

Accompanying Notes

Mapping Disability

A statistical review of disabled people in England - accompanying notes

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Introduction

This document has been designed to accompany the 'Mapping Disability: The Facts' slides which give a visual summary of key figures and statistics about the disabled population in England, specifically examining each of the 12 impairment types identified in the Life Opportunities Survey that Sport England draws on. It is intended to be read in conjunction with the slides and includes:

- More detailed explanations of the figures used
- Comparison of different figures, especially with those used in Sport England's existing analysis
- An indication of what further demographic information has been found
- Gaps in the information collected
- How different impairment types may overlap

It should be noted that an exhaustive review of information available was not possible and inevitably the information collected will contain gaps and miss some sources.

The research builds on Sport England's own analysis of the disability market and is specifically intended to provide greater detail on each of the impairment types.

Not all the information collected has been used in this report. The complete raw data is located in the 'Data Template' which is referred to throughout this report.

Methodological notes

- The data has been gathered from existing information from a number of sources: government surveys, health data, academic studies, charities and voluntary organisations.
- For statistics where only UK or GB populations were available, figures were recalculated for England only, using ONS population estimates for the mid-point of the year the data is taken from. This will be indicated using a * in the report. When considering these recalculated figures it must be noted that the calculation assumes an even prevalence of conditions across the UK nations, which may not be the case for all types of conditions or impairments.
- Where sources only cite prevalence rates, these have been applied to the ONS population estimate for mid-2013. Prevalence rates for UK or GB populations have been applied to the England population and marked with a *. This is again calculated with the assumption that there is an even prevalence of conditions across the UK nations; and that prevalence has not changed since the figure was derived; again, this may not be the case in practice.
- Calculated figures were rounded to the nearest 100.
- Population sizes for calculations were taken from ONS mid-year population estimates.
- For population calculations relating to surveys running over several years, the population sizes of the most recent ONS mid-year estimate were used. For example, to calculate the population size for a prevalence of 10% given in a 2012-13 survey, population data from 2013 were used.
- In many cases the overall population for specific conditions has been given, not the population that is disabled with that condition. This is because it was usually not possible to find out what proportion of those with a condition are disabled or impaired in a specific way. For example, around 8.4 million people are known to have arthritis – however only a smaller proportion of these are disabled and experience mobility or dexterity impairments.
- Where terms such as ‘child’ or ‘adult’ have not been defined with specific ages, this is because the original data source did not clarify the term.

Key surveys

Information on impairment types is drawn from two key surveys throughout this report: the Life Opportunities Survey (LOS) and the Family Resources Survey (FRS). Both of these are carried out for the Department of Work and Pensions (DWP), with the LOS being conducted through the Office for Disability Issues (ODI).

The LOS focuses specifically on areas related to disability as it is designed to provide a comparison of how disabled and non-disabled people participate in different areas of society. It is this survey that Sport England has drawn on to understand how many people with a limiting disability are impaired in each of the 12 areas or types identified, and listed below. As such it gives the numbers and proportions of people who have indicated that they have any limiting disability or long standing illness, and who say that they are impaired in these specific ways.

This contrasts with the FRS, which is designed to cover all households and provide more general information about people's living conditions and their resources. It does however also measure the levels of people with long-standing health conditions, disabilities or impairments which cause substantial difficulty with day-to-day activities.

New harmonised standards for questions about impairment, and impairment types, were introduced in August 2011 affecting both the LOS and the FRS¹; for the FRS this does affect the degree of comparison over time, as the impairment types listed have changed, which can be seen in Figure 1 below²; and note of this is made where relevant in the report.

- 1 An overview of the changes can be found in the ONS's note 'Harmonised Concepts and Questions for Social Data Sources: Long-lasting Health Conditions and Illnesses; Impairments and Disability'.
- 2 This is specifically noted in the 2014 DWP report on the 2012/13 Family Resources Survey, p.28 and Chapter 4.

Key surveys

Figure 1 – Disability prevalence figures for UK from the Family Resources Survey, including change in categories over time

Impairment Type - 2010 / 2011

Mobility	6.7 million	58%
Lifting / carrying	6.3 million	54%
Manual dexterity	2.8 million	24%
Continence	1.7 million	15%
Communication	2.1 million	18%
Memory / concentration / learning	2.4 million	21%
Recognising when in danger	0.8 million	7%
Physical co-ordination	2.7 million	23%
Other	4.0 million	34%
All with at least one impairment	11.6 million	

Impairment Type - 2011 / 2012

Mobility	6.9 million	57%
Lifting / carrying	6.5 million	54%
Manual dexterity	3.0 million	24%
Continence	1.8 million	15%
Communication	2.2 million	19%
Memory / concentration / learning	2.6 million	21%
Recognising when in danger	0.8 million	7%
Physical co-ordination	2.9 million	24%
Other	4.2 million	35%
All with at least one impairment	12.1 million	

Impairment Type - 2012 / 2013

Vision	1.6 million	13%
Hearing	1.8 million	14%
Mobility	6.9 million	57%
Dexterity	3.4 million	28%
Learning	1.4 million	12%
Memory	1.8 million	15%
Mental health	1.9 million	16%
Stamina / breathing / fatigue	4.6 million	38%
Socially / behaviourally	0.8 million	6%
Other	2.5 million	20%
All with at least one impairment	12.2 million	

Key surveys

Direct comparison between the two surveys must be made carefully. For one, impairment types are not entirely the same as those used in the LOS. Where it is possible to compare impairment types, the FRS figures for how many disabled people are affected in that impairment type are consistently higher than those in the LOS, regardless of which version of the FRS is used.

