



# HEALTH CARE QUALITY FOR AN ACTIVE LATER LIFE

Improving quality of prevention and treatment through information: England 2005 to 2012

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**A report from the Peninsula College of Medicine and Dentistry Ageing Research Group for Age UK**

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## ***Foreword***

Population ageing is sometimes portrayed in the media as a problem, a “timebomb” or worse a “tsunami”. Older people are too frequently portrayed as routinely unhappy, dependent or beset by a range of disabling health problems or as passive victims of often poor care. In reality, population ageing represents a victory for our society and for our health services and a cause for celebration as we all increase our chance of long and fulfilling lives. Indeed many older people report high levels of life satisfaction, say that they remain active, engaged and contribute much to society, and that they do not live with life limiting conditions.

For all this, with population ageing, there is inevitably a rise in the total number of older people with one or more long term conditions, including the common conditions of ageing such as dementia, mobility problems, frailty syndrome or bone fragility, and in the numbers with some degree of functional or sensory impairment. Older people with such complex needs are increasingly the main users of services and whether in primary care, community health services, long term care or secondary care. Getting care right for these older people and for their families has to be high on everyone’s agenda.

We know that there are still major care gaps and variation in their care, that care is often insufficiently integrated or truly centred on their needs. We also know that we cannot meet the efficiency challenges ahead without getting the care of older people right. Finally, in public health, in prevention and maintaining wellbeing across the life course, the needs of older people have not been sufficiently to the fore.

For anyone – whether policy makers, national or local professional leaders, managers, local government, jobbing clinicians, researchers or educators the PCMD/Age UK report provides a fantastic, comprehensive “basefile” for people to draw on, describing as it does the current landscape in terms of prevalence, outcomes and services across a whole range of common conditions associated with ageing. It will be invaluable to me in my work as national clinical director for older people and I am sure invaluable for many others. I would love to see a document like this updated and disseminated regularly to ensure older people’s health and health services remain in the spotlight.



Professor David Oliver  
National Clinical Director for Older People, Department of Health, London

## *Executive Summary*

1. The number of older people in England is increasing, due to larger numbers of people entering older ages and because older people are living longer. The challenge now is to help older people to live active, engaged and successful lives for as long as possible. There are many preventive interventions and treatments available to help preserve and enhance health and functioning in later life. While there are also many social, economic and other interventions that can support an active later life, this report focuses on health and health care.
2. This report brings together recent scientific data from diverse sources to shed light on two broad questions:
  - As a country, how successful has England and the UK been in preventing later life disease and disability?
  - How well are we delivering high quality medical treatments for the common disabling diseases of later life?
3. In the past few years there has been much worrying evidence showing that the care of frail older people is sometimes poor. In future work we plan to report on the medical treatments received by frail older people, including those in hospital and nursing home settings. While good quality care for frail older people is of critical importance, in this report we concentrate on the health needs of older people who are active and not frail.
4. We have undertaken a detailed search for relevant UK and international comparative data collected since 2005, including scientific publications plus reports from government and third sector organisations (see Methods: page 11). We have also undertaken new data analyses, notably in the government-supported English Longitudinal Study of Ageing (ELSA).

The results are set out in four major sections:

- Section 1: The older population – describing the basics of population size, disease prevalence and disability free life expectancy (page 14)
- Section 2: Health risks – describing the behaviours and exposures that could be modified to improve ‘healthspan’ (page 34)
- Section 3: Quality of care for common age-related disease, including cardiovascular condition, diabetes, osteoarthritis, mental health and cancers (page 44)
- Section 4: Older people’s experience of health care provision and happiness (page 64)

The charts we present have been selected on the following criteria:

- Relating to the prevention or treatment of common conditions
- Representative of large segments of the ageing population
- Based on substantial research
- Having a clear connection to the well-being of older people
- Based on reliable, preferably nationwide data
- Easy to understand by a wide range of audiences
- Balanced, so that no single area dominates the report

5. Historically there have been notable successes in controlling threats to health in later life:
  - Smoking rates in the 50+ age-group have fallen dramatically since the 1970s. Currently, less than 20% of older people are smokers. Helping current smokers quit could make a further positive contribution (see Chart 20)
  - Partly because of the trends in smoking, mortality rates from coronary heart disease have reduced by more than 60% since 1968 in most age-groups, including those aged 65 to 74 years (Chart 15). Significant reductions in respiratory mortality rates have also occurred (Chart 14)
  - In line with the above trends, UK life expectancy at age 65 has risen for men by about 5 years since 1980 and for women by approximately 4 years. Although this is a notable achievement, UK life expectancy at age 65 lags behind countries like Japan and France, which indicates that there is scope for further improvement (Chart 3)
  
6. In common with other age-groups, middle aged and older people are experiencing an epidemic of obesity. In 2008, 35% of men and 37% of women aged 65 to 74 were classified as obese. Obesity in middle and early old age is associated with diabetes and other major diseases, and is also associated with at least a doubling of disability rates (Chart 21).
  
7. Largely in line with the obesity epidemic, prevalence rates of diagnosed diabetes have increased dramatically. For example, in the government's Health Survey for England, the proportion of men aged 65 to 74 years old who have diabetes rose from 6% in 1994 to more than 16% in 2009 (Chart 31).
  
8. Less privileged older people on average live shorter lives than more privileged groups. In addition, less privileged groups tend to spend more of their life expectancy with health related limitations or disabilities (Chart 18). These inequalities in health suggest that there is substantial scope for improving health in later life for many less privileged older people. The experience of health in the more privileged older groups shows that it is possible to enjoy a longer life expectancy and have a shorter average period of disability.
  
9. We present data that raise questions about quality of care, including for example:
  - Health Survey for England data showing that many older people have raised cholesterol levels or high blood pressures that are insufficiently controlled (Chart 28 to Chart 30)
  - The government's National Psychiatric Morbidity Survey 2007 showed that older people with common mental health problems were much less likely to seek help than younger people. Of those who sought help, older people are also much less likely than younger adults to receive counselling and other 'talking therapies', and were more likely to be prescribed tranquilising drugs (Chart 41) despite older people being more sensitive to the side effects of tranquilisers
  - That cancer survival in later life in the UK lags behind other countries, including for common non-smoking related cancers such as colorectal cancer (Chart 45)
  
10. Using questions from the 'Assessing the Care of Vulnerable Elders' (ACOVE) treatment standards based on expert assessment of the scientific evidence (page 45), we present updated analyses of treatment quality from the English Longitudinal Study of Ageing. Disappointingly, in many areas, the care that people reported receiving, raises concerns. Caution is required in interpreting these data, as exemptions (on the basis of clinical appropriateness and/or patient choice) are not recorded. Notwithstanding this, the overall

impression is that there remains substantial scope for improving treatment quality in order to help achieve active, pain free and successful later lives. Examples include:

- Many older people with diabetes report that they did not receive training in self management of their condition (Chart 33) and did not have their feet checked annually (Chart 34).
- Many people with osteoarthritis reported that they were not advised on how to slow progression of their disease or control joint pain (Chart 35)
- Many people who had experienced a fall reported that health care professionals did not check for the underlying causes of their fall (Chart 38).

11. There are many potential reasons for these apparent shortfalls in care. Treatment quality in most health care systems for all age groups may not be as good as it could be. There is evidence that ageism is a significant factor in the nature and quality of health care provided for older people. Others have suggested that some older people choose not to seek care or to participate in treatment programmes offered to them.

12. Whatever the causes of poor technical quality against treatment standards, the information presented suggests that there is ample opportunity to improve quality and achieve better outcomes. Obvious areas for action that emerge from this overview include:

- Obesity and diabetes prevention – acknowledging that the obesity epidemic is a major threat to health in later life
- Encouraging and enabling older people to keep physically active
- Addressing health inequalities in later life and acting to improve the health of less privileged social groups
- Providing smoking cessation help for the 20% of 65 to 74 year olds who still smoke
- Improving chronic disease management, based on building concordance with older people's wishes, with major improvements possible in common conditions of later life including cardiovascular disease, diabetes, arthritis and musculoskeletal pain and mental health. This is likely to depend partly in ending ageist attitudes toward the care of older people

13. Survey data on whether older people feel that their general practitioners involve them in decision making and explain treatments show that very few (<4%) rate these aspects as poor or very poor (compared to nearly 10% in the 18 to 34 age-group) (Chart 46 and Chart 47). In an international survey of the care of sicker adults, the UK sample reported fewer problems with coordination of care or with treatment errors than in other high income countries (Chart 48 and Chart 49). The UK health system therefore appears to have a strong basis for improving quality of medical care to extend active ageing than many other countries.

14. In thinking about the future of prevention and treatment we need to note the arrival of the post-World War II generation into later life. This generation has far higher formal educational attainment than their predecessors. Recent work in the government's Health Survey for England suggests that the post-war generation will enter later life with lower rates of heart disease but higher rates of obesity, diabetes and mental health problems<sup>1</sup>. Whether this group in later life will also demand to be more involved in making their own choices for prevention and treatment remains to be seen.

15. Finally, despite all the challenges, we should remember that the majority of older people report being fairly or very happy, and this changes little with advancing age (Chart 50). The

many past successes in improving health underline the fact that health status in later life is not fixed and immutable. With greater access to good quality prevention and treatment, particularly for those from socially disadvantaged backgrounds, there remains substantial scope to enable older people to remain physically active, socially engaged and happy for longer. Perhaps the key to improving care is to recognise this opportunity and to move beyond the media stereotypes of later life being a largely unhappy and negative experience.

## *List of Abbreviations*

|                   |   |
|-------------------|---|
| <b>APHO:</b>      | Association of Public Health Observatories  |
| <b>BMI:</b>       | Body Mass Index   |
| <b>BP:</b>        | Blood pressure  |
| <b>CAM:</b>       | Cancer Awareness Measure  |
| <b>CHD:</b>       | Coronary heart disease  |
| <b>CI:</b>        | Confidence interval   |
| <b>DFLE:</b>      | Disability-free life expectancy   |
| <b>DRV:</b>       | Dietary reference value   |
| <b>EHLEIS:</b>    | European Health and Life Expectancy Information System  |
| <b>ELSA:</b>      | English Longitudinal Study of Ageing  |
| <b>EWM:</b>       | Excess winter mortality   |
| <b>GP:</b>        | General practitioner  |
| <b>HES:</b>       | Hospital Episode Statistics   |
| <b>HSE:</b>       | Health Survey for England   |
| <b>IMD:</b>       | Index of Multiple Deprivations  |
| <b>LDL:</b>       | Low-density lipoprotein   |
| <b>LEWD:</b>      | Life expectancy with disability   |
| <b>NICE:</b>      | The National Institute for Health and Clinical Excellence   |
| <b>NMSC:</b>      | Non-melanoma skin cancer  |
| <b>OECD:</b>      | The Organisation for Economic Co-operation and Development  |
| <b>ONS:</b>       | Office of National Statistics   |
| <b>PCMD:</b>      | Peninsula College of Medicine and Dentistry   |
| <b>PCT:</b>       | Primary care trust  |
| <b>PenCLAHRC:</b> | Peninsula CLAHRC, the National Institute of Health Research Collaboration for Leadership in Applied Health Research and Care for the South West Peninsula |



# Introduction

1. The number of older people in England is increasing, due both to better childhood survival sixty or more years ago and because people are living longer. Our challenge now is to help middle aged and older people live active, engaged and successful lives for as long as possible, with health problems having as little impact on function as possible. Fortunately there are many preventive and treatment options available to help preserve and enhance health and functioning in later life. While there are also many social, economic and other interventions that support an active later life, this report focuses on health and treatment.
2. This report brings together health data since 2005 from diverse sources to shed light on two questions:
  - As a country, how successful have England and the UK been in preventing later life disease and disability?
  - How well are we delivering high quality medical treatments for the common disabling diseases of later life?
3. In the past few years there has been much disappointing evidence that the care of frail elderly people can sometimes be poor and neglectful<sup>2-5</sup>. We plan to examine the treatment of more frail older people in future reports, including those in hospital settings and nursing homes. In this report, however, we focus on the majority of older people who are not frail: the many who, though sometimes facing challenges to their health, are able to remain active.
4. We aimed to identify the current successes and challenges in providing high quality prevention and treatment to older people. Our remit from Age UK was to focus on data from England mainly, but we have included some data on the rest of the UK and some international comparisons. We have undertaken a detailed search for relevant and robust UK and comparative data collected since 2005, including scientific publications plus reports from government and third sector organisations (see methods below). We have also undertaken new data analyses, notably in the government supported English Longitudinal Study of Ageing (ELSA).
5. Later life has no specific definition. In this report we focus mainly on those aged 65 and over, using traditional and widely used older age threshold. We also include data on those aged between 50 and 65 years, as this group forms the next generation of older people: prevention of disease and disability in this group now could produce longer active later lives in the future.
6. The report is divided into four major sections:
  - Section 1: The older population – describing the basics of population size, disease prevalence and disability free life expectancy
  - Section 2: Health risks – describing the behaviours and exposures that could be modified to improve ‘healthspan’
  - Section 3: Quality of care for common age-related disease, including cardiovascular condition, diabetes, osteoarthritis, mental health and cancers
  - Section 4: Some of the views of older people on the treatment they receive

7. Measuring the quality of medical care is challenging. In Section 3 we outline our main approach, which is based on expert reviews of the medical evidence and the defining of standards. For example, if you have diabetes, there is good evidence that you will benefit from having your glucose levels, eyes and feet checked periodically. If these checks do not happen, it would be wise to investigate, as valid exceptions to the rule should be rare. In the main we have used standards from the 'Assessing the Care of Vulnerable Elderly' or ACOVE project<sup>6</sup>, and similar work developed by the RAND Health group in the USA, adapted by experts for the UK<sup>7</sup>. We then examined question responses relating to these standards in the English Longitudinal Study of Ageing (ELSA), using the most recent available data (from interviews undertaken during 2009).

## **Methods**

For this report we aimed to identify, review and select for presentation recent data on health and health care relating to the common causes of disability or disease in the older population. We have aimed to cover the major contributors to the burden of disease in older people, as estimated for high income countries by the World Health Organisation<sup>8,9</sup>. The work compiled is drawn from a literature review and also new data analysis, notably in the English Longitudinal Study of Ageing.

### **Literature review**

Literature was searched and reviewed primarily by Behrooz Tavakoly and Rachel Winder, and a rapid literature synthesis was conducted from August 2011 to March 2012. A preliminary search indicated that much relevant material was not indexed in the formal scientific literature databases, and therefore a wider search was undertaken.

We aimed to include the following areas:

- Data on health status, health risks plus quality of treatment (NHS or other)
- Relating to England primarily although including the other countries of the UK where possible
- Material relating to those aged 50 plus
- Data collected since 2005, to ensure timeliness
- Non-frail older people, thus generally excluding studies based in hospital or nursing home settings (these will be reviewed in future work)
- High quality quantitative data i.e. with defined and relevant target populations, measures of response and formal scientific methods. We have not reviewed qualitative data for this project

Where possible we have tried to identify comparative data from other high income countries. Sources searched included:

#### *Medline/PubMed library search*

The focus of our search in Medline/PubMed libraries was based on: age (50+); treatment and/or medical care; UK, GB or England; and date, 2005 onward. Over 600 relevant articles were

identified, but few met our criteria mainly because much of the data presented was collected prior to 2005 or were not representative of the national population.

#### *Google search*

We searched through Google with similar search terms to those used for searching Medline. In Google searches we also used a citation tracking approach, looking through the references of the relevant extracted documents to find the most recent information from other available sources.

#### *Official websites of relevant governmental or non-governmental organisations*

This search included:

Official reports from:

- EuroHex – Advanced research on European life expectancies
- Eurostat
- National Cancer Intelligence Network
- NHS Information Centre
- The Audit Commission
- The Commonwealth Fund (international health policy surveys)
- The Kings Fund
- The OECD (Organisation for Economic Co-operation and Development)
- The Office for National Statistics
- The Public Health Observatories

Leading non-governmental organisations including:

- Age UK
- British Heart Foundation
- Cancer Research UK
- Centre for Policy on Ageing
- Diabetes UK
- The Alzheimer Society
- The Health Foundation

#### *Expert recommended sources*

We examined material recommended by members of Peninsula Ageing Research Group and our Age UK advisory group. We have also contacted several research groups whose work is focussed on specific areas (e.g. health life expectancy, cancer survival etc), to ensure the timeliness and completeness of the material.

### **New data analyses**

In addition to published material we undertook new analyses of publicly available data relating to our aims. The data sources used in this study include:

- National survey data including: Health Survey for England, English Longitudinal Study of Ageing, General Household Survey/General lifestyle Survey (all from Office for National Statistics)
- International and European online data including data from World Health Organization (WHO) and Organization for Economic Co-operation and Development (OCED)

In 2008 Melzer and colleagues published analyses of Assessing the Care of Vulnerable Elders (ACOVE) quality of treatment measures from data collected in the English Longitudinal Study of Ageing in 2005<sup>10</sup>. Using similar methods<sup>10</sup> we used more recent data from ELSA (2009) to provide updated estimates for key elements of care, where possible.

### Criteria for inclusion

The project aimed to distil the most significant data for presentation to policymakers and the public. The following criteria were used to select amongst the relevant material for inclusion in the chartbook:

- Relating to common conditions
- Representative of large segments of the ageing population, rather than one particular group
- Material based on substantial research
- Having a clear connection to the well-being of older people
- based on reliable, preferably nationwide national, data
- Can be easily understood by a wide range of audiences
- Provide a balance, so that no single area dominates the report

### Notable omissions

No report can include all available data. Data on health care activity (numbers of consultations, admissions etc) were not included because these cannot be easily interpreted as relating directly to the quality of prevention or treatment obtained. Similarly, the views of older people on general aspects of care (waiting times, availability of appointments, etc) were not included for the same reason.

Perhaps the most notable absence is that of general practice derived data collected routinely as part of the Quality and Outcomes Framework (QOF) in Primary Care. Approximately 90% of all NHS contacts take place in general practice. The QOF framework is designed to incentivise good practice across clinical, organisational, patient experience and other service domains. Each domain consists of a set of indicators against which practices score points according to their level of achievement, and are reimbursed for their activities. Although a rich source of data on the management of many of the chronic diseases referred to in this report that are prevalent in later life, we are unable to present age-related analysis of QOF as it is anonymised and collated at the level of practices rather than individual patients. Similarly, while the new NHS<sup>11</sup> and Public Health Outcomes frameworks<sup>12</sup> will capture data relevant to the care of older people (aged up to 75 years) across primary and secondary care services. However, many of the indicators are under development and are not yet available for analysis.

#### *Further reading*

Department of Health (2012). Healthy Lives, Healthy People: Improving Outcomes and Supporting Transparency. A Public Health Outcomes Framework.

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_132358](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_132358)

NHS Information Centre. (Accessed 2012). The NHS Quality and Outcomes Framework for Primary Care.

<http://www.qof.ic.nhs.uk/>

Department of Health. (2011). NHS Outcomes Framework 2012/13.

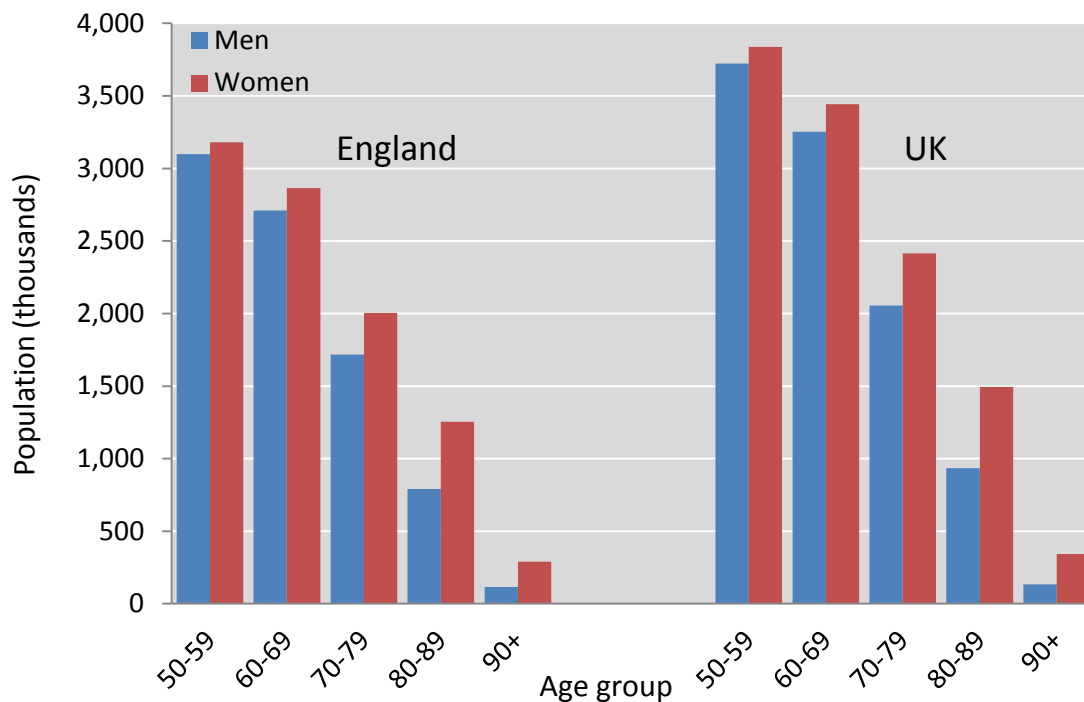
[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_131700](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_131700)

## **SECTION 1:**

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# THE OLDER POPULATION: NUMBERS, HEALTH CONDITIONS AND FUNCTIONING

## Chart 1: The older population



Source data: ONS, 2011 - Mid-2010 Population Estimate  
 (<http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc1/UKPyramid.html>)

**Figure 1: Number of men and women aged 50+ years, in England and UK, 2010**

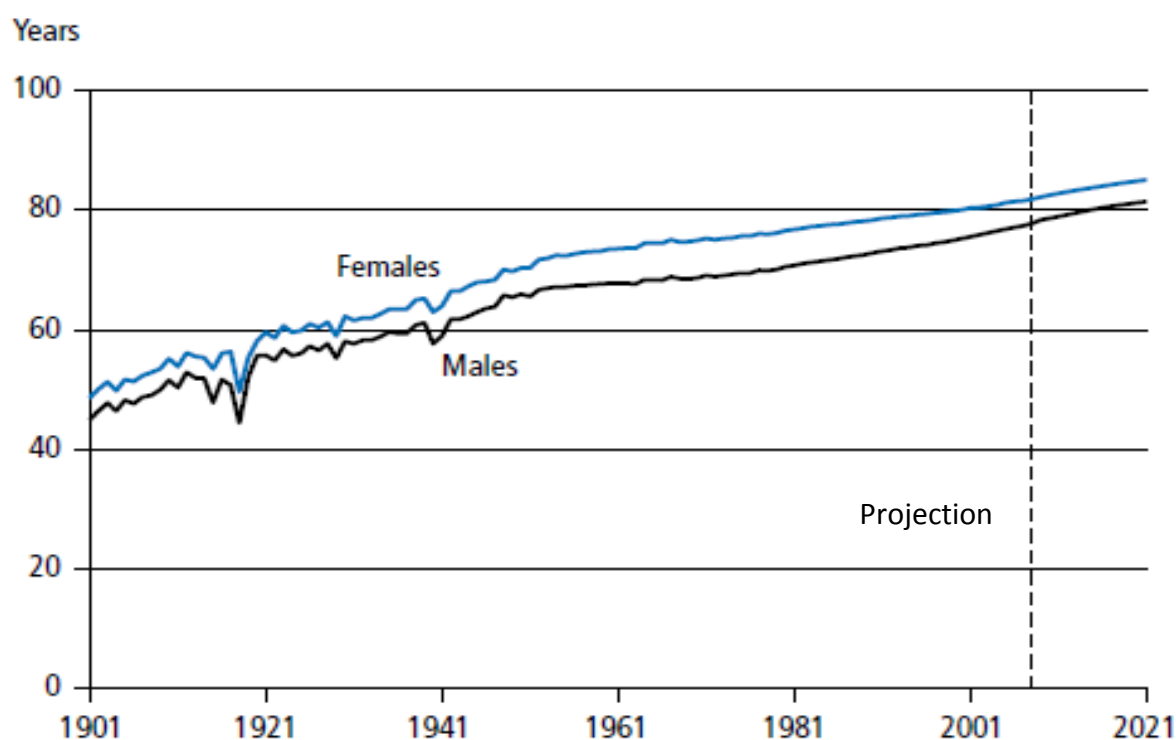
Over the past 40 years, the whole population has increased in size: in 1971 the total UK population was 55.9 million compared to 62.3 million in 2010, an 11.4 % increase. Over this time period, the population aged fifty and over grew by 25% and now forms 34.7% of the total UK population compared to 30.9% in 1971. Figure 1 shows the male and female population aged fifty and over in 2010 which stood at 17.3 million in England and 21.6 million in the UK.

The population mix has also changed, with children now making up a smaller percentage of the total. There are also large groups born soon after 1945 and in the 1960s coming through: the so-called ‘baby boomers’<sup>13</sup> (although numbers are relatively much smaller in the UK than in the USA, where the term originated). This large post-World War II generation will help expand the 65+ UK population from 14.3% to an estimated 17.8% of the total by 2051 on current trends<sup>14</sup>. The expansion of the older population is therefore mainly the result of long-term population and birth patterns and to a lesser extent longer survival of people in later life.

### Further reading

Hicks J., Allen G., (1999). A Century of Change: Trends in UK Statistics since 1900. Research Paper 99/111. London: House of Commons Library. <http://www.parliament.uk/documents/commons/lib/research/rp99/rp99-111.pdf>

## Chart 2: Life expectancy at birth



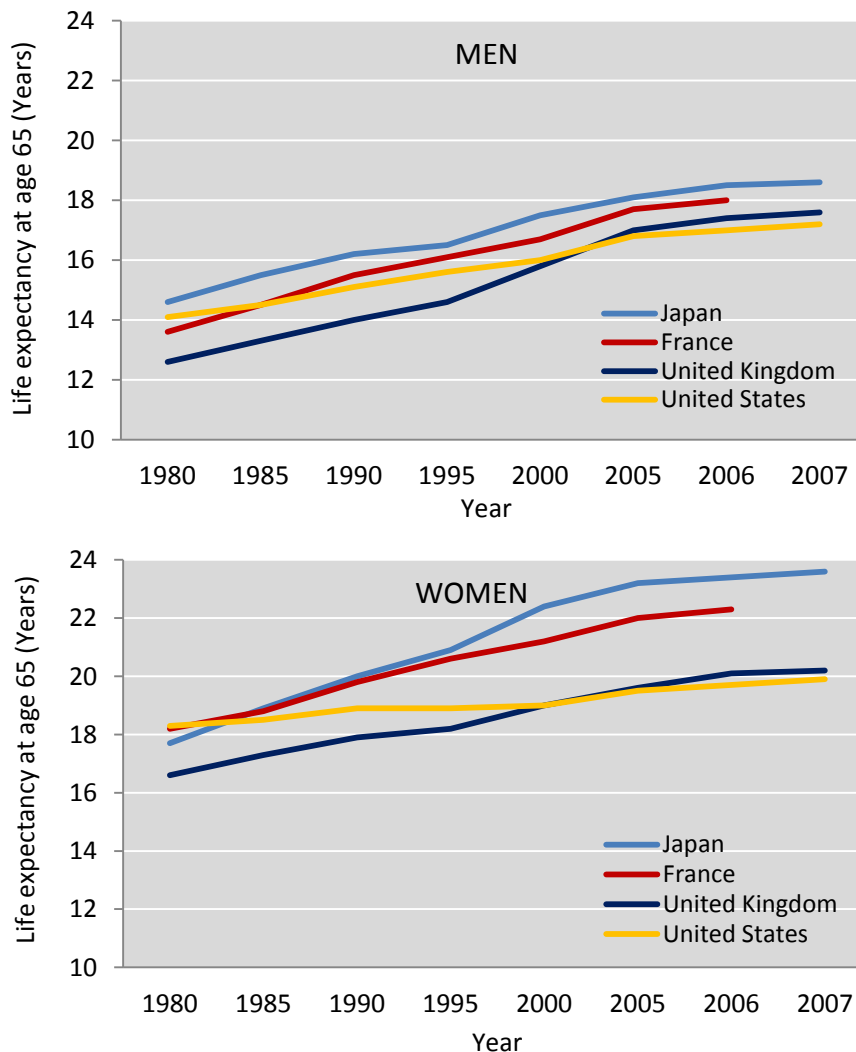
Source: Social Trends 40: 2010 edition, ONS

**Figure 2: Life expectancy at birth in men and women, UK, 1901 to 2021.**

Since 1901 there has been a very substantial increase in life expectancy at birth for men and women in the UK: from age 49 to 82.3 years for women and 45 to 78.2 years in men (Figure 2)\*. However, these figures are somewhat misleading because the gain is largely attributable to a reduction in childhood deaths: better nutrition and standards of living, plus new treatments which helped reduce child mortality. Major events such as the First World War (followed by an influenza outbreak), economic depression in the 1920s and the Second World War interrupted the improvement in life expectancy of the new born child<sup>13</sup>. The higher childhood survival increased the UK population of school children and workers and is now feeding through into later life. The impression of lengthening life expectancy produced by this graph may have caused more concerns about the aging population than are justified by these underlying facts surrounding the better survival of children. Life expectancy increases for those who reached age 65 have been important but much less dramatic (see Figure 3).

\* Life expectancy at birth is designed as the average number of years a new-born baby would survive if he or she experienced age-specific mortality rates. 2008-based projections for 2009 to 2021.

