

Article

Disability in England and Wales: 2011 and comparison with 2001

We take a look at the health of the population of England and Wales in respect to activity limiting health problems or disabilities. We found that more than 10 million people reported to have activity limiting health problems in 2011, however, results show that this has fallen slightly since 2001.



Contact:
Emma White
census.customerservices@ons.
gsi.gov.uk

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1. Key points

- More than 10 million people were limited in daily activities in England and Wales in 2011
- The percentage of people with activity limitations has fallen slightly since 2001; by 0.3 of a percentage point in England and 0.6 of a percentage point in Wales; however, prevalence remains 5 percentage points higher in Wales, a similar difference to that in 2001
- People whose activities are limited 'a lot' because of a health problem or disability was more than 3 percentage points higher in Wales (11.9 per cent) than in England (8.3 per cent) in 2011
- Across English regions there was a general north-south divide with percentages of people limited a lot or a little in daily activities lower in the south and higher in the north
- The North East region (21.6 per cent) had the highest percentage of activity limitations and London (14.2 per cent) the lowest
- The London borough of Wandsworth (11.2 per cent) had the lowest percentage of activity limitations and Neath and Port Talbot in Wales (28.0 per cent) the highest
- The ten English local authorities with the lowest percentage of activity limiting health problems or disabilities were located exclusively in London and the South East
- London and other large urban conurbations in England such as Manchester experienced the greatest reductions in activity limitations since 2001, while rural local authorities, such as East Lindsey in Lincolnshire, experience the greatest rise in prevalence.
- The percentage of activity limitations in Liverpool, the most deprived¹ English local authority, was 10.4 percentage points higher than Hart in Hampshire, the least deprived local authority
- The level of inequality by area disadvantage groupings has fallen since 2001 by 3.2 percentage points in Wales and by 3.3 points in England

Notes for key points

1. The measures of area deprivation used in this release are the Index of Multiple Deprivation (IMD) [2004](#) and [2010](#) in England and the Welsh Index of Multiple Deprivation (WIMD) [2005](#) and [2011](#) in Wales. Measures of deprivation are likely to be updated in future based on 2011 Census data and therefore these comparisons by level of deprivation must be treated as provisional.

2. Animated YouTube video

A podcast explaining this analysis using audio commentary and graphical animations is available on the [ONS YouTube channel](#).

3. Introduction

This analysis describes the health of the population of England and Wales in respect to activity limiting health problems or disabilities¹; a [complementary analysis](#) released today by ONS describes health using the general health question.

Most people suffer periods of ill health at some time, but these are usually temporary problems that do not have a sustained effect on day to day activities, such as going to work or socialising with friends and family. However, some health problems and disabilities are long-lasting and reduce a person's ability to carry out the activities people usually do day-to-day and which most of us take for granted.

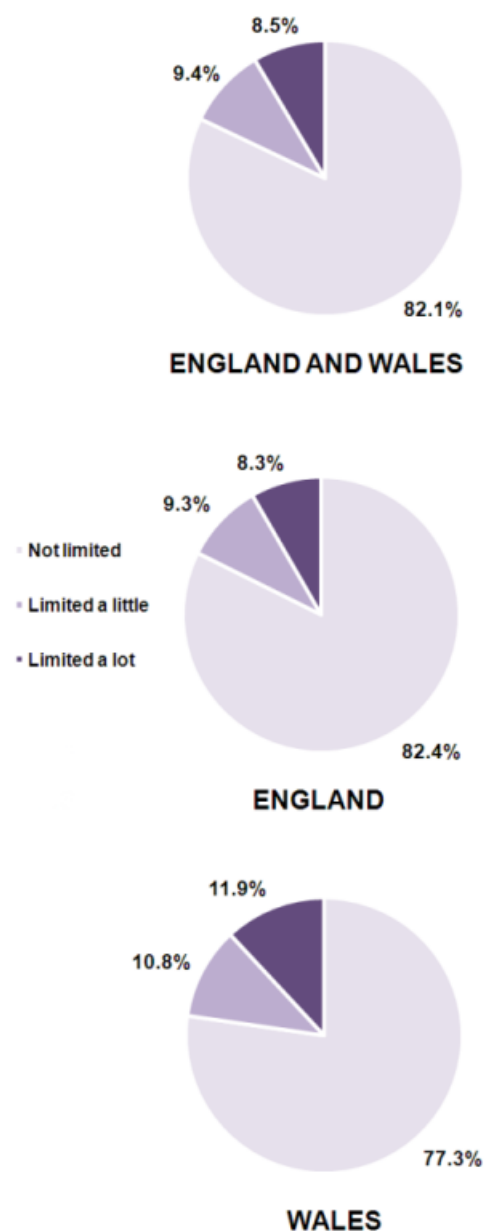
Notes for introduction

1. In the 2001 Census each person in a household was asked whether they have [a long-term illness, health problem or disability which limits activities in any way and to include problems which were due to old age \(129.7 Kb Pdf\)](#). The response categories were simply 'yes' or 'no'. [The question in 2011 \(2.02 Mb Pdf\)](#) had different wording, excluded the reference to work limiting problems, changed the categories to plain English terms to allow individuals to state the extent of their limitations, and included a 12 month time frame for the persons' activities to have been limited.

4. National comparisons

Figure 1: Activity limiting health problem or disability

England and Wales, England, Wales, 2011, usual residents



Source: Census - Office for National Statistics

Notes:

1. Rounded values.

In England and Wales, approximately 10 million people were limited in daily activities because of a health problem or disability. This figure is similar to [the number of disabled people in England and Wales reported by the Department for Work and Pensions](#) using information available from the Family Resources Survey (10.1 million) for the period 2010/11, which suggests the question used in the 2011 Census will be a good representation of the prevalence of disability.

In England and Wales, 8.5 per cent of the population reported their daily activities were 'limited a lot' ¹, and 9.4 per cent were 'limited a little'; so more than four-fifths of the population were free from activity limitations.

In Wales, activity limitations were notably higher: almost 12 per cent reported they were 'limited a lot' and almost 11 per cent were 'limited a little'. However, Wales has proportionately more people aged 55 and above than England, and activity limitations are more common among those above retirement age. By selecting the [population pyramids for England and Wales](#) separately and overlaying them, the differences between 'England' and 'Wales' at specific ages can be visualised.

Since 2001, the percentage of the population who are limited in daily activities has fallen slightly ²; by 0.3 of a percentage point in England and by 0.6 of a point in Wales.

Notes for national comparisons

1. 'Yes, limited a lot' signifies someone usually needing regular, continuing support from family members, friends or personal social services for a number of normal daily activities.
2. As the question asked in the 2011 Census on limiting long-term illness and disability differed to that asked in 2001, it is not possible to directly compare activity limitations in 2011 with that in 2001, but the questions are sufficiently similar to draw indicative insights on change over time.

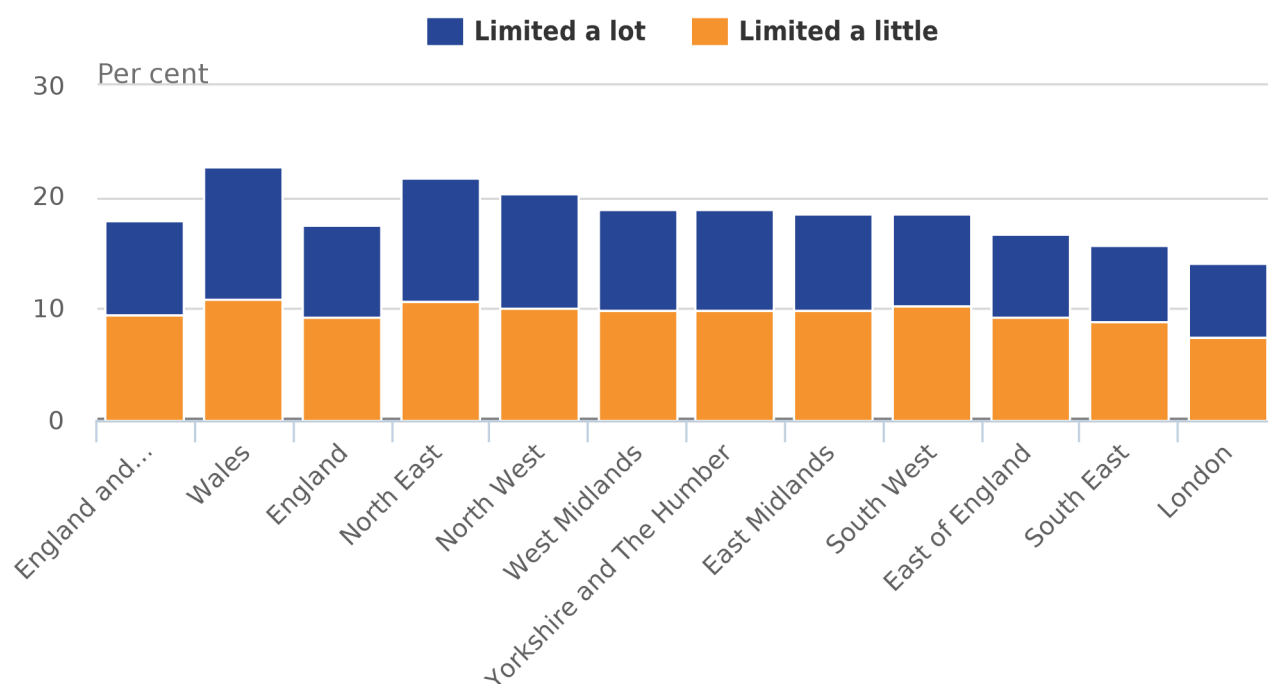
5. Activity limitations across English regions and Wales