This difference may be because the definitions used for the disabled population vary, based on the different impairment types prompted for. It could also be due to the set-up of the surveys being so different to lead people into responding differently at those points. Thus, the LOS dedicates detailed sections to exploring how people are affected in each impairment type, and how this limits their activity.¹ The FRS impairment type appears to be based on one multiple choice question². Nonetheless it would require further research into how these surveys are designed and coded to fully understand the difference in figures

For both of these surveys, the figures reported are the numbers of people with a long standing limiting illness or disability, that are affected by each of the impairment types. However this does not mean that this impairment type is the primary limiting impairment; indeed Sport England's own analysis found that most (74%) disabled people have more than one impairment type.

¹ The 2010 questionnaire of the Life Opportunities Survey has been made available by the ONS.

² As detailed in the Question Instructions for the 2012-13 version of the FRS.



Overall prevalence

The RNIB estimates that in England there were some 1,564,340 people with some sight loss in 2013, referring to studies by Access Economics and ONS. This is similar, albeit higher, than the DWP's figure from its Family Resources survey, of 1,344,400* people in England with visual impairments. This could be explained by the fact that the higher RNIB figure includes people who are awaiting or having treatment to improve their sight, or those whose vision loss could be improved by wearing correctly prescribed glasses, and these people may not have self-reported in the DWP survey.

This figure will include those who are registered blind (143,385 in 2014) and partially sighted (147,715) with their local councils. However to register, people have to first undergo an examination by a consultant ophthalmologist, and more people will have sight problems without being registered. Hence why the RNIB estimates there are actually around 187,740 people with severe sight loss/blindness.

The Life Opportunities Survey (LOS) notes that 9.6% of people with limiting disabilities, 959,919, have visual impairments, which is nearer the top figures given by the RNIB, suggesting that the LOS figure includes not only blind people, but also many with less severe visual impairments.

Other demographics and gaps

There is a good understanding of the population registered blind or partially sighted with respect to age and region, as well as of the RNIB's overall estimates of the population with some sight loss, and severe sight loss, by age and region.¹ However, data was not readily available on differences by gender and ethnicity. The RNIB reports some studies that people from BME communities may be at greater risk of some of the leading causes of sight loss but no figures were given for this.

1 In the Data Template



Overlaps

There is a significant overlap with hearing impairments, in the deafblind population – i.e. those with severe hearing and visual impairments. More information on the deafblind population can be found in the ‘Hearing’ section.

RNIB reports that people with learning difficulties are more likely than the general population to have sight loss. They report that there are 81,100* blind or partially sighted people in England aged 20 or over who also have a learning disability. RNIB also state that there are around 21,000* blind and partially sighted children between the ages of 0 and 16, of which around half (10,500*) have additional disabilities and/or special educational needs.

It is known that people with diabetes are at risk of developing eye disease – out of a total population in England of 2,456,000 with diabetes (see long term conditions).

Since sight loss is linked to age it can be associated with other conditions or problems that become more prevalent among older populations. The RNIB specifically mentioning dementia; and noting that sight loss can also be associated with higher rates of depression, with 34% of people with sight loss stating they feel unhappy or depressed.

The RNIB report that Mobility can also be affected, with half of people with sight loss experiencing difficulties getting into and moving around buildings; these mobility issues also making people with sight loss more likely to experience falls.



Overall prevalence

Action on Hearing Loss give a figure of 8,450,500 people in England with some form of hearing loss in 2010 – which equates to 16.1% of the general population. This rises to 41.7% of over 50 year olds and 71.1% of over 70 year olds.¹

These figures are much lower than that from the 2012-13 DWP Family Resources Survey which gives a figure of 1,512,500* people. This difference could be largely explained by differences in methodology: whereas the FRS is based on self-reported answers and asks about any impairment that may reduce ability to carry out day-to-day activities even a little, Action on Hearing Loss's figures are based on definitions of measured hearing ability in decibels.

Action on Hearing Loss also state that of the 8,450,500 people in England with some form of hearing loss, 697,500 are severely or profoundly deaf; there are 37,800* deaf children. However only very few of these are registered with local councils: 56,400 are registered as deaf, and 156,500 as hard of hearing. Council registration data thus underreports prevalence of severe hearing impairment, but it does give a useful breakdown of registrations by age.²

Sport England's own 'the Disability Market' document, using the Life Opportunities Survey, states that 8.8% of those with limiting disability have a hearing impairment, around 867,119 people. This group is thus likely to include those with severe or profound hearing loss as well as a smaller number of those with moderate or mild hearing loss; not everyone however with a moderate or mild hearing loss and no other conditions will have self-reported themselves as having a limiting illness or disability.

Other demographics and gaps

As mentioned above there is some information of the prevalence of hearing loss among older age groups, but no clear breakdown of these figures by age band, other than for those registered deaf or hard of hearing.

There are also no clear figures on gender. Action on Hearing loss does state that "From the age of 40 onwards, a higher proportion of men than women develop hearing loss. This is probably because more men have been exposed to high levels of industrial noise. Among people over the age of 80, more women than men have hearing loss, which is due to women living longer than men on average, not because women are more likely to become deaf."

¹ For the UK as a whole.

² In the Data Template.



Similarly there are no figures breaking down hearing loss by ethnicity, although again Action on Hearing Loss states that “there is evidence to suggest that some minority ethnic groups may experience higher levels of hearing loss.”

Figures were not broken down by regions in England, although they are available for the different UK nations.

Overlap

A key overlap with other impairment types is found in the deafblind population – i.e. those with severe impairments of hearing and vision. The Centre for Disability Research report into this estimates the UK deafblind population at somewhere between a lower estimate of 110,900* and an upper estimate of 299,100*, with Sense using these to give a rough midpoint of around 210,000* deafblind citizens. However as the report authors note, these figures are based on self-report surveys which deafblind people may be less willing to participate in; thus these numbers may underestimate the population. These surveys also exclude the homeless and institutional populations, although the report authors have tried to adjust for this latter issue.