### Chart 3: Life expectancy at age 65 – international comparisons



Source data: OECD Health Data 2011 - Frequently Requested Data, Update - November 2011  
[http://stats.oecd.org/Index.aspx?DataSetCode=HEALTH\\_STAT](http://stats.oecd.org/Index.aspx?DataSetCode=HEALTH_STAT)

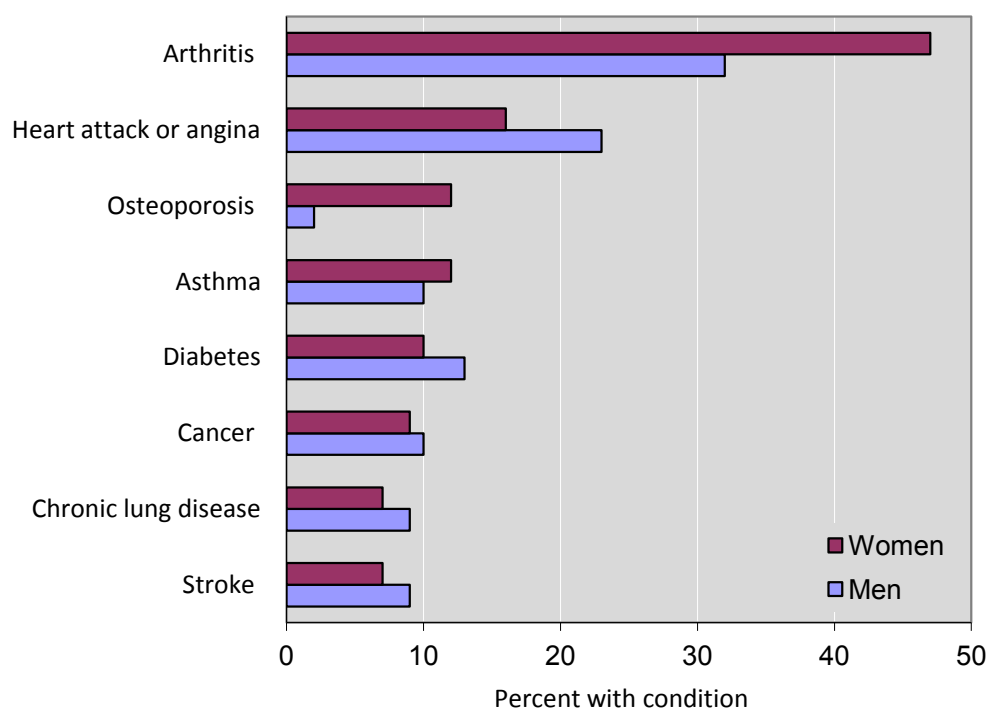
**Figure 3: International changes in life expectancy in men and women at age 65, 1980-2007**

In addition to the gain in life expectancy from birth (Figure 2), mainly from childhood mortality decreases, there has also been a steady lengthening of later life itself. Figure 3 shows the increase in life expectancy at age 65 from 1980 to 2007 for women and men in the UK compared to the United States, France and Japan. In the UK, life expectancy has increased by five years for men and 3.6 years for women over this period compared to 4.4 and 4.1 years for men and women in France and 4.0 and 5.9 years respectively for Japan. However, France and Japan started from a much better position so the UK still lags behind, particularly for women. In contrast, in 1980 the US population had a similar life expectancy at age 65 as France and Japan but has seen little improvement since, to the extent that the UK is now in a better position compared to the US.

While many factors are involved in explaining these trends, the differences in life expectancy, between the UK and long-lived countries such as France and Japan gives an indication of what might be possible to achieve in terms of life expectancy.



## Chart 4: Prevalence of disease



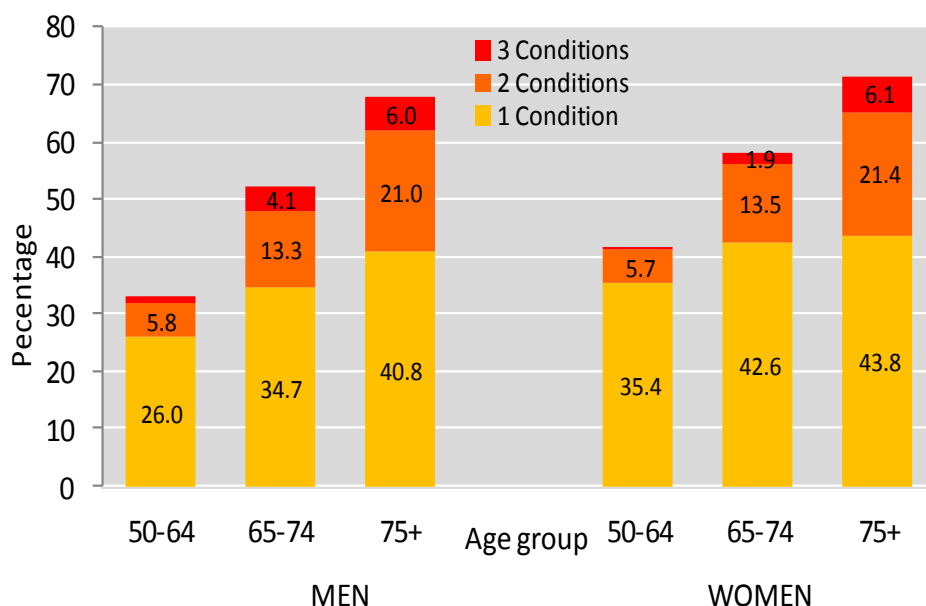
Source data: Health Survey for England 2005<sup>15</sup> Copyright © 2011, Re-used with the permission of The NHS Information Centre. All rights reserved

**Figure 4: Self-reported prevalence of self-reported doctor diagnosed chronic disease in men and women aged 65+ years, England, 2005**

For people aged 65 and over and living in the community, arthritis (predominantly osteoarthritis) is by far the most common condition (Figure 4)\*. The next most common set of conditions is due to changes in the arteries, affecting especially the heart and manifesting as heart attacks and angina. Stroke, due to clots or bleeding in the arteries of the brain can be a cause of major disability, but better preventive and acute treatment is reducing the impact of this condition to some degree. Osteoporosis involves thinning of the bone structure with a risk of fractures: it affects more than 10% of women but is less common in men. Lung diseases (including mainly asthma and chronic bronchitis) together are significant problems, with the latter often attributable to tobacco smoking. At any one time in the community 8 to 10% of older people have current cancer or a history of having had cancer (excluding the more minor skin cancers) at some time in their lives. The impact or severity of most diseases varies greatly, and with good management merely having a condition does not necessarily mean that an active and fulfilling later life is not possible.

\* Question asked for each disease reported by respondent: 'You said that you had angina. Were you told by a doctor that you had angina'.

## Chart 5: Several conditions together - co-morbidity



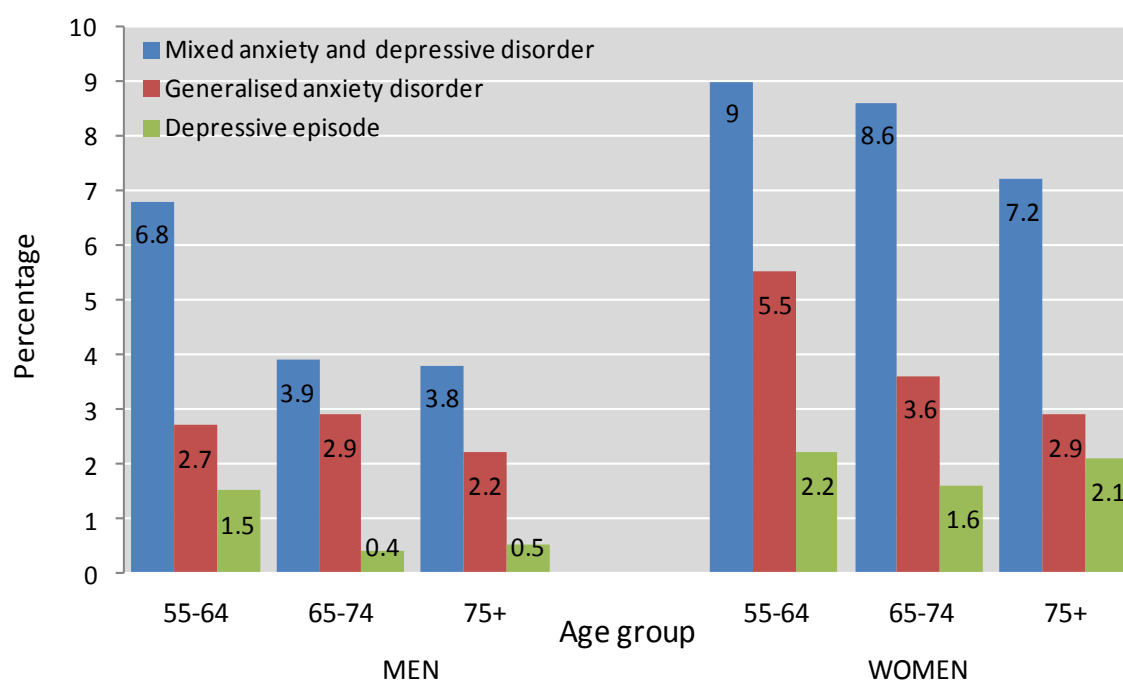
Source data: ELSA 2009

**Figure 5: Percentage reporting one to three conditions in men and women aged 50+ years, England, 2009**

Around 14% of those aged 50 plus report two or more of the more serious age-related conditions (i.e. including heart disease, stroke, cancer, diabetes, arthritis or dementia). There is a marked increase in the prevalence of such co-morbidity with advancing age (but with similar figures across genders) (Figure 5)\*. The graph above also shows that in the general community the proportion of older people with three or more of the major conditions listed is relatively small (i.e. less than 7% even in the 75+ group living in the community).

\* Respondents reporting a diagnosis of heart disease (i.e. one or more of the following: heart attack, congestive heart failure, angina or ischemic heart disease), stroke, cancer, diabetes, arthritis and dementia. All 6 conditions were treated equally by allocating one score to each disease.

Chart 6: Common mental health disorders in the community



Source data: *Adult Psychiatric Morbidity in England, 2007: Results of a household survey*<sup>16</sup>. Copyright © 2011, Re-used with the permission of The Health and Social Care Information Centre. All rights reserved

**Figure 6: Prevalence of common mental health disorders in the past week in men and women aged 55 + years, England, 2007**

Mixed anxiety and depression is the most common mental disorder in the community in later life, followed by anxiety and depressive episodes separately. In this national survey of psychiatric morbidity in England<sup>16</sup>, respondents were asked to complete the revised Clinical Interview Schedule (CIS-R): phobias, obsessive compulsive disorders and panic disorders were rare (i.e. each affecting less than 1%). In total, 7.2% of men aged 65 to 74 had any common mental disorder compared to 13.8% of women (Figure 6). Social isolation is common in the older population and may be an independent risk factor for depression<sup>17 18</sup>.

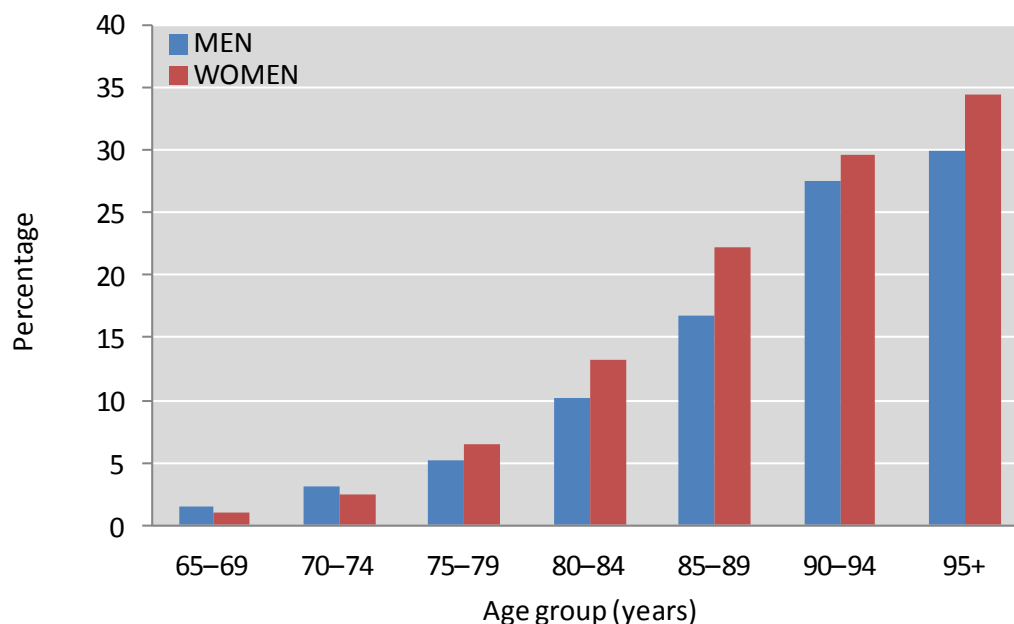
A recent finding from the Health Survey for England data suggests that the post-war generation (born 1945 to 1954) may have almost double the prevalence of mental disorder diagnoses than the wartime generation had at the same age (prevalence for 1935-1939 cohort, 2.5%, vs. 1950-1954 cohort, 4.7%)<sup>1</sup>. Findings from the National Psychiatric Survey show limited evidence for an increase in prevalence in women, but not for men born since 1950<sup>19</sup>.

#### Further reading

Spiers N, Brugha TS, et al. (2012). Age and birth cohort differences in depression in repeated cross-sectional surveys in England: The National Psychiatric Morbidity Surveys, 1993 to 2007. *Psychological Medicine*. 17: 1-9. <http://journals.cambridge.org/download.php?file=%2FPSM%2FS003329171200013Xa.pdf&code=388f842b7beb0bf8215d621ee092fd38>

Bebbington, P., Brugha, T., et al (2009). *Adult Psychiatric Morbidity in England, 2007: Results of a Household Survey*. The Health & Social Care Information Centre. <http://www.ic.nhs.uk/pubs/psychiatricmorbidity07>

## Chart 7: Dementia - a major challenge



Source data: Alzheimer's Society 2007<sup>20</sup> Reproduced with permission from Alzheimer's Society. © Alzheimer's Society, 2007

**Figure 7: The consensus estimates of the population prevalence of late onset dementia in men and women aged 65 +years, UK, 2007**

In surveys of the older population, it is difficult to get a true estimate of the impact of dementia: presented in Figure 7 therefore are expert consensus estimates. The chart shows that dementia is an enormous challenge. Two women for every man are affected by dementia, with Alzheimer's dementia being more common in women and vascular dementia and mixed dementia more common in men<sup>20</sup>. However it is also clear that in all age-groups the majority of older people do not have dementia. Interestingly, analyses of the National Psychiatric Morbidity Survey 2007<sup>16</sup> showed that forgetfulness in the absence of dementia is more related to anxiety, depressive and physical symptoms, than to age<sup>21</sup>.

It has been estimated that only around 40% of people with dementia receive a diagnosis in the UK<sup>22</sup>, which can have an impact on how their care is planned and on starting treatments that may help manage the disease<sup>23</sup>. In one international comparison study, it was estimated that the number of patients in the UK receiving pharmacological treatment was less than half that in countries such as France, Sweden, Ireland and Spain<sup>24</sup>. Improvements in early diagnosis and intervention, in care both in general hospitals and care homes, and a reduction of antipsychotic medication are needed<sup>25 26</sup>.

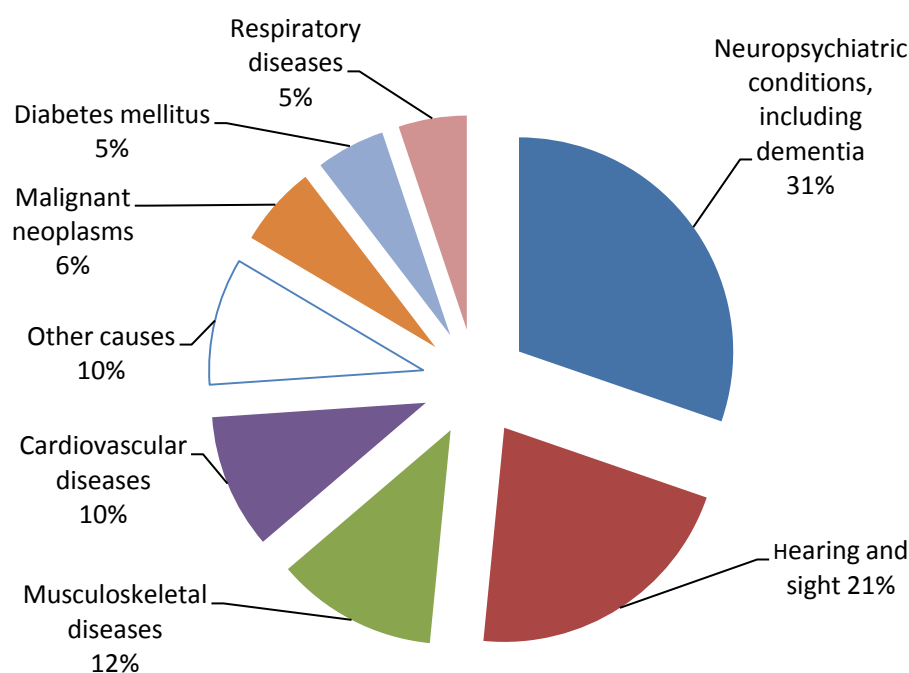
### Further reading

World Health Organization and Alzheimer's Disease International (2012). Dementia: A Public Health Priority. Geneva: WHO. [http://whqlibdoc.who.int/publications/2012/9789241564458\\_eng.pdf](http://whqlibdoc.who.int/publications/2012/9789241564458_eng.pdf)

Prince, M, Bryce, R., Ferri, C. (2011). World Alzheimer Report 2011: The Benefits of Early Diagnosis and Intervention. London: Alzheimer's Disease. <http://www.alz.co.uk/research/WorldAlzheimerReport2011.pdf>

Department of Health (2009). Living Well with Dementia: A National Dementia Strategy. Leeds: DoH. [www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_094058](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_094058)

## Chart 8: Years lost with disability - dementia, hearing and sight loss dominate



Source data: World Health Organisation: [http://www.who.int/healthinfo/global\\_burden\\_disease/estimates\\_regional/en/index.html](http://www.who.int/healthinfo/global_burden_disease/estimates_regional/en/index.html)  
Last visited 30/04/2012

**Figure 8: Estimated proportion of 'Years Lost due to Disability' for adults aged 60+ years, 2004, high income countries of the European region**

The World Health Organisation 'Burden of disease' project<sup>8</sup> sets out to estimate the number of years lost with disability attributable to disease categories. The estimate takes into account the relative severity of the disability caused, giving severe disability a bigger weight. Above we present the results for high income country populations aged 60 years and over.

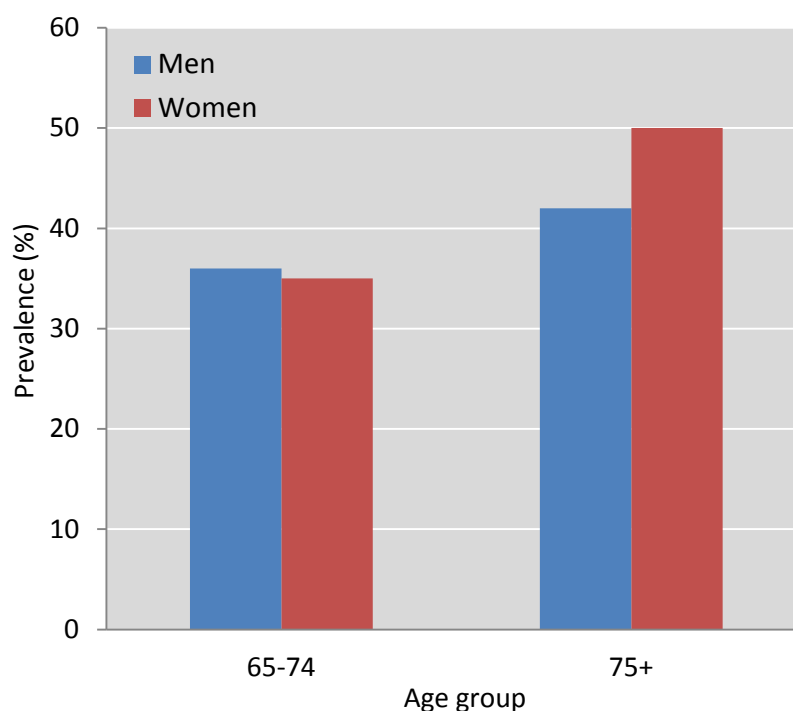
The biggest contributor to years lost through disability in the 60 years plus population was attributed to neuropsychiatric disorders: this was dominated by the burden of dementia (21.9% of all years lost with disability). The next biggest area relates to hearing loss (10.6%). Disability due to vision impairment was attributed mainly to refractive errors, macular degeneration, glaucoma and cataracts.

### Further reading

World Health Organisation (2012). Good Health Adds Life to Years: Global Brief for World Health Day 2012, WHO. [http://whqlibdoc.who.int/hq/2012/WHO\\_DCO\\_WHD\\_2012.2\\_eng.pdf](http://whqlibdoc.who.int/hq/2012/WHO_DCO_WHD_2012.2_eng.pdf)

World Health Organisation (2008). The Global Burden of Disease: 2004 Update. Geneva: WHO. [http://www.who.int/healthinfo/global\\_burden\\_disease/GBD\\_report\\_2004update\\_full.pdf](http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf)

## Chart 9: Longstanding illness and limitation in activities



Source data: General Lifestyle Survey, ONS 2009<sup>27</sup>

**Figure 9: Prevalence of self-reported limiting longstanding illness in men and women aged 65 + years England, 2009**

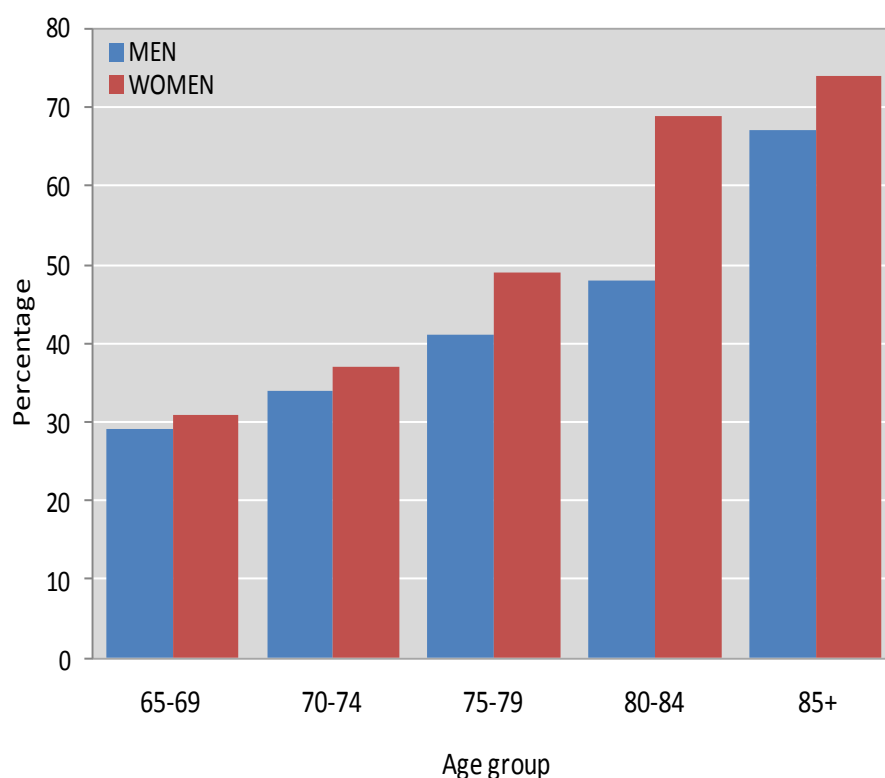
Merely being diagnosed with a disease reveals little about the impact of that condition on daily life. Many older people have been diagnosed with one or more chronic conditions, but despite this a majority of older people in the community report having no limitation of activities as a result of their conditions. For example, less than 40% of those in the 65 to 74 age-group report having limitation in activities from any 'longstanding illness, disability or infirmity'<sup>\*</sup> (Figure 9). Targeting conditions such as stroke, diabetes, heart disease, cognitive impairment, arthritis and visual impairment could significantly increase the number of years of life lived without disability<sup>28</sup>.

### Further reading

Stroke Association (2012). Struggling to Recover: Life after Stroke Campaign Briefing. London: The Stroke Association. <http://www.stroke.org.uk/sites/default/files/files/Struggling%20to%20recover%20Rpt.pdf>

<sup>\*</sup> Respondents were asked if they had 'any longstanding illness, disability or infirmity', i.e. anything that had troubled/affected them over a period of time. If responded 'yes' they were asked whether the illness or disability limited their activities in any way?' A 'limiting longstanding illness' is a positive answer to both parts of the question.

Chart 10: Mobility difficulties



Source data: HSE 2005<sup>29</sup>. Copyright © 2011, Re-used with the permission of The Health and Social Care Information Centre. All rights reserved

**Figure 10: Prevalence of mobility problems in men and women aged 65 +years, England, 2005**

Being able to walk moderate distances (e.g. a quarter of a mile) without difficulty is a major element in being independent. In the community, a majority of people aged between 65 and 79 report no difficulties in this area (Figure 10)<sup>\*</sup>. Fewer men (39%) than women (47%) aged 65 and over reported any difficulty with walking a quarter of a mile. Both the prevalence and severity of this mobility problem increases with age. When asked, the main reasons given for finding difficulty walking were: pain in the leg or foot, and/or shortness of breath, with older groups reporting some stability (balance) problems and fatigue too<sup>30</sup>.

Prevalence rates of mobility difficulties are higher in less privileged communities. Those living in non-Spearhead PCTs and also those living in local authorities with nationally the highest two fifths of equivalised household income<sup>†</sup> were less likely to experience mobility problems than those in Spearhead PCTs<sup>‡</sup><sup>29</sup>.

#### Further reading

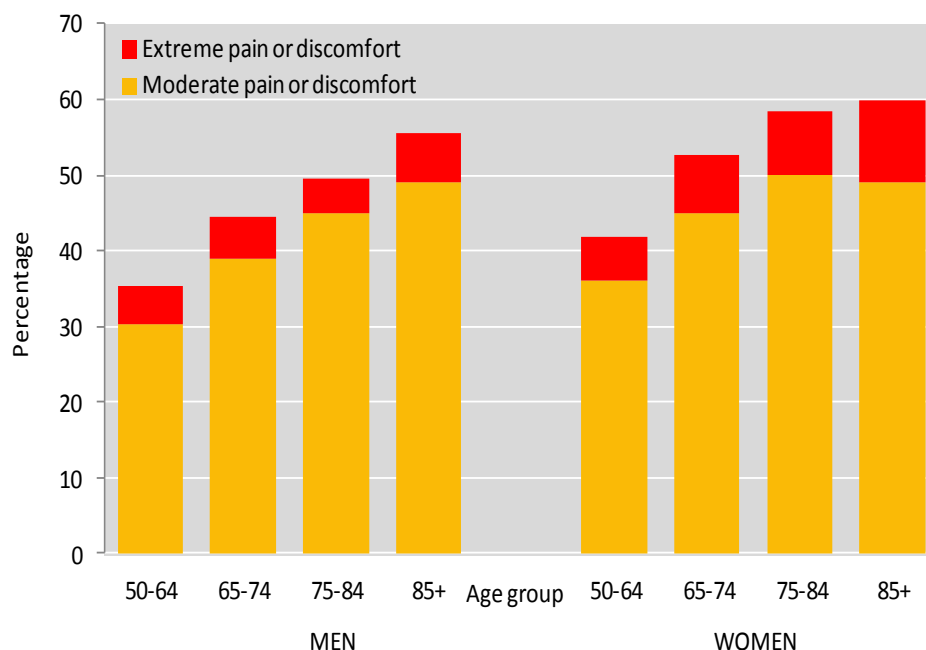
Gardener, E. A., F. A. Huppert, et al. (2006). "Middle-aged and mobility-limited: Prevalence of disability and symptom attributions in a national survey." *Journal of General Internal Medicine* 21(10): 1091-1096.

<sup>\*</sup> Informants were asked whether they were able to walk a quarter of a mile by themselves, without any equipment.

<sup>†</sup> Equivalised household income is a measure that adjusts the total annual income of the household to take account of the number of people in the household.

<sup>‡</sup> The Spearhead Group consists of the local authority areas with the widest health inequalities nationally. They are identified by being the bottom fifth of areas with three or more of the following factors: Male life expectancy at birth, female life expectancy at birth, cancer mortality rate in those aged under 75, CVD mortality rate in those aged under 7 Index of Multiple Deprivation 2004 (LA summary), average score. These local authority areas have been mapped onto primary care trust boundaries.

## Chart 11: Pain or discomfort



Source data: HSE 2005<sup>29</sup>, 2006 and 2008 data (aggregated 3 year's data). ESDS, © Copyright 2003-2012 Universities of Essex and Manchester. All rights reserved. <http://www.esds.ac.uk/findingData/hseTitles.asp>

**Figure 11: Self-reported prevalence of pain in men and women aged 50+ years, England, 2005, 2006 & 2008**

Figure 11 shows the proportion of people affected by pain or discomfort: around 35% of men and over 40% of women aged 50 to 64 years complain of moderate or extreme pain or discomfort\*.

Persistent pain is not only widespread but often under-reported by older people<sup>31</sup>. Areas where pain is most often reported as occurring in those aged 50+ are knee, lower back, shoulder or upper arm and hip, and the pain becoming much more debilitating with age (as measured by the effect of pain on daily activities)<sup>32</sup>.

Although the mechanism is unclear, musculo-skeletal pain has also been associated with an increased risk of mortality, especially cancer-related deaths and cardiovascular mortality<sup>33</sup>.

### Further reading

British Pain Society and British Geriatrics Society (2007). Guidance on: The Assessment of Pain in Older People: British Pain Society and British Geriatrics Society.