Among the English regions (Figure 2), London had the lowest percentage of people whose activities were limited either 'a lot' or 'a little' and the North East, the highest; a 7.5 percentage point difference exists between these regions. A smaller difference of 4.2 percentage points is present between London and the North East in the proportion of their populations who are 'limited a lot'.

In Wales the prevalence of activity limitations is higher than any English region, with almost 12 per cent of its population 'limited a lot' and a further 11 per cent limited a little.

Figure 2: Activity limiting health problem or disability by extent of limitation (per cent)

England, Wales, England regions, 2011, usual residents



Source: Census - Office for National Statistics

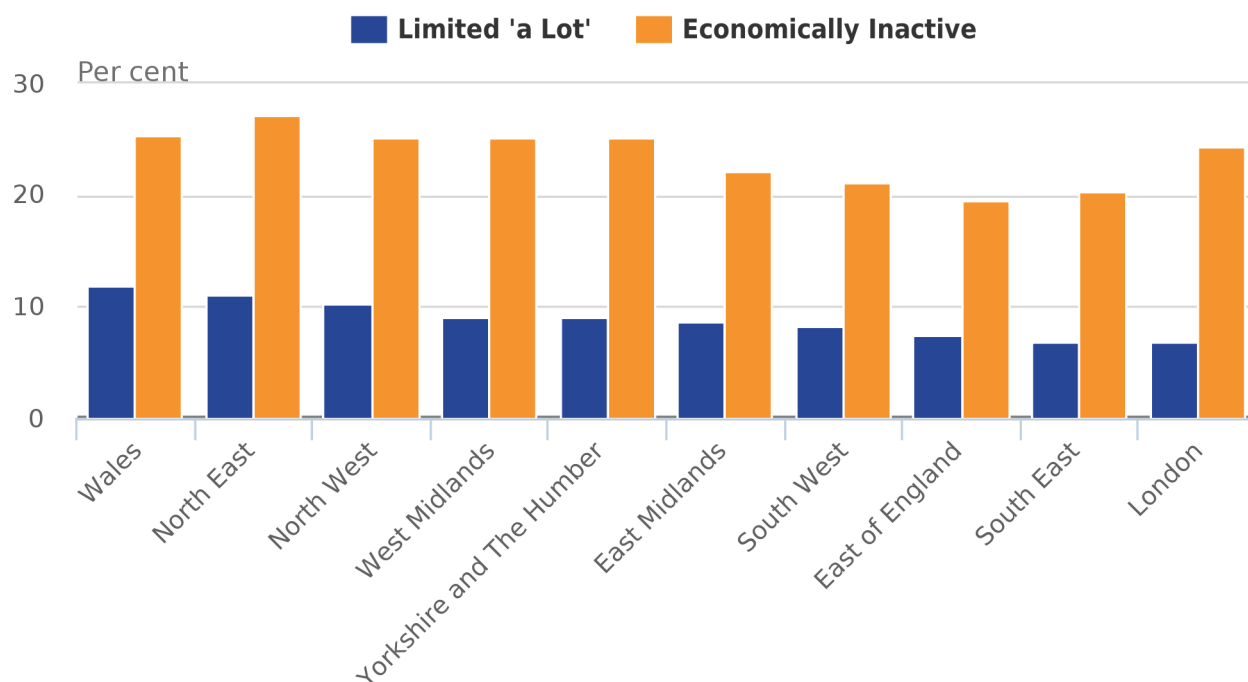
However, [the younger age structure](#)¹ of London's population is likely to partly contribute to this region's more favourable position. Other likely contributing factors are a healthy worker effect resulting from the job-creating regeneration occurring in London during the first decade of the 21st Century such as: construction of the Olympic Village; the improvements to the transport system; and investment in brown field sites such as Greenwich and the Isle of Dogs. The attraction of migrants from other parts of the UK and from abroad to take up these employment opportunities is also likely to affect the socio-demographic structure towards a more trained and skilful workforce and a younger age-structure.

A clear north-south divide is noticeable, with northern regions having higher percentages of their populations with activity limitations than southern regions; the prevalence in the North East is more aligned with that in Wales, than with other English regions. The decline of heavy manufacturing industries experienced in Wales and in the North East, the lingering effects on health of working in such industries, and the relative lack of alternative employment opportunities are possible reasons for this similarity.

At ages 16-64, where the expectation is for a high percentage of the population to be economically active (either in work, on an employment scheme or seeking work), for most of those whose day-to-day activities are limited 'a lot' because of a health problem or disability, they are less likely to be able to work and therefore are economically inactive. However, there are large differences between regions in the amount of economic inactivity and the percentage of people who are limited 'a lot' in day-to-day activities (Figure 3). The North East has the highest rate of economic inactivity at 27.1 per cent; but London has the greatest variation in the reasons for economic inactivity, and only 28 per cent of the population which are economically inactive between these ages have a health problem or disability which limits day-to-day activities 'a lot', whereas in Wales it is 47.0 per cent. Further analysis of 2011 Census data will clarify these regional differences.

Figure 3: 'A lot' of activity limitation and economic inactivity (per cent)

England regions, Wales, 2011, usual residents and usual residents aged 16 to 64



Source: Census - Office for National Statistics

Notes:

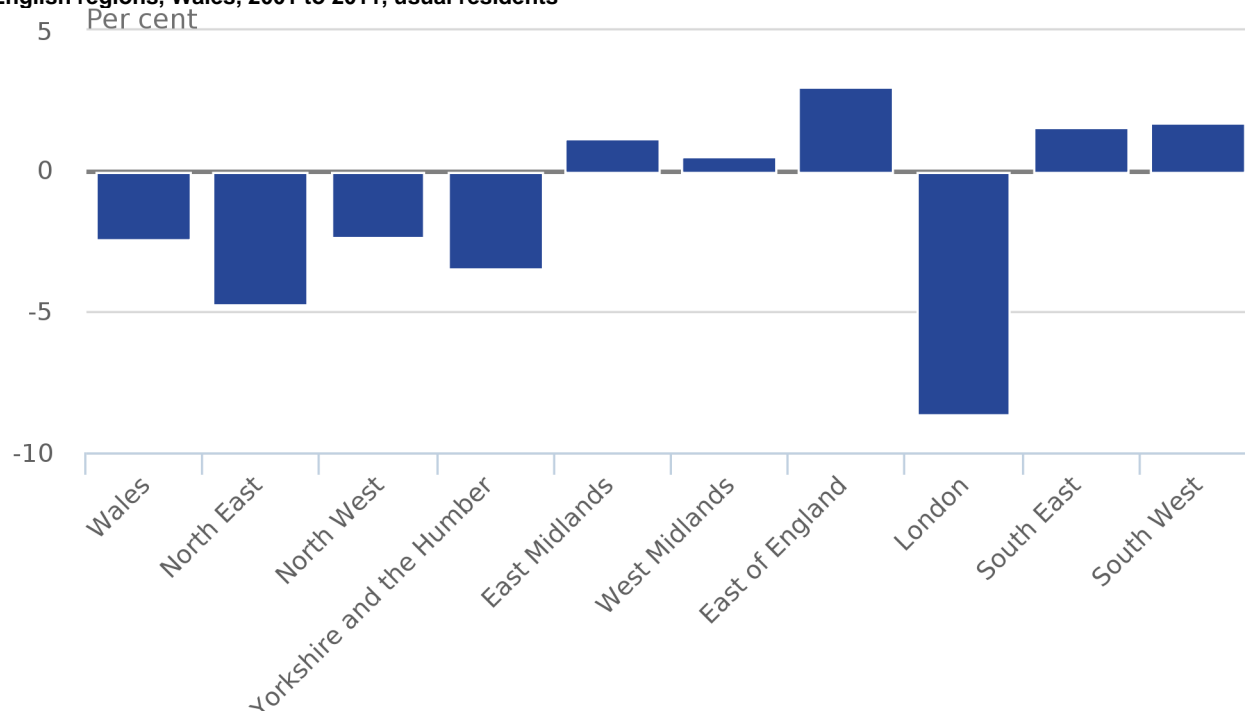
1. Rounded values.
2. Economic activity data taken from Labour Market Statistics.

