

Statistical bulletin

Disability-Free Life Expectancy by Upper Tier Local Authority: England 2012 to 2014

2012 to 2014 estimates of disability-free life expectancy for males and females in upper tier local authorities, England at birth and at age 65.



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1. Main points

Males at birth could expect to spend a greater proportion (79.5%) of their lives free from disability compared with females (76.0%).

Males and females living in the South East, South West and East of England could expect to spend more years disability-free compared with those living in other regions.

The inequality in disability-free life expectancy (DFLE) at birth across upper tier local authorities was wider for females (19.4 years) than males (16.8 years).

Males living in Wokingham had the longest DFLE at birth (71.9 years); for females, Richmond upon Thames had the longest DFLE (72.1 years).

Tower Hamlets had the shortest DFLE at birth for both males (55.1 years) and females (52.7 years).

2. Background

What are health expectancies?

Health expectancy estimates show the amount of time an individual is expected to spend in different states of health. We annually publish data based on 2 types of health expectancies: 1) healthy life expectancy (HLE), which estimates lifetime spent in "Very Good" or "Good" health, and 2) disability-free life expectancy (DFLE), which estimates lifetime spent free from a limiting long-term illness or disability. Both health expectancies are based on self-reported measures of health. HLE aims to measure health-related well-being and DFLE aims to measure functional health status.

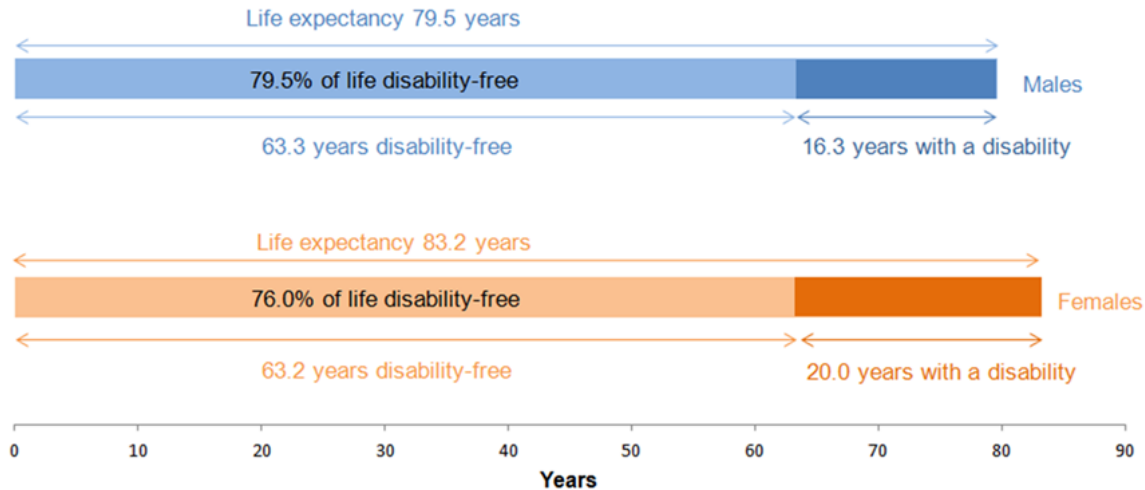
This bulletin focuses on the latest data: 2012 to 2014 DFLE for upper tier local authorities in England. DFLE data between 2006 to 2008 and 2011 to 2013 are also included in the datasets that accompany this bulletin.

3. England

Males at birth could expect to spend a higher proportion (79.5%) of their lives free from disability compared with females (76.0%).

Based on the 2012 to 2014 mortality and health status rates, males at birth could expect to live on average for 79.5 years, with 63.3 of these years (79.5%) spent disability-free. In comparison, females could expect to live longer (83.2 years); however, less of their lifespan (63.2 years) would be spent free from disability (76.0%). Although females could expect to live 3.7 years longer than males, these years could be spent living with a disability.