<http://www.bgs.org.uk/Publications/Publication%20Downloads/Sep2007PainAssessment.pdf>

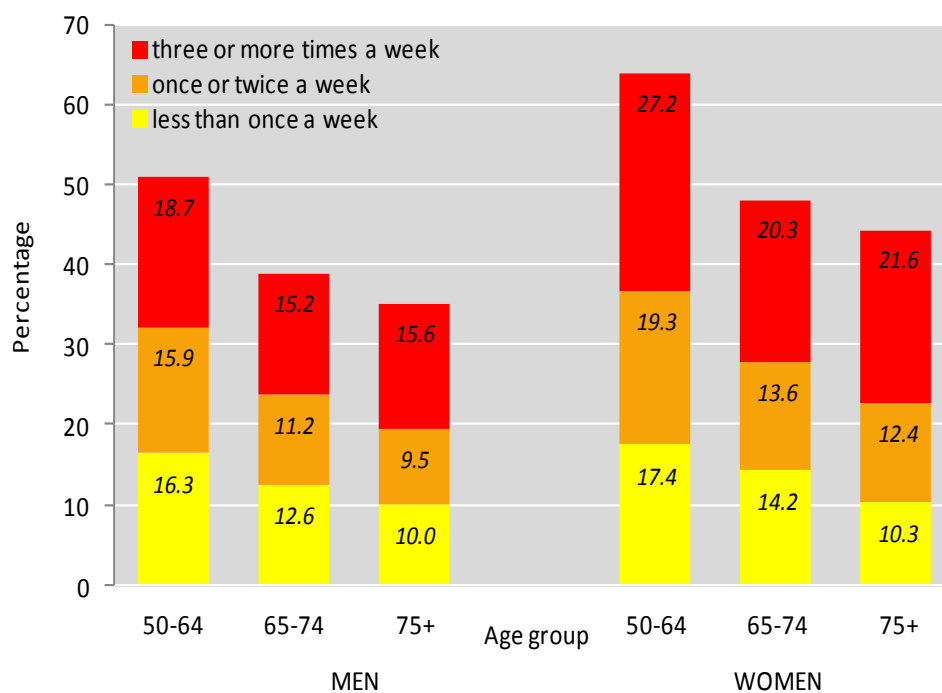
Fricker, J. Pain in Europe Survey.

[http://www.paineurope.com/fileadmin/user\\_upload/Issues/Pain\\_In\\_Europe\\_Survey/PainInEuropeSurvey\\_2.pdf](http://www.paineurope.com/fileadmin/user_upload/Issues/Pain_In_Europe_Survey/PainInEuropeSurvey_2.pdf)

\* Respondents were asked to 'indicate the statement that best describes your own health state **today**: I have no pain or discomfort, I have moderate pain or discomfort or I have extreme pain or discomfort'.



## Chart 12: Sleep quality



Source data: ELSA 2009

**Figure 12: Frequency of waking feeling tired and worn out in men and women aged 50+ years, England, 2009**

Although the dynamics of sleep change with age, older adults still sleep on average around seven hours a night<sup>34</sup>; however, older adults report insomnia more regularly although this is generally due to co-morbid conditions, rather than age per se<sup>35</sup>. Poor sleep can have a wide range of consequences including reduced physical function, increasing the risk of falls, cognitive impairment and mortality, although it is not clear whether treating sleep disorders in older adults can reduce these effects<sup>35</sup>. It is clear from Figure 12 that men and women aged 50-64 years report more often feeling tired and worn out on waking than those in older age groups, with over a fifth of women aged 50 or over reporting these symptoms three or more times per week\*. Although sleep loss through worry has been shown to decline with age<sup>36</sup>, many other conditions and circumstances can impact more heavily (e.g. pain, dementia, urinary problems, caring roles) and the knock-on effect on sleep disturbance can have an overall effect on self-reports of health and quality of life<sup>37</sup>.

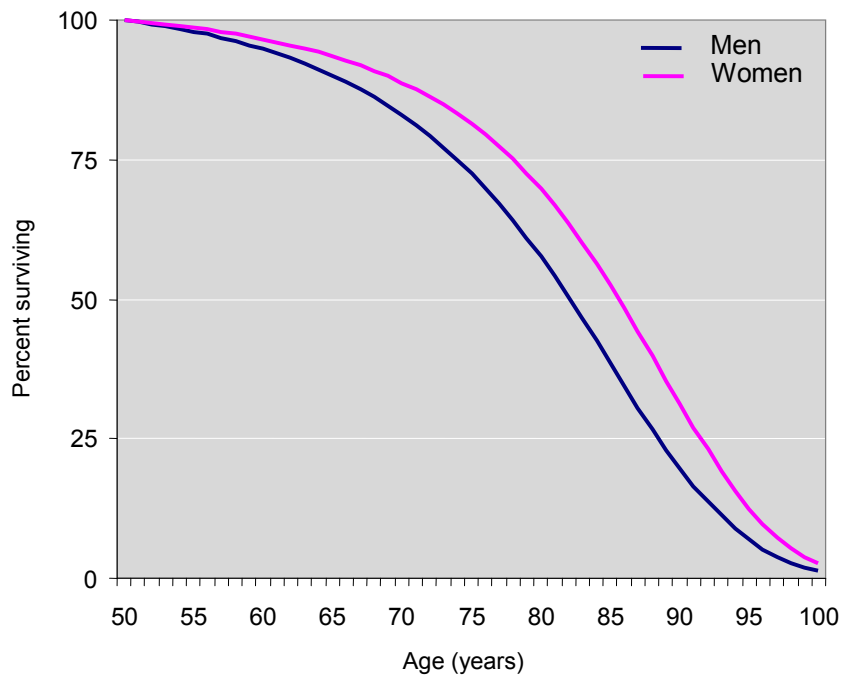
While the use of sedatives can create modest improvements in sleep, they do however bring their own risk factors in the older population (e.g. increased risk of falls and car accidents, as well as many minor side effects), especially in those with cognitive decline or at risk of falling<sup>38</sup>.

#### Further reading

Glass J., Lanctôt K.L., et al. (2005) Sedative hypnotics in older people with insomnia: Meta-analysis of risks and benefits. *British Medical Journal*, 331(7526):1169. <http://www.bmj.com/content/331/7526/1169.full>

\* Question asked: How often do you wake up after your usual amount of sleep feeling tired and worn out? Possible answers: 1. Not during the last month; 2. less than once a week; 3. once or twice a week; 4. three or more times a week.

## Chart 13: Reducing early deaths



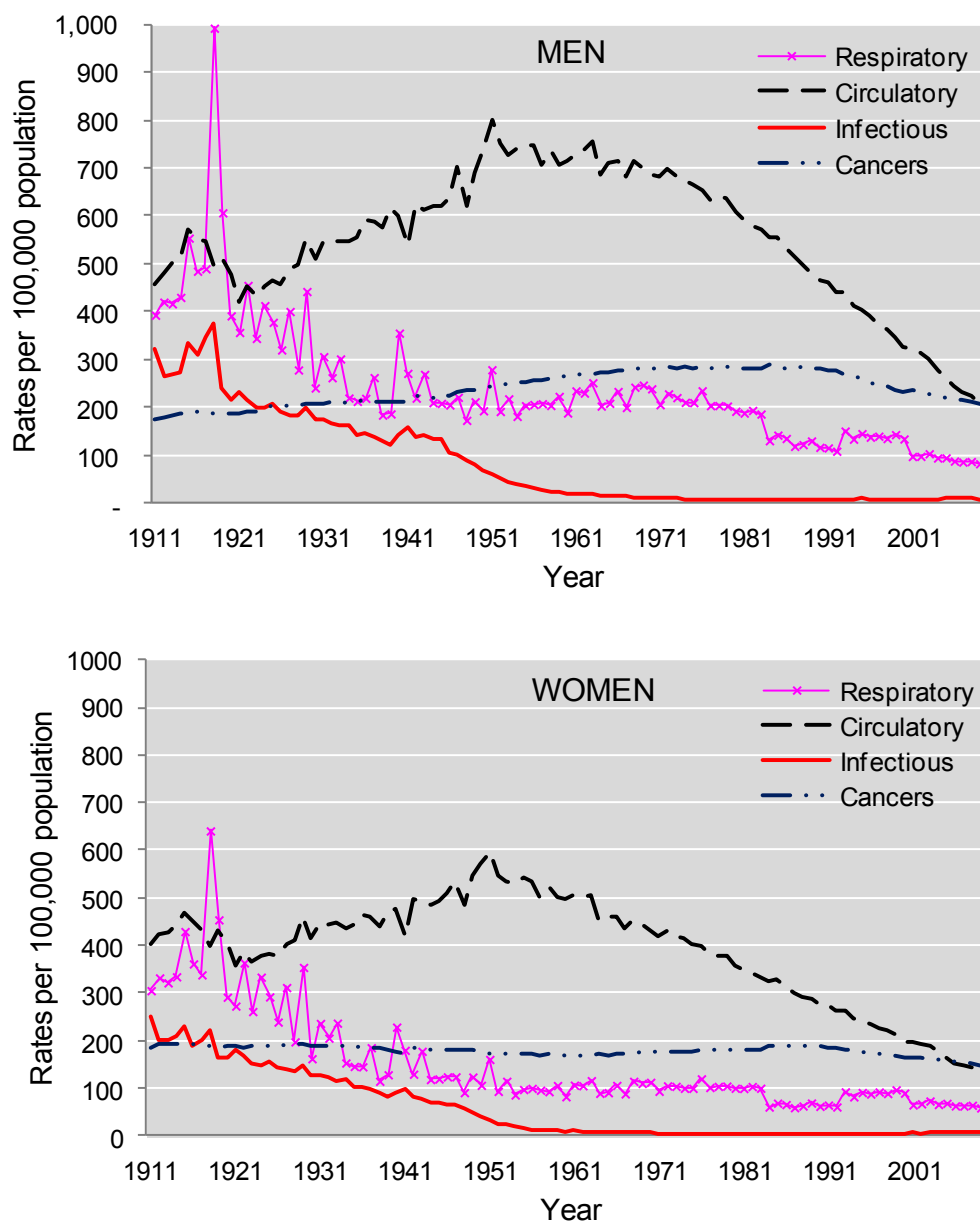
Source data: ONS (2008-2010), Life Tables England <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-223324>. Date accessed: 05 Jan 2012

**Figure 13: Percentage of men and women surviving aged 50+ years, England, 2008-10**

At present, of those aged 50 and over, more than a quarter of men die before the age of 75 years, as do 18% of women\*. Many of these early deaths may be preventable through healthy behaviour, good preventive health services, early detection and better treatment of disease. Reducing preventable deaths depends on factors including implementing policies and practices that include older people in screening programmes, increasing specialist service referral and reducing stereotyping by chronological age for access to beneficial treatments<sup>3 39</sup>.

\* Estimates of life expectancy are for an average population. As with any average, there is always variation around that estimate.

Chart 14: Changes in common causes of death

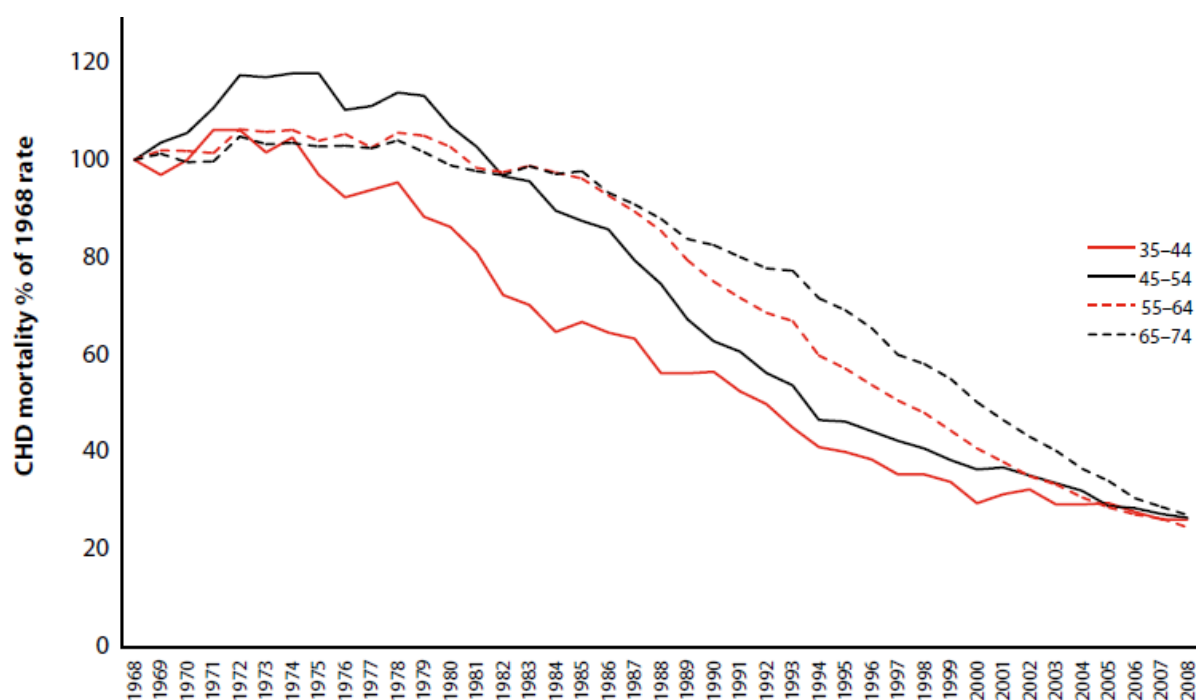


Source: ONS, 2011

**Figure 14: Mortality by major cause, in men and women (all ages), England and Wales, 1911-2010**

Ageing is popularly seen as an immutable process and the notion of inevitability is often used to dismiss efforts to improve health in later life. Longer term mortality rates provide a very clear indication that actually healthy later life is very modifiable. Figure 14 shows the dramatic reductions in death rates in men and women over almost a century, especially for infectious, circulatory and respiratory conditions. Unfortunately this progress does not apply to cancer mortality rates. For men cancer mortality rates have increased throughout most of the last century with a modest reduction over the last two decades to a level still higher than in 1911. For women rates have been relatively stable throughout the last 100 years, with a modest improvement in the last 20 years in parallel to that seen in men.

Chart 15: Major reductions in coronary heart disease death rates



Source: Scarborough et al, 2010<sup>40</sup>

**Figure 15: Age-specific death rates from coronary heart disease (CHD) in men aged 35+ years, UK, 1968 to 2008.**

One of the great successes of the last 40 years is the very substantial reduction in cardiovascular death rates<sup>40</sup> (Figure 15). Although there is some difference in opinion, it has been estimated that more than half of this improvement is from risk factor reduction (principally smoking – see Section 2) and around two fifths from new medical and surgical treatments (including secondary prevention)<sup>40</sup>.

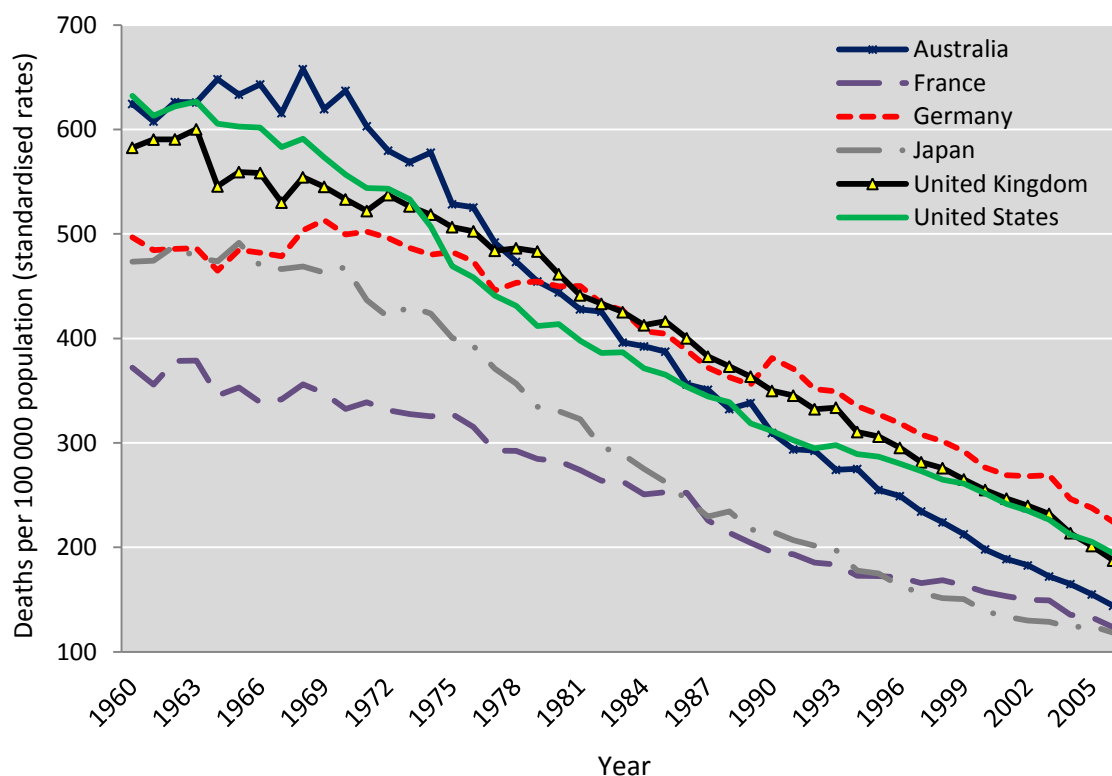
Interestingly the prevalence of heart disease continued to rise until the mid 2000s, but its severity and impact are reducing. Over the past 30 years there have been improvements in prevention by reducing risk factors such as poor diet, smoking and low physical activity levels<sup>41 42</sup>. There have also been major increases in the number of effective treatments delivered (for example, anticoagulant, lipid-lowering and anti-hypertensive drugs) with five times as many prescriptions issued in 2008 as in 1986, increases in surgical and less invasive interventions, in particular percutaneous coronary interventions with or without stent implantation, and a concomitant 12 % increase in inpatient episodes between 2000 and 2008<sup>40</sup>.

Between 1999 and 2008 the incidence of stroke decreased by 29% (across all ages) (by 42% in those aged 80 and over), with 56-day mortality after the first stroke falling by 43% over the same period<sup>43</sup>; Lee et al suggested the reductions were probably associated with improved control of vascular risk factors before and following a stroke<sup>43</sup>.

#### Further reading

Department of Health (2000). NSF for Coronary Heart Disease: Modern Standards and Service Models. London: DoH.  
[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4057526.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4057526.pdf)

Chart 16: Reduction in mortality from circulatory disorders - international comparisons

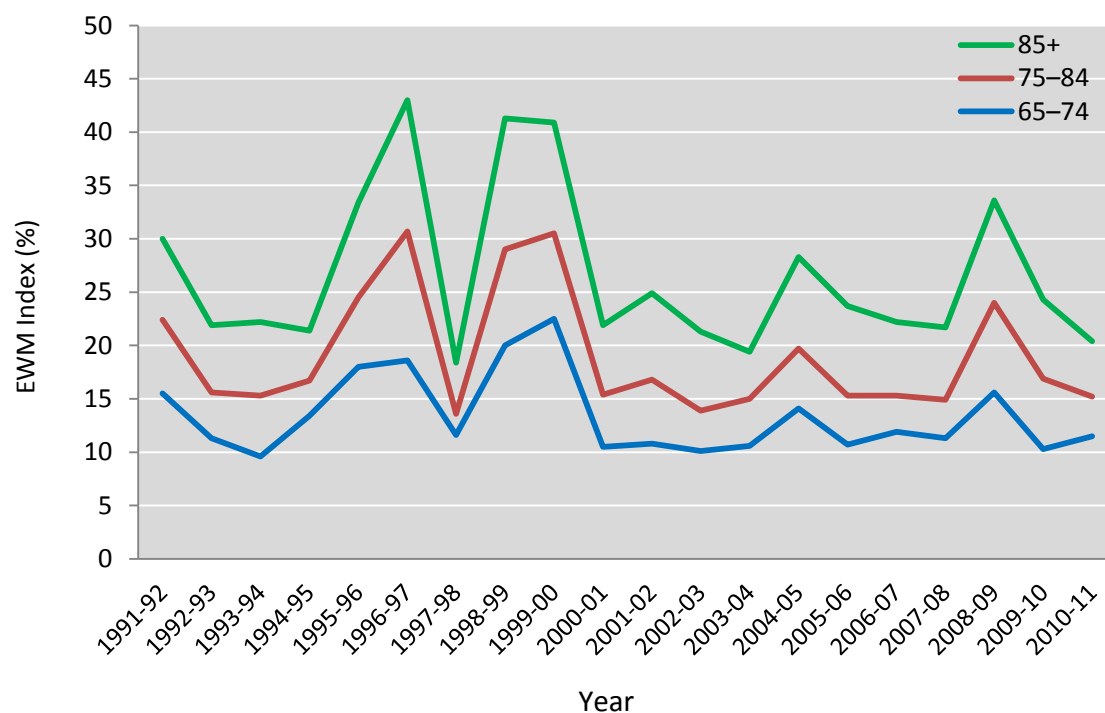


Source data: OECD.StatExtracts, 2011 <http://stats.oecd.org/index.aspx?queryid=21760> (last visited: 3<sup>rd</sup> April 2012)

**Figure 16: Mortality by diseases of the circulatory system (deaths per 100 000 population - standardised rates) (all ages), international comparisons, 1960 - 2006**

Over the past five decades the UK has made substantial progress in reducing the number of people dying from circulatory disorders. In 1960, 583 out of 100,000 people died, compared to 186 per 100,000 of the population in 2006, a reduction of 68% in under 50 years. The decline comes with advances in reducing risks and new surgical and medical treatments (see Chart 15). Other countries have also seen declining mortality rates from circulatory diseases (Figure 16), reductions in some (e.g. Australia) have been significantly greater than in the UK, suggesting that there is still scope for the UK to continue to progress through improved health care.

## Chart 17: Excess winter mortality



Source data: ONS, 2011<sup>44</sup>

**Figure 17: Trends in excess winter deaths in 65+ age groups, England and Wales, 1991 to 2011**

Winter in England and Wales is accompanied by an increase in death rates, with most excess deaths happening in older groups, mainly through increases in respiratory and cardiovascular disorders<sup>44</sup>. This is a potentially avoidable loss of life: in many colder countries factors including better housing, heating and preparation for going outside lead to little or no excess winter mortality (EWM)<sup>45 46</sup>. Around 20,000 people aged 65 and over in England and Wales lose their lives in this way each year, amounting to a 15 to 20% increase over what would be expected (Figure 17)\*. While excess deaths occur mainly in frail groups, many healthy and active older people (especially women) are affected and the burden of increased illness as a consequence of cold conditions can affect individuals and greatly increase general practice and secondary care workloads<sup>47</sup>.

### Further reading

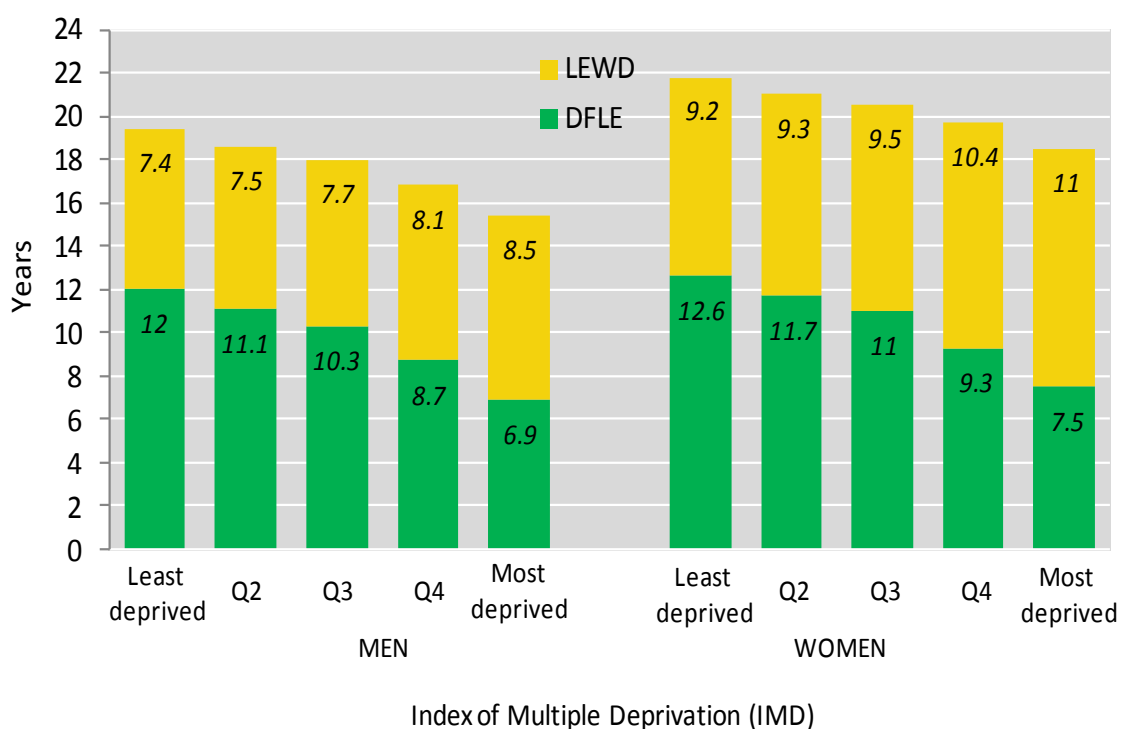
The Marmot Review Team (2011). The Health Impacts of Cold Homes and Fuel Poverty. London: The Marmot Review. <http://www.instituteofhealthequity.org/projects/the-health-impacts-of-cold-homes-and-fuel-poverty>

Department of Health (2010). 2009 Annual Report of the Chief Medical Officer, 2010.

[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/@ps/documents/digitalasset/dh\\_114012.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_114012.pdf)

\*  $EWM = \text{winter deaths} - \text{average non-winter deaths}$ .  $EWM \text{ Index} = (EWM / \text{average non-winter deaths}) \times 100$ .

Chart 18: Social inequalities - shorter lives with more disability



Source data: Health Statistics Quarterly 50, summer 2011, ONS<sup>48</sup>

**Figure 18: Life Expectancy with Disability (LEWD) and Disability Free Life Expectancy (DFLE) for men and women at age 65 years, by Index of Multiple Deprivation (IMD) 2007 quintile, England, 2006–08**

Comparing years of disability in those living in more or less deprived areas, it is striking that those in the most privileged areas both live longer and are (on average) disabled for a shorter time. This shows that the ‘dream’ of longer lives with shorter disability and dependency is both possible and happening. It also shows the scope for reducing the length of disability in less privileged groups. Unfortunately, the inverse is also true, i.e. that less privileged groups can expect shorter lives with longer periods of disability.

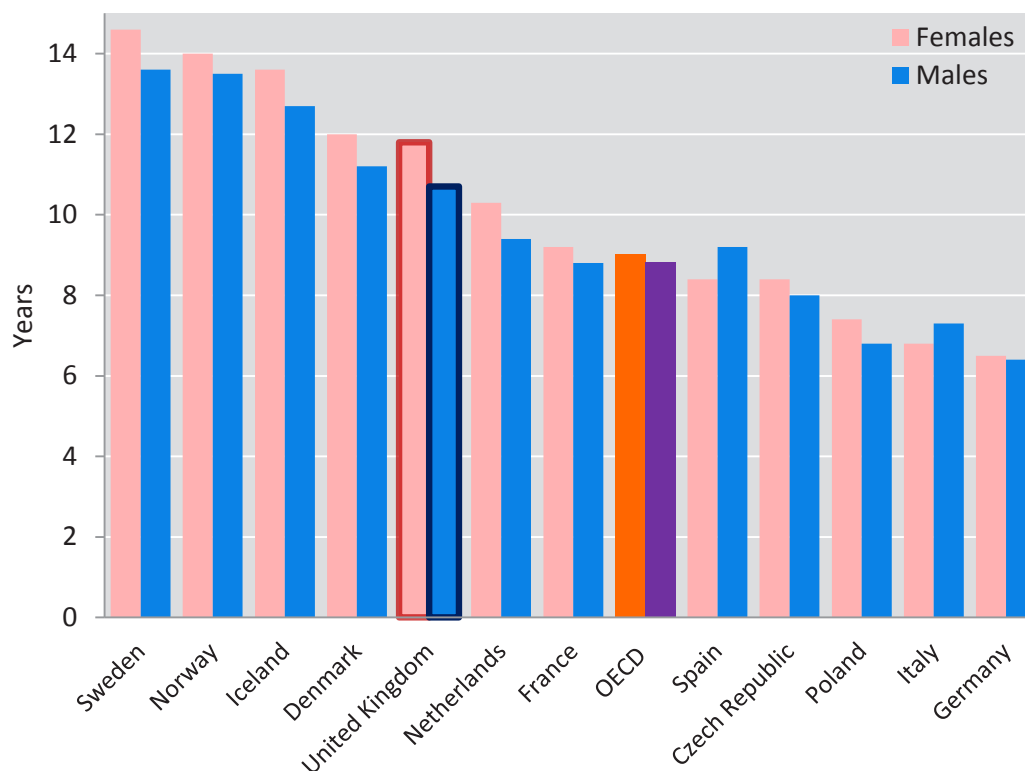
Longer life expectancy is also associated with higher occupational status, higher income or more education. There are many reasons for this pattern of longer disability and shorter lives in less privileged groups, including greater exposure to major risk factors, such as smoking, alcohol consumption, obesity, physical inactivity, diet quality, and use of preventive medical care. Underlying many of these differences are the direct effects of lower incomes, but also the impact this has on feeling that healthy choices are out of reach. The Marmot Review puts forward the evidence in relation to health inequalities and discusses suggested policy changes<sup>45 49 50</sup>, and it is useful to emphasize, in considering these, that inequality-related differences in health persist into old age.

#### Further reading

The Marmot Review Team (2010). Fair Society, Healthy Lives: The Marmot Review - Strategic Review of Health Inequalities in England Post-2010. London: The Marmot Review.

<http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review/fair-society-healthy-lives-full-report>

## Chart 19: Healthy life expectancy - international perspective



Source: European Health and Life Expectancy Information System (EHLEIS); Eurostat Statistics Database, 2011 Health at a Glance 2011: OECD Indicators © OECD 2011 <http://dx.doi.org/10.1787/888932526388>

**Figure 19: Healthy life years at age 65 years, by sex, comparison across selected OECD countries, 2009**

As noted in Chart 18, combining life expectancy with an estimate of the average time people spend with disability provides a useful overview and helps to highlight the scope for lengthening the period of 'healthy' life expectancy. Figure 19 shows that the UK does relatively well on healthy life expectancy in comparison with other Organisation for Economic Co-operation and Development (OECD) countries, but does lag behind several Nordic countries\*.

### Further reading

Jagger, C., Weston, C., et al (2011). Inequalities in health expectancies at older ages in the European Union: Findings from the Survey of Health and Retirement in Europe (SHARE). *Journal of Epidemiology and Community Health* Nov; 65(11):1030-5. <http://jech.bmj.com/content/early/2011/04/05/jech.2010.117705.abstract>  
[www.eurohex.eu](http://www.eurohex.eu) - A detailed collection of material on healthy life expectancy in Europe.