Since 2001, the prevalence of activity limitations slightly decreased in England from 17.9 per cent to 17.6 per cent, and also decreased in Wales from 23.3 per cent to 22.7 per cent. Across the English regions (Figure 4), London showed the greatest fall, reducing from 15.5 per cent to 14.2 per cent, a 1.3 per cent absolute reduction and an 8.6 per cent reduction relative to 2001; while other falls occurred in the northern regions. However the East and West Midlands, South East, South West and East of England all experienced increases, so that those with the highest prevalence in 2001 improved somewhat while those with the lowest prevalence, excluding London, experienced increases in 2011.

Despite the falls in prevalence occurring in the populations of the northern regions and in Wales and the rises occurring in the midlands and the south, the northern regions and Wales continued to have higher rates of activity limitation than the south in 2011. In fact the difference between regions was slightly lower in 2001 at 7.3 per cent between the North East and the South East. It is the extent of reduction in London which was largely responsible for the marginal growth in the inequality in activity limitations at regional level; if London is excluded, regional differences narrowed between 2001 and 2011.

Figure 4: Percentage change in usual residents with an activity limiting health problem or disability between 2001 and 2011

English regions, Wales, 2001 to 2011, usual residents



Source: Census - Office for National Statistics

Notes:

1. Rounded values.
2. Negative values indicate falls in prevalence.
3. Percentage change in activity limitation between 2001 and 2011 is calculated by subtracting per cent activity limitation in 2011 from per cent activity limitation in 2001 and dividing the resulting figure by per cent per cent activity limitation in 2001 and multiplying by 100.
4. Downward facing bars show falling occurrence of activity limitations; upward facing bars indicate a rise.

Notes for activity limitations across English regions and Wales

1. Click into the link and select London in the left pyramid and another region or Wales in the right pyramid to compare age structure.

6. English local authority comparisons

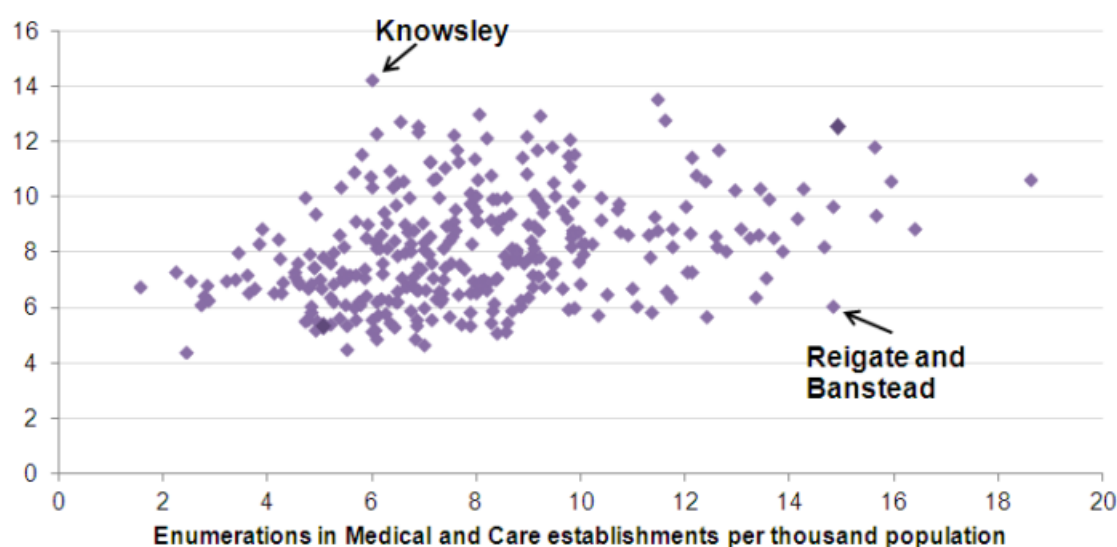
In 2011 the gap between authorities in the percentage of their populations who were limited 'a lot' carrying out day-to-day activities was 9.8 per cent, ranging from 4.4 per cent in the London borough of the City of London to 14.2 per cent in Knowsley in the North West region, more than three times higher. People who are limited 'a lot' require more intensive social care support and place additional demands on care services and family and friends. The extent of this difference suggests the populations of these two local authorities are very different in their social care support needs.

People whose daily activities are limited 'a lot' are also more likely to be in need of residential support, such as that provided by care homes. The 2011 Census also collected information on residents in medical and care establishments¹ and it is possible to compute a rate per thousand population for each local authority in England and compare this with the authority's prevalence of activity limitations, with the expectation that medical and care enumerations would be higher in those authorities with higher prevalence of people who are limited 'a lot' in their daily activities.

Figure 5 plots a local authority's medical and care establishment enumerations per thousand population with its prevalence of people who are limited 'a lot' in daily activities.

Figure 5: Per cent of usual residents with 'a lot' of activity limitation by usual residents in medical and care establishments

England local authorities, 2011, usual residents



Source: Census - Office for National Statistics

Notes:

1. Rounded values.
2. Medical and care establishments include local authority, private and voluntary sector residential and nursing care homes, NHS-run establishments, children's homes and medical establishments run by registered social landlords.

The graph highlights a dissimilarity between the need for care, measured by the prevalence of people who are limited 'a lot' and the medical and care enumeration rate. For example, Knowsley in Merseyside has a prevalence of 14.2 per cent and a care establishment rate of 6.0 per thousand; while Reigate and Banstead in Surrey has a prevalence of only 6.1 per cent and a care establishment rate of 14.8 per thousand.

The 10 authorities with the lowest and highest percentage of people who are either limited 'a lot' or 'a little' in daily activities are shown in Table 1.

Table 1: Local authorities with the highest and lowest percentages of activity limitationEngland local authorities, 2001,
2010, 2011, Usual residents

Per Cent

Local Authority	With activity limitations 2011 ¹	Rank 2011	Rank 2001	IMD 2010 Summary Score Rank ²	Medical and Care Establishment rate ³
Lowest ⁴					
Wandsworth	11.2	1	28	121	6.0
Richmond upon Thames	11.5	2	5	285	6.1
City of London	11.5	3	27	262	2.4
Wokingham	11.9	4	1	325	7.0
Hart	12.0	5	2	326	5.5
Elmbridge	12.1	6	7	320	8.4
Bracknell Forest	12.3	7	4	296	4.9
Kensington and Chelsea	12.3	8	36	103	4.8
Oxford	12.4	9	42	122	5.1
Kingston upon Thames	12.4	10	15	255	6.8
Highest ⁴					
East Lindsey	26.0	326	313	73	11.6
Blackpool	25.6	325	325	6	11.5
Tendring	25.5	324	316	86	14.9
Bolsover	24.7	323	326	58	8.0
Barrow-in-Furness	24.6	322	323	32	9.2
Knowsley	24.5	321	322	5	6.0
Torbay	24.0	320	308	61	15.6
Barnsley	23.9	319	324	47	6.9
West Somerset	23.8	318	298	90	12.4
Wyre	23.8	317	304	163	9.1

Sources: 2001 Census, 2011 Census, Office for National Statistics Notes: 1. The question asked in the 2011 Census on activity limitation differed to that asked in 2001; therefore it is not possible to directly compare 2011 percentages with those from 2001, but the questions are sufficiently similar to draw indicative insights on change over time. 2. IMD score rank, 1 = most deprived, 326 = least deprived 3. per 1000 resident population 4. Place names hyperlink to interactive maps

Interactive [data visualisations](#) are available to aid interpretation of these results.