Figure 1: Life expectancy (LE), disability-free life expectancy (DFLE) and proportion of life disability-free for males and females at birth in England, 2012 to 2014



At age 65, men could expect to live a further 18.8 years, with 10.3 of these years (55.1%) spent disability-free. Women could expect to live a further 21.2 years, with 10.9 of these years (51.3%) spent disability-free. Although, from age 65, women could expect to live 2.4 years longer than men, they could also expect to spend more of their remaining lives (an extra 1.9 years) with a disability compared with men.

Figure 2: Life expectancy (LE), disability-free life expectancy (DFLE) and proportion of life disability-free for men and women at age 65 in England, 2012 to 2014



4. Regions

Males and females living in the southern regions could expect to spend a greater number of years disability-free compared with those living in other regions.

Disability-free life expectancy (DFLE) estimates for males and females, at birth, living in the southern regions were significantly higher than the overall England DFLE estimate. In contrast, DFLE estimates for the northern and Midlands regions were significantly lower than the overall England DFLE estimate.

DFLE was highest for the South East (65.1 years for males and 65.2 years for females) and lowest in the North East (60.4 years for males and females). As well as a longer life expectancy, males and females living in the southern regions could expect to spend a greater proportion of their life free from disability. Males in the South West could expect to spend more than four-fifths (81.0%) of their lives free from disability compared with males in the North East (77.4%). Whereas, females in the South East could expect to spend 77.6% of their lives free from disability compared with females in the North East (74.0%) (Table 1).

Table 1: Life expectancy (LE), disability-free life expectancy (DFLE) and proportion of life spent free from disability by region for males and females at birth, 2012 to 2014, England

English regions	LE (years)	DFLE (years)	Lower 95% confidence interval	Upper 95% confidence interval	Proportion of life free from disability (%)	LE rank	DFLE rank
Males							
South East	80.5	65.1 *	64.6	65.5	80.8	1	1
South West	80.2	65.0 *	64.5	65.5	81.0	4	2
East of England	80.4	64.8 *	64.3	65.3	80.6	2	3
London	80.3	64.0 *	63.5	64.5	79.6	3	4
East Midlands	79.4	62.5 **	61.9	63.1	78.8	5	5
West Midlands	78.9	62.3 **	61.8	62.8	79.0	6	6
Yorkshire and The Humber	78.7	61.4 **	60.9	61.9	78.0	7	7
North West	78.1	61.0 **	60.6	61.4	78.1	8	8
North East	78.0	60.4 **	59.8	61.0	77.4	9	9
England	79.5	63.3	63.1	63.4	79.5		
Females							
South East	84.0	65.2 *	64.7	65.7	77.6	2	1
East of England	83.8	64.7 *	64.1	65.3	77.2	4	2
South West	83.9	64.3 *	63.7	64.9	76.6	3	3
London	84.2	64.2 *	63.7	64.8	76.3	1	4
West Midlands	82.9	62.2 **	61.7	62.8	75.1	6	5
East Midlands	83.0	61.8 **	61.2	62.5	74.5	5	6
Yorkshire and The Humber	82.4	61.6 **	61.1	62.2	74.8	7	7
North West	81.9	61.0 **	60.5	61.4	74.5	8	8
North East	81.7	60.4 **	59.8	61.1	74.0	9	9

England	83.2	63.2	63.0	63.4	76.0
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Source: Office for National Statistics

Notes

1. Excludes residents of communal establishments except NHS housing and students in halls of residence where inclusion takes place at their parents' address.
2. Regions are presented by DFLE in descending order.
3. Figures may not sum due to rounding.
4. * Denotes that the DFLE estimate is significantly higher than the England estimate.
5. ** Denotes that the DFLE estimate is significantly lower than the England estimate.
6. The significance test refers to a one tailed Z test of the difference of the estimates to a 95% confidence level as detailed in Jagger, et al (2007).

