have large confidence intervals, it is difficult to compare year on year change and measure the effect of COVID-19. In addition, the survey data that the figures are based on only asks people to say whether they are in good health or poor health (see the

We have however done some analysis of the effect of COVID-19 on life expectancy. You can read this in the 2018-2020 edition of our report



**Figure 2: Healthy life expectancy at 65 in Scotland, 2009-2011 to 2018-2020**



In 2018-2020:

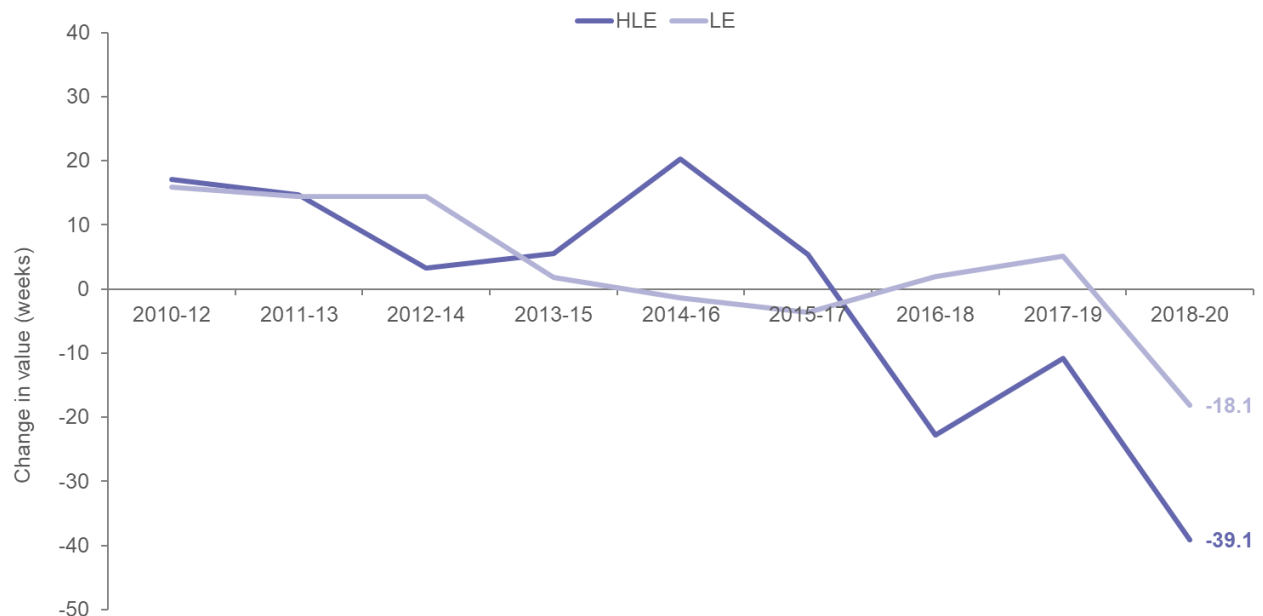
- The estimated healthy life expectancy of a female at 65 was 10.8 ( $\pm 0.3$ ) years.
- The estimated healthy life expectancy of a male at 65 was 9.6 ( $\pm 0.3$ ) years.

Between 2009-2011 and 2015-2017, male HLE at 65 was increasing. Since then however it has started to decrease although it still remains slightly higher in 2018-2020 than the 2009-2011 estimate.

Female HLE at 65 has remained almost the same since the estimate in 2009-2011 with very little year on year change. There has been a small increase in the latest year but this is not statistically significant.