[IMD Summary score rank is based on the average of LSOA ranks](#)

An interesting feature of this table is its composition; the ten authorities with the lowest prevalence are exclusively concentrated in London and the South East region. While London boroughs and Oxford have relatively younger populations, which contribute to their lower prevalence, those other authorities in the south east, which are among the least deprived in the country as shown by their Index of Multiple Deprivation (IMD) summary score rank, have age structures more closely aligned to the general population in England. To visualise the comparative age structures of each authority use this [link to the animated population pyramids](#) and select the authorities you are interested in comparing, and then overlay them to see how they compare on age structure.

The following link will take you to an inactive map for England and Wales which enables further information to be accessed for each [local authority](#) in England, such as the percentage of 'Good' and 'Not good' general health and the percentage with and without activity limitations in both 2001 and 2011, in addition to the inequality between local authorities on these statistics within their respective regions and the authority's Index of Multiple Deprivation 2004 and 2010 average summary score rank which shows their relative level of deprivation compared with other authorities.

The 10 authorities with the highest prevalence paint a different location picture. Four authorities are located in the North West, two in the South West, one in the East of England, two in the East Midlands and one in Yorkshire and the Humber; despite the North East region having the highest prevalence, no authorities located in the North East appear in the 10 authorities with the highest prevalence. East Lindsey, Blackpool and Tendring have more than twice the prevalence of the 10 authorities with the lowest prevalence; a 14.8 percentage point gap exists between Wandsworth and East Lindsey.

Of the 10 authorities with the highest prevalence, nine are placed among the third most deprived authorities in England, indicating the links between the relative deprivation of an area and the functional health status of its population.

Comparisons with 2001

Of interest is how authorities compare on prevalence of activity limitations over time. In 2001 a similar question was asked and comparing prevalence between these time points enables health change over time to be considered. Table 2 shows the 10 authorities with the greatest falls and rises in prevalence of activity limitations since 2001.

Table 2: Local authorities with the highest and lowest percentage difference in activity limitation between 2001 and 2011

England local authorities, 2001, 2011, Usual residents Per Cent

Local Authority	With activity limitations 2011 ¹	Rank in 2011 ²	Rank in 2001 ²	Percentage difference (2011-2001)
Largest falls in prevalence ³				
Manchester	17.8	173	280	-3.8
Tower Hamlets	13.5	28	160	-3.7
Hackney	14.5	63	193	-3.6
Barking and Dagenham	16.4	125	242	-3.5
Newham	13.9	37	164	-3.5
Newcastle upon Tyne	18.8	211	282	-2.8
Greenwich	15.1	86	165	-2.3
Islington	15.7	105	181	-2.2
Liverpool	22.4	298	321	-2.2
Wandsworth	11.2	1	28	-2.2
Largest rises in prevalence ³				
East Lindsey	26.0	326	313	2.2
Wyre Forest	19.9	245	182	2.0
Daventry	15.6	99	37	1.9
Castle Point	19.0	216	157	1.9
Maldon	17.4	158	101	1.9
North Norfolk	23.3	310	279	1.8
South Staffordshire	18.7	207	151	1.7
Fenland	21.0	275	235	1.6
Waveney	22.3	295	269	1.6
Oadby and Wigston	17.3	152	113	1.6

Sources: 2001 Census, 2011 Census, Office for National Statistics Notes: 1. The question asked in the 2011 Census on activity limitation differed to that asked in 2001; therefore it is not possible to directly compare 2011 percentages with those from 2001, but the questions are sufficiently similar to draw indicative insights on change over time. 2. LA rank refers to rank of prevalence of activity limitations in 2001 and 2011 3. Place names hyperlink to interactive maps

Interactive [data visualisations](#) are available to aid interpretation of these results.

The greatest improvement is occurring in urban authorities, mostly in inner London, but also in Manchester, Liverpool and Newcastle-upon-Tyne. Some of these London boroughs and the metropolitan districts are among the most deprived in England, showing that favourable change has occurred over the decade in deprived areas.

For example, Manchester's rank improved by more than 100 places since 2001, and Tower Hamlets by more than 130, resulting in Tower Hamlets being placed in the top 30 authorities with lowest prevalence of activity limitations in 2011. The intensive regeneration of these areas during the decade, such as the Olympic development in Newham, the influx of the financial sector into the Isle of Dogs, and the investment in brown field sites to build new communities in Manchester are likely contributing factors changing the socio-demographic structure of these areas. Also migrant workers from within the UK and abroad will be drawn to areas with greater employment prospects which is likely to alter the socio-demographic complexion of these former deprived inner city areas.

The 10 authorities experiencing the greatest increase in prevalence of activity limitations were predominantly rural. East Lindsey, Daventry, Maldon, North Norfolk and Fenland are all categorised as 'Rural 80' in [DEFRA's Classification of Local Authority districts and Unitary Authorities in England](#), indicating 80 per cent of their populations are resident in rural settlements and larger market towns; while Wyre Forest, South Staffordshire and Waveney are classified as 'Significant Rural', districts with more than 26 per cent of their population in rural settlements and larger market towns².

Despite the improvements arising in some of the more deprived authorities, the scale of inequality in activity limitations between local authorities in England remained unchanged. In both 2001 and 2011 a gap of 14.8 per cent persisted.

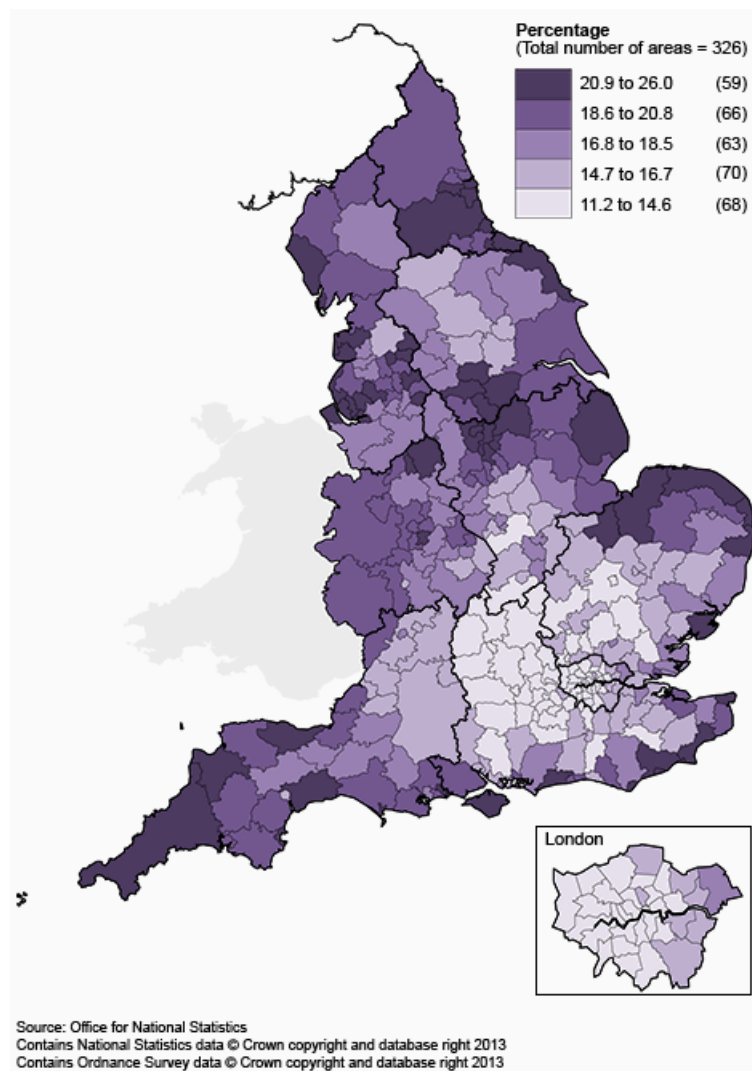
When examining the inequality between authorities by level of relative area deprivation, Liverpool is classified as the most deprived authority using the summary score of the Index of Multiple Deprivation Index in 2010 and Hart the least deprived. The difference in prevalence of activity limitations between these two authorities is 10.4 percentage points. Despite the greater improvement occurring in Liverpool (-2.2 percentage points) between 2001 and 2011 and the slight increase in prevalence occurring in Hart (0.9 percentage points), a sizeable inequality remains.