The regional pattern observed at birth was also present at age 65 (Table 2). Men, at age 65, living in the South West could expect to spend 59.0% of their remaining lives disability-free, while for women in the South East it was 55.6%. This is in contrast to men and women in the North East who could expect to spend 51.2% and 47.9% (respectively) of their remaining lives free from disability. However, although within each region women at age 65 could expect to spend a lower proportion of their remaining lives disability-free than men, women in the southern regions spent a higher proportion of their remaining lives free from disability than men in the North East.

Table 2: Life expectancy (LE), disability-free life expectancy (DFLE) and proportion of life spent free from disability by region for men and women at 65, 2012 to 2014, England

English regions	LE (years)	DFLE (years)	Lower 95% confidence interval	Upper 95% confidence interval	Proportion of life free from disability (%)	LE rank	DFLE rank
Men							
South West	19.3	11.4 *	11.0	11.8	59.0	3	1
South East	19.3	11.3 *	10.9	11.6	58.3	2	2
East of England	19.3	11.0 *	10.6	11.4	56.9	1	3
London	19.2	10.3	9.8	10.7	53.4	4	4
West Midlands	18.5	10.0	9.6	10.4	54.1	6	5
Yorkshire and The Humber	18.2	9.7 **	9.3	10.1	53.3	7	6
East Midlands	18.6	9.7 **	9.2	10.1	52.0	5	7
North West	18.0	9.4 **	9.0	9.7	52.1	8	8
North East	17.9	9.2 **	8.7	9.6	51.2	9	9
England	18.8	10.3	10.2	10.5	55.1		
Women							
South East	21.7	12.1 *	11.7	12.5	55.6	3	1
South West	21.8	11.8 *	11.3	12.2	54.1	2	2
East of England	21.6	11.4	10.9	11.8	52.7	4	3
London	21.9	10.9	10.5	11.4	49.8	1	4
	20.6	10.4	9.9	10.9	50.5	7	5

Yorkshire and The Humber								
West Midlands	21.1	10.3**	9.9	10.7	48.9	5	6	
East Midlands	21.1	10.2**	9.7	10.7	48.4	6	7	
North West	20.3	9.7**	9.4	10.1	48.1	8	8	
North East	20.0	9.6**	9.1	10.1	47.9	9	9	
England	21.2	10.9	10.7	11.0	51.3			

Source: Office for National Statistics

Notes

1. Excludes residents of communal establishments except NHS housing and students in halls of residence where inclusion takes place at their parents' address.
2. Regions are presented by DFLE in descending order.
3. Figures may not sum due to rounding.
4. * Denotes that the DFLE estimate is significantly higher than the England estimate, judged by means of a Z test to 95% confidence level.
5. ** Denotes that the DFLE estimate is significantly lower than the England estimate, judged by means of a Z test to 95% confidence level.
6. The significance test refers to a one tailed Z test of the difference of the estimates to a 95% confidence level as detailed in Jagger, et al (2007).