## 4. How changes in HLE compare with changes to overall life expectancy

**Figure 3a: Yearly change in healthy life expectancy and life expectancy at birth, 2010-2012 to 2018-2020, males**

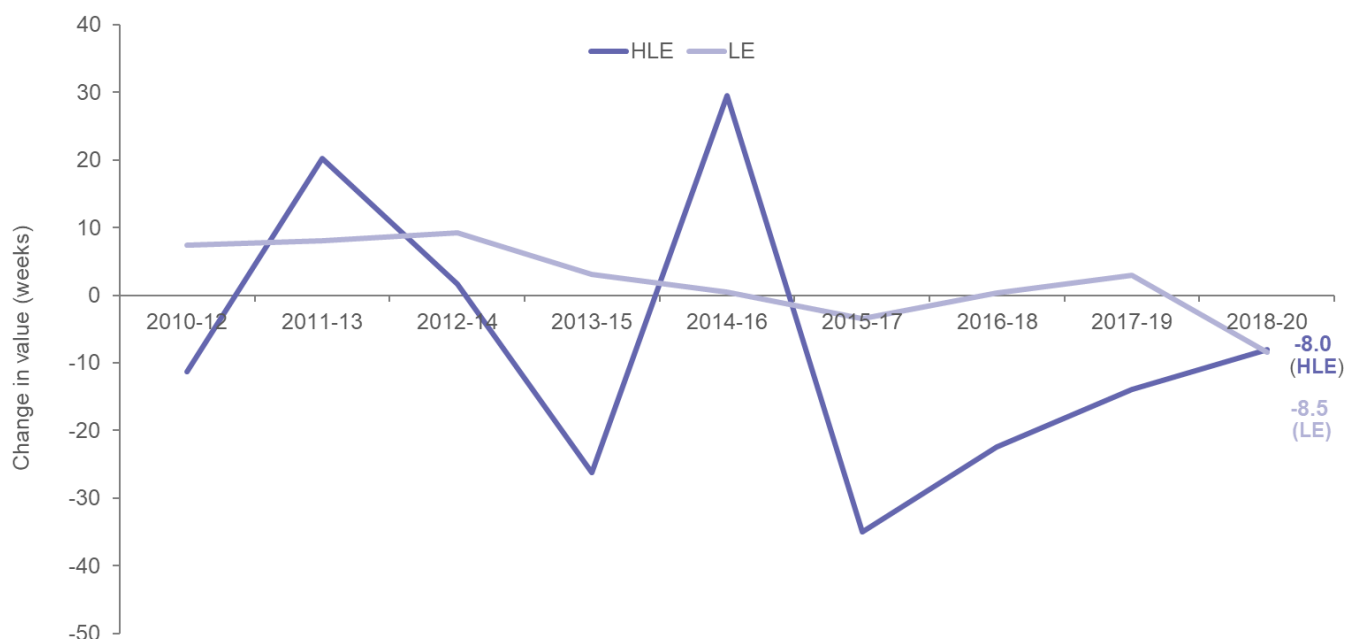


In 2018-2020:

- Male healthy life expectancy decreased by 39.1 weeks (0.7 years) from the previous year (60.9 compared to 61.7 years in 2017-2019).
- Male life expectancy decreased by 18.1 weeks (0.3 years) from the previous year (76.8 compared to 77.2 years in 2017-2019).

Although both life expectancy and HLE have fallen for males in recent years, HLE has done so at a faster rate. This means that a greater proportion of life is likely to be spent in poor health now than in previous years.

**Figure 3b: Yearly change in healthy life expectancy and life expectancy at birth, 2010-2012 to 2018-2020, females**



In 2018-2020:

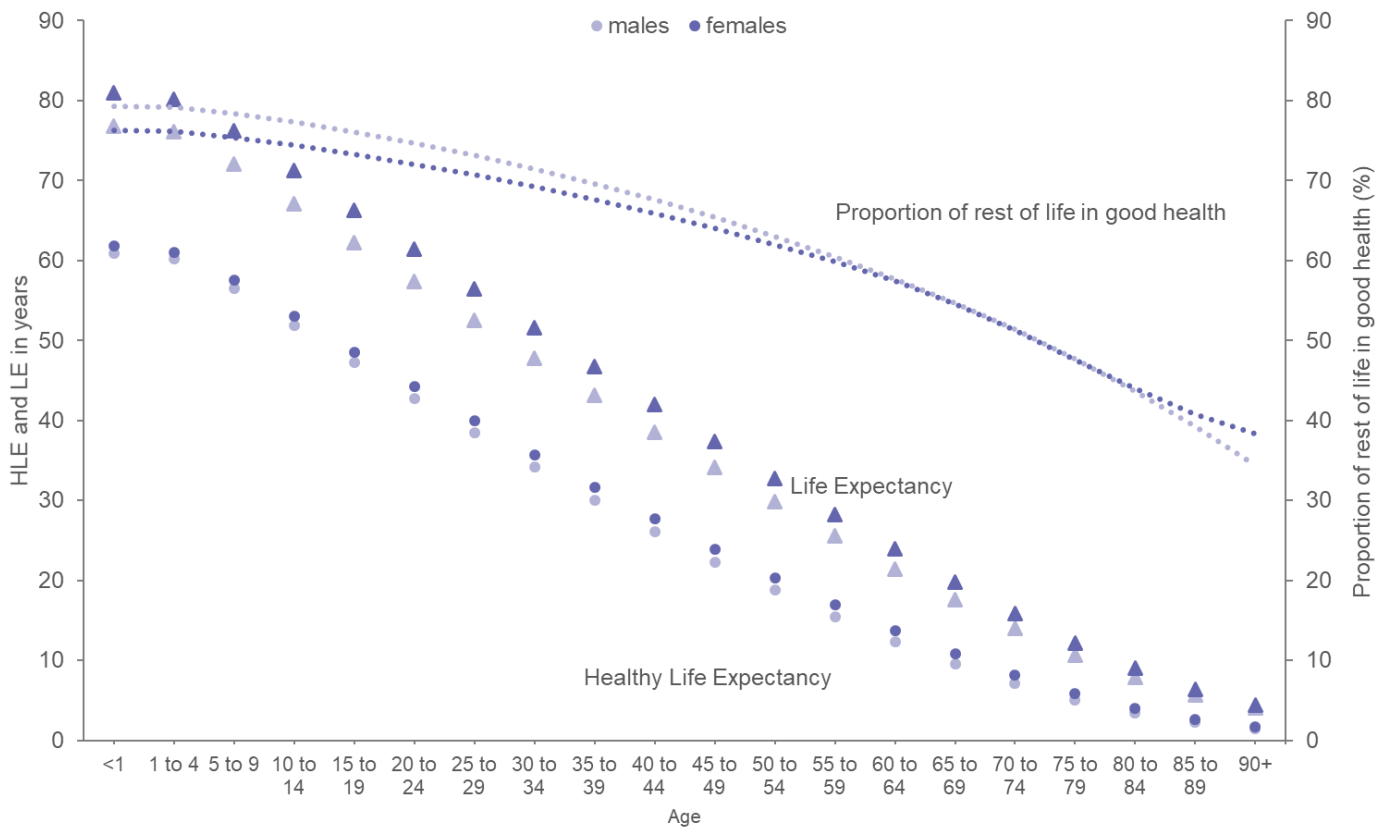
- Female healthy life expectancy has decreased by 8 weeks (0.2 years) from the previous year (61.8 compared to 61.9 years in 2017-2019).
- Female life expectancy has decreased by 8.5 weeks (0.2 years.)