\* Disability-free life expectancy, or healthy life years, are the number of years spent free of activity limitation. The Sullivan method (Sullivan, 1971) is used to calculate healthy life years in Europe.

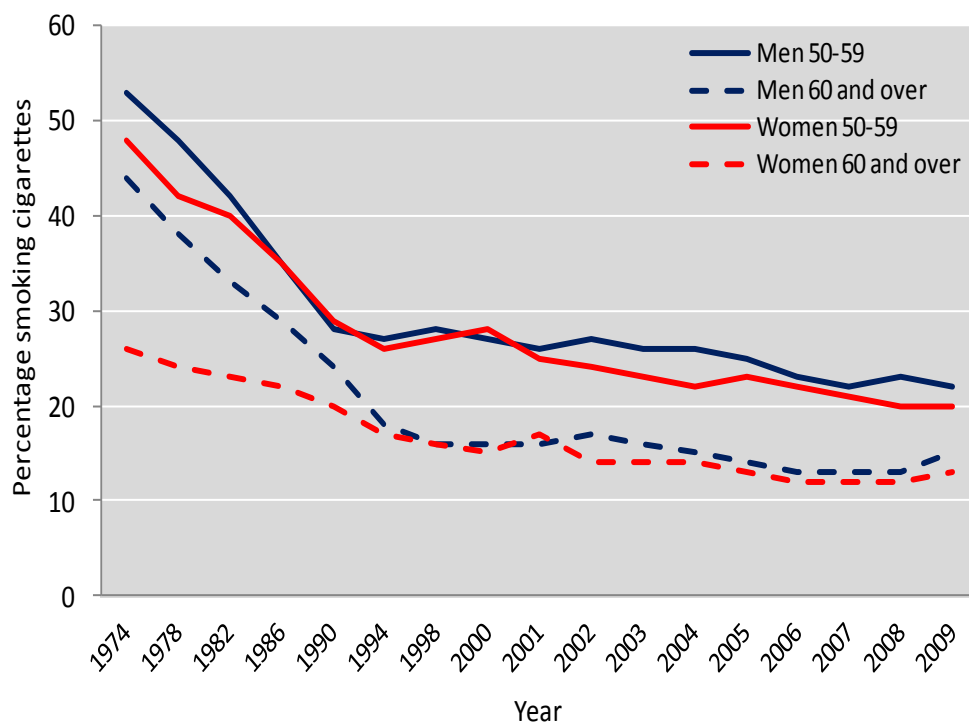


## SECTION 2:

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HEALTH RISKS:  
IS OUR LIFESTYLE HELPING US LIVE  
ACTIVE AND SUCCESSFUL LATER  
LIVES?

## Chart 20: Smoking - kicking the habit



Source data: General Lifestyle Survey, ONS 2011<sup>51</sup>

**Figure 20: Smoking trends in men and women aged 50+ years, England, 1974 - 2009**

Tobacco smoking exposes older people to a battery of cancer producing and toxic chemicals, damaging DNA and cells throughout their bodies. Continued smoking results in a ten year premature loss of life on average<sup>52</sup>. A small number of smokers live into late old age and tend to attract media attention, but these individuals are exceptional: most of their smoking contemporaries passed away long ago.

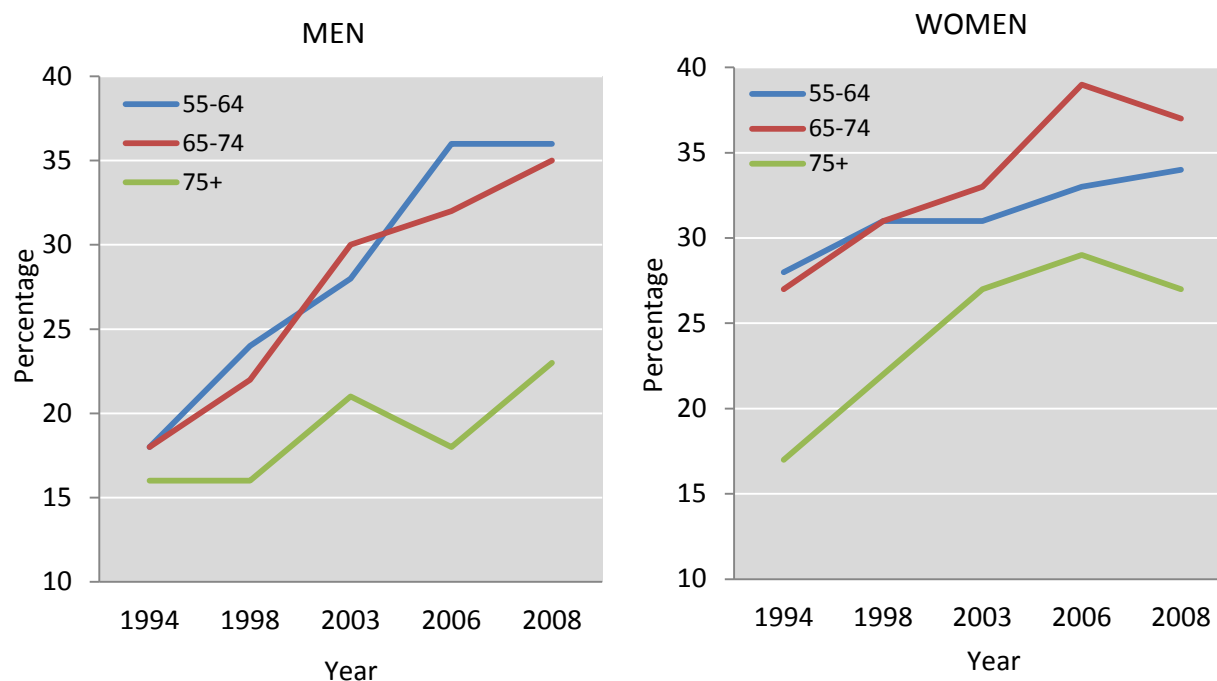
Since 1972 rates of smoking in later life have fallen dramatically, both in men and women, and it is clear that older people are more likely to give up smoking through the NHS Stop Smoking Services: 55% of those aged 60 and over who had set a date to stop whilst receiving support reported quitting at four weeks (although these figures include people who set more than one quit date over the year)<sup>53</sup>. Despite this, substantial numbers of older people still smoke and much needless suffering from cancers, heart disease and many other conditions could be avoided by ending exposure to tobacco smoke. Unfortunately over 20% of those aged 50 to 59 smoke (Figure 20)\*, with recent trends showing little improvement<sup>54</sup>, threatening the health of the next generation of older workers and retirees.

### Further reading

The NHS Information Centre (2011). Statistics on NHS Stop Smoking Services: England, April 2010 – March 2011. <http://www.ic.nhs.uk/pubs/sss1011>

\* Data from 1998 onwards are weighted.

## Chart 21: Obesity - an unfolding epidemic



Source data: Scarborough et al, 2010<sup>40</sup>

**Figure 21: Prevalence of obesity in men and women age 55+ years, England, 1994 - 2008**

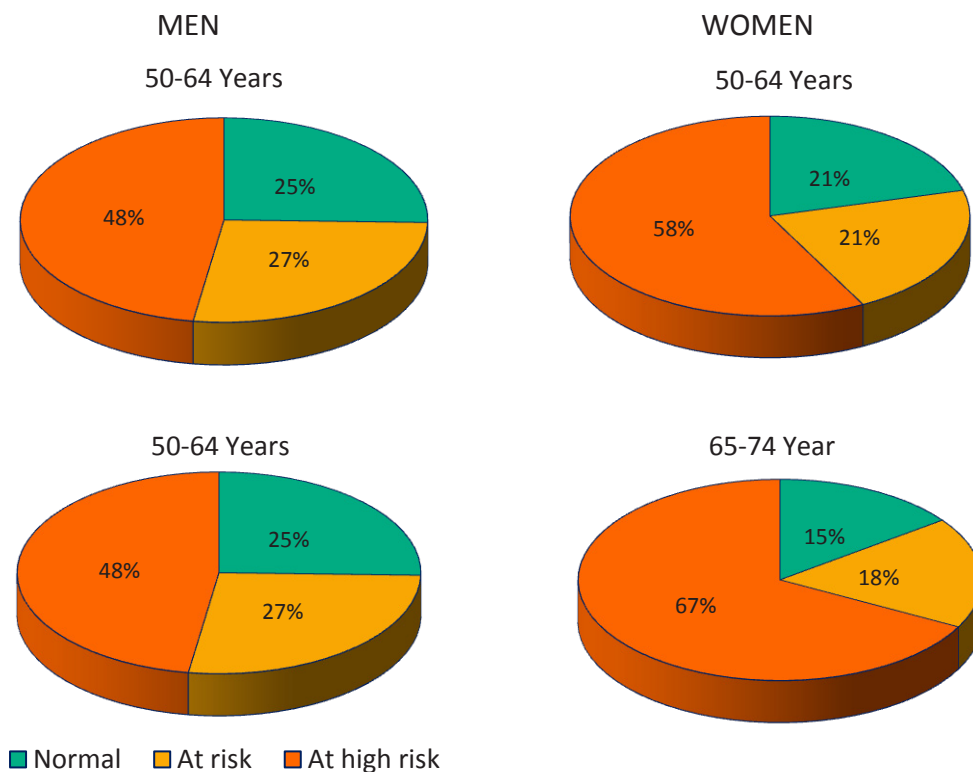
High dietary intake in relation to energy expenditure results in the deposition of adipose tissue or 'fat'. Excessive intake can overwhelm the body's metabolic systems, including glucose metabolism. Excess lipids can be deposited into fatty tissue around major organs and in the linings of arteries, risking vessel blockages. Body mass index (BMI) (calculated from weight and height) mostly works well to identify obesity overall, although has some limitations in older people in whom muscle mass can decline. Figure 21 shows the very large increase in the obesity rate in later life: on the BMI measure 35% of men and 37% of women aged 65 to 74 were obese by 2008. Metabolic changes mean the body's ability to cope with excess fat in old age declines, making diabetes, cardiovascular disease and other major conditions more common.

In an analysis of English Longitudinal Study of Ageing data, Angleman et al found that obesity, however measured, was associated with substantially higher rates of difficulty in performing activities of daily living and with higher rates of disability<sup>55</sup>.

According to the National Diet and Nutrition Survey<sup>56</sup>, older adults consumed on average around four portions of fruit per day, with 37% of those aged 65 and over meeting the Five-a-Day government recommendation. However men and women aged 65 and over-consumed more than the dietary reference value (DRV)<sup>57</sup> of fat (i.e. fat provided more than 35% of food energy).

\* DRVs are benchmark intakes of energy and nutrients that can be used for guidance but should not be seen as exact recommendations.

## Chart 22: Expanding waistlines putting us at risk



Source data: Health Survey for England, 2009<sup>58</sup>. Copyright © 2011, Re-used with the permission of The Health and Social Care Information Centre. All rights reserved.

**Figure 22: Prevalence of obesity related health risk for men and women age 50-64 and 65-74 years based on waist circumference, England, 2009**

In later life, muscle bulk tends to fall at the same time that adipose tissue (fat) is accumulating, so measures other than BMI can be useful. Fatty deposits in the liver and around the intestines are particularly dangerous, and a good overall measure of such deposits is waist circumference. The chart shows the very high prevalence of enlarged waists in those aged 50 to 64, and 65 to 74\*. At older ages (75 years plus) the statistics are somewhat complicated because as serious disease develops, many people start losing weight: as a result risks are difficult to calculate properly.

### Further reading

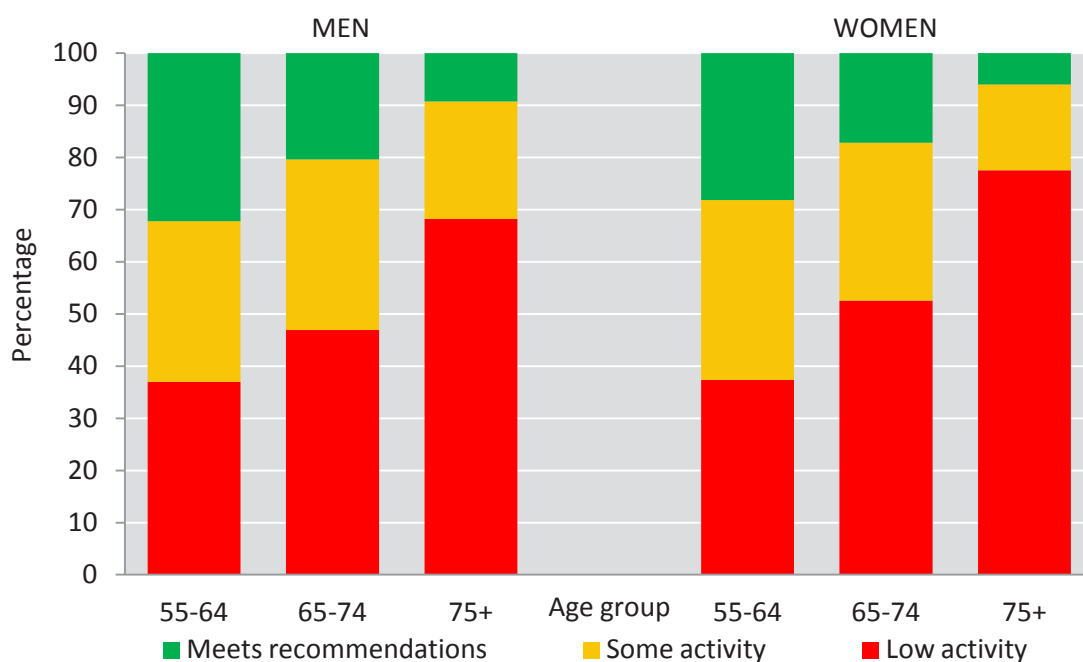
Samper-Ternent, R., Al Snih, S. (2012). Obesity in older adults: Epidemiology and implications for disability and disease. *Reviews in Clinical Gerontology*. 22, (1), 10-34.

Hubbard, R.E., Lang, I.A., et al. (2010). Frailty, body mass index, and abdominal obesity in older people. *Journals of Gerontology - Series A Biological Sciences and Medical Sciences* 65 A (4), 377-381.

National Institute for Clinical Excellence (2010). Prevention of Cardiovascular Disease at Population Level. London: NICE. [www.nice.org.uk/nicemedia/live/13024/49273/49273.pdf](http://www.nice.org.uk/nicemedia/live/13024/49273/49273.pdf)

\* For men, low waist circumference (normal) is defined as < 94cm, high (at risk) as 94–102cm, and very high (at high risk) as > 102cm. For women, low waist circumference is < 80cm, high is 80–88cm and very high is > 88cm.

Chart 23: Physical inactivity



Source data: Health Survey for England<sup>59</sup> Copyright © 2011, Re-used with the permission of The Health and Social Care Information Centre. All rights reserved.

**Figure 23: Levels of physical activity in men and women aged 55+ years, England, 2008**

Being physically active is important for the ageing body. It can reduce the risks of coronary heart disease, stroke, type 2 diabetes, depression, dementia and falls<sup>60</sup>, and can improve strength and physical function. In 2011 the Department of Health issued new guidance on physical activity for people aged 65 or over, recommending daily activity with health benefits gained from 150 minutes of moderate to vigorous intensity physical activity each week in bouts of ten minutes or more. Muscle-strengthening activity should also be included twice a week and older adults are advised to minimise the amount of time being sedentary<sup>61</sup>.

Unfortunately levels of physical activity in England in later life are often too low to maintain health. The government's Health Survey for England<sup>59</sup> estimated that 47% of men and 53% of women aged 65 to 74 year have low levels of activity (less than 30 minutes of moderate activity on less than one day a week) (Figure 23)\*.

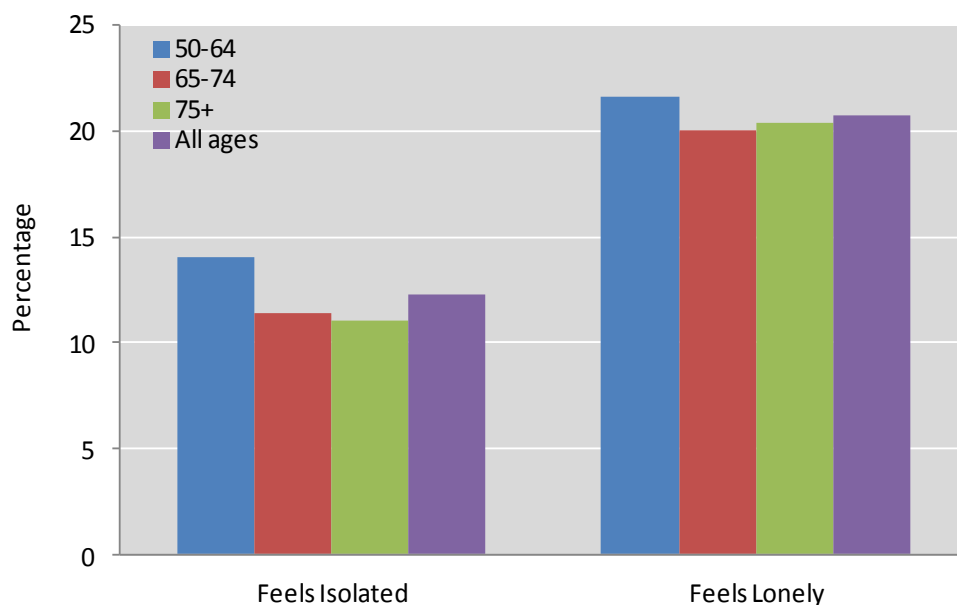
#### Further reading

Department of Health (2011). Start Active, Stay Active: A Report on Physical Activity from the Four Home Countries' Chief Medical Officers. London: DoH.

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_128209](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_128209)

\* Meets recommendations:  $\geq 30$  minutes of moderate/ vigorous activity  $\geq 5$  days a week some activity:  $\geq 30$  minutes of moderate/ vigorous activity on 1 to 4 days a week/ Low activity: lower levels of activity.

## Chart 24: Social isolation and loneliness



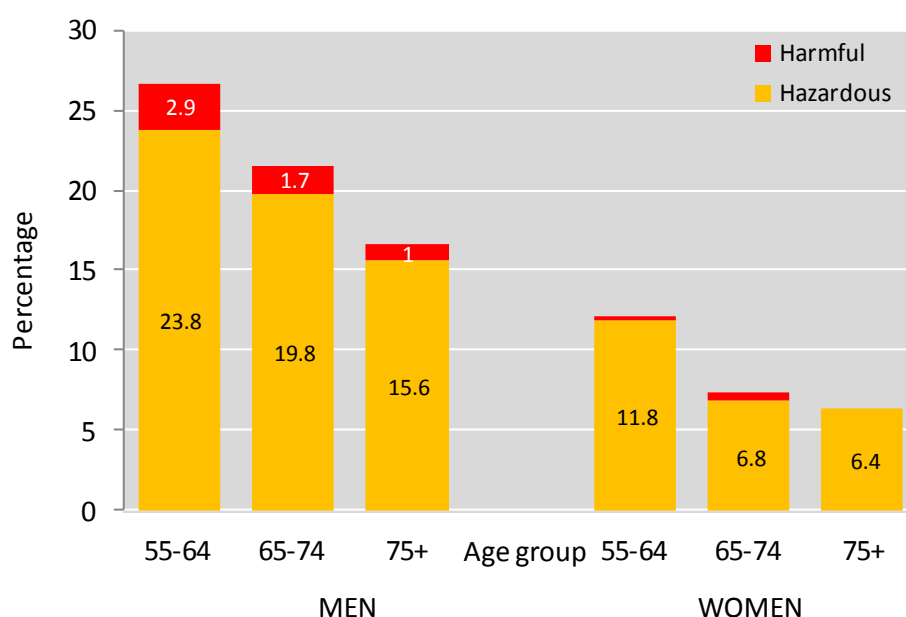
Source data: ELSA 2009

**Figure 24: Percentage of people aged 50+ years not living with a partner/spouse, who replied 'Often' as opposed to 'Sometimes' or 'Hardly ever' when asked if they felt isolated or lonely, England, 2009**

The social context in which older people live influences their health, quality of life, and well being, as it does for other age groups<sup>62</sup>. A recent review<sup>63</sup> combining results from 148 studies (308,849 participants) estimated that individuals reporting strong social relationships had a reduced risk of mortality (50% increase in likelihood of survival) compared with individuals lacking social support (after adjusting for important baseline socio-demographic and health-related confounders). These findings suggest that the influence of social relationships on the risk of death are comparable with well-established risk factors for mortality such as smoking and alcohol consumption and exceed the influence of factors such as physical inactivity and obesity.

While there is little agreement regarding how best to define the quality of one's social relationships, there is consensus that both quantity and quality are important<sup>64</sup>. Social isolation concerns a lack of social relationships or contacts (quantity), while loneliness relates specifically to one's negative feelings about that situation (quality). Subtle differences in definition are important, as estimates of prevalence of social isolation or loneliness in England vary considerably both between studies and across waves of longitudinal studies due, in part, to differences in methods used. Descriptive analysis of data from ELSA suggests that the experience of feeling isolated or lonely is dependent on whether you live with a partner/spouse. Of those cohabiting, only 3.8% (211/5868) reported feeling 'often' isolated and 3.7% (220/5885) felt lonely. In contrast, for people not cohabiting the proportions are much higher (Figure 24), with around 12% (282/2298) of people (all ages) feeling 'often' isolated and 21% feeling 'often' lonely (479/2308), although the proportions appear broadly consistent across age bands.

## Chart 25: Hazardous and harmful alcohol consumption



Source data: *Adult Psychiatric Morbidity in England, 2007 Results of a Household Survey*<sup>16</sup>

**Figure 25: Hazardous and harmful drinking in men and women in the past year aged 55+ years, England, 2007**

In the government's National Psychiatric Morbidity Survey 2007 more than 20% of men aged 65 to 74 reported drinking alcohol at levels classified as hazardous or harmful, as did more than 10% of women (Figure 25)\*. Hazardous drinking was defined as a pattern of alcohol consumption associated with risks of physical and psychological harm to the individual. Harmful drinking denotes the most hazardous use of alcohol, at which damage to health is likely. According to The Royal College of Psychiatrists, the proportion of older people whose drinking falls into these categories has been increasing in recent years and they also report older people misusing a combination of alcohol and prescribed medication<sup>65</sup>.

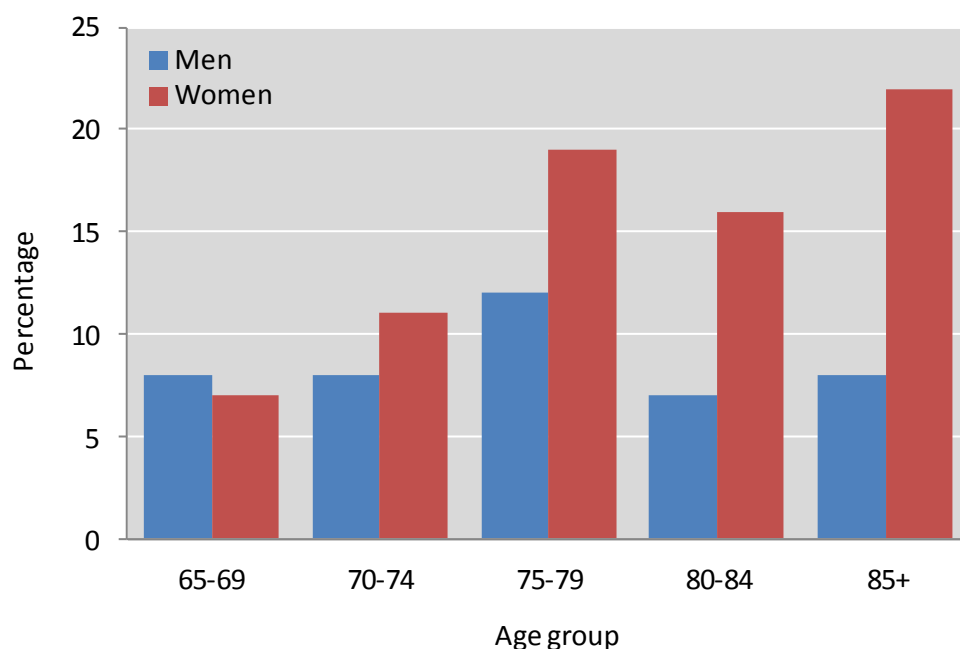
Moderate levels of alcohol intake are probably not a health risk and may be mildly beneficial, providing no relevant medical conditions or treatments are present, and risky tasks such as driving are not undertaken soon after<sup>66 67</sup>. Current 'safe limits' (i.e. regular consumption of up to three units per day for women and four for men) are based on work with younger adults. As the ratio of body water to fat is lower in older adults, the Royal College of Psychiatrists has produced evidence of harm at much lower levels in the older population and recommend that the limit for older people should be nearer 1.5 units for men and women, with lower maximum daily drinking levels recommended at 4.5 units per day for men and 3 units for women<sup>65</sup>. Self reported intakes in the Health Survey for England 2009 in the future elderly (currently aged 55 to 64) often exceed the general advice, as do a sizeable proportion of those in older groups<sup>68 69</sup>.

### Further reading

Royal College of Psychiatrists (2011). *Our Invisible Addicts*. <http://www.rcpsych.ac.uk/files/pdfversion/CR165.pdf>

\*Hazardous drinking was assessed using the 10-item Alcohol Use Disorders Identification Test (AUDt), which takes the year before the interview as a reference period and covers: Hazardous alcohol consumption (frequency of drinking, typical quantity, frequency of heavy drinking); harmful alcohol consumption (feeling of guilt or remorse after drinking, blackouts, alcohol-related injury, other concern about alcohol consumption); and symptoms of dependence (impaired control over drinking, increased salience of drinking, morning drinking).

## Chart 26: Low vitamin D levels - the 'sunshine vitamin'



Source data: HSE, 2005<sup>29</sup>

**Figure 26: Percentage of people with clinically low vitamin D concentrations in men and women aged 65+ years, England, 2005**

Vitamin D is made by the human skin when it is exposed to sufficient sunshine: at our northern latitudes it can be difficult to make sufficient vitamin D, especially as the skin ages. Results from the Health Survey for England 2005<sup>29</sup> suggested a substantial proportion of people in later life are vitamin D deficient, with rates rising to over 22% in women aged 85 and over (Figure 26)\*. Vitamin D is involved in skeletal health, but may also play a role in a wide range of non-skeletal, age-associated diseases including cancer, heart disease, type 2 diabetes, stroke and dementia<sup>70 71</sup>; deficiency has also been linked to increased mortality<sup>72</sup>.

Serum 25-hydroxyvitamin D [25(OH)D] levels are a stable marker of vitamin D status, with deficiency commonly defined as <50 nmol/L and severe deficiency as <25 nmol/L. The therapeutic benefits of vitamin D have attracted considerable interest as over three billion people worldwide are thought to have insufficient 25(OH)D levels (<75 nmol/L)<sup>70</sup> which can be increased using inexpensive and well tolerated dietary supplements, and taking vitamin D supplements has been associated with a decrease in mortality<sup>73</sup>. Short periods of sun exposure of 5-30 minutes per day also help to maintain healthy levels of vitamin D<sup>70 74 75</sup>.

Following fresh concerns about vitamin D deficiency (based on the evidence from the National Diet and Nutrition Survey 2008/9 – 2009/10)<sup>56</sup>, the UK's four Chief Medical Officers wrote to health professionals to remind them to give Vitamin D supplements to people aged 65 upwards and to people not exposed to much sunlight<sup>76</sup>.

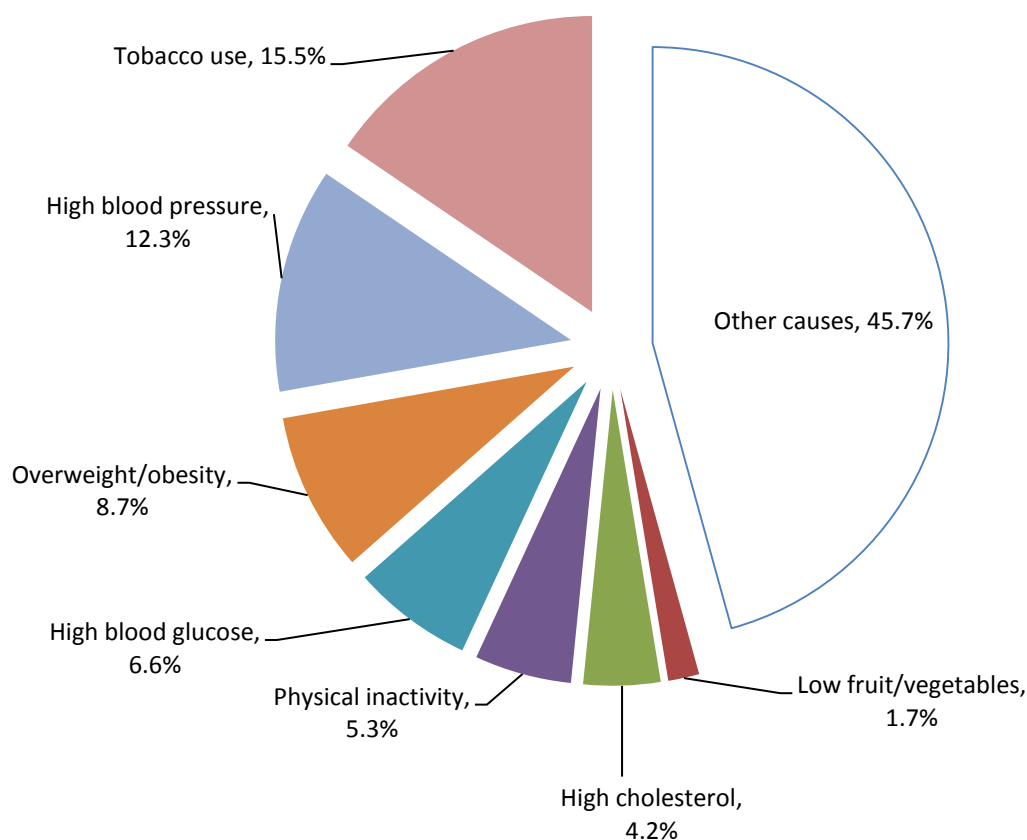
### Further reading

Holick, MF (2007) Vitamin D deficiency. *The New England and Journal of Medicine* 357, 266-81.