Breakdowns for age and gender are also given in the CEDR report, with prevalence again highest for older people, and a roughly even split between men (54,600*, lower estimate) and women (55,500*, lower estimate). Due to the small sample differences in prevalence rates by ethnicity were only found at for age groups of 50-59 and 70-79, where BME people had higher rates. Differences in the deafblind population are only given at national, not regional levels.

Action on Hearing Loss also reports that up to 40% of deaf children (apparently those under 16, although this is not entirely clear) have additional or complex needs; and that around half of older people with hearing loss (apparently those in retirement age) have other disabilities or long term conditions.



Overall prevalence

Mind states that 1 in 4 people in the UK will experience a mental health problem each year, slightly higher than a King's Fund report which gives an overall prevalence of around 20% in the general population. However, more finely grained information on mental health is available broken down between adults and children. The HSCIC's Adult Psychiatric Morbidity Survey from 2007 gives a prevalence among adults (defined as aged 16 or over) of 23.0%; a similar ONS study for children and young people from 2004 found the prevalence to be 10.1% (among those aged 5-15).

Applying these prevalence rates to the most recent population estimates from 2013 gives a population of 10,041,000* adults (16+) and 686,306* children (aged 5-15) with some form of mental poor health.

These figures appear to be much higher than the proportion of people in the Life Opportunities Survey (LOS) indicating they have a mental health condition, which stands at 1,332,839, or 13.6% of the disabled population; similarly in the DWP's Family Resources Survey (FRS) for 2012/13, a figure of 1,596,500*. This difference could possibly be accounted for because respondents to the FRS or LOS surveys may only have reported more serious impairments, or even be aware that problems they experience could count as a mental health condition. Thus, the Life Opportunities Survey only asked respondents about conditions that "have lasted, or are expected to last, 12 months or more," which may exclude people with milder, passing or irregular conditions.

Other national sources do show that far fewer people have been in contact with mental health services in the last year compared to the overall prevalence: 1,746,698 in 2013/14 according to the HSCIC. The Long Term Conditions compendium also reports on mental health, but as these figures are only for GP diagnoses it appears to be a less reliable indication of overall numbers.

However it should be borne in mind that both the figures for prevalence among adults and children are both more than five years old, with the ONS study on children's mental health more than ten years old. The UK Faculty of Public Health suggests that the UK's prolonged economic downturn and changes to the welfare system since then may have affected levels of mental health and poor wellbeing; a paper by the Nuffield Trust suggests similar effects may have specifically impacted on children and young people too.



Conditions and demographics

The ONS study into children’s and young people’s mental health gives a breakdown of condition for England only for the most general categories of emotional disorders; conduct disorders (either ‘oppositional defiant’, solitary antisocial behaviour, or socialised or group antisocial behaviour), and hyperkinetic disorders. More detailed breakdowns of conditions are only available at GB level. The study also breaks down the overall and general condition prevalence figures for England by gender, age, and large regions. Again, more detailed analysis of the data is only available at GB level.

For adults (generally defined as 16+), the 2007 HSCIC survey has very detailed information on a range of different conditions, with the main groupings given below. Note that for individual conditions, a number of different definitions or approaches to measurement may exist; the figures given below and in the Data Template are the most commonly used ones in the study. Specifically, some of these prevalence figures are based on having the condition in the past week, which may underreport the true prevalence – these are marked with a ** in the table below. This study also analyses each of these conditions by gender, age, ethnicity, and region, although in some cases only very detailed interlocking breakdowns are available.

Table 1. Prevalence of different mental health conditions

Condition	Prevalence
Mixed anxiety and depression**	9.0%
Post traumatic stress disorder (PTSD)	8.9%
Attention deficit hyperactivity disorder characteristics (ADHD)	8.2%
Generalised anxiety disorder**	4.4%
Depressive episode**	2.3%
Eating disorders	1.6%
All phobias**	1.4%
Obsessive compulsive disorder**	1.1%
Panic disorder**	1.1%
Psychosis (e.g. schizophrenia, bi-polar disorder, manic depression)	0.4%
Borderline personality disorders	0.4%
Antisocial personality disorders (18+)	0.3%



Gaps

The biggest gap for mental health statistics is around more recent information, with the figures for children's mental health especially now being relatively dated. Certain demographic information was also only available at GB level. Another gap in the data is that both the main surveys are of households, and so institutional populations are excluded from the figures. For individual conditions the methodologies and definitions may also lead to and under-reporting or over-reporting of prevalence.

These figures are also based on the general population and more detailed studies of the mental health and specific needs of the disabled population may reveal significant differences.

Overlap

There is some degree of overlap within the category of mental health itself, as people may have multiple conditions. Thus 2007 adult survey finds that 6.9% of men and 7.5% of women have multiple mental health conditions.

Overlap is also likely to exist with other impairment types. For example, the King's Fund paper reports that 46% of people with a mental health problem also have a long-term health condition. Although it is not clear what the full list of long-term conditions used there includes, it does not appear to cover other disabilities. We also know from some specific impairment types and disability groups (e.g. visual, ASD) that people with these may have higher rates of (sometimes specific) mental health conditions.



Overall prevalence and demographics

Although, as the National Autistic Society point out, there is no register of people with autism in the country, recent studies have estimated a prevalence of around 1.1% of the population; which would equate to around 592,500 people in England in 2013. Another study from 2006 estimated the prevalence among children to be slightly lower, at 1%, similar to the ONS's 2004 GB figure of 0.9%.

Using the most recent prevalence figure, this would give an adult (18+) population in 2013 of 466,000* (similar to the HSCSI estimate of 450,000 in 2012); and a child population (0-17) of 126,600*. This is still some degree higher than the figures recorded in the Life Opportunities Survey, where 328,303 people with disabilities are indicated to have ASD impairments. It is difficult to say why this is, although one explanation could be that some people with ASD do not consider themselves as being limited; given it is a spectrum condition this may also be linked to where on the spectrum people may be or consider themselves.