Life expectancy for females has experienced relatively little change since 2010-2012 although it has fallen by a larger amount over the past year. Female HLE on the other hand has been highly variable, increasing one year and decreasing the next for much of the last decade. However, the rate of change in HLE for females has been negative for the past four estimates.

The female healthy life expectancy estimates have experienced negative changes more frequently than for males with 6 out of the 9 periods in the time series showing a reduction from the previous period. By contrast, female life expectancy change has been positive or unchanging for 7 out of the 9 periods. This means that the proportion of life spent in good health has been decreasing more rapidly for females than males.

Life expectancy has been consistently higher for females than for males across the time series. At the same time, HLE has also been higher for females than males but by a much smaller margin and in the last few years the difference has not been statistically significant. This means that a greater proportion of life for females is spent in poor health compared to males.

**Figure 4: Healthy life expectancy at all ages in Scotland, 2018-2020**



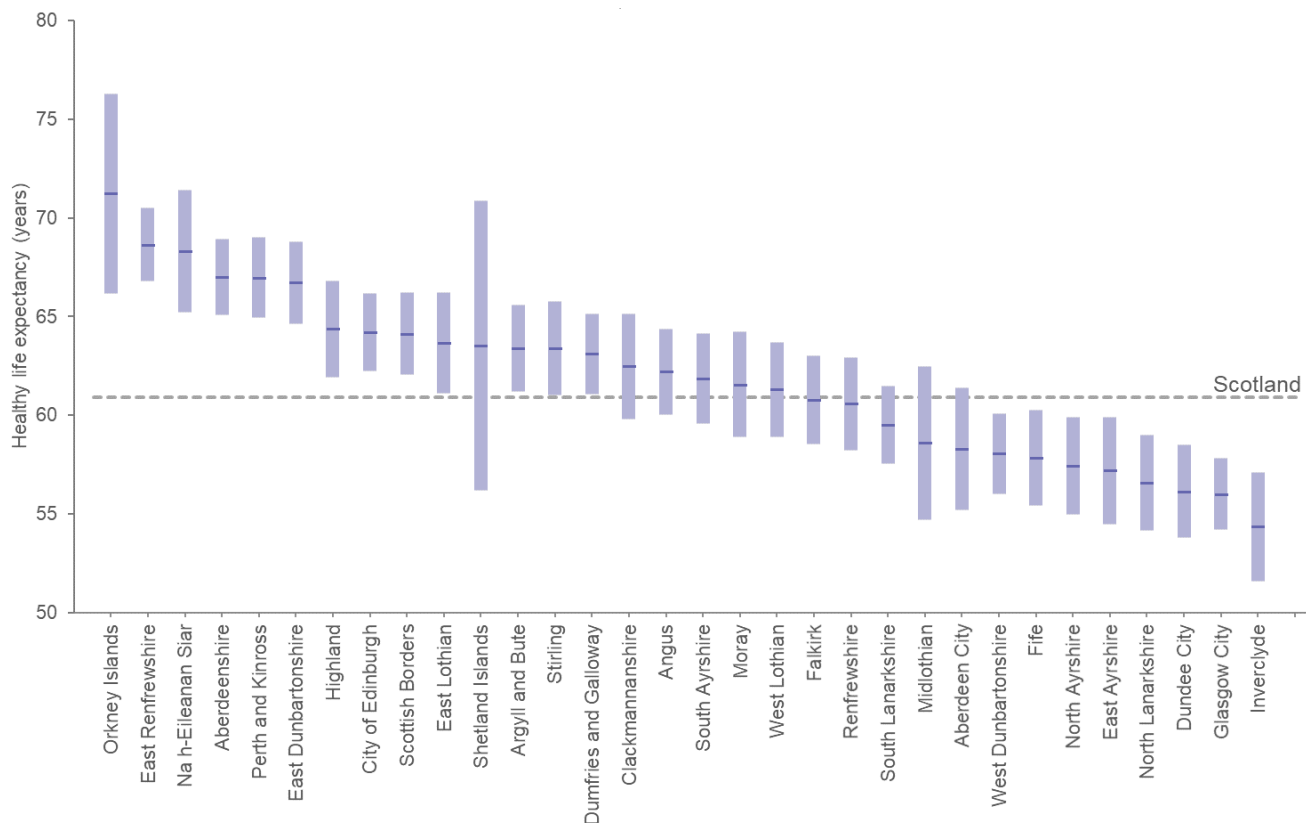
Healthy life expectancy and life expectancy estimates both become smaller as the age category increases (as you would expect). Across all age categories, LE and HLE remains higher for females than for males, although the difference is much smaller for HLE than for LE.