5. Upper tier local authorities (UTLAs)

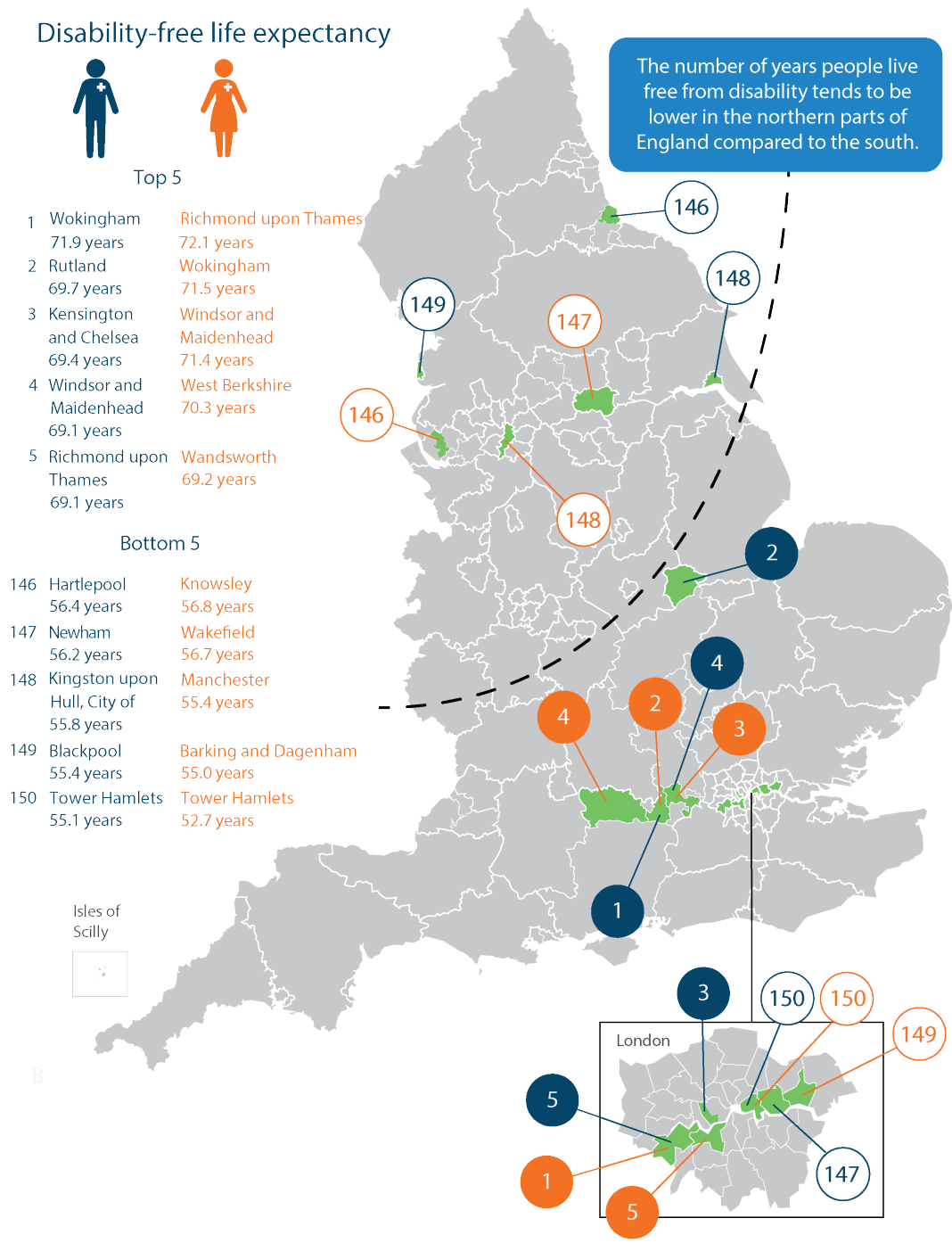
The gap in disability-free life expectancy at birth between upper tier local authorities exceeds 16 years for males and 19 years for females.

At birth

Each upper tier local authority (UTLA) was ranked from highest (1) to lowest (150) based on their disability-free life expectancy (DFLE) estimate. Figure 3 shows the top and bottom 5 UTLAs for males and females at birth (data for all 150 UTLAs can be found in the [datasets](#) for this release). The UTLA with the longest DFLE estimate for males was Wokingham (71.9 years) and the shortest DFLE was in Tower Hamlets (55.1 years). For females, the longest DFLE was in Richmond upon Thames at 72.1 years, while Tower Hamlets had the shortest DFLE at 52.7 years. Therefore, males in Wokingham and females in Richmond upon Thames could expect to live an extra 16.8 years and 19.4 years (respectively) free from disability compared with those living in Tower Hamlets.

This geographical inequality can be further illustrated by the proportion of life that males and females could expect to spend free from disability, with males and females in Wokingham expecting to live 87.8% and 84.4% (respectively) of their lives disability-free compared with males and females living in Tower Hamlets (70.6% and 63.9%, respectively).