A comparison of daily activity limitations across all authorities in England in both 2011 and 2001 is shown in Map 1 and Map 2 respectively. The darker colours signify higher percentages and the lighter colours lower percentages.

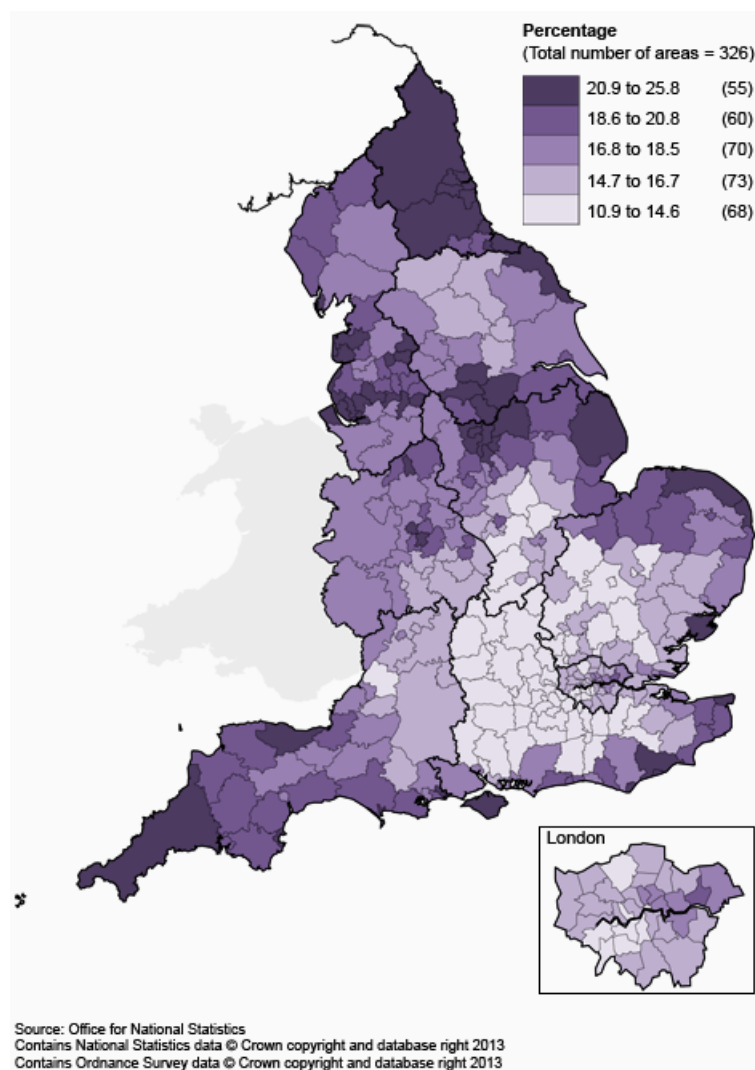
The maps demonstrate the concentration of low levels of activity limitation in central and southern England and emphasise the north-south divide at each time point. The relatively lighter shading of London boroughs in 2011 shows the relative reduction in daily activity limitations taking place in London between 2011 and 2001, while some coastal authorities, such as in Lincolnshire, Kent, East Sussex, Cornwall, Devon, Lancashire, Yorkshire, Cumbria and Norfolk continue to have higher percentages.

Map 1: Population reporting daily activity limitations

England local authorities, 2011, usual residents



Map 2: Population reporting daily activity limitations



Notes for English local authority comparisons

1. Medical and care establishments include local authority, private and voluntary sector residential and nursing care homes, NHS-run establishments, children's homes and medical establishments run by registered social landlords.
2. ONS is working on a new Urban Rural Classification and a comparison between urban and rural areas undertaken using this new classification is planned.

7. Welsh unitary authority comparisons

There are 22 unitary authorities in Wales ranging in population size and density. Cardiff has the largest population and Merthyr Tydfil the smallest. In 2011 the gap between unitary authorities in the percentage of their populations who were limited 'a lot' in carrying out day-to-day activities was 6.9 per cent, ranging from 9.2 per cent in Cardiff to 16.1 per cent in Neath Port Talbot. The gap is smaller than that which exists between English local authorities.

As with England, there was no pattern in prevalence of people with a lot of activity limitations and level of medical and care communal establishment enumerations. For example, Neath Port Talbot had a prevalence of people with a lot of activity limitations of 16.1 per cent, but its medical and care establishment rate per thousand population was 7.8; while Conwy's prevalence was only 12.1 per cent, and its medical and care establishment rate was 15.7 per thousand.

Table 3 shows the five unitary authorities with the lowest and highest prevalence of all activity limitations, including the Welsh Index of Multiple Deprivation 2011 synthetic rank and the rate per 1000 population of residents enumerated in medical and care establishments.

Table 3: Unitary authorities with the highest and lowest percentages of activity limitation

Wales unitary authorities, 2001, 2011, Usual residents					Per Cent
Unitary Authority	With activity limitations 2011 ¹	Rank 2011	Rank 2001	WIMD 2011 synthetic rank ²	Medical and Care Establishment rate ³
Lowest ⁴					
Cardiff	18.0	1	1	6	6.1
Flintshire	19.5	2	3	15	5.0
Monmouthshire	20.1	3	2	22	7.8
The Vale of Glamorgan	20.3	4	4	12	7.7
Gwynedd	20.5	5	6	17	7.4
Highest ⁴					
Neath Port Talbot	28.0	22	21	3	7.8
Blaenau Gwent	27.2	21	20	2	7.6
Merthyr Tydfil	26.9	20	22	1	7.6
Rhondda Cynon Taf	25.8	19	19	4	7.4
Carmarthenshire	25.4	18	17	14	10.0

Sources: 2001 Census, 2011 Census, Office for National Statistics Notes: 1. The question asked in the 2011 Census on activity limitation differed to that asked in 2001; therefore it is not possible to directly compare 2011 percentages with those from 2001, but the questions are sufficiently similar to draw indicative insights on change over time. 2. WIMD 2011 score rank, 1 = most deprived, 22 = least deprived 3. Per 1000 resident population 4. Place names hyperlink to interactive maps

Interactive [data visualisations](#) are available to aid interpretation of these results.

The following link will take you to an inactive map for England and Wales which enables further information to be accessed for each [unitary authority](#) in Wales, such as the percentage of 'Good' and 'Not good' general health and the percentage with and without activity limitations in both 2001 and 2011, in addition to the inequality between local authorities on these statistics within their respective regions and the authority's Welsh Index of Multiple Deprivation 2005 and 2011 rank which shows their relative level of deprivation compared with other authorities.

In 2011, Cardiff had the lowest prevalence of activity limitations in Wales at 18.0 per cent; however, this prevalence is 6.8 percentage points higher than the authority in England with the lowest prevalence, and Cardiff's prevalence is higher than more than half of the authorities in England.

The gap between Cardiff and Neath Port Talbot is 10 percentage points, which is smaller than the 14.8 percentage point gap between authorities in England. The younger age structure in Cardiff is likely to contribute to this authority's lower prevalence, which compensates for its relative level of deprivation being higher than the other four authorities with the lowest prevalence. A comparison of Cardiff's age structure to that in Neath Port Talbot can be visualised using this [link to the animated population pyramids](#) and selecting Cardiff in the left pyramid and Neath Port Talbot in the right pyramid and overlaying the pyramids.

Otherwise the pattern of prevalence with area deprivation is strong, with four of the five most deprived authorities in Wales having the highest prevalence.

Table 4 shows the authorities with the greatest falls and rises in prevalence of activity limitations since 2001.