The rate of change in healthy life expectancy as people age is lower than the rate of change in life expectancy. This demonstrates that the healthy life expectancy reduces more slowly as you move up the age groups and the gap between healthy life expectancy and life expectancy narrows.

Due to females having a higher life expectancy, but a similar healthy life expectancy to males, the proportion of life in good health for females is lower. In other words, females spend a greater proportion of life in poor health. This relationship inverts in the oldest age groups, but this is likely to be due to the fact that there are very few males in these groups.

## 5. Healthy life expectancy in council areas

**Figure 5a: Healthy life expectancy at birth in council areas with 95% confidence intervals, 2018-2020, males**

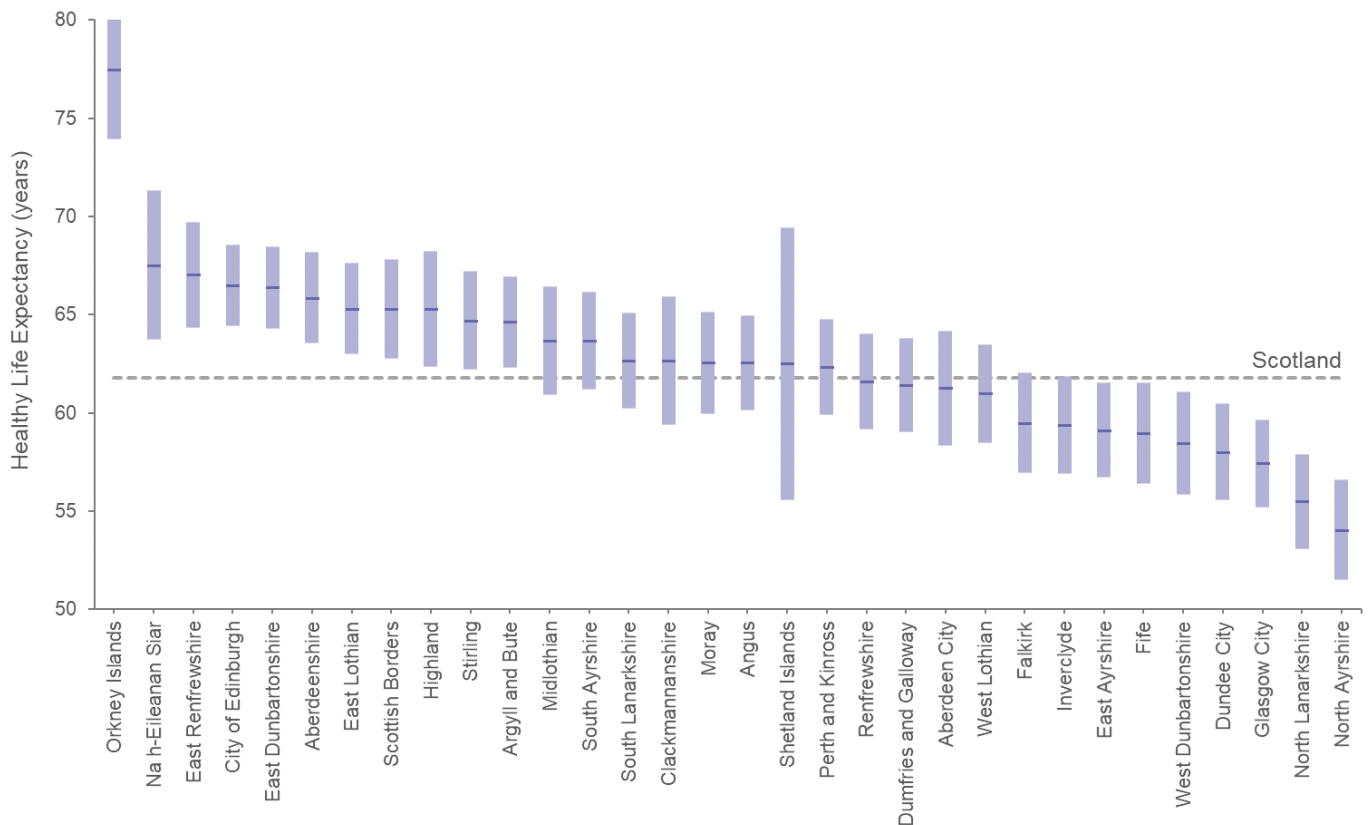


For males in 2018-2020:

- The councils with the highest healthy life expectancy at birth were Orkney (71.2 ( $\pm 5.1$ ) years), East Renfrewshire (68.7 ( $\pm 1.8$ ) years) and Na h-Eileanan Siar (68.3 ( $\pm 3.1$ ) years).
- The councils with the lowest healthy life expectancy at birth were Inverclyde (54.4 ( $\pm 2.8$ ) years), Glasgow City (56.0 ( $\pm 1.8$ ) years) and Dundee City (56.1 ( $\pm 2.3$ ) years).

Please note that the bars represent the confidence intervals around the estimate, showing that although the island council areas have some of the highest recorded HLE estimates, they also have the widest confidence intervals because they have small populations. This makes their HLE estimates less reliable.

**Figure 5b: Healthy life expectancy at birth in council areas with 95% confidence intervals, 2018-2020, females**

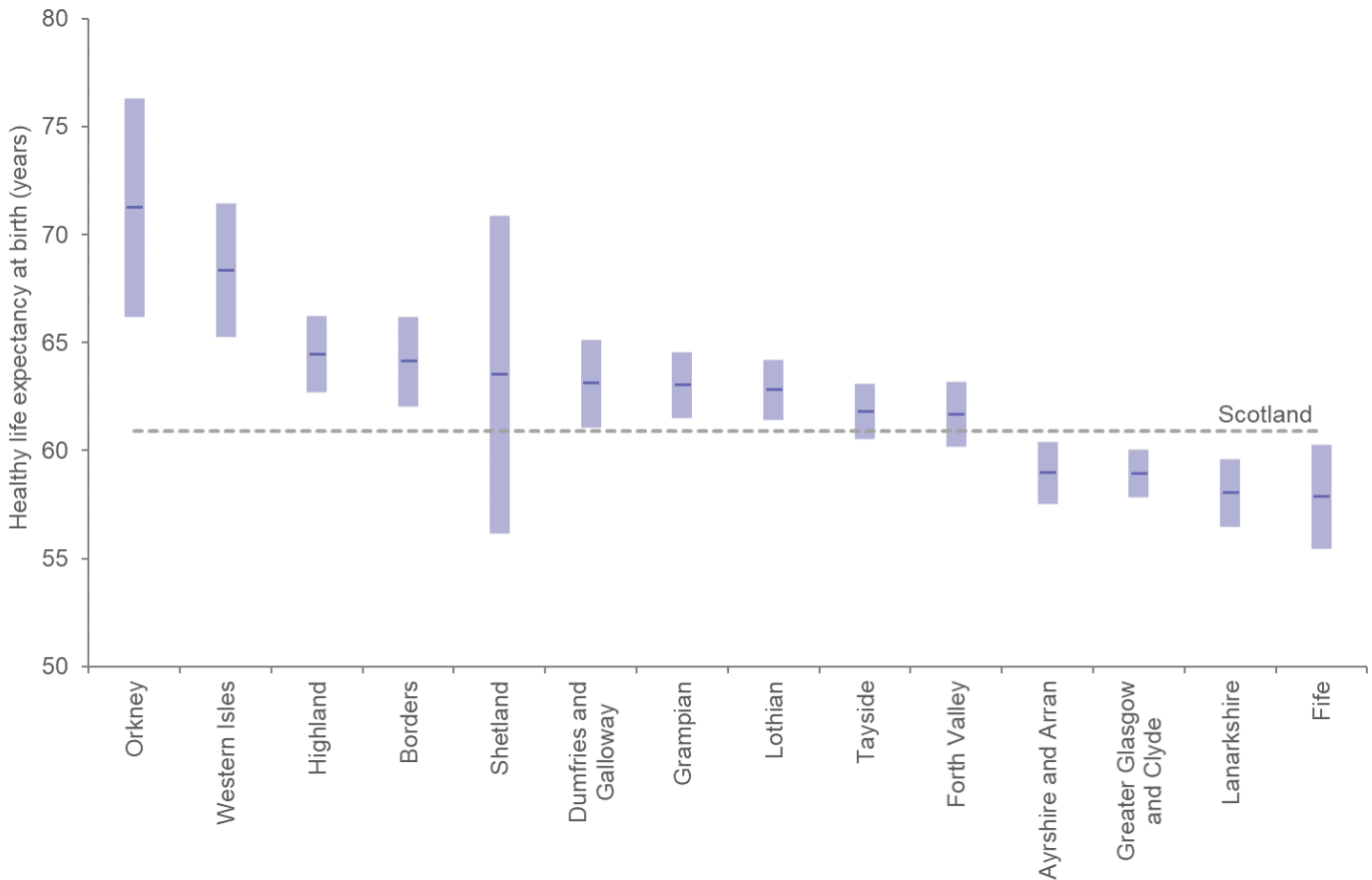


For females 2018-20:

- The councils with the highest healthy life expectancy at birth were Orkney Islands (77.5 (±3.6) years), Na h-Eileanan Siar (67.5(±3.8) years) and East Renfrewshire (67.0 (±2.7) years).
- The councils with the lowest healthy life expectancy at birth were North Ayrshire (54.0 (±2.5) years), North Lanarkshire (55.5 (±2.4) years) and Glasgow City (57.4 (±2.2) years).

## 6. Healthy life expectancy in NHS health boards

**Figure 6a: Healthy life expectancy at birth in health boards with 95% confidence intervals, 2018-2020, males**

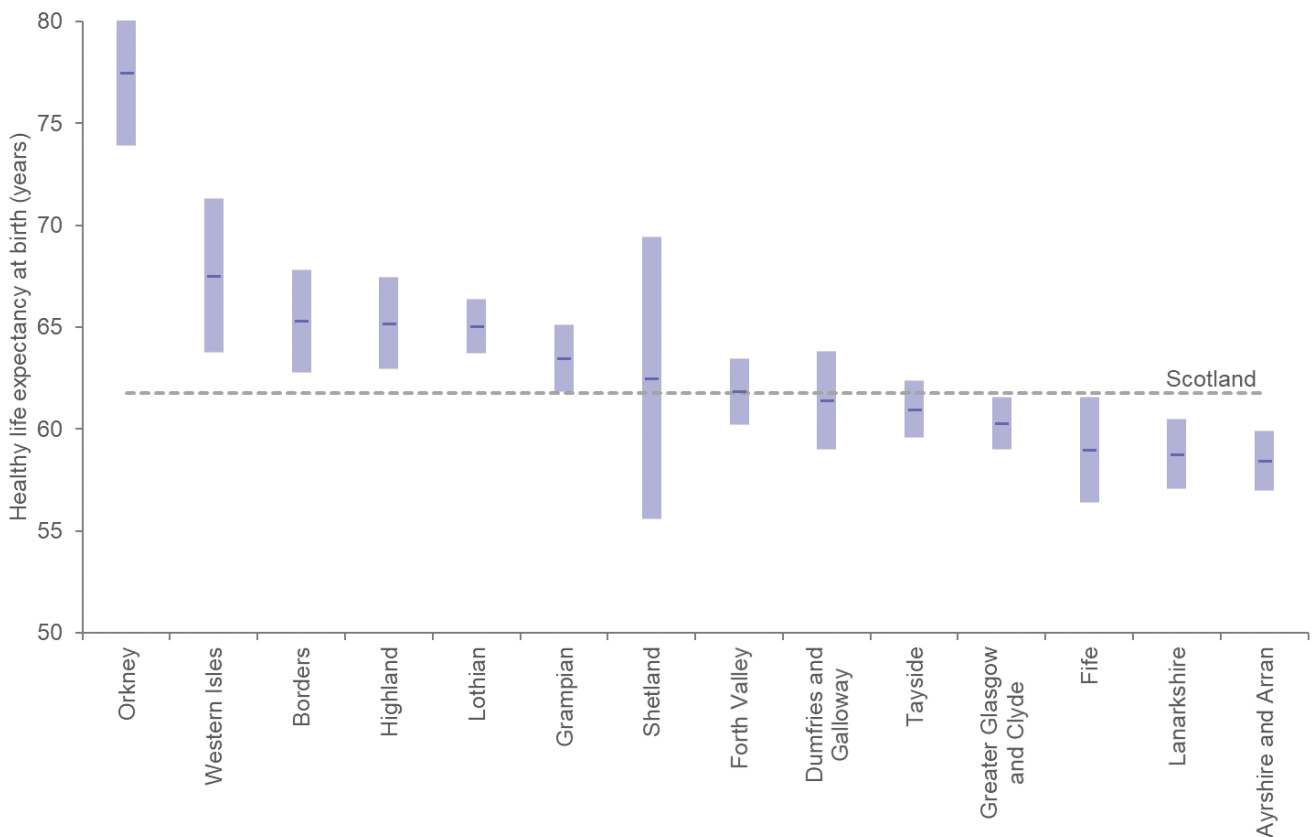


For males in 2018-2020:

- Orkney, Western Isles and Highland had the highest healthy life expectancy estimates of all the health boards (71.2 ( $\pm 5.1$ ), 68.3 ( $\pm 3.1$ ) and 64.3 ( $\pm 1.8$ ) years respectively).
- Fife, Lanarkshire and Greater Glasgow and Clyde had the lowest healthy life expectancy estimates (57.8 ( $\pm 2.4$ ), 58.0 ( $\pm 1.6$ ) and 58.9 ( $\pm 1.1$ ) years respectively), all below the overall estimate for Scotland.