Figure 3: Disability-free life expectancy by upper tier local authorities for males and females at birth, 2012 to 2014



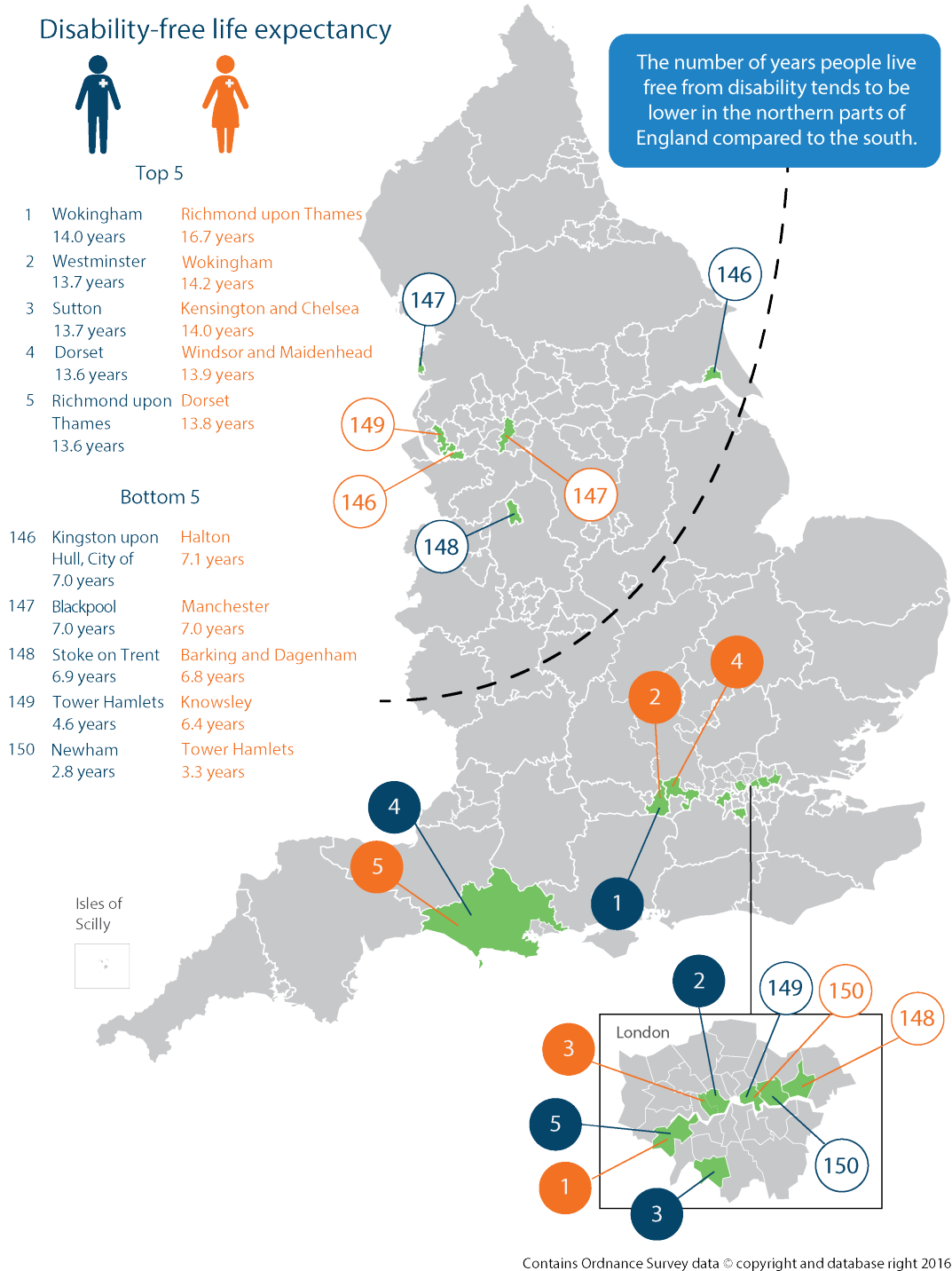
Age 65

Figure 4 shows the top and bottom 5 UTLAs for men and women at age 65. Similar to the DFLE estimates at birth, men living in Wokingham and women living in Richmond upon Thames could also expect to live the most number of years free from disability (14.0 and 16.7 years, respectively). In contrast, men in Newham and women in Tower Hamlets could expect to spend the least number of years free from disability (2.8 years and 3.3 years, respectively). This shows an inequality of 11.2 years and 13.3 years for men and women (respectively) between the UTLAs.

Men living in Wokingham could expect to spend 71.1% of their remaining lives free from disability, while men living in Newham could expect to spend 15.6% of their remaining lives disability-free, showing a difference of 55.0 percentage points. Women living in Richmond upon Thames could expect to spend 71.8% of their remaining lives

disability-free, while those living in Tower Hamlets could expect to spend 16.3% of their remaining lives free from disability, showing a difference of 55.5 percentage points. These sizeable differences point to very different prospects for the quality of life post-retirement between the residents in these local authorities.

Figure 4: Disability-free life expectancy by upper tier local authorities for men and women at age 65, 2012 to 2014



DFLE in each UTLA was also compared with England's DFLE estimate. For males at birth, 42 of the 150 UTLAs were significantly higher than the England DFLE estimate, while 58 were significantly lower than the England estimate. For females at birth, 38 UTLAs were significantly higher and 49 UTLAs were significantly lower than the England DFLE estimate. For men, at age 65, 23 UTLAs were significantly higher and 36 UTLAs were significantly lower than the England DFLE estimate, while for women at age 65, 24 UTLAs were significantly higher and 44 UTLAs were significantly lower than England's DFLE estimate. For both males and females at birth and at age 65, the majority of UTLAs with a significantly higher DFLE than the England estimate were in the South of England, while the majority of the significantly lower DFLEs were in the North of England. Data on this can be found in the [data section](#) of this release.