Table 4: Unitary authorities with the highest and lowest percentage difference in activity limitation between 2001 and 2011

Wales unitary authorities, 2001, 2011, Usual residents				Per Cent
Unitary Authority	With activity limitations 2011 ¹	Rank in 2011	Rank in 2001	Percentage difference (2011-2001)
Largest falls in prevalence ²				
Merthyr Tydfil	26.9	20	22	-3.2
Swansea	23.3	12	14	-1.4
Neath Port Talbot	28.0	22	21	-1.4
Rhondda Cynon Taf	25.8	19	19	-1.4
Blaenau Gwent	27.2	21	20	-1.0
Largest rises in prevalence ²				
Monmouthshire	20.1	3	2	1.1
Powys	21.4	9	5	1.0
Conwy	24.2	15	13	0.7
Isle of Anglesey	23.1	11	11	0.7
The Vale of Glamorgan	20.3	4	4	0.4

Sources: 2001 Census, 2011 Census, Office for National Statistics Notes: 1. The question asked in the 2011 Census on activity limitation differed to that asked in 2001; therefore it is not possible to directly compare 2011 percentages with those from 2001, but the questions are sufficiently similar to draw indicative insights on change over time. 2. Place names hyperlink to interactive maps

Interactive [data visualisations](#) are available to aid interpretation of these results.

The four most deprived authorities in Wales were among the five authorities improving the most. In the former mining area of Merthyr Tydfil, prevalence of activity limitations reduced by 3.2 per cent; however, its prevalence in 2011 remained 4.1 percentage points above the Wales average.

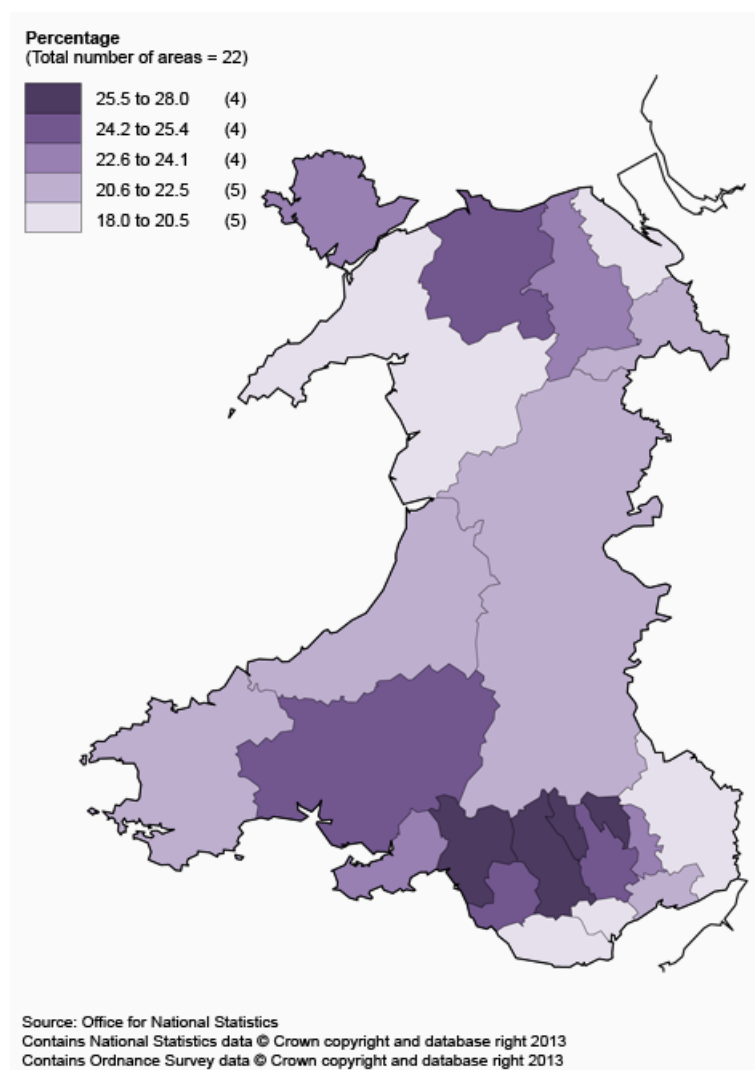
Among the less deprived authorities in Wales, a different picture emerges with prevalence increasing since 2001. In Monmouthshire and Powys the prevalence increased by a percentage point. This change of fortune by level of deprivation caused the gap between Welsh authorities to narrow between 2001 and 2011 by 1.2 percentage points; in 2001 the gap between Cardiff and Merthyr Tydfil was 11.2 per cent.

A comparison of daily activity limitations across all unitary authorities in Wales in both 2011 and 2001 is shown in Map 3 and Map 4 respectively. The darker colours signify higher percentages and the lighter colours lower percentages.

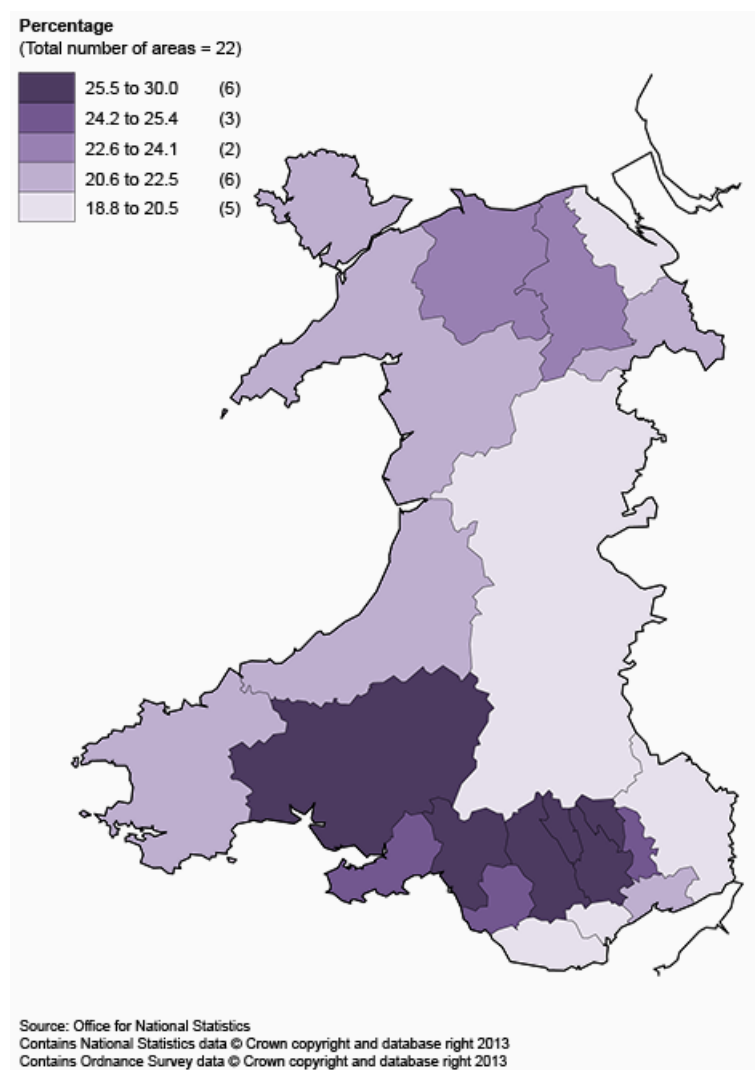
The maps demonstrate the concentration of high percentages of daily activity limitations in the former coal mining and heavy industrial centres of the Welsh valleys in 2011, although some improvement has occurred since 2001 in these authorities. Cardiff and Monmouthshire had the lowest percentages in both 2011 and 2001.

Map 3: Population reporting daily activity limitations

Wales unitary authorities, 2011, usual residents



Map 4: Population reporting daily activity limitations



8. Activity limitations for small area groupings

The inequality that exists between populations is often explained in terms of area disadvantage. Measures of health status such as [life expectancy](#) and [health expectancy](#) are shown to be more favourable in some geographical locations than others and to be strongly patterned with material factors such as income, environment, housing quality, unemployment, access to services and education. These factors can be brought together into an index (such as the [English Indices of Deprivation](#)) which can be applied to small areas such as [lower super output areas](#) (LSOAs) to give a measure of relative material disadvantage experienced by a specific area compared with other areas.

In order to present a picture of activity limitation and the scale of inequality that exists between populations, these small areas are amalgamated, on the basis of their relative level of disadvantage. The Index of Multiple Deprivation [2004](#) and [2010](#) in England, and the Welsh Index of Multiple Deprivation [2005](#) and [2011](#) in Wales, are used to group areas into tenths (deciles). Rates of 'activity limitation' are then calculated for these deciles.