Please note that the bars represent the confidence intervals around the estimate, showing that although Orkney, Western Isles and Shetland have some of the highest recorded HLE estimates they also have the widest confidence intervals of all health boards making their estimates less reliable.

**Figure 6b: Healthy life expectancy at birth in health boards with 95% confidence intervals, 2018-20, females**



For females in 2018-2020:

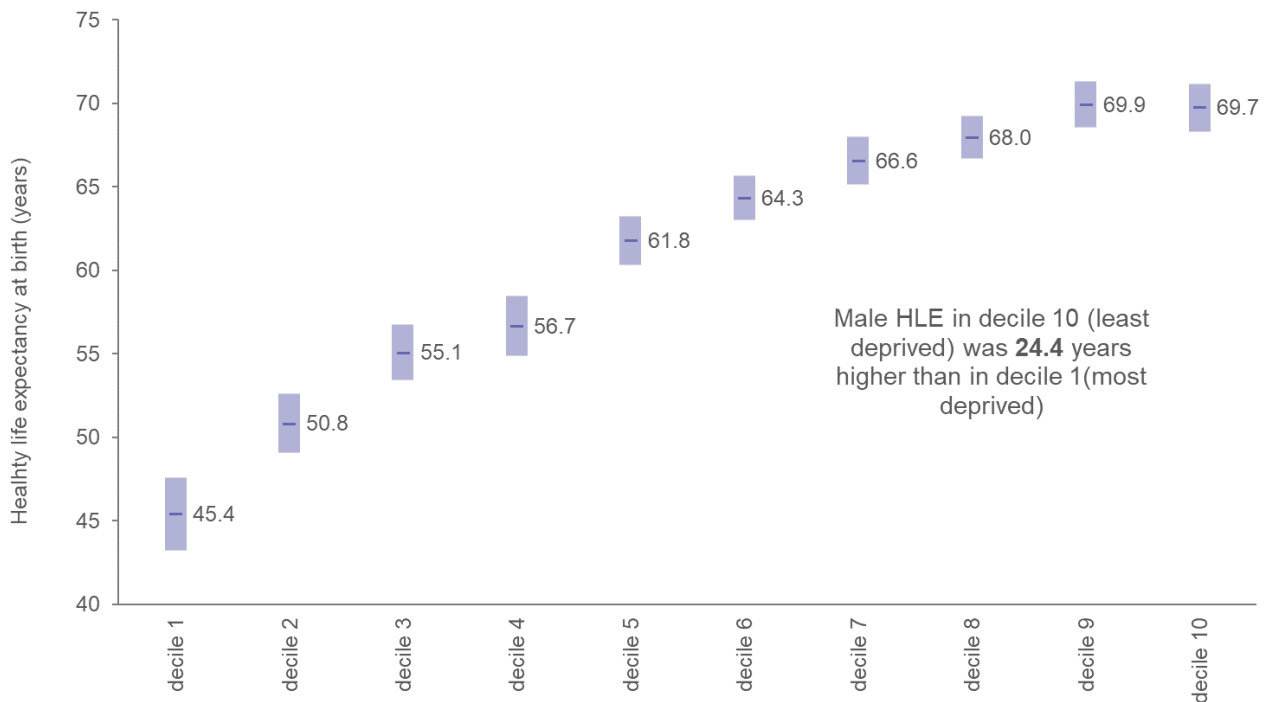
- Orkney, Western Isles and Borders had the highest healthy life expectancy estimates of all the health boards (77.5 (±3.6), 67.5 (±3.8) and 65.3 (±2.5) years respectively).
- Ayrshire and Arran, Lanarkshire and Fife had the lowest healthy life expectancy estimates (58.4 (±1.5), 58.8 (±1.7) and 59.0 (±2.6) years respectively), all below the overall estimate for Scotland.

As with the male estimates, Orkney, Shetland and Western Isles have large confidence intervals making their estimates less reliable than the others with smaller confidence intervals.