Notes for Upper tier local authorities (UTLAs)

1. DFLE figures are not available for City of London and Isles of Scilly because of insufficient population size.

6. Disability-free life expectancy (DFLE) comparisons over time

The disability questions on the Annual Population Survey (APS) have undergone a number of changes since 2010 and as a result data are not comparable over time. There are 2 sets of changes that have resulted in discontinuities in the time series:

1. In January 2010, the introductory paragraph of the disability section was reworded.
2. In April 2013, the disability questions were changed in order to bring them in line with the [Government Statistical Service \(GSS\) Harmonised Standards](#), which in turn are designed to be consistent with the [2010 Equality Act](#).

These changes have resulted in differences in the number of people reporting disabilities. Therefore, estimates either side of the discontinuity (before and after April 2013) should not be directly compared. As the DFLE data is aggregated over a 3 year period, the 2012 to 2014 dataset includes a combination of APS data based on the old disability questions and data on the new disability questions.

Therefore no comparisons have been made in this bulletin of DFLE over time.

7. Interactive content

Explore disability-free life expectancy (DFLE) for your area using our [animated map](#).

8. Methods

Calculating disability-free life expectancy (DFLE)

The prevalence of disability data used to calculate DFLE was obtained from the Annual Population Survey (APS). Questions on the APS are derived from the Labour Force Survey (LFS), which is a longitudinal survey where data is collected from participants over 5 waves (5 times on a quarterly basis). The APS uses unique waves from the LFS (often waves 1 and 5) to avoid the use of multiple responses from the same participants. Data from the APS is aggregated over a 3 year period to achieve sufficiently large sample sizes and enable meaningful statistical comparisons. Data is provided for males and females living in private households in England and compared across regions and upper tier local authorities (UTLAs) (including unitary authorities, London boroughs and metropolitan districts). The analysis excludes data collected from the City of London and Isles of Scilly because of their small sample sizes.