\* < 25nmol/L cut-off for deficiency.



Chart 27: Burden of disease - much is potentially avoidable



Source data: World Health Organisation: [http://www.who.int/healthinfo/global\\_burden\\_disease/estimates\\_regional/en/index.html](http://www.who.int/healthinfo/global_burden_disease/estimates_regional/en/index.html)  
Last visited 30/04/2012

**Figure 27: Proportion of 'Disability Adjusted Life Years' (DALYs) in high-income countries of the European region caused by specific risk factors**

The World Health Organisation 'Burden of disease' project set out to estimate the years of life lost to major health risks, and the number of years lived with disability as a result of these risks. These two measures were combined into 'disability adjusted life years' or DALYs, using weights to take account of the severity of the disability caused. In Figure 27 we present the results for high income country populations aged 60 years and over. The seven potentially modifiable risk factors shown in the chart account for over half of the burden of disease in later life, with smoking, high blood pressure and obesity shown to be responsible for the largest negative impacts.



## SECTION 3:

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# TREATMENT FOR COMMON CONDITIONS

## Introduction: Assessing the quality of treatment for common age-related diseases

How should we measure the quality of medical care for older people? One way is to get experts to review the medical evidence and define standards. For example, if you have diabetes, there is good evidence that you will benefit from having your glucose levels, eyes and feet checked periodically. If these checks do not happen, it would be wise to investigate, as valid exceptions to the rule should be rare. In this section we present a range of measures based on this approach.

Part of this work is based on the 'Assessing the Care of Vulnerable Elders' (Acove)<sup>6</sup> and similar medical quality standards developed by the RAND Health group in the USA and adapted by experts in the UK<sup>7</sup>. Steel, Melzer and colleagues measured many of these standards in the English Longitudinal Study of Ageing (ELSA) in 2004/5 and found several areas of concern<sup>10</sup> and noted lower achievement of standards for conditions of later life, including osteoarthritis, falls, and incontinence. The government's Quality and Outcomes framework for primary care (QoF) (see page 13) does collect similar data from general practice, but unfortunately data on older people are not separately available. Nevertheless, comparisons between the patient reported ELSA quality of care data and the QoF estimates (where these were possible) suggested good concordance of results<sup>10</sup>. In several of the charts that follow we present data from quality related questions asked in the ELSA study in 2009: in some cases we have presented components of multi-question standards separately, to make the data more easily understood.

Unfortunately we are unable to investigate the reasons for these shortfalls in care from the available data: our focus is on how much improvement is possible overall. Similar quality of care shortfalls are found in other health systems<sup>77</sup>. Sometimes the shortfalls are due to patients not wanting care, but it is impossible to say whether they would have accepted care if the quality of the service was better. Sometimes patients in surveys may not remember getting specific checks and treatments, but as noted above Steel et al showed for 2004/5, that where available, official data from general practices indicated similar patterns<sup>10</sup>.

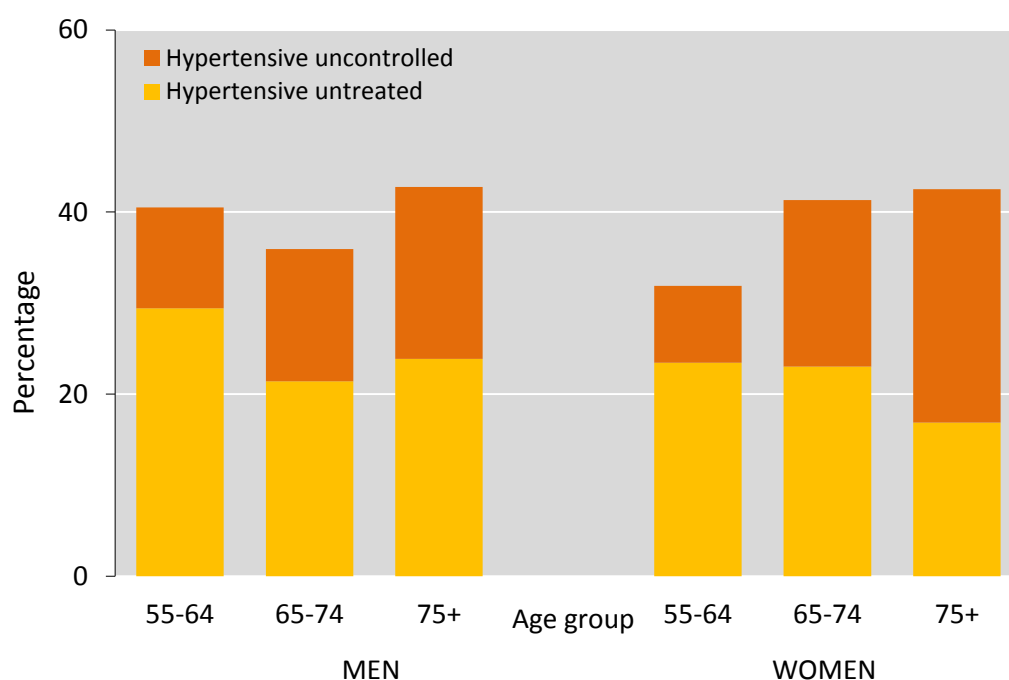
### **Further reading**

Steel N, Bachmann M, et al. (2008). Self-reported receipt of care consistent with 32 quality indicators: National population survey of adults aged 50 or more in England. *British Medical Journal* 337: a957.

Wenger, N.S., Shekelle, P.G. (2001). Assessing care of vulnerable elders: ACOVE project overview. *Annals of Internal Medicine* 135 (8 1), 642-646.

Shekelle, P.G., MacLean, C.H., et al. (2001). ACOVE quality indicators. *Annals of Internal Medicine* 135 (8 Pt 2), 653-667.

Chart 28: Hypertension - often insufficiently controlled



Source data: HSE – 2009<sup>68</sup>

**Figure 28: Blood pressure control in men and women aged 55+ years, England, 2009**

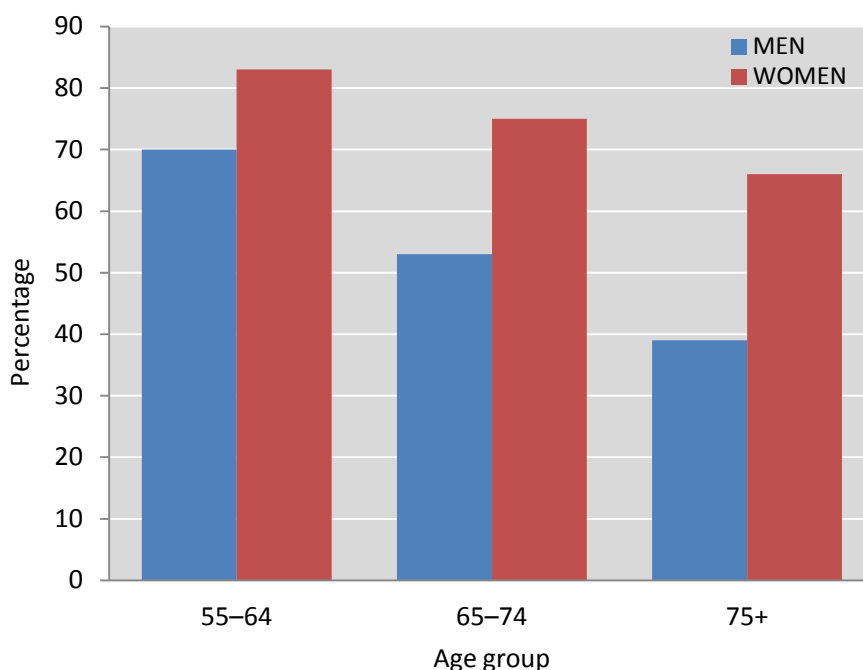
Blood pressure generally increases throughout life and is strongly related to cardiovascular disease and mortality<sup>78</sup>. Lifestyle factors, gender and occupation can influence the blood pressure risk trajectory<sup>79</sup>. There is ample evidence that treating hypertension and returning blood pressure to target levels is beneficial<sup>80 81</sup>. NICE 2006 guidelines (now updated) recommended that persistent high blood pressure of  $\geq 160/100$  mmHg (or  $>140/90$  mmHg if at risk of cardiovascular disease or target organ damage) should be the level at which treatment should be offered. The recommended target blood pressure on treatment is  $\leq 140/90$  mmHg<sup>82</sup>. It also recommended giving advice on lifestyle modification rather than medication if blood pressure is under 160/100mmHg (if no signs of cardiovascular risk or target organ damage are present).

HSE measures blood pressure in their community-living respondents and we present the results for 2009<sup>68</sup>. Figure 28 shows that a significant proportion was on treatments that had not controlled their blood pressures sufficiently\*. A further group (not shown) were recorded as possibly being in need of treatment i.e. blood pressure  $\geq 140/90$ mmHg and not currently taking medication for blood pressure, but details of additional risks and lifestyle modification are not available. These data are not perfect: the measures were taken only on the day of the survey, and some people find their antihypertensive treatment difficult to tolerate. However, with a sizeable proportion of hypertension appearing uncontrolled, this area needs urgent investigation and improvement. NICE has recently issued new guidance on hypertension diagnosis and management which may help improve hypertension control<sup>83</sup>.

National Institute for Health and Clinical Excellence (2011). Hypertension Clinical Management of Primary Hypertension in Adults. NICE clinical guideline 127. London: NICE. <http://guidance.nice.org.uk/CG127/Guidance>

\* HSE levels definitions were: hypertensive controlled:  $<140/90$ mmHg and taking medication for high blood pressure; hypertensive uncontrolled:  $\geq 140/90$ mmHg and currently taking medication for blood pressure.

## Chart 29: High blood cholesterol level

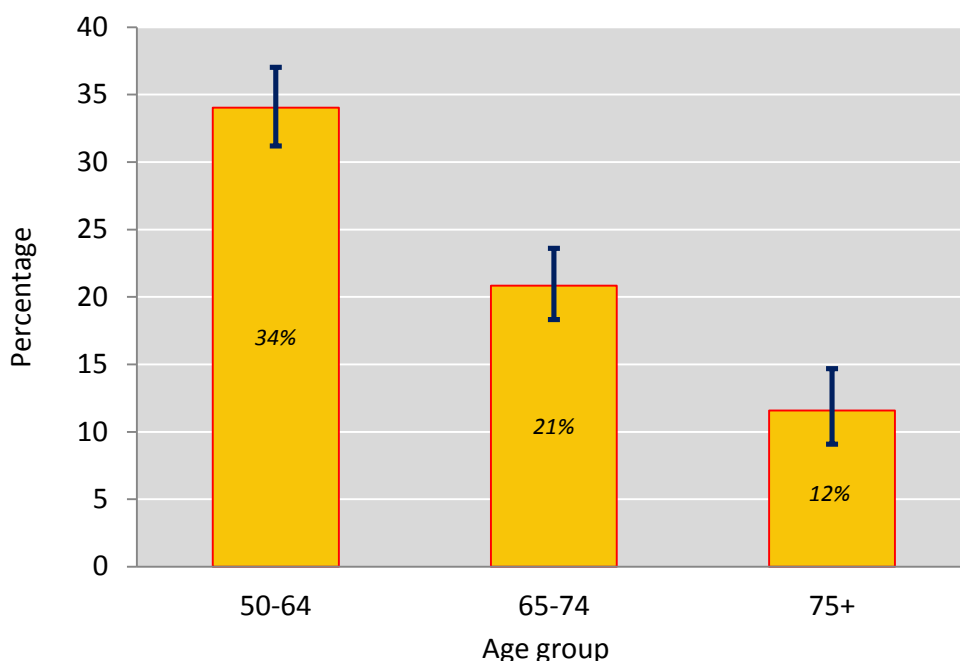


Source data: Joint Health Surveys Unit (2009) Health Survey for England 2008. The Information Centre: Leeds, and previous editions<sup>40</sup>

**Figure 29: Prevalence of high cholesterol level in men and women aged 55 +years, England, 2008**

High total cholesterol levels in the blood are related to the development and severity of coronary heart disease. Cholesterol levels tend to be high in later life, although there is some tailing off at advanced ages. There is strong evidence that reducing cholesterol levels (by reducing the amount of saturated fat in the diet, through physical activity or through medication) can substantially reduce risks<sup>84-86</sup>, especially in older people<sup>87-89</sup>. Total cholesterol levels above 4 mmol/L are considered high by some, with levels above 5.0 mmol/L accepted as high by all. The chart shows that a very large proportion of people in later life have high total cholesterol levels at  $\geq 5.0$ mmol/L. NICE advises that total cholesterol levels should be reduced to at least 5 mmol/L, so Figure 29 shows an enormous room for improvement through the use of statins, dietary supplements (including cholesterol-lowering functional foods<sup>90</sup>) and lifestyle modifications.

## Chart 30: High blood cholesterol level but not taking cholesterol lowering medication



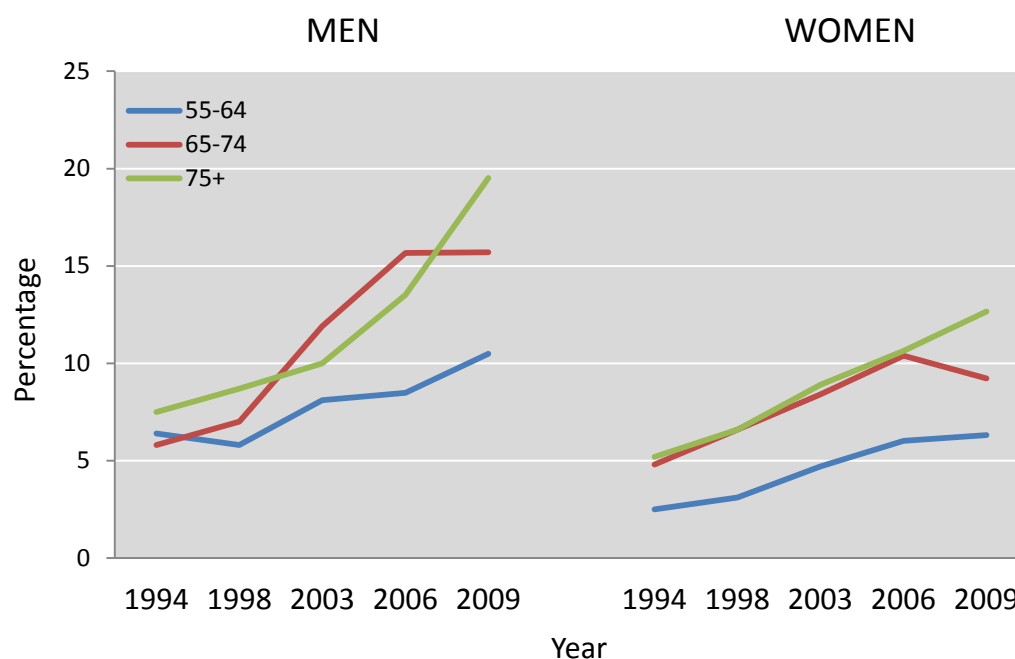
Source data: ELSA 2009<sup>91</sup>

**Figure 30: Percentage (with 95% CIs) of people with high cholesterol level who are not taking medication to lower cholesterol level, aged 50+ years, England, 2009**

According to the ACOVE quality indicators<sup>6</sup> if a person aged 50 and older has established coronary heart disease and a low-density lipoprotein (LDL) cholesterol above 3 mmol/l then he or she should be offered an intervention to lower cholesterol. The English National Survey for England (ELSA) study 2009 asked people whether they were taking cholesterol-lowering medication, which is the mainstay of treatment (Figure 30)\*. Of those aged 50 years or more who took part in ELSA 28% were identified as having high cholesterol. A third of the 50 to 64 age group with high cholesterol reported not taking such treatment, with 21% of those aged 65 to 74 years reporting the same. However a proportion of these people may be newly identified and initially given advice to modify cerebro-vascular risk factors (such as smoking status, weight management, diet, physical activity) prior to making the decision to start medication.

\* Question asked to those diagnosed with high cholesterol level: 'Are you currently taking any medication to lower your cholesterol level?'

## Chart 31: Diabetes - an epidemic unfolding



Source data: HSE, 2009<sup>58</sup>

**Figure 31: Percentage of respondents with doctor diagnosed diabetes (all types) in men and women aged 55+ years, England, 1994-2009**

Type 2 diabetes is characterised by high blood glucose levels. Susceptibility to the condition rises dramatically with advancing age. Obesity and low levels of physical activity are common risk factors, with large waist circumference also increasing risk<sup>92</sup>, although the condition does occasionally occur even in the absence of these risks. Those with Type 2 diabetes are at high risk of cardiovascular disease, damage to the retina of the eye, poor peripheral circulation with possible lesions of the skin and feet, kidney damage and premature mortality<sup>93</sup>. In line with the rising prevalence of obesity in later life, there has been a dramatic increase in the percentage of older people being diagnosed with diabetes (Figure 31). This has risen in those aged 75 plus from around 8% to nearly 20% for men and from around 5% to almost 13% in women between 1994 and 2009. In addition, the National Diabetes Audit 2009/10 estimated that there were almost 2% going undiagnosed in the 70-84 age group alone; once diagnosed, under half those aged 55 to 84 years received the full recommended annual care processes as set out by the NICE<sup>94</sup>.

### Further reading

Hex, N., Bartlett, C., et al (2012). Estimating the current and future costs of Type 1 and Type 2 diabetes in the UK, including direct health costs and indirect societal and productivity costs. (in print) *Diabetic Medicine* <http://onlinelibrary.wiley.com/doi/10.1111/j.1464-5491.2012.03698.x/pdf>

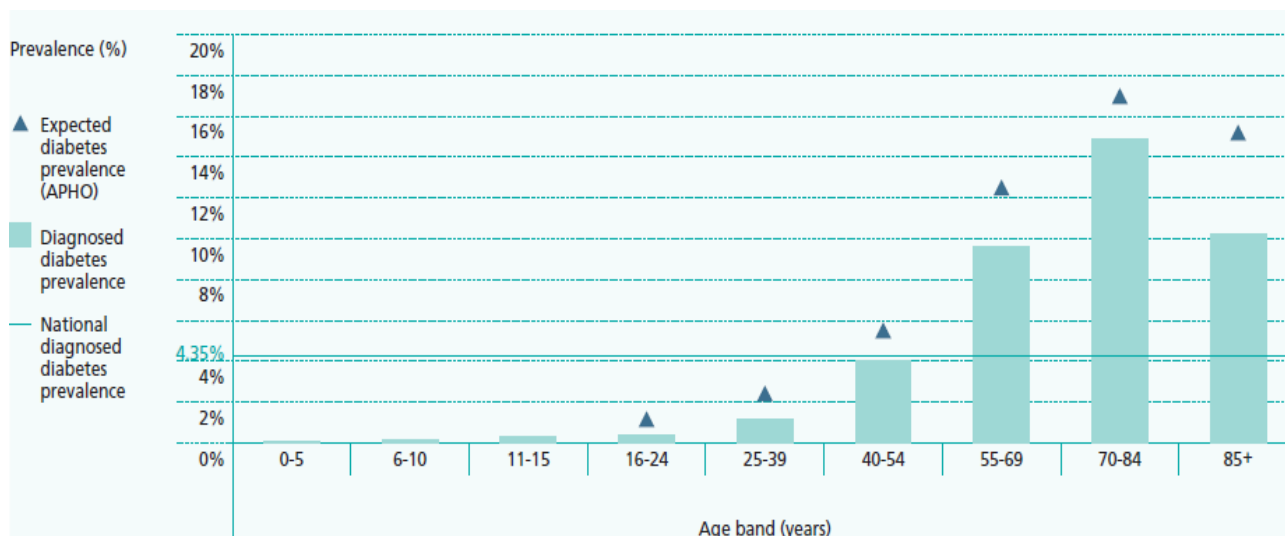
The NHS Information Centre (2011) National Diabetes Audit Mortality Analysis 2007-2008. Leeds: The NHS Information Centre for Health and Social Care. [http://www.ic.nhs.uk/webfiles/Services/NCASP/Diabetes/200910%20annual%20report%20documents/NHS\\_Diabetes\\_Audit\\_Mortality\\_Report\\_2011\\_Final.pdf](http://www.ic.nhs.uk/webfiles/Services/NCASP/Diabetes/200910%20annual%20report%20documents/NHS_Diabetes_Audit_Mortality_Report_2011_Final.pdf)

Diabetes UK (2011). Diabetes in the UK 2010: Key Statistics on Diabetes. Diabetes UK. [http://www.diabetes.org.uk/Documents/Reports/Diabetes\\_in\\_the\\_UK\\_2010.pdf](http://www.diabetes.org.uk/Documents/Reports/Diabetes_in_the_UK_2010.pdf)

National Institute for Health and Clinical Excellence (2008). Type 2 Diabetes: The Management of Type 2 Diabetes: London: NICE. <http://www.nice.org.uk/nicemedia/pdf/CG66NICEGuideline.pdf>



## Chart 32: Diabetes - under-diagnosed in later life



Adapted from: National Diabetes Audit 2009-2010<sup>94</sup>

**Figure 32: Prevalence of expected and diagnosed diabetes (all types) in adults aged 40+ years, England & Wales, 2009-10**

Type 2 diabetes can develop gradually with few obvious signs. As a result, the disease is not always diagnosed, and patients therefore can go without treatment for some time. The National Diabetes Audit 2011 estimated the likely scale of undiagnosed diabetes: in the older age groups, especially those aged 85+ years, the difference between expected and diagnosed rates are substantial<sup>94</sup>. It is likely that diagnosing these and offering effective treatment could reduce the complications of diabetes, including heart attacks, neuropathy, kidney and eye damage.

The Yorkshire and Humber Public Health Observatory estimate that around 27% of people with diabetes are currently not diagnosed<sup>95</sup> - a big concern considering the number of older people already diagnosed with diabetes. Raising public and health professional awareness of the signs and symptoms of diabetes and opportunistic screening of those with increased risk of developing diabetes can lead to earlier diagnosis and reduce the risks of complications.

#### Further reading

Sinclair, A.J., Paolisso, G., et al. (2011). A Report of the European Diabetes Working Party for Older People (EDWPOP) Revision Group on Clinical Practice Guidelines for Type 2 Diabetes Mellitus: Executive Summary. *Diabetes & Metabolism* 37 (supplement 3), S27–S38.

<http://www.sciencedirect.com/science/article/pii/S1262363611709624>

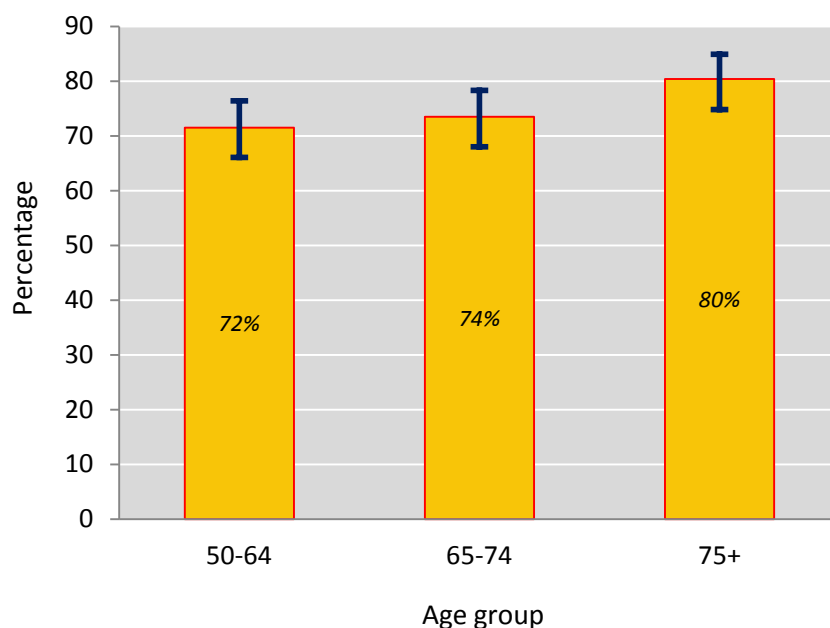
National Institute for Clinical Excellence (NICE) (2011). Preventing Type 2 Diabetes: Population and Community-level Interventions in High-risk Groups and the General Population.

<http://www.nice.org.uk/nicemedia/live/13472/54345/54345.pdf>

Department of Health (2010). Six Years on: Delivering the Diabetes National Service Framework. London: DoH.

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_112509](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_112509)

## Chart 33: Diabetes - training in self-management



Source data: ELSA 2009

**Figure 33: Percentage (with 95% CIs) of people aged 50+ years with diabetes who replied 'No' when asked if they had received any training to manage their diabetes, England, 2009**

Living with Type 2 diabetes is a difficult challenge, juggling changes in diet and physical activity, medicines and regular checks. The National Service Framework for Diabetes viewed the provision of information, education and psychological support that facilitates self-management as 'the cornerstone of diabetes care' and recommended that structured education, tailored to the individual could improve blood glucose control, weight and dietary management, physical activity and psychological well-being<sup>96</sup>. Some people with diabetes do receive training to help manage their diabetes themselves; respondents to the ELSA study with diabetes (i.e. 8% of those aged 50+ years in the study) were asked whether they had ever participated in a course or class about diabetes, or received special training on how they can live with their diabetes from day-to-day\*. Disappointingly the great majority (three quarters) reported never having had such training. Correcting this could improve outcomes and save costs.

### Further reading

Coulter, A., Parsons, S., & Askham, J. (2008). Where are the Patients in Decision-making about their Own Care? Geneva: World Health Organisation.

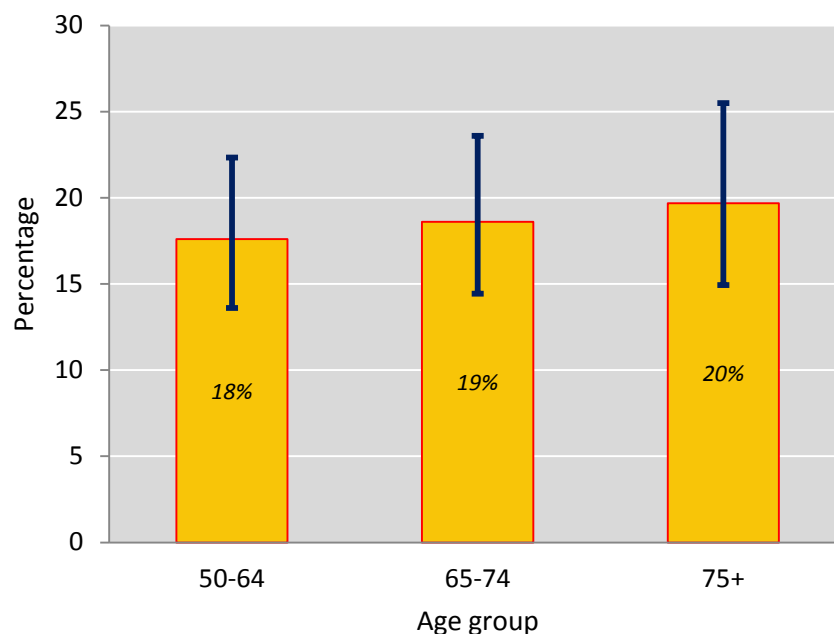
<http://www.who.int/management/general/decisionmaking/WhereArePatientsinDecisionMaking.pdf>

Department of Health (2001). National Service Framework for Diabetes: Modern Standards and Service Models. London: DoH.

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4002951](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4002951)

\* Question asked: 'Some people with diabetes receive training to help manage their diabetes themselves. Have you ever participated in a course or class about diabetes, or received special training on how you can live with your diabetes from day-to-day?'

Chart 34: Diabetes - feet not checked each year



Source data: ELSA 2009

**Figure 34: Percentage (with 95% CIs) of people aged 50+ years with diabetes who replied 'No' when asked if they had had their feet examined in past year by a doctor or nurse, England, 2009**

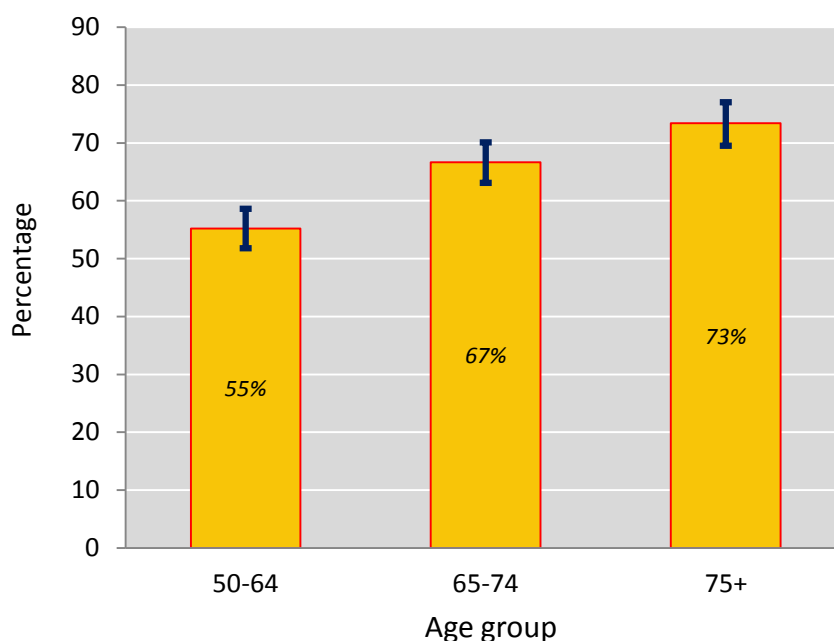
Diabetes can damage the arteries of the leg and can eventually cause tissue damage and ulcers: in rare cases this can end in the need for amputation when foot ulcers cannot be healed. Good foot care is effective in reducing the risks of damage, and therefore all people suffering from diabetes and aged 50 or older should get their feet checked at least once a year<sup>97</sup>. When asked whether their feet had been checked\*, 18% to 20% of those with diabetes in the ELSA study said they had not.

#### Further reading

National Institute for Clinical Excellence (2004) Type 2 Diabetes Prevention and Management of Foot Problems. London: NICE. <http://www.nice.org.uk/nicemedia/live/10934/29241/29241.pdf>

\* Question asked: 'Some doctors suggest that some patients with diabetes have a regular foot examination. In the past year, has any doctor or nurse examined your bare feet?'