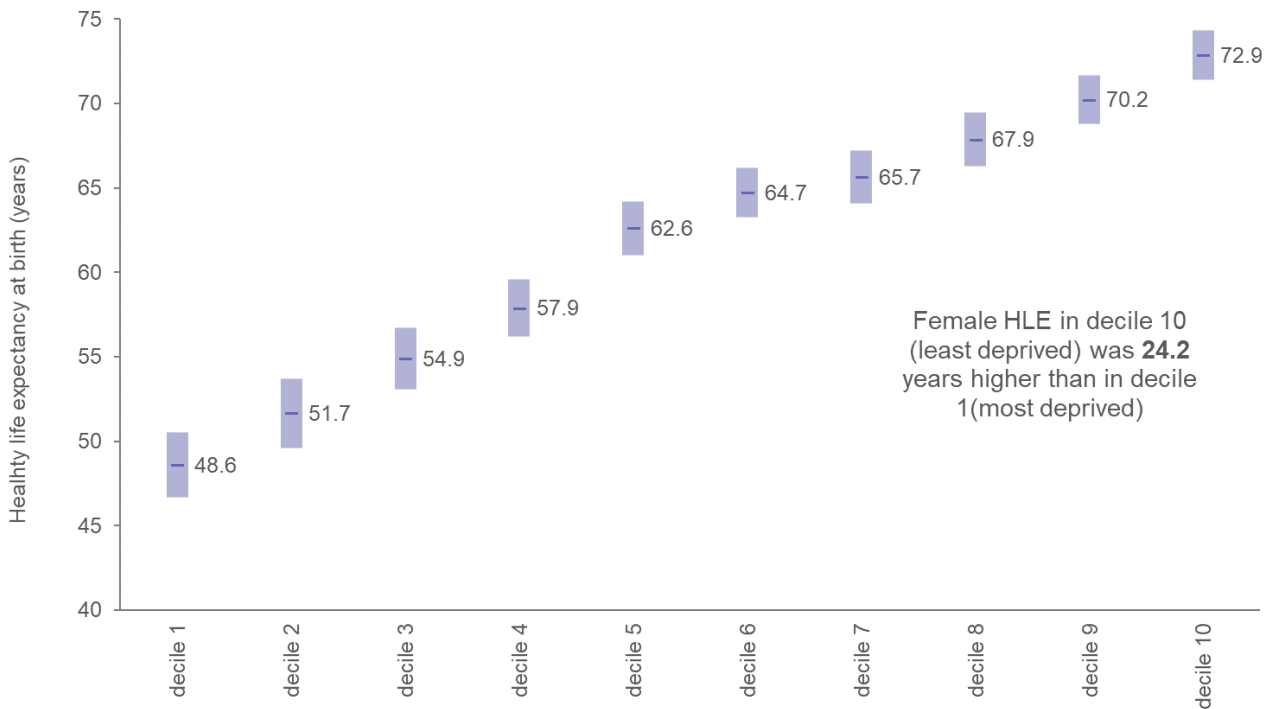
## 7. Healthy life expectancy in SIMD areas

**Figure 7a: Healthy life expectancy at birth by SIMD decile with 95% confidence intervals, 2018-2020, males.**



- Males born in the most deprived area were estimated to have a healthy life expectancy of 45.4 ( $\pm 2.2$ ) years whilst males in the least deprived area were estimated to have a healthy life expectancy of 69.7 ( $\pm 1.4$ ) years. That is a difference of 24.4 years (numbers do not sum due to rounding).

**Figure 7b: Healthy life expectancy at birth by SIMD decile with 95% confidence intervals, 2018-2020, females.**



- Females born in the most deprived area were estimated to have a healthy life expectancy of 48.6 ( $\pm 1.9$ ) years whilst females in the least deprived area were estimated to have a healthy life expectancy of 72.9 ( $\pm 1.4$ ) years. That is a difference of 24.2 years (numbers do not sum due to rounding).
- For both males and females, the difference in HLE between the most and least deprived areas is much larger than the difference in LE. The result of this is that people in the most deprived areas not only have shorter life expectancy and lower HLE, but they also have a smaller proportion of life spent in good health.
- Males in the least deprived areas are expected to spend 84.6% of their life in good health compared with 65.8% in the most deprived areas.
- Females in the least deprived areas are expected to spend 85.2% of their life in good health compared with 64.5% in the most deprived areas.
- This means that both males and females in the most deprived areas spend more than a third of their life in poor health.

## 8. Healthy life expectancy in Urban and Rural areas

**Figure 8a: Healthy life expectancy at birth by urban rural classification with 95% confidence intervals, 2018-2020, males.**



- The difference between the healthy life expectancy estimates in the most urban and most rural areas for males is 6.9 years.

**Figure 8b: Healthy life expectancy at birth by urban rural classification with 95% confidence intervals, 2018-2020, females.**



- The difference between the healthy life expectancy estimates in the most urban and most rural areas for females is 3.6 years.

Overall

- The difference in healthy life expectancy at birth by rurality of area is relatively small for both males and females.
- However, the rural categories show the highest healthy life expectancy estimates whilst the urban areas have the lowest in both males and females.

## 9. Related Statistics

Previously, the healthy life expectancy statistics were included more briefly in the [life expectancy](#) publication.

[Accidental Deaths](#) are also published by NRS for more information on the statistics around accidents prone to each age-category.

The ONS also produce [Health State life expectancies](#) which contain healthy life expectancy (and life expectancy) statistics for areas within the UK.

## 10. 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 metadata that is published alongside this publication on the NRS website.

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