The level of inequality between the least and most deprived group of areas can then be estimated using the [Slope Index of Inequality](#). This statistic represents the inequality between the most and least deprived deciles of areas on the basis of the gradient of the best fitting line. The line indicates the level of reduction in activity limitation needed by decile 1 to get to decile 10's position to narrow the inequality.

9. Inequality in England

In England there were 32,844 LSOAs with enumerated populations in 2011; use of the [ONS Census Geography lookup file](#) enables the total number of census LSOAs to be assigned an Indices of Deprivation 2010 score. LSOAs were then ranked according to their level of deprivation and grouped into tenths (deciles), with each decile consisting of approximately 3,284 LSOAs. This method of determining the extent of inequality between populations that is related to their relative level of disadvantage better reflects the size of the inequality between the least and most deprived areas than the summary scores of local authorities used above. The use of LSOA groupings provides a more valid measure of the extent of inequality in percentages of activity limitation between advantaged and disadvantaged populations.

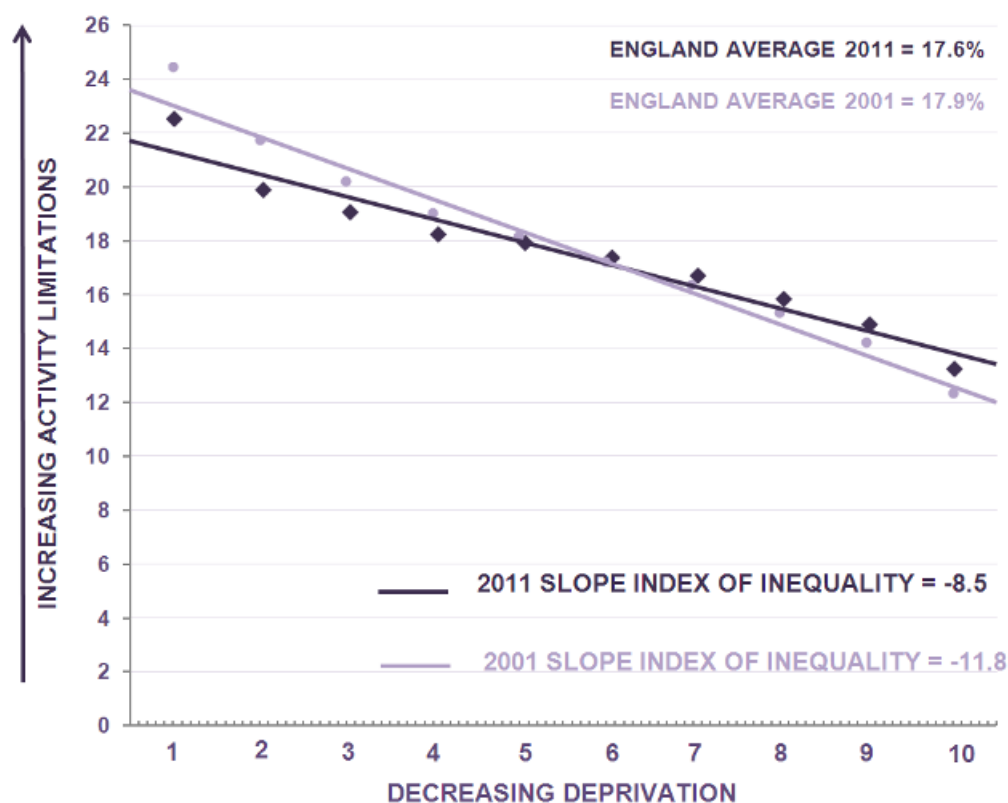
Figure 6 shows the prevalence of activity limitations for each IMD decile in both 2001 and 2011; by using these LSOA groupings, a more accurate measure of the inequality between advantaged and disadvantaged areas can be constructed using the Slope Index of Inequality (SII) ¹. In 2011 the prevalence of activity limitations was 9.3 per cent lower in the least deprived decile compared with the most deprived. However, the absolute level of inequality using the SII, which takes account of all intervening deciles, is estimated at -8.5 per cent. The SII is negative because a lower prevalence of activity limitation indicates more favourable health of a given population.

An interesting question to ask is whether the inequality in prevalence of activity limitation between advantaged and disadvantaged populations has increased, decreased or stayed the same since 2001. Analyses of 2001 LSOA groupings suggest the level of inequality has fallen ²; activity limitation prevalence was 12.1 per cent higher in the most deprived decile compared with the least deprived in 2001, and the SII was also larger at -11.8 per cent.

Figure 6 shows that the line representing the slope is shallower in 2011 compared with 2001, and this is because the prevalence increased in 2011 in the less deprived areas and decreased in the more deprived area as shown by the position of the data points.

Figure 6: Activity limitation by level of area disadvantage (showing the Slope Index of Inequality)

England, 2011, deprivation deciles



Source: Census - Office for National Statistics

Notes:

1. Rounded values.
2. In descending order of deprivation, i.e decile 1 represents the most deprived ten per cent of Lower Super Output Areas (LSOAs) in England and decile 10 represents the least deprived ten per cent of LSOAs in England.
3. Deciles for 2001 are grouped LSOAs by rank index of multiple deprivation (IMD) 2004 score.
4. Deciles for 2011 are grouped 2011 Census LSOAs by rank index of multiple deprivation (IMD) 2010 score.
5. Slope Index of Inequality is calculated using weighted regression, which takes account of the different population sizes of the area deciles derives a predicted slope which represents the extent of inequality across the whole population.
6. Census Question 2001: Q13 'Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do? - Include problems which are due to old age.' (Yes/No).
7. Census Question 2011: Q23 'Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months? - Include problems related to old age ' (Yes, limited a lot/ Yes, limited a little/ No).
8. Deprivation information from the Index of Multiple Deprivation, 2004 and 2010

The question asked in the 2011 Census on activity limitation differed to that asked in 2001; therefore it is not possible to directly compare 2011 percentages with those from 2001, but the questions are sufficiently similar to draw indicative insights on change over time.

Notes for inequality in England

1. The Slope Index of Inequality (SII) assesses the absolute inequality between the least and most deprived tenths, taking account of the inequality across all adjacent area tenths, rather than focusing only on the extremes. It is calculated using weighted regression, which ensures the different population sizes of the area groupings is taken into account. The regression calculates a predicted slope which represents the extent of inequality across the whole population.
2. Further analysis will be needed to support this provisional finding by comparing decile age structures and taking account of any future revisions to the Indices of Deprivation using 2011 Census data.

10. Inequality in Wales

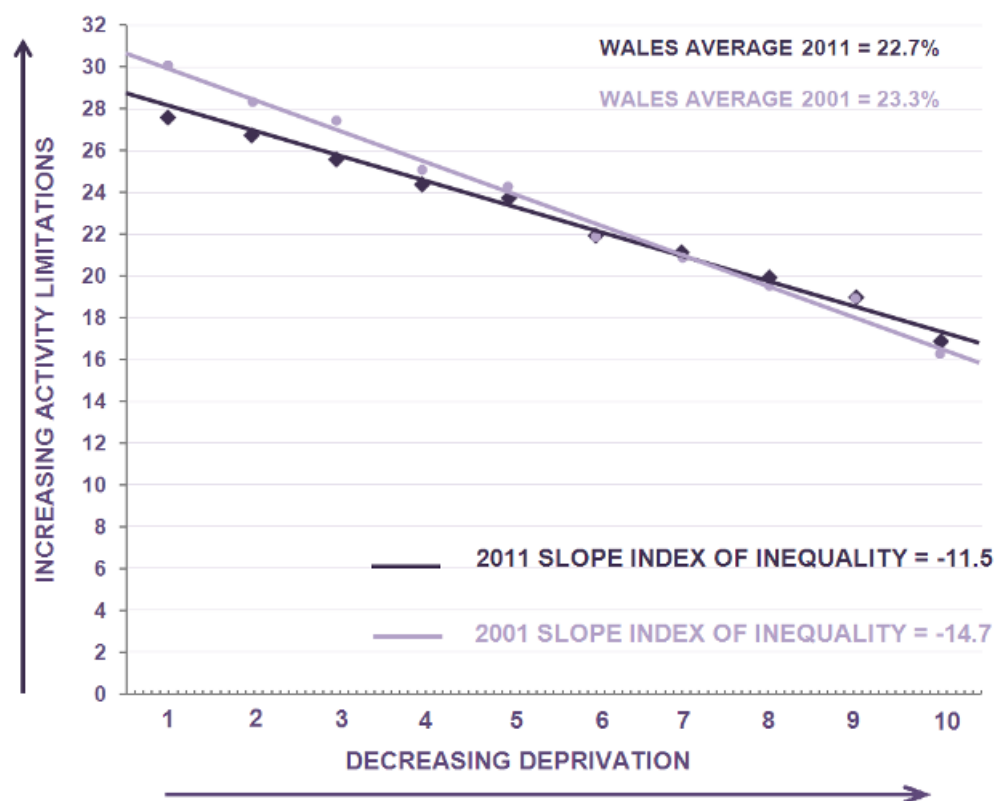
In Wales there were 1,909 LSOAs enumerated in the 2011 Census; the use of the ONS lookup file enables the total number of census LSOAs to be assigned a WIMD 2011 rank so that nine deciles in Wales consisted of 191 areas, and one decile 190 areas.