## Chart 35: Osteoarthritis - preventing progression not discussed



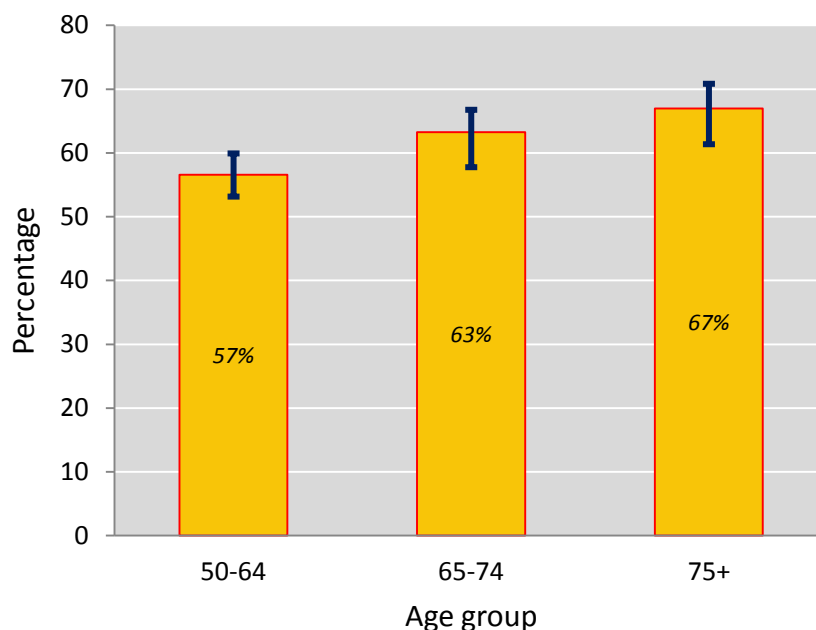
Source data: ELSA 2009

**Figure 35: Percentage (with 95% CIs) of people aged 50+ years with arthritis who replied 'No' when asked if the doctor or nurse had explained how to keep it from worsening, England, 2009**

Osteoarthritis is a common condition in older people, involving degeneration of the cartilage that lines joints, commonly affecting the hips and knees. Obesity is a major risk factor for osteoarthritis<sup>98-101</sup>. As the disease progresses it tends to cause pain and stiffness, and can eventually result in serious disability<sup>102</sup>. Management includes advice, exercise, weight loss if needed, analgesics and surgical replacement of joints where needed (although there is little evidence on the use of pharmacological and non-pharmacological therapies in the very old<sup>103</sup>). As with most chronic conditions of later life, the progression and the impact of the disease on daily living and quality of life can be best managed if the patient understands the disease and is an active partner in managing their own condition. In the ELSA study, 20% of respondents reported having osteoarthritis; when asked whether a doctor or nurse had discussed how to keep the condition from worsening: alarmingly the majority (64%) said they had not discussed this (Figure 35)\*.

\* Question asked: 'Has any doctor or nurse ever talked to you about: How to keep your arthritis or joint pain from getting worse?'

Chart 36: Arthritic joint pain - treatment options not discussed



Source data: ELSA 2009

**Figure 36: Percentage (with 95% CIs) of people aged 50+ years with arthritis who replied 'No' when asked if the doctor or nurse had talked about their treatment, England, 2009**

Joint pain is extremely common in the older population<sup>104 105</sup>. Most people aged 50 and over suffering from osteoarthritis should be offered education regarding the natural history, treatment and self management of the disease, at least once<sup>103 106</sup>. Self treatment is a large element, especially in keeping active and reducing pain. When ELSA respondents with arthritis (20% of the ELSA sample) were asked whether a doctor or nurse had ever talked to them about treatment for joint pain\*, a majority (61%) said they had not talked about treatment in this way.

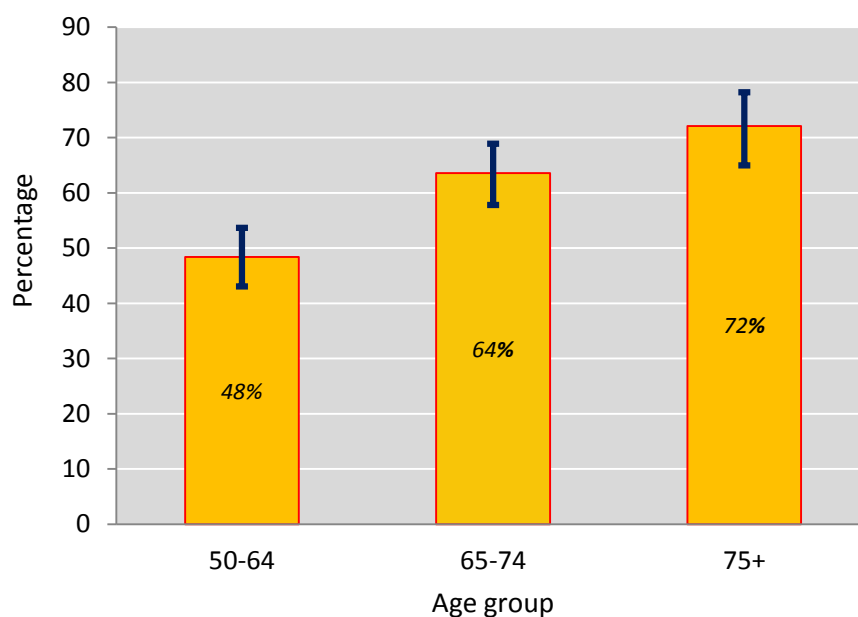
#### Further reading

Arthritis Care (2004). OA Nation. London: Arthritis Care.

<http://www.arthritiscare.org.uk/@3235/Forhealthprofessionals/OANation>

\* Question asked: 'Has any doctor or nurse ever talked to you about: How your arthritis or joint pain will be treated?'

## Chart 37: Knee joint pain - no recommendation for physiotherapy or exercise programme



Source data: ELSA 2009

**Figure 37: Percentage (with 95% CIs) of people with arthritis aged 50+ years who replied 'No' when asked if physiotherapy or exercise had been recommended, England, 2009**

For those with osteoarthritis experiencing knee joint pain (8% of the total sample), existing evidence suggests that exercise in some form or physiotherapy should be recommended (irrespective of age, comorbidity, pain severity or disability) to increase local muscle strength and aerobic fitness<sup>107</sup> and to ensure the correct aids equipment is used if necessary<sup>103 106 108</sup>. Of the target group in the ELSA study 2009, the majority of patients reported that physiotherapy or a structured exercise programme had not been recommended\*.

### Further reading

Escalante Y., García-Hermoso, A. & Saavedra, J.M. (2011). Effects of exercise on functional aerobic capacity in lower limb osteoarthritis: A systematic review. *Journal of Science and Medicine in Sport*, 14: 190–198.

<http://www.sciencedirect.com/science/article/pii/S1440244010002033>

Zhang, W., Nuki, G., et al (2010). OARSI recommendations for the management of hip and knee osteoarthritis Part III: changes in evidence following systematic cumulative update of research published through January 2009. *Osteoarthritis and Cartilage*, 18 476–499.

[http://faculty.ksu.edu.sa/Bindawas/RHS/Fall2010/RHS424\\_wk10\\_KneeHipOA\\_evidence2010.pdf](http://faculty.ksu.edu.sa/Bindawas/RHS/Fall2010/RHS424_wk10_KneeHipOA_evidence2010.pdf)

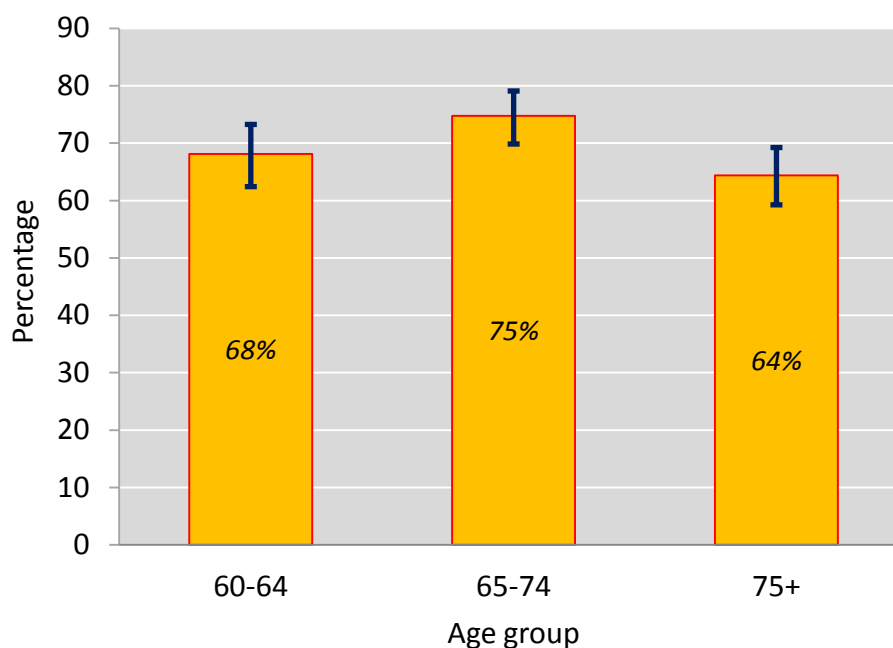
Zhang, W., Moskowitz, R.W., et al (2008). OARSI recommendations for the management of hip and knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines. *Osteoarthritis and Cartilage* 16, 137e 162.

Roddy E, Zhang, W., et al. (2005). Evidence-based recommendations for the role of exercise in the management of osteoarthritis of the hip or knee - the MOVE consensus. *Rheumatology*, 44(1):67-73.

<http://www.ncbi.nlm.nih.gov/pubmed/15353613>

\* Question asked to those with osteoarthritis of knee: Has a doctor or nurse suggested physiotherapy or that you attend a supervised exercise program for your knee pain?

Chart 38: Falls - causes not sought



Source data: ELSA 2009

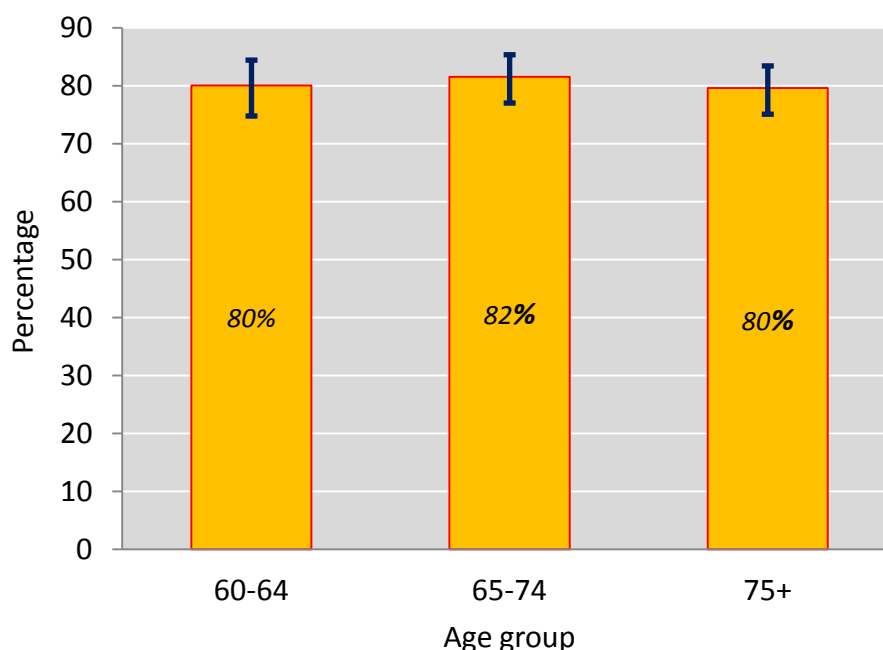
**Figure 38: Percentage (with 95% CIs) of people aged 60+ years who had reported falling and who replied 'No' when asked if the doctor or nurse had tried to understand the causes of the fall, England, 2009**

Falls tend to become more common with advancing age, but they are by no means inevitable or unavoidable<sup>109</sup>. From a total of people aged 60+ years who participated in ELSA, 27% (1849 people out of 7014 who answered the question) had fallen in the past year, 15% having one fall, and a further 12% having two or more falls; just under 500 people (29%) reporting a fall in the past year said that they had been injured seriously enough to require medical treatment.

Often there are risk factors that underlie falls such as an earlier fall, balance problems, muscle weakness, impaired eyesight, medication, acute medical illness, fainting or cognitive problems<sup>110</sup>, or pain<sup>111</sup>. When a fall has occurred, however minor, it is very important to assess the likely reasons by asking the patient about background factors<sup>112</sup>. Disappointingly a majority (68%) of the ELSA respondents (a total of 1104) who had experienced more than one fall in the past two years and/or sustained a serious injury needing medical attention reported that their doctors or nurses had not tried to understand the underlying causes (Figure 38)\*. Many falls do not result in serious injuries, and thus may go unreported by patients. However, considering the rate of falls in the older population more needs to be done. The Royal College of Physicians concluded in one study that there were unacceptable variations in the quality of falls and fracture services across the UK<sup>112</sup>; communication between patient and health care professionals was voiced as a concern by some patients in another study<sup>113</sup>. The Royal College of Physicians have put forward recommendations for health professionals to help reduce falls and prevent a second fall (see further reading list on next page).

\* Question asked to those who had had more than 1 fall in the last two years, or 1 fall that required medical treatment: 'With any of your past falls, did a doctor or nurse talk with you to try to understand why you fell?'

## Chart 39: Falls - assessing strength, balance or walking



Source data: ELSA 2009

**Figure 39: Percentage (with 95% CIs) of people aged 60+ years with a history of falls or reporting serious injury requiring treatment who replied 'No' when asked if the doctor or nurse had tested balance or strength or watched respondent walk, England, 2009**

A key part of assessing older people after a fall is to test balance or strength, or watch the older person walk. In the ELSA study 2009, the great majority of those who had experienced more than one fall in the past two years and/or sustained a serious injury needing medical attention reported that these tests had not happened\*. In the National Audit of Falls and Bone Health in Older People 2010, it was noted that the majority of high-risk patients 'miss the best or only opportunity' for their falls and fracture risk to be identified in the majority of hospitals<sup>112</sup>. The audit also noted that 'Most primary care organisations lack adequate services for secondary falls and fracture prevention'.

### Further reading

Royal College of Physicians (2011). Report of the National Audit of Falls and Bone Health in Older People 2010. RCP. <http://www.rcplondon.ac.uk/resources/national-audit-falls-and-bone-health-older-people>

Panel on Prevention of Falls in Older Persons, American Geriatrics Society and British Geriatrics Society (2011). Summary of the Updated AGS/BGS Clinical Practice Guideline for Prevention of Falls in Older Persons. *Journal of the American Geriatrics Society* 59,(1)148-157. <http://onlinelibrary.wiley.com/doi/10.1111/j.1532-5415.2010.03234.x/pdf>

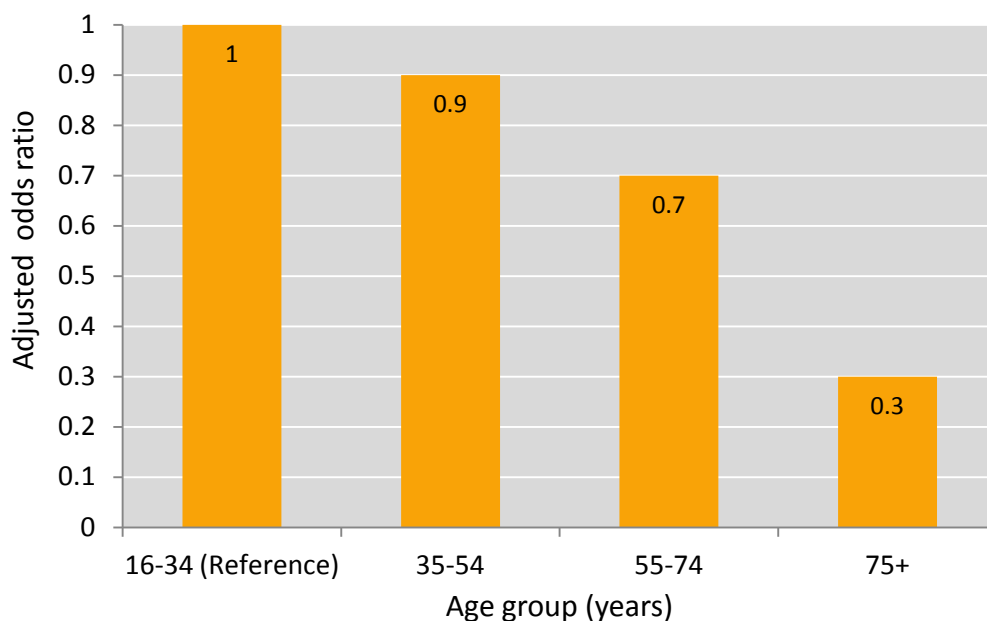
Gillespie L.D., Gillespie W.J, et al (2009). Interventions for Preventing Falls in Older People Living in the Community. *Cochrane Database of Systematic Reviews Issue 4*. <http://www.ncbi.nlm.nih.gov/pubmed/14583918>

Department of Health (2009). Falls and Fractures: Effective Interventions in Health and Social Care. [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/@pg/documents/digitalasset/dh\\_10912\\_2.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@pg/documents/digitalasset/dh_10912_2.pdf)

\* Question asked to those who had had more than 1 fall in the last two years/1 fall that required medical treatment 'Did a doctor or nurse or physiotherapist test your balance or strength or watch how you walk to understand why you fell?' ...'This might include standing with one foot in front of the other, standing with your eyes closed, walking heel to toe, getting up from a chair without using your hands.'



Chart 40: Common mental health problems - seeking help



Source data: Cooper et al., 2010<sup>114</sup>

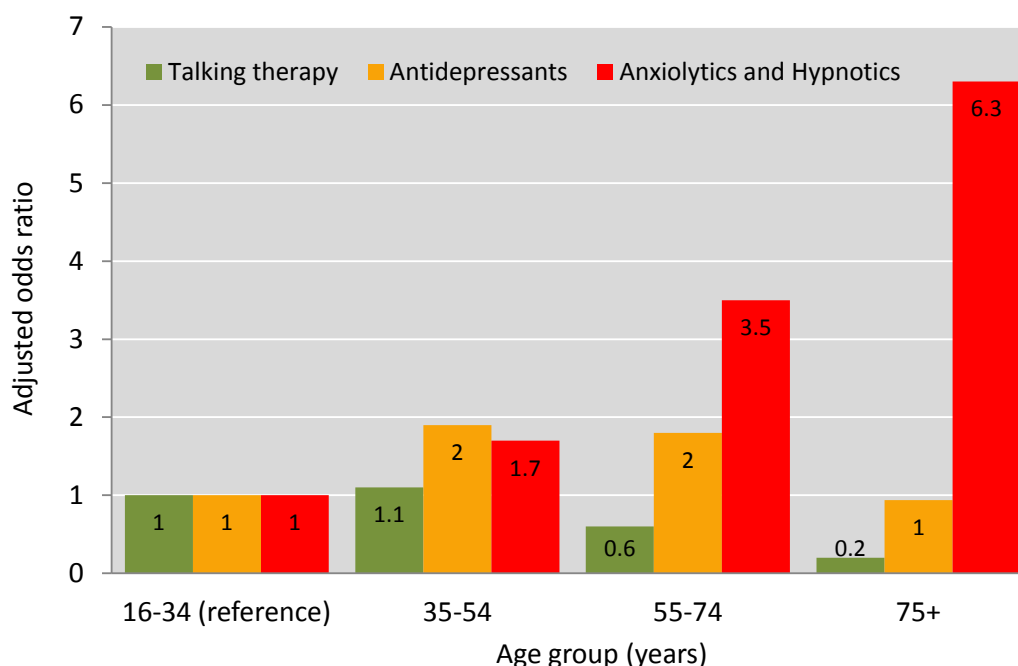
**Figure 40: Adjusted odds ratios for those consulting a GP in the last year for a mental health problem: Comparison of older age groups with those aged 16-34 years, England, 2007**

In the National Psychiatric Morbidity survey 2007, people were asked if they had consulted a GP about one of a number of common mental health problems (including anxiety and depression disorders) in the past year. After taking into account a range of other important factors<sup>114</sup>, older people were relatively much less likely than the youngest age group to have consulted a GP to seek help for a mental health problem, even though older people are much more likely to have seen GPs for other reasons<sup>\*</sup> †. The reasons why older people may be unwilling to seek help for mental health related conditions are complex<sup>115</sup>; feelings of stigma, or perceptions that low mood may be a normal response to the ageing process have been reported. However, there is also evidence that primary care clinicians struggle to make diagnoses of, for example, depression and this may be particularly challenging for older people, and particularly those with existing comorbidities. Helping older people seek appropriate care to treat their common mental disorders would help extend healthy active ageing.

\* Logistic regression model adjusted for the mental health symptom severity (CIS-R score), number of activity of daily living impairments, gender, ethnic group, marital status, home ownership and educational qualifications. The 'reference' category is the age group 16-34 years. As all the adjusted odds ratios are less than 1.0, the proportion of older age groups who sought help from the GP are all lower than those aged 16-34

† Notes: from table 3, C. Cooper et al 2010: Sample size is limited so estimates have margins of error: e.g. in the 75+ group the true estimate is likely to be between 20% and 50%.

## Chart 41: Common mental health problems - accessing treatments



Source data: Cooper et al<sup>114</sup> 2010

**Figure 41: Adjusted odd ratios for those accessing mental health treatments: Comparison of older age groups with the 16-34 age group, England, 2007**

After taking account of various indicators of need for mental health treatments, older people in the National Psychiatric Morbidity Survey 2007 were less likely than younger groups to receive talking therapies and much more likely to be on a tranquilizers (anxiolytics and hypnotics)<sup>\* 114</sup>. Older people were noted to be much more likely to be receiving benzodiazepines, which tend to alleviate symptoms in the short term without treating the underlying condition and can lead to excess morbidity such as fall and cognitive impairment, particularly in older age.

Cooper et al note that insomnia rates increase with increasing age and that tranquilizer prescribing may, in part be due to this, plus a cohort effect of a generation who are long-term users with difficulty coming off them. New prescriptions are becoming much rarer since new guidance on their use has been published.

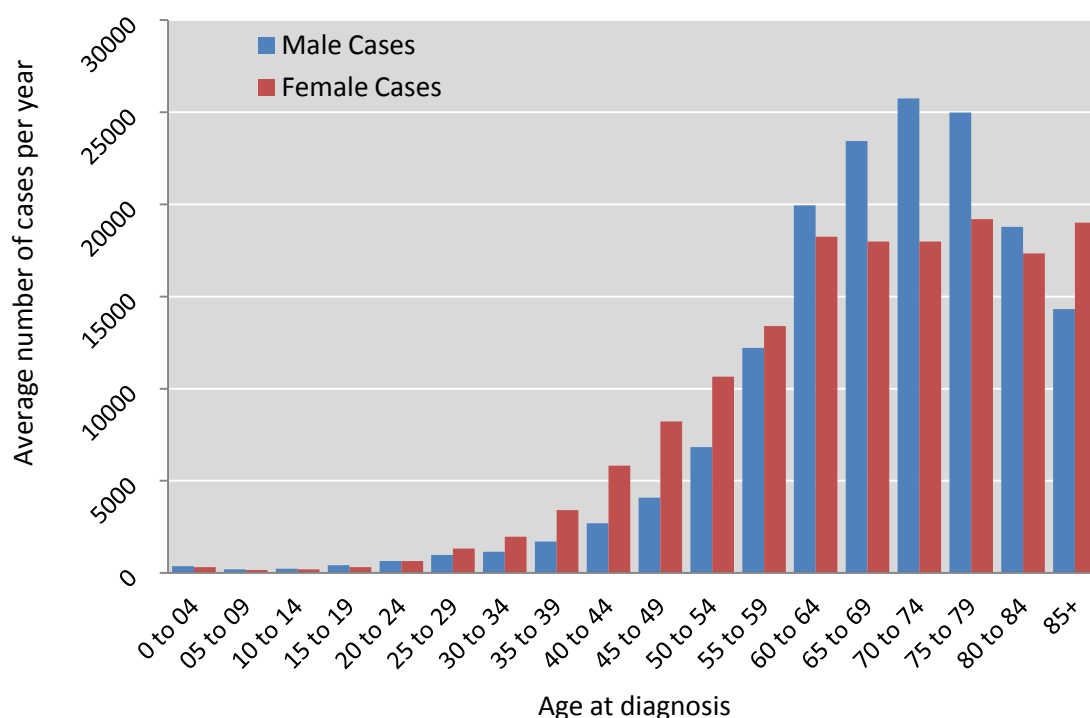
### Further reading

National Collaborating Centre for Mental Health (2011). Common Mental Health Disorders: Identification and Pathways to Care. <http://www.rcpsych.ac.uk/files/samplechapter/NICEcommonMHdisSC.pdf>

Lievesley N, Hayes R, Jones K, Clark A. (2009). Centre for Policy on Ageing. Ageism and age discrimination in mental health care in the United Kingdom. A review from the literature. [http://www.cpa.org.uk/information/reviews/CPA-ageism and age discrimination in secondary health care-report.pdf](http://www.cpa.org.uk/information/reviews/CPA-ageism%20and%20age%20discrimination%20in%20secondary%20health%20care-report.pdf)

\* Logistic regression model adjusted for the mental health symptom severity (CIS-R score), number of activity of daily living impairments, gender, ethnic group, marital status, home ownership and educational qualifications. The 'reference' category is the age group 16-34 years. An adjusted odds ratio (OR) of less than 1 indicates that the proportion of the older age group who accessed that treatment is lower than those aged 16-34 years, while an OR of greater than 1 indicates that the proportion in the older age group is higher.

## Chart 42: Cancer - a disease of ageing



Source data: Cancer Research UK <http://info.cancerresearchuk.org/cancerstats/incidence/age>. Date accessed: 21st March 2012

**Figure 42: Average number of all cancers (excluding non-melanoma skin cancer) per year by age group, UK, 2006-8**

While many think of cancers as diseases of middle age, as the above chart shows, the vast majority of cases occur in older people<sup>116</sup>. For most forms of cancer (excluding non-melanoma skin cancer) the number of new cases increases with increasing age. Only 11% of all cancers occur in the under 50 year olds; most cases (64%) are diagnosed in people aged 65 and over, with 37% of cases in people aged 75 and over<sup>116</sup>. Although there are more than 200 different types of cancer, breast, lung, large bowel (colorectal) and prostate cancer account for over half of all new cases.

The charts that follow highlight some of the key challenges in improving the outcomes of cancer care for older people. Given the many types of cancer diagnosis, and the important differences in diagnosis and management required for each condition, the following charts discuss the broad issues relevant to good quality cancer care i.e. obtaining a timely diagnosis, and access to appropriate treatment.

#### Further reading

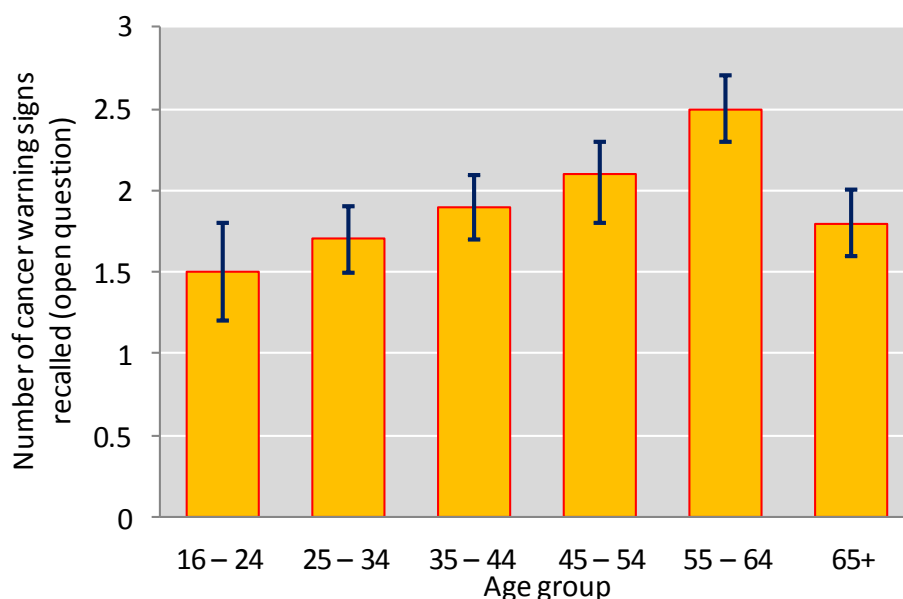
Macmillan Cancer Support (March 2012). The Age Old Excuse: The Under Treatment of Older Cancer Patient. <http://www.macmillan.org.uk/Documents/GetInvolved/Campaigns/AgeOldExcuse/AgeOldExcuseReport-MacmillanCancerSupport.pdf>

National Cancer Intelligence Network (2011). Improving Outcomes: A Strategy for Cancer - NCIN Information Supplement (June 2011). <http://www.ncin.org.uk/publications/reports/default.aspx>

Foot, C. & Harrison, T. (2011). How to Improve Cancer Survival: Explaining England's Relatively Poor Rates. King's Fund. [http://www.kingsfund.org.uk/publications/cancer\\_survival.html](http://www.kingsfund.org.uk/publications/cancer_survival.html)

Cancer Research UK website; <http://info.cancerresearchuk.org/cancerstats/>

Chart 43: Cancer - recall of warning signs



Source data: NCIN outcomes: A strategy for cancer - NCIN information supplement (June 2011).