The disability questions on the APS have undergone a number of changes since 2010, making it difficult to compare DFLE over time. In January 2010, the introductory paragraph of the disability section was reworded. In April 2013, the wording of the disability questions (presented in Table 3) were changed in order to bring them in line with the [Government Statistical Service \(GSS\) Harmonised Standards](#) for questions on disability, which in turn are designed to be consistent with the [2010 Equality Act](#). Therefore, estimates either side of the discontinuity (before and after April 2013) are not directly comparable. As the DFLE data is aggregated over a 3 year period, the 2012 to 2014 dataset includes a combination of APS data based on the old disability questions and data on the new disability questions. However, the new data is deemed sufficiently accurate for public use. Further information on the questions and derived variables can be found in the [LFS user guides](#).

Table 3: Changes to the disability questions in the Annual Population Survey from April 2013

LFS QUESTIONS (before April 2013)	HARMONISED QUESTIONS (from April 2013)
LNGLIM	LNGLST (replacing LNGLIM)
Do you have any health problems or disabilities that you expect will last for more than a year?	Do you have any physical or mental health conditions or illnesses lasting or expected to last 12 months or more?
1 Yes	1 Yes
2 No	2 No
HEALIM	LIMACT (replacing HEALIM)
Do these health problems or disabilities, when taken singly or together, substantially limit your ability to carry out normal day-to-day activities?	Does your condition or illness/do any of your conditions or illnesses reduce your ability to carry out day-to-day activities?
1 Yes	1 Yes, a lot
2 No	2 Yes, a little
	3 Not at all

DFLE estimates are, in part, subjective and based on the survey questions presented in Table 3. For questions used before April 2013, respondents are classified as having a limiting persistent illness (disability) only if they answered yes to both questions (LNGLIM and HEALIM). For questions used from April 2013, respondents are classified as having a limiting persistent illness (disability) only if they answered yes to both questions (LNGLST and LIMACT: "Yes, a lot" or "Yes, a little"). In terms of the questions, problems with mobility, dexterity, sight, speech and hearing, physical co-ordination, memory and the ability to concentrate may limit day-to-day activities. The subjective nature of these questions means that responses are influenced by how respondents perceive their health.

DFLE was calculated using the Sullivan method (Jagger et al, 2007). This method involves combining disability prevalence data with mortality and mid-year population estimates (used to calculate life expectancy), over the same period and geographical coverage. DFLE estimates are calculated at birth and age 65 for both sexes. The APS provides prevalence data for individuals aged 16 and over. It is possible to estimate DFLE at birth by directly imputing disability prevalence at age 16 to 19 for those under 16 (ONS, 2013). The age band structure used for calculating DFLE is not that outlined in the update to methodology to calculate health expectancies (ONS, 2013) but the traditional age band structure of <1, 1 to 4, 5 to 9, 10 to 14, 15 to 19.....85 and over.

Figures in the datasets are presented with 95% confidence intervals to aid interpretation. Confidence intervals in this bulletin indicate the uncertainty surrounding DFLE estimates and allow more meaningful comparisons between areas. When comparing the estimates of 2 areas, non-overlapping confidence intervals are indicative of statistical significance but to confirm this, a test of significance should be carried out. When the statistical significance is noted in the text, this is based on a statistical test of the differences (Jagger et al, 2007). All differences noted in the text have been calculated to 5 decimal places. However, because of the discontinuity referred to above, no tests of statistically significant changes between time periods were undertaken and users should not infer statistically significant differences in DFLE based on non-overlapping confidence intervals.

Interpretation of DFLE

DFLE at a given age for a specific period and population, such as at birth in 2012 to 2014, at the UTLA level, is an estimate of the average number of years a person can expect to live without a limiting long-term illness (or disability). This is only if they experienced the specified population's age-specific mortality and disability rates for that time period throughout the rest of their life.