The HSCIC's study, where the 1.1% figure is from, breaks up the adult population by gender, age, and two ethnic groups (numbers were too small for other ethnic groups). It is based on a household survey (the 2007 Adult Psychiatric Morbidity Survey) but has adjusted this with further studies of adults with learning disabilities living in private households as well as communal care establishments, although it still excludes other institutional populations (e.g. people in prisons).

Gaps

The adult ASD population is fairly well understood although there is limited information on ethnicity and none on regional breakdowns. For children with ASD, only headline prevalence data was found for England. The ONS's 2004 survey of children does include breakdowns by gender and age, but this is only at GB level. More detailed studies of these demographic factors may exist in the academic literature.

ASD

(Autistic Spectrum Disorders)



Overlap

Since ASD is a spectrum condition, there are many different forms and different people will be affected in different ways. We were not able to draw on information that quantifies possible overlap with other impairment types but it is known that some people with ASD can also have:

- Learning difficulties
- Limitations to speech
- ADHD (Attention Deficit Hyperactivity Disorder) – covered in mental health

Long-term health conditions



Overall prevalence

It is widely reported, from the Department of Health, that around 15 million people in England have one or several chronic, or long-term, conditions. This equates to around 30% of the general population. This figure by far exceeds the number of people with a limiting disability with a long-term health condition recorded in the Life Opportunities Survey, of 4,571,401.

It is highly likely that this difference is due to the fact that the Life Opportunities Survey figures only record those with a limiting disability that state they have a long-term health condition, so anyone with a long-term health condition that does not impair them in a substantial or limiting way would not be recorded within that figure; and indeed many millions of people with such conditions may not consider themselves much impaired by it. This is also relates to whether people consider themselves ill or disabled by their condition, with it being likely that many people with a long-term health condition would not see themselves as disabled.

Conditions

Definitions of what counts as a long-term condition vary substantially, particularly around whether mental health problems are included. Whilst the Department of Health and the Long Term Conditions Compendium (LTCC) include these, other sources such as the King's Fund do not. The 2010 Life Opportunities Survey questionnaire, in the section on long-term conditions, also does not include mental health conditions in its list of prompted conditions, so it is likely that these figures exclude mental health.

The conditions we have listed in Table 2 include all those prompted for in the Life Opportunities Survey (LOS); as well as those given in the Long Term Conditions Compendium, other than 'Mental Health' and 'Depression', as these are covered more substantially in their own section of this report. Dementia was included as it does not fall as neatly into the mental health category, although debate exists about this.

Nonetheless the list of conditions included here should by no means be considered as definitive or exhaustive, and indeed some conditions with very small populations have been listed based on the above approach even though many others exist with larger populations.

Long-term health conditions



Table 2. Selected long-term health conditions and their populations

Condition	Population	Notes
Hypertension	12,485,800*	In LTCC
Arthritis or rheumatism	8,402,700*	in LOS
Cardiovascular disease	5,881,900	In LOS as heart condition or disease. LTCC lists coronary heart disease, atrial fibrillation, heart failure (in Data Template)
Migraines	5,850,000	In LOS. Figure is only people aged 16-65
Musculoskeletal	5,000,000	In LTCC
Asthma	4,536,000	In LTCC. In LOS - with 'severe allergies'
Diabetes	3,218,200*	Includes undiagnosed cases. In LTCC. in LOS.
COPD	3,109,000*	In LTCC
Chronic kidney disease	1,855,000	In LTCC. In LOS as kidney condition or disease
Hypothyroidism	1,667,000	In LTCC
Cancer	1,512,478	In LTCC and LOS
Paralysis	1,023,500*	In LOS
Stroke	966,093	In LTCC (with TIAs)
Dementia	685,812	In LTCC
Epilepsy	504,000	In LTCC and LOS
Multiple Sclerosis (MS)	87,686	In LOS
Muscular Dystrophy	70,872	In LOS
Cerebral Palsy	24,620	In LOS
Cystic Fibrosis	7,600*	In LOS
Spina Bifida	1,512,478	In LOS

Long-term health conditions



Demographics and gaps

The population of people with long-term health conditions is detailed somewhat further in the Long Term Conditions Compendium, which gives diagrams of the population by age and by smaller regions within England (although these do not give the actual figures). However, their figures are not broken down by gender or ethnicity, and many of the data sources used in the Compendium are themselves now five years old or even less recent.

For individual conditions, the amount known on demographics varies greatly. Although the Compendium does give age breakdowns for all the conditions it lists, it does not provide any other demographic information. Furthermore, their figures are sourced from the Quality and Outcomes Framework and in many cases may underreport prevalence. Where possible these figures have been supplemented in the Data Template with alternatives e.g. from national charities, but often there was little or no extra demographic data readily available from these sources either.

Overlap

This is a very difficult area to identify overlaps in for the population as a whole, since each condition will have its own specific areas of overlap and long-term health conditions could affect people's impairments in most of the other categories. It is also known that overlaps exist within the population that has long-term health conditions: the Long Term Conditions Compendium reports that over 5 million, so around a third of all those with long-term health conditions, have two or more conditions. Another area of overlap is with mental health: the King's Fund reports that 30% of those with a long-term physical health condition also have a mental health problem.



Overall prevalence

It is difficult to source figures about impairments of speech for two reasons. Firstly, speech impairments are sometimes combined with vision, hearing, or other impairments; to give figures on people with communication problems in general; similarly, speech, language and communication is a much more common category for statistics than speech on its own. Secondly, figures are often specific to children or children and young people, on which a large amount of literature exists; less is available on the adult population or the population as a whole.