**Figure 43: Recall of nine cancer warning signs (with 95% CIs) by age group, England, 2008**

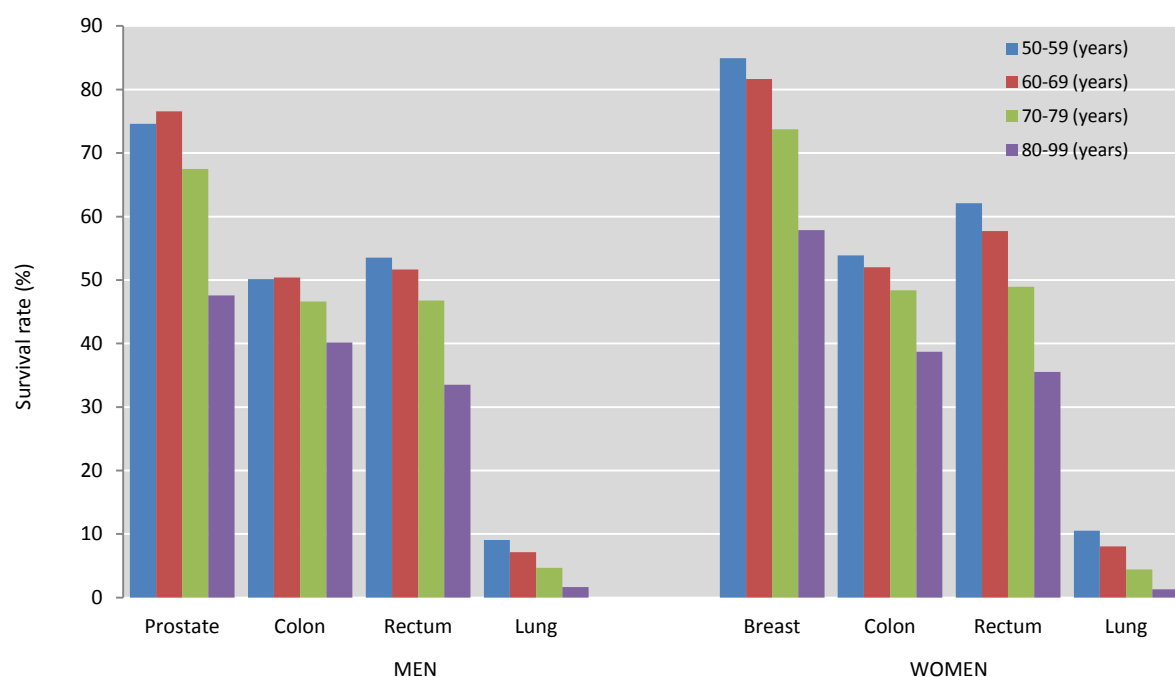
For many cancers, survival rates are significantly improved by early diagnosis. The timely identification of cancers includes pro-active case finding of individuals via the national NHS cancer screening programmes (<http://cancerscreening.nhs.uk/>), combined with early diagnosis of cancer-related symptoms<sup>117</sup>. NHS screening identifies around 5% of all cancers, and this is set to increase as the age extensions for routine invitation to breast and bowel screening progress<sup>117</sup>. All women aged 50-64 years are routinely invited for cervical screening every five years and those aged 50-70 years (extending to 73 years) are invited for breast screening every five years. Participation levels in women aged 50 or over are high, with coverage\* of around 78% (2010/11)<sup>118</sup> and 77% (March 2010)<sup>119</sup> respectively. Colorectal screening (established 2006) routinely invites men and women aged 60-69 (extending to 75 years) every two years. Early data suggests that coverage is lower (around 60%) than for other screening programmes, with men being less likely to be screened than women, and uptake rates increasing with increasing age<sup>120</sup>.

Early diagnosis based on cancer-related symptoms is a complex process<sup>121</sup>, the first step of which depends on the person being aware of their symptoms and then quickly consulting their doctor. Figure 43 summarises people's recall<sup>122</sup> of nine main early warning signs for cancer<sup>†</sup>. Men recall fewer signs than women, with awareness highest for those up to the age 55 to 64 years. Recall drops substantially in those aged 65 and over, despite this group being at the greater risk of developing cancer<sup>123</sup>. Although it is often assumed that older people, and men in particular, delay seeking help for their symptoms, a recent review<sup>124</sup> found little evidence supporting this. It is possible that many people delay help-seeking due to a lack of awareness of the importance of their symptoms<sup>123</sup>.

\* Coverage is a good indicator of whether people are being screened regularly. It is the proportion of eligible people who have been screened within the current 'round' of screening (e.g. breast screening invites all women once every three years).

† The Cancer Awareness Measure (CAM) is a validated questionnaire. It includes both open (recall) and closed (recognition) questions for 9 early cancer warning signs: lump or swelling; unexplained bleeding; unexplained pain, unexplained weight loss; change in a mole, change in bowel/bladder habits; persistent cough; sore that does not heal; difficulty swallowing.

Chart 44: Cancer survival by age



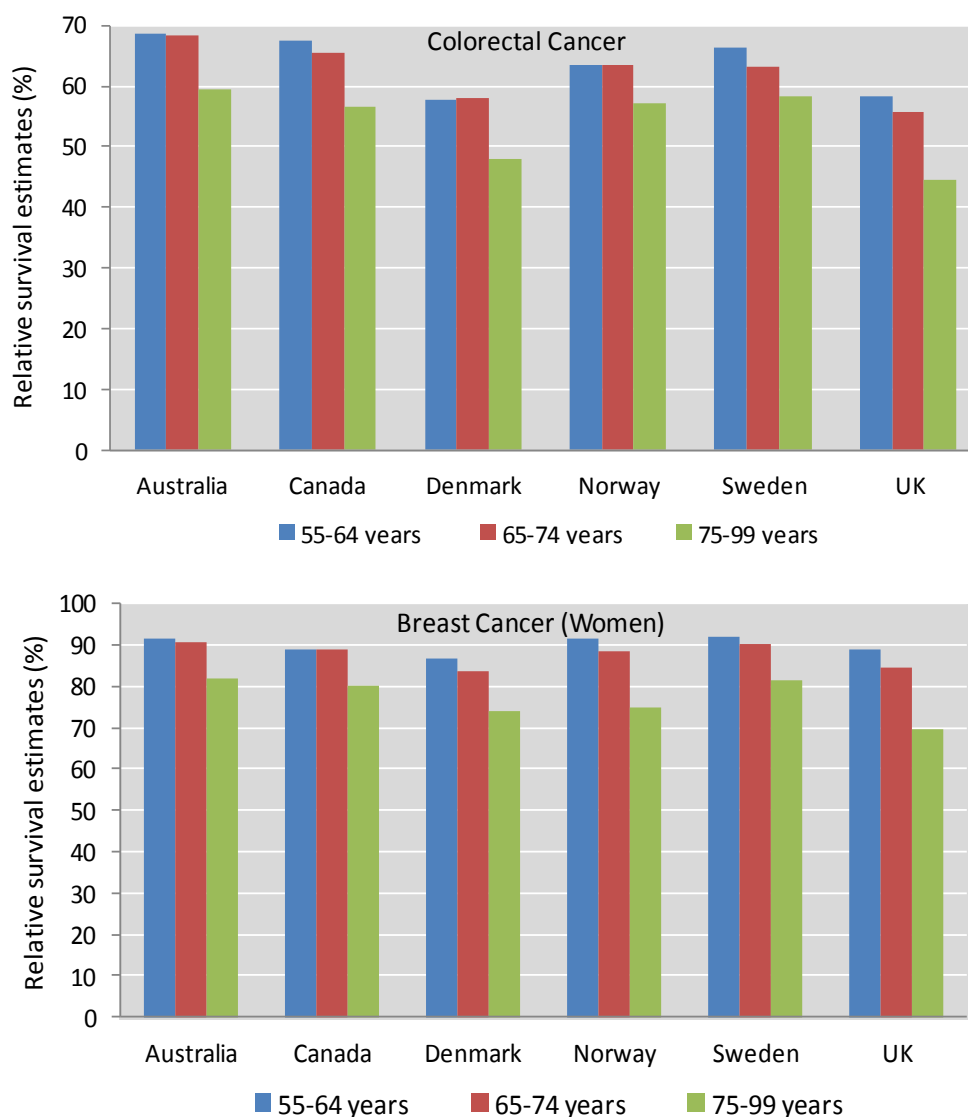
Source data: Cancer Research UK <http://info.cancerresearchuk.org/cancerstats/survival/age/> Date accessed: 04 Jan 2012

**Figure 44: Five-year relative survival (from age of diagnosis) for men and women by site, England and Wales, 1996-1999 followed up to the end of 2001**

In 2009 there were more than 156,000 cancer deaths in the UK, equivalent to over a quarter of all deaths (28%). Reflecting the incidence of cancer, the majority of cancer-related deaths (77%) occur in old age (65 years and over)<sup>116</sup>. Among adults, relative survival decreases with increasing age at diagnosis for almost every cancer, even when the higher mortality from other causes in older people is allowed for. The factors driving this observation are complex and inter-related<sup>121</sup>, and the reasons underlying poorer survival in older patients requires urgent investigation<sup>117</sup>.

Early diagnosis for most types of cancer is critical, and there are many routes to diagnosis (screening, primary care, secondary care etc). The type of cancer, the person's characteristics (age, ethnicity, sex) and the doctor's response to symptoms all influence the speed of diagnosis<sup>121</sup>. There is evidence, for example, that these factors combine to predict the number of consultations a patient makes with their general practitioner before a specialist referral is made<sup>125 126</sup>. People aged 85 years or over are also more likely to be admitted to hospital as an emergency, where they are diagnosed at a later stage when survival rates are lower<sup>117 121 127</sup>. Older people are also reported to be relatively under-investigated and receive less aggressive treatment<sup>121</sup>; although it is unclear whether these differences are due largely to age discrimination, as opposed to a combination of clinical appropriateness (i.e. the patient is too frail to withstand radical, but potentially curative procedures) and/or patient preferences for less aggressive management<sup>123</sup>.

Chart 45: Cancer survival - international comparison



Source data: Table 14, Webappendix, Coleman et.al. 2010<sup>128</sup>

**Figure 45: Age-specific relative survival estimates (%) at five years for colorectal cancer and breast cancer (women) for ages 55-99, international comparisons, 2005–2007**

As noted previously in Figure 44 the decline in survival from cancer in the UK with advancing age is difficult to fully explain. However, when we compare colorectal and breast cancer survival rates with those of other countries of comparable wealth, health care and health expenditures (with good quality registry data available), it is clear that the UK has lower relative survival rates for these cancers, especially in the 75+ age group.

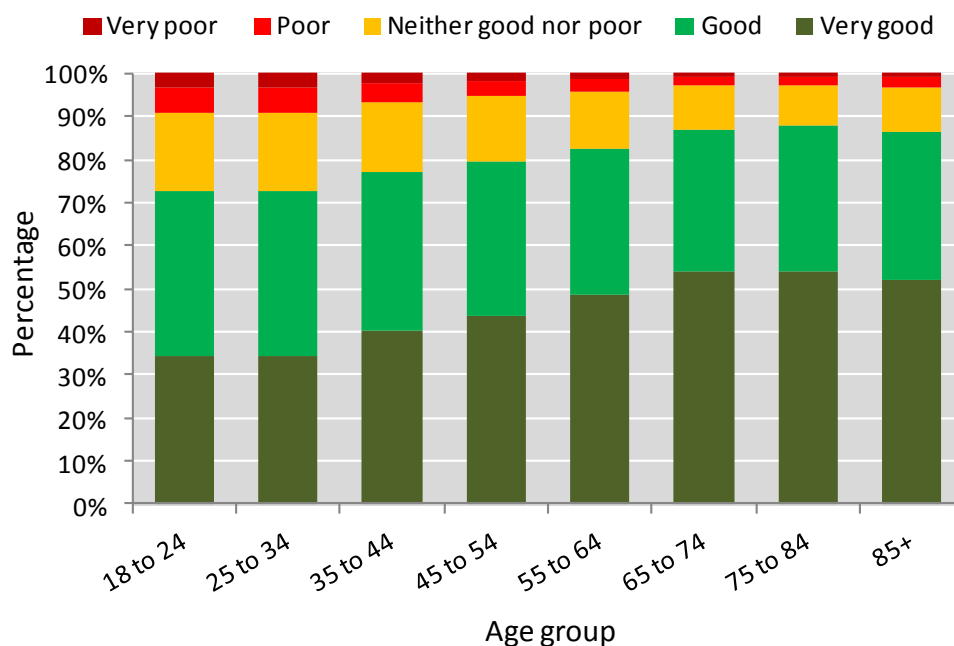
Compared with international data, the UK data shows a slower improvement in cancer mortality in older people compared with younger people. In 2010 the Department of Health acknowledged these differences<sup>129</sup>. Strategic guidance has recently been published about how improved outcomes for patients with cancer might be achieved<sup>117</sup>. To date, it is too early to evaluate the success of this strategy, although its importance cannot be under-estimated if real improvements in equity of access to health care are to be realised for older people.

## SECTION 4:

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# PATIENT EXPERIENCE OF TREATMENT

## Chart 46: Doctors involving you in care decisions



Source data: General Practice Patient Survey, Year 5 data, 2011

**Figure 46: Patients' self-report rating of how good the general practitioner was at involving them in care decisions, all adults, England, 2011.**

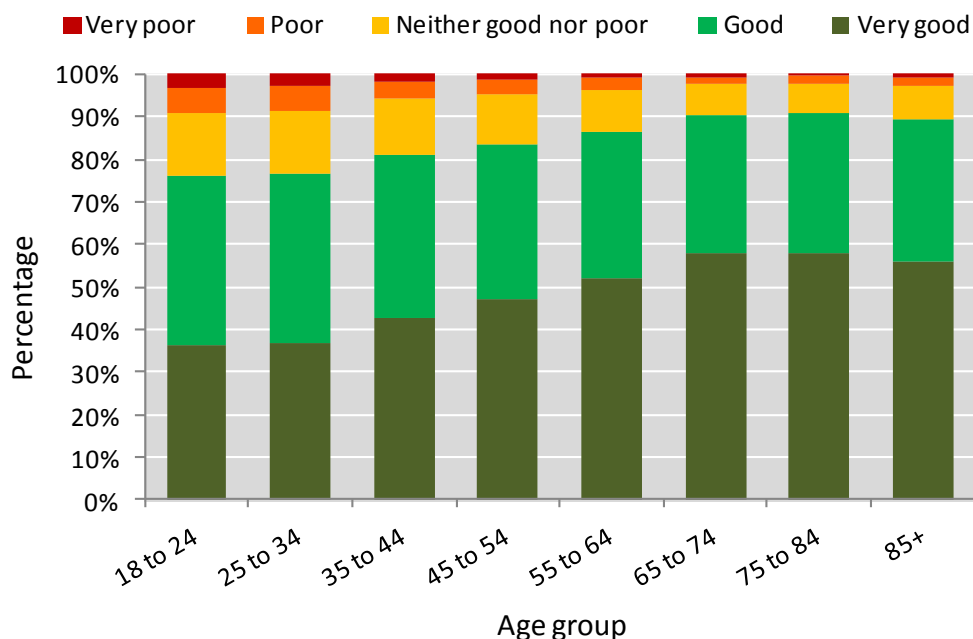
The General Practice Patient Survey (<http://www.gp-patient.co.uk/>) is an ongoing survey run on behalf of the Department of Health to assess patients' experiences of using local NHS services. The survey asks about a range of issues related to general practice and other local services that concern patients, such as accessing appointments, opening hours and the quality of care received from their GP and practice nurses. The questionnaire is mailed directly to patients who have been selected at random from practices' registered lists.

Figure 46 shows that older patients feel that their general practitioners are on the whole very good or good at involving them in decisions about their care\*, with only 3% of those aged 65 and over rating this aspect of their care as 'poor' or 'very poor'.

\* Question asked: 'Last time you saw a doctor at your GP surgery or health centre, how good was the doctor at each of the following: ... Involving you about decisions about your care?'



Chart 47: Doctors explaining tests and treatments



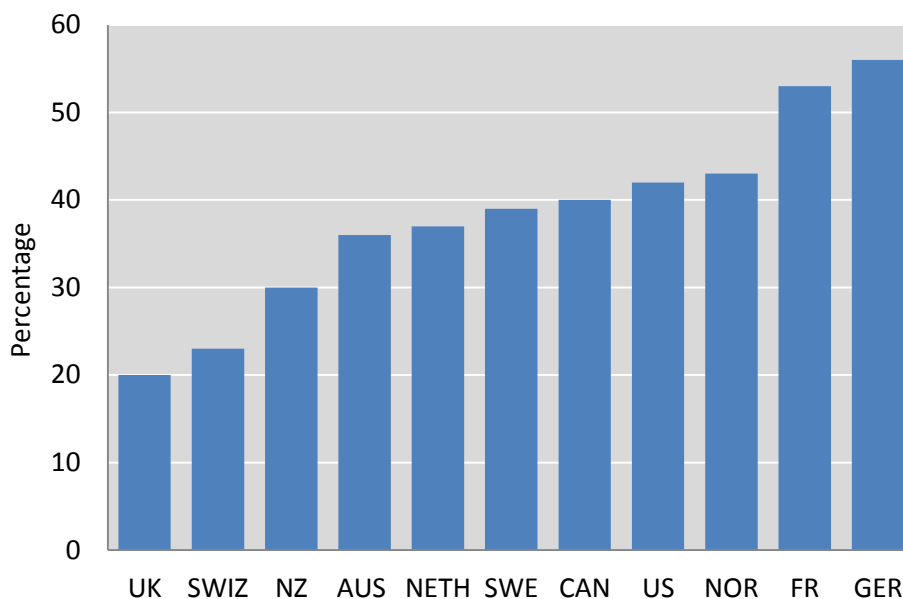
Source data: General Practice Patient Survey, Year 5 data, 2011

**Figure 47: Patients' self-report rating of how good the general practitioner was at explaining tests and treatments, all adults, England, 2011.**

As in Figure 46, Figure 47 refers to one answer from a set of eight questions from the General Practice Patient Survey enquiring about patients' experiences of seeing a doctor at their surgery. The majority of patients felt that the doctor was 'very good' or 'good' at explaining tests and treatments to them\*, with only 3% of those aged 65 and over rating this aspect of their care as 'poor' or 'very poor'. The same or higher satisfaction levels were achieved when asked to rate their doctor regarding giving them enough time, asking about symptoms, listening to them, and taking problems seriously.

\* Question asked: 'Last time you saw a doctor at your GP surgery or health centre, how good was the doctor at each of the following: ...Explaining tests and treatments?'

## Chart 48: Sicker people's experiences of poor care coordination - international comparison

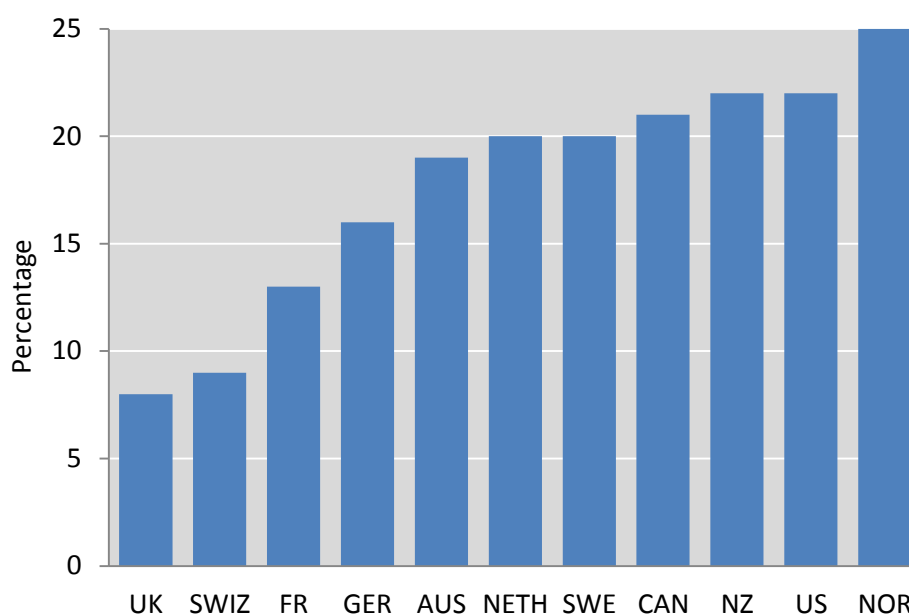


Source: Commonwealth Fund International Health Policy Survey, 2011  
<http://www.commonwealthfund.org/Surveys/2011/Nov/2011-International-Survey.aspx>

**Figure 48: Percentage of patients self-reporting gaps in coordination of services in the past two years, all adults, international comparisons, 2011**

In 2011 the Commonwealth Fund undertook an international survey of 'sicker' adults across 11 countries. These were selected as being in: fair or poor health; had surgery or been hospitalized in past two years; or received care for serious or chronic illness, injury, or disability in past year. In the UK 62% of the sample (1001 people interviewed) were aged 50 or over. Respondents were asked about test results and records not being available at time of appointment, whether doctors ordered tests that had already been done, whether providers failed to share important information with each other, whether specialist did not have information about medical history, and/or whether the respondents' regular doctor was not informed about their specialist care. Across these measures the UK did exceptionally well in comparison with other leading countries, suggesting that coordination of the care of sicker adults is one of the great strengths of the UK health system. Interestingly the UK also did well with 79% of respondents reporting positive shared decision-making experiences with specialists, with only Switzerland doing (marginally) better on this measure (80% positive experience).

## Chart 49: Sicker people's experiences of medical errors - international comparison



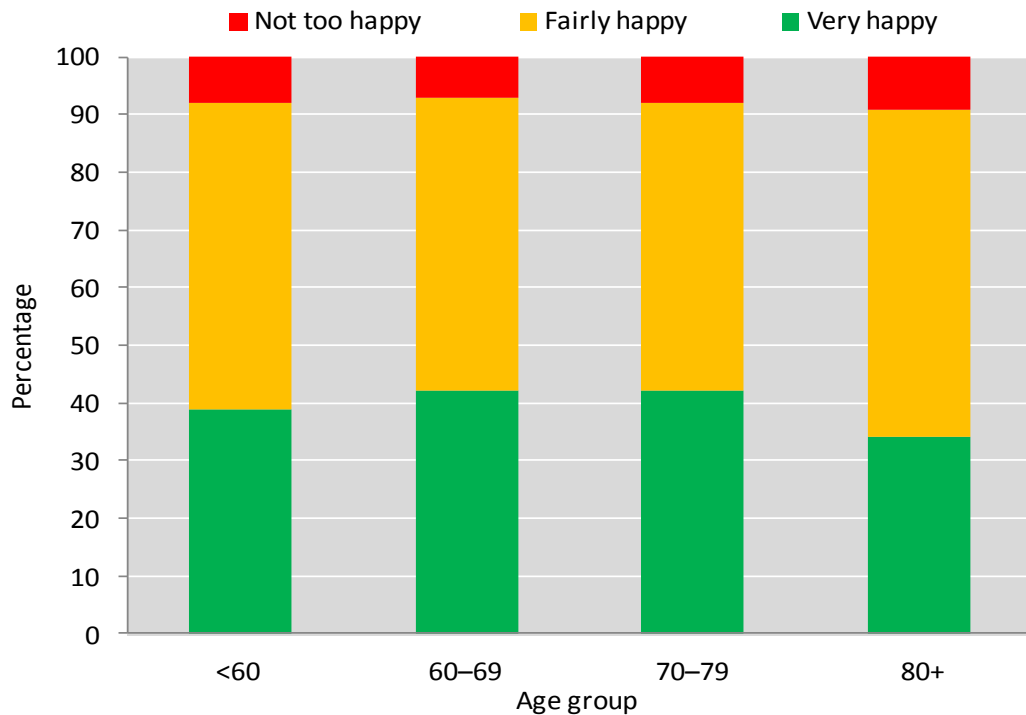
Source: Commonwealth Fund International Health Policy Survey, 2011  
<http://www.commonwealthfund.org/Surveys/2011/Nov/2011-International-Survey.aspx>

**Figure 49: Percentage of patients self-reporting medical, medication or laboratory test errors, all adults, international comparison, 2011**

In 2011 the Commonwealth Fund undertook an international survey of 'sicker' adults (See Chart 48) Respondents who reported having had investigations (blood tests, x-rays or other tests) in the past two years were asked about experiences of being given the wrong medication or dose, medical mistakes in treatment, receiving incorrect diagnostic or lab test results and delays in receiving the results of abnormal test results, during that time period.

The survey reported that adults with complex care needs who received care from a practice that had 'medical home' characteristics, i.e. an accessible primary care practice that knows their medical history and helps coordinate care - were less likely to report experiencing medical errors, test duplication, and other care coordination failures<sup>130</sup>. Across these measures the UK did very well in comparison with other high income countries, perhaps because of the current strength of the primary care system.

## Chart 50: Happiness in later life - age makes little difference



Source data: Cooper et al (2010)<sup>131</sup>

**Figure 50: Level of happiness reported by age group, England, 2007**

In the government's National Psychiatric Morbidity Survey 2007, people living in the community were asked about how happy they were<sup>131</sup>. Figure 50 shows that the great majority of older people consider themselves fairly or very happy, with less than 10% reporting being 'not too happy'. These responses did not change much with advancing age.

\* Question asked: 'Taking all things together, how would you say you are these days—very happy, fairly happy or not too happy?'

# Conclusions

1. Over the last few years there has rightly been a focus on the poor standards of care for the frail elderly and the many challenges faced in the social care arena. In addressing the pressing needs for more humane care for the frail elderly, we should not forget the scope for improving health in later life for the majority of older people who are not frail.
2. In this chart book we have provided an overview of data since 2005 on the health and health care of the non-frail older population of England. We have presented material relating to the characteristics of the population, health risks, quality of medical care and experience of treatment. We have highlighted common risks and common conditions, but will have inevitably missed out some important areas, mostly because of lack of recent data. There are very few data available on the health and treatment of frail and non-frail older people in residential or nursing homes, for example, and how much disability in these settings might be avoidable. Also, we hope to be able to cover several areas including nutrition, dental health, hearing, Parkinson's disease, macular degeneration and other eye conditions in greater depth in future work.
3. Our purpose was to gather information on the main opportunities for achieving more active and healthier later lives. In many cases the data available provide strong indications that action is needed, at least to investigate why certain risk factor trends appear so adverse or why quality standards for treatment appear to be missed so frequently. Inevitably the available data cannot answer all questions about the underlying factors involved or the legitimate exceptions to standards: overall however the data presented provides a compelling picture of the many opportunities for extending healthy later lives through improved prevention and treatment.
4. Historically there have been notable successes in controlling threats to health in later life:
  - a. Smoking rates in the 50+ age-group have fallen dramatically since the 1970s. Now less than 20% of people aged 60 plus are still smoking (see Figure 20). Unfortunately the fall in smoking rates has been slow since the mid-1990s. Helping current smokers quit could make a positive contribution.
  - b. Partly because of the positive smoking trends, mortality rates from coronary heart disease are down by more than 60% since 1968 in most age-groups, including those aged 65 to 74 (Chart 15). Significant reductions in respiratory mortality rates have also occurred (Chart 14).
  - c. In line with the above changes, UK life expectancy at age 65 has risen for men by about five years since 1980 and for women by approximately four years (Chart 3).
5. It is clear from the above areas of dramatic progress that health in later life is far from fixed, but rather is capable of being improved. Life expectancy comparisons with the longest lived major countries (Japan and France, Chart 3) indicate that substantially more is possible, especially for UK women. Similarly there may be scope for increasing healthy or disability free life expectancy (Chart 19) although the UK does relatively well in Europe, some Nordic countries do substantially better on this measure.
6. As in other age-groups, less privileged older people on average live shorter lives than more privileged groups (Chart 18). In addition, less privileged groups tend to spend more of their

life expectancy with health related limitations or disabilities. These inequalities in health suggest that there is substantial scope for improving later life health for many less privileged older people. Incidentally, the experience of the more privileged groups shows that it is possible to enjoy a longer life expectancy combined with a shorter average period of disability.

7. In common with other age-groups, middle aged and older people are experiencing an epidemic of obesity. For example, rates of obesity in men aged 65 to 74 have risen from less than 20% in 1994 to 35% in 2008. 37% of women aged 65 to 74 were obese in 2008 (Chart 21). For some, unplanned weight loss can be a feature of serious disease and maintaining a normal or slightly higher weight in old age can be associated with lower health risks. However, obesity in middle and early old age is associated with diabetes and other major diseases, and is also associated with at least a doubling of disability rates.
8. Largely in line with the obesity epidemic, rates of diagnosed diabetes have increased dramatically: for example, in the government's Health Survey for England in the 65 to 74 age group in men, diabetes prevalence rates have risen from 6% in 1994 to around 16% in 2009 (Chart 31).
9. We have presented several measures that raise questions about quality of care, including for example:
  - a. Health Survey for England data showing that many older people have raised cholesterol levels or high blood pressures that are insufficiently controlled (Chart 28 to Chart 30 ).
  - b. The government's National Psychiatric Morbidity Survey 2007 showed that older people with common mental health problems were much less likely than younger people to receive counselling and other 'talking therapies'. Older people were more likely than younger people with mental health problems to be prescribed tranquilising drugs (Chart 41), however this may in part be due to an increase in insomnia with increasing age. In addition, the current older generation of long-term users who may have difficulty coming off them (new prescriptions are becoming much rarer since new guidance on their use has been published).
  - c. That cancer survival in later life in the UK lags behind other countries, including for common non-smoking related cancers such as colorectal cancer (Chart 44).
10. Using evidence based and expert agreed treatment standards, we presented updated analyses of treatment quality from the English Longitudinal Study of Ageing (ELSA, 2009). Disappointingly, in many areas the care people reported receiving fell below the quality standards. Caution is required in interpreting these data, as exemptions (on the basis of clinical appropriateness and/or patient choice) are not recorded. Notwithstanding this, the overall impression is that there remains substantial scope for improving treatment quality in order to help achieve active, pain free and successful later lives. Examples include:
  - a. Many older people with diabetes report that they did not receive training in self management of their condition (Chart 33) and did not have their feet checked annually (Chart 34).
  - b. Many people with osteoarthritis reported that they were not advised on how to reduce progression of their disease (Chart 35) or control joint pain.
  - c. Many people who had experiencing a fall reported that health care professionals did not check for the underlying causes of their fall (Chart 38).