The figures reflect the mortality and health status of a population in a given time period residing in that area, rather than only those born in the area. It is therefore not the number of years that a person will actually expect to live free from disability. This is because both the death rates and health status of the specified population are

likely to change in the future, due to changing attitudes to health, availability of treatments, healthcare and people moving in and out of the area.

Results are comparable by age, sex and between specified populations as health expectancies take into account differences in the age structures of populations.

9. Uses and users

Life expectancy (LE) has increased considerably since the 1980s and is expected to increase further (ONS 2014a). As LE continues to increase, it is important that these additional years are not spent in poor or disabling health states. If this is the case, it can put greater strain on health and social care resources. Therefore health expectancy estimates are used to monitor whether the “extra” years are spent in favourable health.

Survey measures of general health and limiting persistent illness are used to identify health inequalities between administrative areas, inform unmet health and social care needs, and target and monitor the allocation of health resources amongst population groups (Marmot, 2010). International organisations and networks such as the World Health Organisation, Eurostat and the Reves Network on Health Expectancy use this information to compare morbidity across countries, and to monitor trends over time.

10. Feedback

If you have any comments or suggestions, we would like to hear them. Please email us at hle@ons.gsi.gov.uk.

11. References

Eurostat (2013) [Healthy Life Years and Life Expectancy at birth, by sex](#).

Jagger C, Cox B, Le Roy S and EHEMU (2007) Health Expectancy Calculation by the Sullivan Method: A Practical Guide Third Edition available at: http://maryland.mri.cnrs.fr/ehemu/pdf/Sullivan_guide_final_jun2007.pdf

Marmot M (2010) [‘Fair Society, Healthy Lives. The Marmot Review. Strategic review of Health Inequalities in England post-2010’](#), The Marmot Review.

ONS (2013) [Update to the Methodology used to Calculate Health Expectancies](#). Health Statistics Quarterly Spring 56:1. Office for National Statistics.

ONS (2014a) [Life Expectancy at birth and at age 65 by local areas in England and Wales, 2011–13](#). Office for National Statistics.

ONS (2014b) [Labour Force Survey – user guidance](#). Office for National Statistics.

ONS (2015) [Harmonised Concepts and Questions for Social Data Sources Primary Principles: Long-lasting Health Conditions and Illnesses; Impairments and Disability](#). Office for National Statistics.

Reves Network on Health Expectancy (2016) [International network on health expectancies and the disablement process](#).

World Health Organisation (2011) [World Report on Disability](#).

12. Background notes

1. Figures in the text may not sum due to rounding.
2. The significance test refers to a one tailed Z test of the difference of the estimates as detailed in Jagger et al, 2007.

3. Analysis has been carried out at the upper tier local authority (UTLA) level, which includes counties, London boroughs, unitary authorities and metropolitan districts based on the 2009 reorganisation. Further information about the boundaries can be found on our website. There are 152 UTLAs in England; we exclude City of London and the Isles of Scilly from the analysis due to small death and population counts. Therefore results are presented for the 150 remaining UTLAs.
4. This bulletin comments on a north-south divide. The north includes the North East, North West and Yorkshire and The Humber regions, and the south includes the South East, South West and East of England regions. London is not included in the south due to its differing characteristics, which include its transient population, access to services and limited rural population.
5. Enquiries relating to these statistics should be made to:
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Details of the policy governing the release of new data are available by visiting www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html or from our Media Relations Office email: media.relations@ons.gsi.gov.uk

6. We welcome feedback on the content, format and relevance of this release. Please send feedback to the postal or email address above.
7. [National Statistics](#) are produced to high professional standards set out in the [Code of Practice for Official Statistics](#). They undergo regular quality assurance reviews to ensure that they meet customer needs. They are produced free from any political interference.
8. The [UK Statistics Authority](#) has designated these statistics as National Statistics, in accordance with the [Statistics and Registration Service Act 2007](#) and signifying compliance with the Code of Practice for Official Statistics.

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1. meet identified user needs
2. are well explained and readily accessible
3. are produced according to sound methods
4. are managed impartially and objectively in the public interest

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