Up until the penultimate version of the DWP's Family Resources Survey (2011/12), there is just one category for 'communication' impairments, which can also include problems with hearing and eyesight. On this measure, 1,846,600* people in England had an impairment of this type. Compared to other figures this appears to be very high and the inclusion hearing and eyesight makes it impossible to isolate those who have a speech impairment from this figure. By comparison, the Life Opportunities Survey (LOS) gives a figure of 378,176 people with a limiting disability who have a speech impairment.

Other figures come closer to the LOS number. An older study, the 2001 English Health Survey, used by Communication Matters, found that 0.4% of the population overall have both difficulty speaking and a severe communication disability, which would translate to 215,500* people today. This is similar to the figure Communication Matters suggest would benefit from Alternative or Augmentative Communication (AAC), of 0.529% of the population, i.e. around 285,000* in England today (however these definitions may not overlap entirely). Although these figures are still lower than those in the LOS, this may be because the LOS includes some people with less severe impairments than those considered by Communication Matters.



Demographics and gaps

As mentioned above, speech impairments are much better understood among children than the population overall. I CAN, the children's communication charity, reports a study that one in ten children, or around one million, have speech, language and communication needs (SLCN) requiring long-term support. One percent are believed to have severe and complex needs. (Unfortunately they do not specify the age brackets for the definition of children.) However, the ICAN website does not give a reference for this source, or define the age range for children used in their definition.

Figures used by the Royal College of Speech and Language Therapists break down the population of children (aged 3-14) with speech impairments/SLCN further by age as well as by school attended. It is very likely that more data exists on gender, ethnicity, and region, with regards to children with SLCN, through for example the Schools Census.

However, less was found about the adult or general population, with gaps in the data collected on gender, age, ethnicity and region. Furthermore, comprehensive statistics exclusively on speech impairment were also not found, although this could be because isolating speech from more general language or communication issues may be conceptually or pragmatically difficult.

Forms, conditions and overlap

Speech impairments can take a number of different forms and be caused by or associated with a very wide range of other conditions. The separation into specific forms of speech impairment and conditions is however only a rough one; that some forms may be considered conditions in their own right, or themselves be part of or caused by other conditions. The demographic information available, and possible areas of overlap, will vary between these different forms and conditions, and the list below is not meant to be exhaustive.



Forms include:

- **Aphasia** - around 211,000* people in England have this, according to Connect; aphasia itself can be subdivided into different types. Stroke is a main cause of aphasia.
- **Dysarthria** - The Royal College of Speech and Language Therapists reports that there are no known figures indicating its incidence, with only little information on its prevalence in children. Itself can be caused by many of the conditions listed below.
- **Voice dystonia/Spasmodic dysphonia** - can be a condition in its own right or acquired due to a number of other conditions. The Dystonia Society suggests it may have a two-way relationship with mental health issues, such as anxiety or depression.
- **Developmental verbal dyspraxia** - The Dyspraxia Foundation reports that this may take different forms at different ages and stages of development.
- **Stammering** - According to the British Stammering Association, it is thought to affect 1% of the adult population (assuming this refers to 18+ this would be around 423,600* people) and at least 5% of children under the age of five go through a phase of stammering, although the prevalence of more severe forms could not be established.

Conditions that may include or result in speech impairment are listed in Table 3 on the next page – it is important to note that the population estimate only gives the overall known numbers with that condition, only a fraction of which may also have speech impairments.



Table 3. Conditions which may include speech impairments

Condition	Population Estimate	Overlap
Learning disabilities	1,198,000	Learning / intellectual / memory
Stroke	966,093	Long-term health conditions; visual; mobility; dexterity;
Dementia	685,812	Learning / intellectual / memory; long-term health conditions
ASD	600,200*	Learning / intellectual / memory; ADHD
Parkinson's	107,835	Dexterity; mobility; long term pain; visual; speech; mental health; learning / intellectual / memory; long-term health conditions
Multiple sclerosis	87,686	Visual; mobility; dexterity; mental health; learning / intellectual / memory; chronic health conditions
Head and neck cancer	32,500*	Long-term health conditions
Cerebral Palsy	24,620	Visual; mobility; dexterity; learning / intellectual / memory; hearing; long-term health conditions
Tourette's	21,000*	Dexterity; learning / intellectual / memory
Motor Neurone Disease	3,800*	Dexterity; mobility; learning / intellectual / memory; chronic health conditions
Traumatic Brain Injury	Not known	Long term pain; learning / intellectual / memory; dexterity; mobility



Overall prevalence

DWP's Family Resources Survey from 2012/13 gives a figure of 5,797,800* million people with mobility issues in England. Leonard Cheshire report a lower figure of 4,201,300*, although this figure seems to be referring to adults only in which case it would be roughly comparable to the DWP's figure. Both of these were obtained from self-reporting surveys. Again, the figures from the Life Opportunities Survey are far lower, with only 3,537,048 people recorded as having a limiting disability and a mobility impairment.

This could be a result of the difficulty defining what a mobility impairment may be, and which activities are affected. Thus, for use of wheelchairs or mobility aids, distinctions can be made between those requiring support for any degree of mobility, whereas others may only need them for particularly lengthy or strenuous activities, such as sports.

The EFDS cites a source which states that 484,800* people were in receipt of benefits as a result of having problems with mobility, which may be an indication of the numbers with severe mobility impairment, although no date or method was given for this figure.

Contributing conditions

A number of different problems and conditions can lead people to experience mobility issues, listed in Table 4 below, which gives the overall known population sizes for each of these conditions. Because of this diverse set of possible contributing conditions, it is difficult to get a sense of the overall demographic make-up of the population with mobility issues, as opposed to the populations for each individual condition or problem. Even at this individual level, demographic factors (age, gender, region, ethnicity) are not always well understood.