11. The majority of those who develop cancer are older people. Cancer survival in the UK lags behind that in comparable countries and poorer survival in older groups is reported to be a significant contributor. Detailed work is needed to identify the opportunities for improving self recognition of early signs, early presentation to health professionals, early diagnosis and in supporting older people to choose what they regard as the most appropriate treatment and care for themselves.
12. There are many potential reasons for these apparent shortfalls in care. Treatment quality in most health care systems for all age groups may not be as good as it could be. There is evidence that ageism is a significant factor in the nature and quality of health care provided for older people<sup>2 3 39 132 133</sup>. In discussing the material presented with colleagues, several have suggested that some older people can be fatalistic about their health, discounting the scope for disease and disability prevention. Similarly it is suggested that many older people do not want or take the treatment packages offered. At the same time, health professionals can ignore the adverse effects of some treatments, and overestimate the size of benefits offered by specific treatments. While these factors need to be investigated and monitored, it is clear that to be effective in an ageing society, health care will have to adjust better to the needs of older people.
13. Whatever the detailed causes for the shortfalls against quality standards, the information presented suggests that there is ample opportunity to improve treatment quality and achieve better outcomes. Health care will need to be better designed to engage older people, provide preventive services, information and training, and ensure continuity and completeness of chronic disease management. Obvious areas for action that emerge from this overview include:
  - Obesity and diabetes prevention – acknowledging that the obesity epidemic is a major threat to health in later life
  - Encouraging and enabling older people to keep physically active
  - Addressing health inequalities in later life, acting to improve the health of less privileged social groups
  - Smoking cessation for the 20% of 65 to 74 yr olds who still smoke
  - Improving chronic disease management, based on building concordance with older people's wishes, with major improvements possible in common conditions of later life including cardiovascular disease, diabetes, arthritis and musculoskeletal pain and mental health. This is likely to depend partly in ending ageist attitudes toward the care of older people
14. In thinking about the future of prevention and treatment we need to note the arrival of the post-World War II generation into later life. This generation has far higher formal educational attainment than their predecessors. Recent work in the government's Health Survey for England suggests that the post-war generation will enter later life with lower rates of heart disease but higher rates of obesity, diabetes and mental health problems<sup>1</sup>. Whether this group in later life will also demand to be more involved in making their own choices for prevention and treatment remains to be seen.
15. Finally, despite all the challenges, we should remember that the majority of older people report that they are fairly or very happy, and that this changes little with advancing age (Chart 50). With greater access to good quality prevention and treatment, particularly for

those from socially disadvantaged backgrounds, there remains scope to help even more people remain physically active, socially engaged, and enjoying high levels of wellbeing. Perhaps the key to improving care is to recognise the positive aspects of later life and to move beyond the media stereotypes of later life being a largely unhappy and negative experience.



## Further reading

World Health Organization (2012). Good Health Adds Life to Years: Global Brief for World Health Day 2012. Geneva: WHO. [http://whqlibdoc.who.int/hq/2012/WHO\\_DCO\\_WHD\\_2012.2\\_eng.pdf](http://whqlibdoc.who.int/hq/2012/WHO_DCO_WHD_2012.2_eng.pdf)

World Health Organization and Alzheimer's Disease International (2012). Dementia: A Public Health Priority. Geneva: WHO. [http://whqlibdoc.who.int/publications/2012/9789241564458\\_eng.pdf](http://whqlibdoc.who.int/publications/2012/9789241564458_eng.pdf)

Equality and Human Rights Commission (November 2011). Close to home: An inquiry into Older People and Human Rights in Home Care. Equality and Human Rights Commission. London: EHRC. [http://www.equalityhumanrights.com/uploaded\\_files/homecareFI/home\\_care\\_report.pdf](http://www.equalityhumanrights.com/uploaded_files/homecareFI/home_care_report.pdf)

National Institute for Health and Clinical Excellence (August 2011). Hypertension Clinical Management of Primary Hypertension in Adults. NICE clinical guideline 127. London: NICE. <http://guidance.nice.org.uk/CG127/Guidance>

National Institute for Clinical Excellence (May 2011). Preventing Type 2 Diabetes: Population and Community-level Interventions in High-risk Groups and the General Population London: NICE. <http://www.nice.org.uk/nicemedia/live/13472/54345/54345.pdf>

Department of Health (January 2011). Improving Outcomes: A Strategy for Cancer. London: DoH. [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_123394.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_123394.pdf)

Department of Health (December 2010). The NHS Outcomes Framework 2011/12. London: DoH. [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_122944](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_122944)

Department of Health (March 2010). Prevention Package for Older People Resources. London: DoH. [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/dh\\_103146](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/dh_103146)

Marmot, M. (February 2010). Fair Society Healthy Lives: The Marmot Review - Strategic Review of Health Inequalities in England Post-2010. The Marmot Review. <http://www.instituteofhealthequity.org/projects/fair-society-healthy-lives-the-marmot-review>

Department of Health (February 2010). Six Years On Delivering the Diabetes National Service Framework. London: DoH. [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/@ps/documents/digitalasset/dh\\_11251\\_1.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_11251_1.pdf)

Department of Health (October 2009). Use of Resources in Adult Social Care: A Guide for Local Authorities. London: DoH. [http://www.csed.dh.gov.uk/library/Resources/Personalisation/Personalisation\\_advice/298683\\_Uses\\_of\\_Resources.pdf](http://www.csed.dh.gov.uk/library/Resources/Personalisation/Personalisation_advice/298683_Uses_of_Resources.pdf)

Centre for Policy on Ageing (December 2009). Ageism and Age Discrimination in Primary and Community Health Care in the United Kingdom: A Review from the Literature. CPA. [http://www.cpa.org.uk/information/reviews/CPA-ageism\\_and\\_age\\_discrimination\\_in\\_primary\\_and\\_community\\_health\\_care-report.pdf](http://www.cpa.org.uk/information/reviews/CPA-ageism_and_age_discrimination_in_primary_and_community_health_care-report.pdf)

World Health Organisation (2008 ). Primary Health Care: Now More than Ever. Geneva: WHO. <http://www.who.int/whr/2008/en/>

World Health Organization (2008). The Global Burden of Disease: 2004 update. Geneva: WHO. [http://www.who.int/healthinfo/global\\_burden\\_disease/GBD\\_report\\_2004update\\_full.pdf](http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf)

Department of Health (December 2007). National STROKE Strategy. London: DoH [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/documents/digitalasset/dh\\_081059.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/documents/digitalasset/dh_081059.pdf)

Department of Health (March 2005). Independence, Well-being and Choice: Our Vision for the Future of Social Care for Adults in England. London: DoH. [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4106477](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4106477)

Department of Health (March 2005). The National Service Framework for Long Term Conditions. London: DoH [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4105361](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4105361)

Department of Health (March 2004). The National Service Framework for Coronary Heart Disease: Winning the war on heart disease. London: DoH

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4077154](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4077154)

Department of Health (March 2001). National Service Framework for Older People. London: DoH.

[http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_4071283.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4071283.pdf)

Department of Health (March 2000). Modern Standards and Service: National Service Framework for Coronary Heart Disease Models. London: DoH.

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4094275](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4094275)

# References

1. Rice N, Lang I, Henley W, Melzer D. Baby boomers nearing retirement: The healthiest generation? *Rejuvenation Research* 2010;13(1):105-14.
2. Abraham A. Care and Compassion? Report of the Health Service Ombudsman on Ten Investigations into NHS Care of Older People. In: Ombudsman PaHS, editor. London, 2011.
3. Centre for Policy on Ageing. Ageism and Age Discrimination in Secondary Health Care in the United Kingdom: CPA, 2009.
4. National Confidential Enquiry into Patient Outcome and Death. An Age Old Problem: A Review of the Care Received by Elderly Patients Undergoing Surgery. London, 2010.
5. Cornwell J, Levenson R, Sonola L, Poteliakhoff E. Continuity of care for older hospital patients: A call for action, 2012.
6. Shekelle PG, MacLean CH, Morton SC, Wenger NS. ACOVE-1 quality indicators. *Annals of Internal Medicine* 2001;135(Part 2):653-67.
7. Steel N, Melzer D, Shekelle P, Wenger N, Forsyth D, McWilliams B. Developing quality indicators for older adults: Transfer from the USA to the UK is feasible. *Quality & Safety in Health Care* 2004;13:260-64.
8. World Health Organization. The Global Burden of Disease: 2004 Update. Geneva, 2008.
9. World Health Organization. Good Health Adds Life to Years: Global Brief for World Health Day 2012. Geneva, 2012.
10. Steel S, Bachmann M, Maisey S, Shekelle P, Breeze E, Marmot M, et al. Self reported receipt of care consistent with 32 quality indicators: National population survey of adults aged 50 or more in England. *British Medical Journal* 2008;337:a957.
11. NHS Information Centre. The NHS Quality and Outcomes Framework for Primary Care: <http://www.qof.ic.nhs.uk/>, Accessed April 2012.
12. Department of Health. Healthy Lives, Healthy People: Improving Outcomes and Supporting Transparency. A Public Health Outcomes Framework. London, 2012.
13. Hicks J, Allen G. A Century of Change: Trends in UK Statistics since 1900. Research Paper 99/111. *House of Commons Library*. London, 1999.
14. Office of National Statistics. Age Structure of United Kingdom, 1971-2085 (web page): <http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc1/UKPyramid.html>, Accessed February 2012.
15. The NHS Information Centre for Health and Social Care. Health Survey for England 2005 Volume 2: The Health of Older People: Chronic Diseases. London, 2007.
16. Bebbington P, Brugha T, Coid J, Crawford M, Deverill C, D'Souza J, et al. Adult Psychiatric Morbidity in England, 2007: Results of a Household Survey, 2009.
17. Hawton A, Green C, Dickens AP, Richards SH, Taylor RS, Edwards R, et al. The impact of social isolation on the health status and health-related quality of life of older people. *Quality of Life Research* 2011; 20:57-67.
18. O'Lunaigh C, Lawlor BA. Loneliness and the health of older people. *International Journal of Geriatric Psychiatry* 2008;23:1213-21.
19. Spiers N, Brugha TS, Bebbington P, McManusa S, Jenkins R, Meltzer H. Age and birth cohort differences in depression in repeated cross-sectional surveys in England: The National Psychiatric Morbidity Surveys, 1993 to 2007. *Psychol Med*. 2012;Feb 17:1-9.
20. Dementia UK. A Report into the Prevalence and Cost of Dementia: Summary of Key Findings. London, 2007.
21. Cooper C, Bebbington P, Lindesay J, Meltzer D, McManus S, Jenkins R, et al. The meaning of reporting forgetfulness: A cross-sectional study of adults in the English 2007 Adult Psychiatric Morbidity Survey. *Age Ageing*. 2011;40(6):711-7.
22. Alzheimer's Society. Mapping the Dementia Gap 2011: Progress on Improving Diagnosis of Dementia 2010-2011: Alzheimer's Society, 2012.
23. Prince M, Bryce R, Ferri C. World Alzheimer Report 2011: The Benefits of Early Diagnosis and Intervention. London, 2011.

24. Waldemar G, Phung KTT, Burns A, Georges J, Hansen FR, Iliffe S, et al. Access to diagnostic evaluation and treatment for dementia in Europe. *International Journal of Geriatric Psychiatry* 2007;22(1):47-54.
25. Department of Health. Quality Outcomes for People with Dementia: Building on the Work of the National Dementia Strategy. London, 2010.
26. Royal College of Psychiatrists. Report of the National Audit of Dementia Care in General Hospitals 2011. London, 2011.
27. Office of National Statistics. General Lifestyle Survey: Overview, 2009.
28. Jagger C, Matthews R, Matthews F, Robinson T, Robine J-M, Brayne C, et al. The burden of diseases on disability-free life expectancy in later life. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 2007;62(4):408-14.
29. The NHS Information Centre for Health and Social Care. Health Survey for England 2005 Volume 1: The Health of Older People: General Health and Function. London, 2007.
30. Gardener EA, Huppert FA, Guralnik JM, Melzer D. Middle-aged and mobility-limited: Prevalence of disability and symptom attributions in a national survey. *Journal of General Internal Medicine* 2006;21(10):1091-96.
31. British Pain Society and British Geriatrics Society. Guidance on: The Assessment of Pain in Older People: British Pain Society and British Geriatrics Society, 2007.
32. Thomas E, Peat G, Harris L, Wilkie R, Croft PR. The prevalence of pain and pain interference in a general population of older adults: Cross-sectional findings from the North Staffordshire Osteoarthritis Project (NorStOP). *Pain* 2004; 110:361–68.
33. McBeth J, Symmons DP, Silman AJ, Allison T, Webb R, Brammah T, et al. Musculoskeletal pain is associated with a long-term increased risk of cancer and cardiovascular-related mortality. *Rheumatology* 2009;48(1):74-77.
34. Ohayon MM, Vecchierini M.F. Normative Sleep Data, Cognitive Function and Daily Living Activities in Older Adults in the Community. *Sleep* 2005;28(8):981-89.
35. Ancoli-Israel S. Sleep and its disorders in aging populations. *Sleep Medicine* 2009;10, Supplement 1(0):S7-S11.
36. Dregan A, Armstrong D. Age, cohort and period effects in the prevalence of sleep disturbances among older people: The impact of economic downturn. *Social Science & Medicine* 2009;69(10):1432-38.
37. Cai J, Clark J, Croft S, Deakin S, Fowajah G, Hartley A, et al. Indications of Public Health in English Regions: Older People. *West Midlands Public Health Observatory*, 2008.
38. Glass J, Lanctôt KL, Herrmann N, Sproule BA, Busto UE. Sedative hypnotics in older people with insomnia: Meta-analysis of risks and benefits. *BMJ* 2005;331(7526):1169.
39. Centre for Policy on Ageing. Ageism and Age Discrimination in Primary and Community Health Care in the United Kingdom, 2009.
40. Scarborough P, Bhatnagar P, Wickramasinghe K, Smolina K, Mitchell C. Coronary Heart Statistics 2010 Edition. London: British Heart Foundation, 2010.
41. Capewell S, O'Flaherty M. What explains declining coronary mortality? Lessons and warnings. *Heart* 2008;94(9):1105-08.
42. Tunstall-Pedoe H, Kuulasmaa K, Mähönen M, Tolonen H, Ruokokoski E. Contribution of trends in survival and coronary event rates to changes in coronary heart disease mortality: 10-year results from 37 WHO MONICA Project populations. *The Lancet* 1999;353(9164):1547-57.
43. Lee S, Shafe ACE, Cowie MR. UK stroke incidence, mortality and cardiovascular risk management 1999e2008: time-trend analysis from the General Practice Research Database. *BMJ Open* 2011;2.
44. Office for National Statistics. Excess Winter Mortality in England and Wales, 2010/11 (Provisional) and 2009/10 (Final), 2011.
45. The Marmot Review Team. The Health Impacts of Cold Homes and Fuel Poverty, 2011.
46. The Eurowinter Group. Cold exposure and winter mortality from ischaemic heart disease, cerebrovascular disease, respiratory disease, and all causes in warm and cold regions of Europe. *The Lancet* 1997;349(9062):1341-46.
47. Department of Health. 2009 Annual Report of the Chief Medical Officer, 2010.

48. Smith MP, Olatunde O, White C. Disability-free Life Expectancy: Comparison of Sources and Small Area Estimates in England, 2006–08. *Health Statistics Quarterly*, 2011:40.
49. The Marmot Review Team. Fair Society, Healthy Lives: The Marmot review - Strategic Review of Health Inequalities in England Post-2010, 2010.
50. Marmot M. Fair Society Healthy Lives: The Marmot Review: Executive Summary, 2010.
51. Office of National Statistics. Smoking and Drinking Among Adults, 2009: A Report on the 2009 General Lifestyle Survey. *UK Data Archive Study Number 6737*, 2011.
52. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ* 2004;328(7455):1519.
53. The NHS Information Centre. Statistics on NHS Stop Smoking Services: England, April 2010 – March 2011, 2011.
54. West R, Brown J, Fidler J. Key findings from the Smoking Toolkit Study (2012)- Online paper STS014 <http://www.smokinginengland.info/> Accessed April 2012.
55. Angleman SB, Harris TB, Melzer D. The role of waist circumference in predicting disability in pre-retirement age adults. *International Journal of Obesity* 2005;30(2):364-73.
56. Department of Health and the Food Standards Agency. National Diet and Nutrition Survey: Headline results from Years 1 and 2 (combined) of the Rolling Programme (2008/2009 – 2009/10). In: Beverley Bates, Alison Lennox, Chris Bates, Gillian Swan, editors, 2011.
57. Department of Health hwdguePNihj. Public Health : Nutrition - DRV: Department of Health, Updated 2011.
58. The NHS Information Centre for Health and Social Care. Health Survey for England 2009 Volume 1: Health and Lifestyles, 2010.
59. The NHS Information Centre. Health Survey for England 2008 volume 1: Physical Activity and Diet, 2009.
60. Department of Health. Start Active, Stay Active: A Report on Physical Activity for Health from the Four Home Countries' Chief Medical Officers. London, 2011.
61. Department of Health. Physical Activity Guidelines for Older Adults (65+ years): Factsheet 5, 2011.
62. Bowling A. *Ageing well: Quality of life in old age*. Maidenhead, UK: Open University Press, 2005.
63. Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: A meta-analytic review. *Public Library of Science - Medicine* 2010;7:e1000316.
64. Victor C, Scrambler S, Bond J. *The Social World of Older People: Understanding Loneliness and Social Isolation in Later Life*. Maidenhead: Open University Press, 2009.
65. Royal College of Psychiatrists. Our Invisible Addicts. London: Royal College of psychiatrists, 2011.
66. Lang I, Wallace RB, Hupper FA, Melzer D. Moderate alcohol consumption in older adults is associated with better cognition and well-being than abstinence. *Age and Ageing* 2007(March 12).
67. Byles J, Young A, Furuya H, Parkinson L. A Drink to Healthy Aging: The Association between older women's use of alcohol and their health-related quality of life. *Journal of the American Geriatrics Society* 2006;54:1341-47.
68. The NHS Information Centre for Health and Social Care. Health Survey for England - 2009: Adult Trend Tables. London, 2010.
69. Moos RH, Schutte KK, Brennan PL, Moos BS. Older adults' alcohol consumption and late-life drinking problems: A 20-year perspective. *Addiction* 2009;104(8):1293-302.
70. Holick MF. Vitamin D deficiency. *The New England Journal of Medicine* 2007;357:266-81.
71. Molano JRV. Vitamin D and older adults. *Neurology* 2010;74(1):e2-e4.
72. Zittermann A, Iodice S., Pilz S., Grant W.B., Bagnardi V., Gandini S. Vitamin D deficiency and mortality risk in the general population: A meta-analysis of prospective cohort studies. *American Journal Clinical Nutrition* 2012.
73. Autier P, Gandini S. Vitamin D supplementation and total mortality: A meta-analysis of randomized controlled trials. *Archives of Internal Medicine* 2007;167(16):1730-37.
74. Holick MF. Sunlight and vitamin D for bone health and prevention of autoimmune diseases, cancers, and cardiovascular disease. *The American Journal of Clinical Nutrition* 2004;80(6):1678S-88S.
75. Sato Y, Iwamoto J, Kanoko T, Satoh K. Amelioration of osteoporosis and hypovitaminosis D by sunlight exposure in hospitalized, elderly women with alzheimer's disease: A randomized controlled trial. *Journal of Bone and Mineral Research* 2005;20(8):1327-33.

76. Davies DSC, Jewell T, Burns H. Chief Medical Officers' Letter to Primary Care Practitioners: Vitamin D - Advice on Supplements for at Risk Patients. In: Department of Health, editor: <http://www.dh.gov.uk/en/Publichealth/Nutrition/index.htm#jumpTo5> Accessed 6th February 2012, Updated 19 January 2012.
77. Askari M, Wierenga P, Eslami S, Medlock S, de Rooij S, Abu-Hanna A. Assessing quality of care of elderly patients using the ACOVE quality indicator set: A systematic review. *PLoS ONE* 2011;6(12):e28631.
78. Lewington S, Clarke R, Qizilbash N, Peto R, Collins R, Prospective Studies Collaboration. Age-specific relevance of usual blood pressure to vascular mortality: A meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet* 2002;360(9349):1903-13.
79. Wills AK, Lawlor DA, Matthews FE, Aihie Sayer A, Bakra E, Ben-Shlomo Y, et al. Life course trajectories of systolic blood pressure using longitudinal data from eight UK cohorts. *PLoS Medicine* 2011;8(6):e1000440.
80. Williams B, Poulter NR, Brown MJ, Davis M, McInnes GT, Potter JF, et al. Guidelines for management of hypertension: Report of the fourth working party of the British Hypertension Society, 2004 BHS IV. *J Hum Hypertens* 2004;18(3):139-85.
81. U.S. Department of Health and Human Services. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, 2003.
82. National Institute for Health and Clinical Excellence. Hypertension: Management of hypertension in adults in primary care. London, 2006.
83. National Institute for Health and Clinical Excellence. Hypertension: Clinical Management of Primary Hypertension in Adults. London, 2011.
84. Brugts JJ, Hoeks SE, Gotto AM, Shepherd J, Westendorp RGJ, de Craen AJM, et al. The benefits of statins in people without established cardiovascular disease but with cardiovascular risk factors: Meta-analysis of randomised controlled trials. *British Medical Journal (Open Access)*, 2009.
85. Wei L, Ebrahim S, Bartlett C, Davey PD, Sullivan FM, MacDonald TM. Statin use in the secondary prevention of coronary heart disease in primary care: Cohort study and comparison of inclusion and outcome with patients in randomised trials. *BMJ* 2005;330(7495):821.
86. Ward S, Lloyd Jones M, Pandor A, Holmes M, Ara R, Ryan A, et al. A Systematic Review and Economic Evaluation of Statins for the Prevention of Coronary Events. *NHS R&D HTA Programme*, 2007.
87. Cooke CA, Kirkland SA, Sketris IS, Cox J. The impact of statins on health services utilization and mortality in older adults discharged from hospital with ischemic heart disease: A cohort study. *BMC Health Serv Res* 2009 9(198).
88. Glynn RJ, Koenig W, Nordestgaard BG, Shepherd J, Ridker PM. Rosuvastatin for primary prevention in older individuals with high C-reactive protein and low LDL levels: Exploratory analysis of a randomized trial. *Annals of Internal Medicine* 2010;152(8):488-W174.
89. Hunt D, Young P, Simes J, Hague W, Mann S, Owensby D, et al. Benefits of pravastatin on cardiovascular events and mortality in older patients with coronary heart disease are equal to or exceed those seen in younger patients: Results from the LIPID trial. *Annals of Internal Medicine* 2001;134(10):931-40.
90. Taylor R. Older people and functional foods: The importance of diet in supporting older people's health; what role for functional foods? London, 2010.
91. Nunn S, Wood N, Ward K, Hussey D. English Longitudinal Study of Ageing (ELSA), Wave 4 Core Dataset, Phase 2 Deposit User Guide Version 2. *National Centre for Social Research*.
92. National Institute for Health and Clinical Excellence. Preventing Type 2 Diabetes: Population and Community-level Interventions in High-risk Groups and the General Population. London, 2011.
93. Diabetes UK. Diabetes in the UK 2010: Key Statistics on Diabetes, 2010.
94. The NHS Information Centre for Health and Social Care. National Diabetes Audit Executive Summary 2009-2010. Leeds, 2011.
95. Diabetes Health Intelligence and Yorkshire and Humber Public Health Observatory. APHO Diabetes Prevalence Model: Key Findings for England, 2010.
96. Department of Health. National Service Framework for Diabetes: Modern Standards and Service Models. London, 2001.

97. National Institute for Health and Clinical Excellence. Type 2 Diabetes: Prevention and Management of Foot Problems. London, 2004.
98. Pottie P, Presle N, Terlain B, Netter P, Mainard D, Berenbaum F. Obesity and osteoarthritis: More complex than predicted! *Annals of the Rheumatic Diseases* 2006;65(11):1403-05.
99. Cooper C, Snow S, McAlindon TE, Kellingray S, Stuart B, Coggon D, et al. Risk factors for the incidence and progression of radiographic knee osteoarthritis. *Arthritis & Rheumatism* 2000;43(5):995-1000.
100. Coggon D, Reading I., Croft P., McLaren M, Barrett D, Cooper C. Knee osteoarthritis and obesity. *International Journal of Obesity* 2001;25:622-27.
101. Lohmander LS, Gerhardsson de Verdier M, Rollof J, Nilsson PM, Engström G. Incidence of severe knee and hip osteoarthritis in relation to different measures of body mass: A population-based prospective cohort study. *Annals of the Rheumatic Diseases* 2009;68(4):490-96.
102. Dieppe P, Cushnaghan J, Tucker M, Browning S, Shepstone L. The Bristol 'OA500 study': Progression and impact of the disease after 8 years. *Osteoarthritis and Cartilage* 2000;8(2):63-68.
103. National Institute for Health and Clinical Excellence. Osteoarthritis: The Care and Management of Osteoarthritis in Adults. London, 2008.
104. Donald IP, Foy C. A longitudinal study of joint pain in older people *Rheumatology* 2004;43:1256-60.
105. Arthritis Care. OA Nation. London, 2004.
106. Zhang W, Moskowitz RW, Nuki G, Abramson S, Altman RD, Arden N, et al. OARSI recommendations for the management of hip and knee osteoarthritis, Part II: OARSI evidence-based, expert consensus guidelines. *Osteoarthritis and Cartilage* 2008;16:137-62.
107. Roddy E, Zhang W, Doherty M. Aerobic walking or strengthening exercise for osteoarthritis of the knee? A systematic review. *Ann Rheum Dis* 2005;64:544-48.
108. Zhang W, Nuki G, Moskowitz RW, Abramson S, Altman RD, Arden NK, et al. OARSI recommendations for the management of hip and knee osteoarthritis Part III: changes in evidence following systematic cumulative update of research published through January 2009. *Osteoarthritis and Cartilage* 2010;18:476-99.
109. Chang J, Morton S, Rubenstein L, Mojica W, Maglione M, Suttorp M, et al. Interventions for the prevention of falls in older adults: Systematic review and meta-analysis of randomised clinical trials. *BMJ* 2004;328(7441):680.
110. Department of Health. Falls and Fractures: Effective Interventions in Health and Social Care. London, 2009.
111. Leveille SG, Jones RN, Kiely DK, Hausdorff JM, Shmerling RH, Guralnik JM, et al. Chronic musculoskeletal pain and the occurrence of falls in an older population. *Journal of the American Medical Association* 2009;302(20):2214-21.
112. Royal College of Physicians. Falling Standards, Broken Promises: Report of the National Audit of Falls and Bone Health in Older People 2010, 2011.
113. Royal College of Physicians. Older People's Experiences of Falls Prevention Services: Patient and Public Involvement, 2010.
114. Cooper C, Bebbington P, McManus S, Meltzer H, Stewart R, Farrell M, et al. The treatment of common mental disorders across age groups: Results from the 2007 adult psychiatric morbidity survey. *Journal of Affective Disorders* 2010;127((1-3)):96-101.
115. Barley EA, Murray J, Walters P, Tylee A. Managing depression in primary care: A meta-synthesis of qualitative and quantitative research from the UK to identify barriers and facilitators. *BMC Family Practice* 2011;Jun 9(12:47).
116. Cancer Research UK. Cancer in the UK: December 2011. London: Cancer Research UK, 2011.
117. National Cancer Intelligence Network. Improving Outcomes: A Strategy for Cancer - NCIN Information Supplement (June 2011). London: National Cancer Intelligence Network Coordinating Centre, 2011.
118. NHS Cervical Screening Programme. Annual Review 2011. London: NHS Cancer Screening Programmes, 2011.
119. The NHS Information Centre, Public Health Indicators Team. Breast Screening Programme, England 2009-10. Leeds: NHS IC, 2011.

120. Steele RJC, Kostourou I, McClements P, Watling C, Libby G, Weller D, et al. Effect of gender, age and deprivation on key performance indicators in a FOBT-based colorectal screening programme. *Journal of Medical Screening* 2010;17:68-74.
121. Foot C, Harrison T. How to Improve Cancer Survival: Explaining England's Relatively Poor Rates. *The King's Fund*. London, 2011:32.
122. Robb R, Stubbings S, Ramirez A, Macleod U, Austoker J, Waller J, et al. Public awareness of cancer in Britain: a population-based survey of adults. *British Journal of Cancer* 2009;101:S18 – S23.
123. National Cancer Intelligence Network. Evidence to March 2010 on Cancer Inequalities in England. London: National Cancer Intelligence Network Coordinating Centre, 2010.
124. Macleod U, Mitchell ED, Burgess C, Macdonald S, Ramirez AJ. Risk factors for delayed presentation and referral of symptomatic cancer: Evidence for common cancers. *British Journal of Cancer* 2009;101 Suppl 2:S92-S101.
125. Lyratzopoulos G, Neal RD, Barbiere JM, Rubin GP, Abel GA. Variation in number of general practitioner consultations before hospital referral for cancer: Findings from the 2010 National Cancer Patient Experience Survey in England. *The lancet oncology* 2012.
126. Rubin G, McPhail S, Elliott K. National Audit of Cancer Diagnosis in Primary Care. *Royal College of General Practitioners*. London: Royal College of General Practitioners,, 2011:66.
127. Raine R, Wong W, Scholes S, Ashton C, Obichere A, Ambler G. Social variations in access to hospital care for patients with colorectal, breast, and lung cancer between 1999 and 2006: Retrospective analysis of hospital episode statistics. *British Medical Journal* 2010;340:b5479.
128. Coleman MP, Forman D, Bryant H, Butler J, Rachet B, Maringe C, et al. Cancer survival in Australia, Canada, Denmark, Norway, Sweden, and the UK, 1995-2007 (the International Cancer Benchmarking Partnership): An analysis of population-based cancer registry data. *The Lancet* 2010;377(9760):127-38.
129. Department of Health, National Cancer Action Team. *Reducing Cancer Inequalities: Evidence, Progress, and Making it Happen*. London: Department of Health, 2010.
130. Schoen C, Osborn R, Squires D, Doty M, Pierson R, Applebaum S. New 2011 survey of patients with complex care needs in eleven countries finds that care is often poorly coordinated. *Health Affairs* 2011;30(12):2437-48.
131. Cooper C, Bebbington P, King M, Jenkins R, Farrell M, Brugha T, et al. Happiness across age groups: Results from the 2007 National Psychiatric Morbidity Survey. *International Journal of Geriatric Psychiatry* 2011;26:608–14.
132. Age UK. Still Hungry to be Heard: The Scandal of People in Later Life Becoming Malnourished in Hospital. London, 2010.
133. Oliver D. 'Acopia' and 'social admission' are not diagnoses: why older people deserve better. *Journal of the Royal Society of Medicine* 2008;101:68–174.





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