On the basis of determining an authority's relative level of deprivation, the percentage of a unitary authority's LSOAs that were placed with the most deprived decile of these areas was used. The most deprived authority was Merthyr Tydfil and the least deprived were Ceredigion and Monmouthshire; a gap of between 5.8 and 6.7 per cent in prevalence existed between the most and least deprived unitary authorities in Wales. As stated above, a more accurate measure of the inequality between the relative deprivation experienced by areas is to compute the Slope Index of Inequality (SII) which measures the gap by taking into account the inequality across all adjacent deciles of relative deprivation, rather than focusing only on the extremes.

Figure 7 shows the prevalence of activity limitations for each WIMD decile in both 2001 and 2011.

Figure 7: Activity limitation by level of area disadvantage (showing the Slope Index of Inequality)

Wales, 2011, deprivation deciles



Source: Census - Office for National Statistics

Notes:

1. Rounded values.
2. In descending order of deprivation, i.e decile 1 represents the most deprived ten per cent of Lower Super Output Areas (LSOAs) in England and decile 10 represents the least deprived ten per cent of LSOAs in England.
3. Deciles in 2001 are grouped LSOAs by rank Welsh index of multiple deprivation (WIMD) 2005 score, Deciles in 2011 are grouped LSOAs by rank WIMD 2011 score.
4. Slope Index of Inequality is calculated using weighted regression, which takes account of the different population sizes of the area deciles derives a predicted slope which represents the extent of inequality across the whole population.
5. Census Question 2001: Q13 'Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do? - Include problems which are due to old age.' (Yes/No).
6. Census Question 2011: Q23 'Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months? - Include problems related to old age' (Yes, limited a lot/ Yes, limited a little/ No).
7. Deprivation information from the Welsh Index of Multiple Deprivation, 2005 and 2011.

The question asked in the 2011 Census on activity limitation differed to that asked in 2001; therefore it is not possible to directly compare 2011 percentages with those from 2001, but the questions are sufficiently similar to draw indicative insights on change over time.

In 2011 the range in prevalence of activity limitations was 10.7 percentage points lower in the least deprived decile of areas compared with the most deprived decile of areas. However, the absolute level of inequality using the SII, which takes account of all intervening deciles, is estimated at -11.5 per cent suggesting the true level of inequality is greater than that represented by the range.

The most deprived decile in Wales had a prevalence of activity limitations 5.1 percentage points higher than the most deprived tenth of areas in England, and the least deprived decile in Wales had a prevalence similar to decile 7 in England.

An interesting question to ask is whether the inequality in prevalence of activity limitation between advantaged and disadvantaged populations has increased, decreased or stayed the same since 2001. Analyses of 2001 LSOA groupings suggest the level of inequality has fallen; activity limitation prevalence was 13.8 per cent higher in the most deprived decile compared with the least deprived in 2001, and the SII was also larger at -14.7 per cent.

Figure 7 shows that the line representing the slope is shallower in 2011 compared with 2001, and this is because the prevalence increased in 2011 in the less deprived areas and decreased in the more deprived areas as shown by the position of the data points¹.

Notes for inequality in Wales

1. Further analysis will be needed to support this provisional finding by comparing decile age structures and taking account of any future revisions to the Welsh Indices of Deprivation using 2011 Census data.

11. More Census analysis

[Census Analysis landing page](#)

12. Background notes

1. In the 2001 Census each person in a household was asked whether they have [a long-term illness, health problem or disability which limits activities in any way and to include problems which were due to old age \(129.7 Kb Pdf\)](#). The response categories were simply 'yes' or 'no'. [The question in 2011 \(2.02 Mb Pdf\)](#) had different wording, excluded the reference to work limiting problems, changed the categories to plain English terms to allow individuals to state the extent of their limitations, and included a 12 month time frame for the persons' activities to have been limited (see box 1 for question wording at each census).

Box 1

2001 Census
Do you have any long-term illness, health problem or disability which limits your daily activities or the work you can do?
Include problems which are due to old age
Yes ☐ No ☐

2011 Census
Are your day-to-day activities limited because of a health problem or disability which has lasted, or is expected to last, at least 12 months?
Include problems which are due to old age
Yes, limited a lot ☐ Yes, limited a little ☐ No ☐

Source: Census - Office for National Statistics

These self reports are useful in indicating an individual's functional capabilities related to work and general day- to- day activities such as socialising, house keeping, cooking, paying bills, as well as self-care tasks such as washing and dressing without help. Other limitations include mobility difficulties, such as walking, reaching, stretching and lifting objects, as well as sight, hearing and communication problems.

This type of information informs care needs, indicates fitness for work and independent living, and has relevance to equality legislation. For this reason, questions collecting data on persistent health problems or disabilities which limit daily activities are also asked on a number of national surveys, both general and health focused.

As the question asked in the 2011 Census on limiting long-term illness and disability differed to that asked in 2001, it is not possible to directly compare activity limitations in 2011 with that.

2. Medical and care establishments include local authority, private and voluntary sector residential and nursing care homes, NHS-run establishments, children's homes and medical establishments run by registered social landlords.
3. This publication follows the [2011 Census Population and Household Estimates for England & Wales](#). The census provides estimates of the characteristics of all people and households in England and Wales on census day. These are produced for a variety of users including government, local and unitary authorities, business and communities. The census provides population statistics from a national to local level. This short story discusses the results at national, regional, local and small area level.
4. 2001 Census data are available via the [Neighbourhood Statistics](#) website.
5. Interactive [data visualisations](#) developed by ONS are also available to aid interpretation of the results.
6. Future releases from the 2011 Census will include more detail in cross tabulations, and tabulations at other geographies. These include wards, health areas, parliamentary constituencies, postcode sectors and national parks. Further information on future releases is available online in the [2011 Census Prospectus](#).
7. ONS has ensured that the data collected meet users' needs via an extensive [2011 Census outputs consultation](#) process in order to ensure that the 2011 Census outputs will be of increased use in the planning of housing, education, health and transport services in future years.
8. Any reference to local authorities includes both local and unitary authorities.
9. Some numbers and percentages throughout this report may not sum due to rounding.

10. ONS is responsible for carrying out the census in England and Wales. Simultaneous but separate censuses took place in Scotland and Northern Ireland. These were run by the National Records of Scotland (NRS) and the Northern Ireland Statistics and Research Agency (NISRA) respectively.
11. A person's place of usual residence is in most cases the address at which they stay the majority of the time. For many people this will be their permanent or family home. If a member of the services did not have a permanent or family address at which they are usually resident, they were recorded as usually resident at their base address.
12. All key terms used in this publication are explained in the [2011 Census glossary](#). Information on the [2011 Census Geography Products for England and Wales](#) is also available.
13. All census population estimates were extensively quality assured, using other national and local sources of information for comparison and review by a series of quality assurance panels. An extensive range of [quality assurance, evaluation and methodology papers](#) were published alongside the first release in July 2012 and have been updated in this release, including a [Quality and Methodology Information \(QMI\) document \(152.8 Kb Pdf\)](#).
14. The 2011 Census achieved its overall target response rate of 94 per cent of the usually resident population of England and Wales, and over 80 per cent in all local and unitary authorities. The population estimate for England and Wales of 56.1 million is estimated with 95 per cent confidence to be accurate to within +/- 85,000 (0.15 per cent).
15. 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 the Media Relations Office email: media.relations@ons.gsi.gov.uk

These National Statistics are produced to high professional standards and released according to the arrangements approved by the UK Statistics Authority.