Many who have these conditions will have reduced mobility but not everyone will experience this and hence the total population of people with these conditions combined can be expected to exceed the overall number of people with mobility issues. It must also be noted that some of the populations for these conditions will themselves be related or duplicated. For instance, arthritis and chronic pain will overlap significantly; some of the main causes of paralysis are known to be spinal cord injury, multiple sclerosis, and cerebral palsy, which are themselves listed the table; and the Parkinson's population is likely to coincide significantly with that experiencing essential tremor.

Mobility



Table 4. Conditions that can involve mobility impairment

Condition	Population	Further demographic data available in Data Template on:
Arthritis	7,736,100*	Age, gender
Chronic pain	6,554,070	Age, gender, region
Sight loss	1,564,340	Age, region
Essential tremor	1,417,960	
Paralysis	1,023,500*	
Stroke	966,093	Age, gender
Chronic fatigue syndrome / ME	210,100*	
Parkinson's	107,835	Age, gender
Post Polio syndrome	102,300*	Dexterity; learning / intellectual / memory
Multiple sclerosis	87,686	Age, gender
Muscular dystrophy	70,872	Region
Dystonia	58,800*	
Amputation	53,900*	
Congenital Hemiplegia	53,500	
Spinal cord injuries	31,200	
Narcolepsy	26,900*	
Cerebral Palsy	24,620	
Traumatic Brain Injury	N/A	

*Population based on US prevalence figures



Overlap

As already mentioned above, there is likely to be significant overlap between the populations for different conditions contributing to mobility impairments. These conditions may individually also contribute to other types of impairment for some or all of the people who have experience them. The largest area of overlap appears to be between mobility impairments and **dexterity** impairments, with many conditions potentially resulting in both. There is also strong overlap with **long term pain** and **long-term health conditions**. People with **visual impairments** are also more likely to have mobility issues.

Wheelchair users

A large number of very different figures have been found which each set the population of wheelchair users at different levels. Often the original sources for these figures are not available or do not contain the statistics being cited in them elsewhere. Estimating the wheelchair user population is further complicated by the fact that not everyone uses a wheelchair or mobility aid all the time, and some people may only need these for sports but not for other day to day activities. Hence a very wide range of at times unsubstantiated numbers exist in the public domain.

One of the most recent and more robust sources is the Department for Communities and Local Governments' 2011/12 English Housing Survey, which gives a household report stating that 726,000 household in England have "at least one person using a wheelchair at least some of the time" (this is also cited in the 2014 Papworth Trust report). Another DCLG document from 2013 estimates that there are between 546,200* and 588,200* wheelchair households in England, although it does not explain where this figure was derived. However, both of these count household, not users, suggesting the possibility that the actual number of wheelchair users may be somewhat higher if there are households with more than one wheelchair user. The 2011 Papworth Trust report also cites another unavailable source (no longer being used in their reports) giving a figure of 630,200* users.

Mobility



The 2014 Papworth Trust report also cites an older figure referring to the NHS Purchasing and Supply agency from 2000 which states there are 1,008,300* wheelchair users in England, which seems very high when compared to other figures. A study by Sapey from the same year cites the Audit Commission stating there are 537,800* wheelchair users in England.

The 726,000 figure appears to be the most robust in that the source and methodology are clearly explained, but given this wide variation in figures and the difficulty of defining the population in the first place, even this figure should be treated with some caution. No reliable further of breakdown of the wheelchair population by age, gender, or other demographic factors was found.



Overlap

There are some inconsistencies in the definition of dexterity impairment which makes it more difficult to compare overall population figures. This difficulty affects even the widely cited Family Resources Survey (FRS) run by the DWP, which is also used by the ODI. In the 2012/13 version of the survey, 2,856,900* people were recorded as having problems with their dexterity – which was defined as “for example lifting and carrying objects, using a keyboard”.

This differs from the phrasing in the previous version of the FRS, which prompted separately for “Difficulty lifting, carrying, or moving objects”, recording 5,449,200* people affected; and difficulties with manual dexterity (“using your hands to carry out everyday tasks”), with 2,421,900* people affected. The difference between the 2012/13 and 2011/12 figures is substantial, and it is not clear whether the new phrasing is more likely to capture only those with dexterity impairments related narrowly to manual applications, or more widely to those with problems lifting or carrying.

The Life Opportunities Survey reports 2,263,586 people with a limiting disability that have dexterity impairments – although it is not clear whether the LOS definition covers the narrow or wider sense of dexterity, this figure is similar to that recorded in the 2011/12 FRS for manual dexterity (as opposed to carrying or lifting). However, none of these surveys break the populations down further by demographic factors at the England level in their publicised reports.

Contributing conditions and gaps

There is a large range of conditions and problems that can affect dexterity. Some of the most commonly identified ones are listed in Table 5 below, but this list is by no means exhaustive. It should also be noted that some of these conditions can take a variety of forms, and do not always involve dexterity impairments. This explains why the population figures given in the table by far exceed the survey figures cited previously.

The prevalence rates and populations of these conditions are understood to varying degrees, with further information on each listed in the Data Template. In some cases, further detailed information on age and gender breakdowns has been found. No information was found relating to ethnicity and region for these conditions. A selection of this data has been presented in the slide pack.

Dexterity



Table 5 Conditions that can involve dexterity impairment

Condition	Population	Further demographic data available in Data Template on:
Arthritis	8,402,700*	Figure is for all types of arthritis. More information on osteoarthritis and rheumatoid arthritis in Data Template. Age, gender.
Essential tremor	1,417,960	
Paralysis	1,023,500*	Based on US figures
Stroke	966,093	Age, gender
Tourette's - all	252,000	Age, gender
Parkinson's	107,835	adults 20+
Multiple sclerosis	87,686	Age, gender
Dystonia	58,800	
Amputation	53,900*	
Congenital hemiplegia	53,500	
Cerebral Palsy	24,620	
Motor Neurone Disease	3,800*	Gender
Traumatic Brain Injury	-	

Overlap

As discussed above, definitions of dexterity themselves vary and this will affect the extent to which there is overlap with other types of impairment. However it is clear that there is a very large overlap with mobility, as a large number of the conditions that can impinge on dexterity can also affect mobility. It would seem probable that people with more severe dexterity impairments are also more likely to have mobility impairments. Areas and likelihood of overlap will of course vary with, and even within, each specific condition affecting dexterity.

Many of these conditions themselves count as long-term health conditions and will also be captured within that impairment category. Finally, a range of conditions, such as arthritis, multiple sclerosis, or Parkinson's, can also be associated with long term pain.



Overall prevalence and demographics

According to the Life Opportunities Survey 5,283,185 people with a limiting disability suffer from long term pain, making it the largest impairment type. In general this seems to reflect the fact that long term pain is a problem that affects a large proportion of the population. However, there are many definitions, and degrees of severity and headline figures often include those with mild forms.

Thus a figure of 6,554,100* is cited from the Department for Health, and another paper finds that 46.5% of the general population experience chronic pain (although it is not clear if this is those aged 25+, or all people). However, around half of these had the least severe grade of pain. Similarly, the Health Survey for England in 2011 found that 31% of men and 37% of women (aged 16+) experienced chronic pain lasting 3 months or more, however only around two in five of these have pain so severe it limits their everyday activities. Recalculating the HSE's figures, 9.3% of men and 11.84% of women have moderately or severely limiting pain, equivalent to around 4,729,000 people. (6% overall were reported to be severely limited).

The above suggests that the figures from the Life Opportunities Survey on disabled people with long term pain include largely those with severely or moderately limiting pain, but may also include some with more mild forms.

The Health Survey for England data also has clear breakdowns of the population with limiting chronic pain by age and shows that the prevalence rises strongly with age.

Contributing conditions and gaps

Long term pain can be caused by a very large range of different conditions but the two main ones are usually identified as arthritis and musculoskeletal conditions such as back pain. Fibromyalgia (fibrositis); migraine and cluster headache, and multiple sclerosis are also often mentioned. This is reflected to some degree in the Health Survey for England data on chronic pain which is broken up by site and by types of longstanding illness people may have.



For each of these conditions, overall population sizes are known but further demographic information is generally limited. Arthritis prevalence by gender and rough age groups is recorded, and the Health Survey England data gives useful prevalence rate breakdowns for gender and age on back pain (and other sites). Demographic information on age and gender for the other conditions was variable. It was not possible to source robust information on these by ethnicity or region (other than for chronic pain overall, by strategic health authorities)

Overlap

Long term pain is often not restricted to a single site: the Health Survey for England found that 33% of men and 39% of women with chronic pain experience it in multiple sites. Indeed this may be an underreporting of the true extent as the 'sites' identified include several different body areas.

Overlap is also common with other conditions. Thus the Health Survey for England quantifies a number of longstanding illnesses and the prevalence rates of long term pain among these, with the top ones being musculoskeletal complaints, arthritis, fibrosis, back problems, and breathing complaints. It also notes that mobility and mental health are also often affected. Furthermore, individual conditions contributing to long term pain themselves often involve other impairment types: arthritis in particular can also affect mobility, dexterity, as well as itself being classed as a long-term health condition.

These findings closely match what Sport England's research identified as the largest areas of overlap within the LOS, which further also found large overlap with visual and hearing impairments. It should be noted again that the prevalence of limiting long term pain rises with age and this mirrors the pattern for many of the other associated impairment types.

Breathing



Overall prevalence and main conditions

The DWP's Family Resources Survey from 2012/13 found that there are 3,865,200* people in England reporting that they have problems with stamina, breathing, or fatigue which substantially reduce their ability to carry out day-to-day activities. As this figure may include people with stamina and/or fatigue but not breathing problems, the number of people impaired just by breathing problem is likely to be somewhat lower than this, as reflected in the Life Opportunities Survey, which reports 1,172,782 people with a limiting disability and a breathing impairment.

The two main conditions that could contribute to this are asthma and COPD (chronic obstructive pulmonary disease). The relevant charities report high numbers of people in England with these conditions: 3,109,000* have COPD and 4,536,000 are receiving treatment for asthma (with potentially more people affected by asthma but not receiving treatment). Some people may have both asthma and COPD.

However, both these figures cannot be directly compared with the DWP's, as many people who have asthma or COPD may not be likely to state that their condition reduces their daily activities 'a lot' (the DWP criterion); some people with asthma or COPD might only feel 'a little' or indeed 'not at all' limited by this in their daily activities. People with substantially limiting breathing problems are thus likely to be somewhat fewer than the overall prevalence for these two conditions.

Other long term conditions that could contribute to breathing difficulties include:

- Chronic sinusitis - No England or UK-specific prevalence data was found in the initial search; an US study put the prevalence at 13.6% of the population, indicating a potentially large number of people in England too. COPD and chronic sinusitis may be linked.
- Allergies and hay fever - A potentially very large population: Allergy UK states that up to one in four may experience allergies at some point in their lives. But it is difficult to get a sense how many people with allergies are affected in their breathing or substantially impaired by this.
- Cystic fibrosis - The Cystic Fibrosis Trust estimates there are around 7,600* people in England affected.

Breathing



Demographics and gaps

For COPD, the British Lung Foundation estimates around 3,109,000* people with the condition in England, most of whom are undiagnosed, based on a scientific study from 2006. However this does not break down the whole population any further. COPD is also recorded in the Long Term Conditions Compendium based on the Quality and Outcomes Framework, but this is only based on people with a GP diagnosis of COPD, giving a figure of 899,000 in 2010-11. Although this is lower than the true population, the Compendium does break down prevalence rates by age. However the undiagnosed population may well differ in terms of its make-up by age to the population that has presented to GPs with COPD.

Similarly for asthma, Asthma UK's estimate does not break its figures down much further although it does note that 933,000 children in England and 3,602,000 adults are receiving treatment. (These estimates do not specify the age ranges used.) Again, the Long Term Conditions Compendium gives a lower figure for people in England with a GP diagnosis of asthma, at 3,273,000 in 2010/11. These figures are also broken down by age, but once again the undiagnosed population may well differ in age distribution to the diagnosed population.

The Cystic Fibrosis Trust runs a Registry which collects data on the gender and age of those affected. In 2013 just over half (52.9%) of people with cystic fibrosis are men; 58% are 16 or over with the median age 18, and the median age at death being 29. The Registry report also breaks down the population by age and gender.

The main gaps for most of these conditions are around gender, ethnicity and region.

Overlap

Many people who are substantially impaired in the breathing through any of the above mentioned conditions would also be likely to indicate that they have an impairing long-term health condition in reference to this condition. Indeed, in the 2010 version of the Life Opportunities Survey, asthma, severe allergies, and cystic fibrosis are conditions that specifically appear in the prompted list of long-term health conditions. Cystic fibrosis can also lead to mobility issues.



Other

This impairment category has been included in both the Life Opportunities Survey (LOS) as well as the DWP's Family Resources Survey (FRS). It is important to include this as a category to ensure that people with any other type of impairment are included in overall statistics. However it is a very difficult category to analyse. Some people with conditions that could fall into the previous categories may also not have recognised this in answering surveys and chosen the 'other' category instead.

The LOS gives a figure of 352,103 people with limiting disabilities who have an 'other' impairment. This is much lower than the figure given by the FRS in 2012/13, which found 2,100,700* people in England to be affected by other impairments. However, comparing these figures directly is not possible as the survey questions used differing categories, and furthermore respondent understandings of what counts as 'other' may have been affected by any other questions that came before it in the survey. The severity of impairment may also have been understood differently in the two surveys.

Thus possible other impairment areas will vary for each survey but some of the possibilities include:

- Behavioural
- Balance or physical co-ordination
- Continence
- Other sensory impairments
- Alcohol, drug or gambling dependency (these figures are captured in some mental health studies but may not have been self-reported as such)
- Digestive conditions

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- Digestive conditions



Overall population

The data from the 2009-12 Life Opportunities Survey (LOS) indicates that there are 1,413,822 people with a long-standing limiting disability or illness who stated they have learning, intellectual and/or memory impairments. (The survey does appear to also ask for each of these three individually, but it would require access to the original dataset to see this breakdown).

The figure in the LOS is thus far lower than that for the general population given in the 2011/12 DWP Family Resources Survey (FRS), which states that 2,184,700* had some problems with memory/concentration/learning (which was defined as “Memory or ability to concentrate, learn or understand”). This higher figure in the FRS is possibly due to the fact that the Life Opportunities Survey figure does not capture people with less severe learning or memory difficulties that did not indicate they had a limiting illness or disability.

Other data sources look at the populations for learning difficulties, and for memory problems, individually. Thus for learning, the 2012/13 version of the FRS (which used a different set of questions) states that there are 1,176,400* people with learning impairments. This is very close to the estimate given in the comprehensive People with Learning Disabilities in England report from 2011, which gives a figure of 1,191,000 people with learning disabilities.

Looking at just memory problems, the 2012/13 FRS reports 1,512,500* to be affected by these. This suggests that, when comparing the figures from the 2012/13 FRS version that listed memory and learning impairments separately to the previous version where these were asked for together, there does appear to be some degree of overlap between the two with people experiencing both types of impairment.



Learning disabilities: demographics and gaps

The population of people with learning disabilities is fairly well understood, with large amounts of demographic and other information available in People with Learning Disabilities in England. This report breaks down the population into gender and age bands, both for adults or children as well as into precise age bands. It also includes prevalence estimates by region and local authority, some of which are broken down further into moderate, and severe and profound learning disabilities. Information in ethnicity is however only given for school age children, not the population as whole.

Some of the above though is based on schools information and excludes children not in a school setting, or those outside the age ranges. The Department for Health gives its own estimates of the numbers of people with severe and profound learning disabilities across the whole population broken down by children, working age adults and older people (although it does not specify clearly what the age bands are, these can be assumed to be 0-15, 16-64, and 65+).

The numbers of children with SEN (Special Educational Needs) in schools in general is fairly well understood and data is regularly collected. However this category does cover needs other than learning disabilities, including ASD, behavioural, and sensory needs – access to data sources such as the Schools Census could be a potential further source to explore the school age population with learning difficulties in even greater detail.

For one specific type of condition, Down's Syndrome, the UK Down's Syndrome Association reports 50,400* people in England living with condition but no more demographic information on this population was made available through this organisation.



Memory: conditions, demographics and gaps

The NHS reports that the most common causes for people presenting with memory problems are anxiety, stress, depression, dementia, head injury and stroke. More detailed information for some of these can be found in sections on mental health, long-term health conditions and speech.

For dementia, the population is fairly well understood, with the Alzheimer's Society reporting 685,812 people in England affected by this in 2014. Together with the 2007 Dementia UK report into dementia prevalence and costs, good information is provided on the population by nation and region; the numbers with early and late onset dementia including broken down by gender; and the prevalence of late onset dementia by age bracket. As comprehensive information on breakdowns by ethnicity was however not readily available.

Overlap

Mencap and other sources report that people with learning disabilities may also have a number of other conditions or impairments, including ASD; ADHD; development delay or coordination issues; speech impairments; cerebral palsy; anxiety, mood and behavioural issues or related mental health problems.

For memory impairments, areas of overlap will vary based on the contributing condition. Those affected by dementia may also be classed as having a long-term health condition or a mental health condition. People whose memory has been affected by stroke or head injury could also experience mobility, dexterity, or/and speech impairments.



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