

Physical activity in adults

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Summary

- This chapter presents adults' self-reported leisure and occupational physical activity, comparing this with the current UK guidelines (introduced in 2011) for aerobic activity, muscle-strengthening activity, and, for older people at risk of falls, exercise to improve balance and co-ordination. It also compares results for 2012 with earlier years, using the previous guidelines, and looks at self-reported sedentary behaviour.
- Current UK guidelines for aerobic activity recommend that adults aged 19 and over should spend at least 150 minutes per week in moderately intensive physical activity, in bouts of ten minutes or longer, or 75 minutes per week of vigorous physical activity, or a combination of the two. The Health Survey for England (HSE) assumes that those aged 16 and over are adults; in 2012, 67% of men and 55% of women aged 16 and over met these new guidelines. In both sexes, the proportion who met the guidelines generally decreased with age.
- The proportion of participants meeting the current UK guidelines for aerobic activity increased as equivalised household income increased. 76% of men and 63% of women in the highest income quintile met the new guidelines, falling to 55% of men and 47% of women in the lowest quintile.
- There was a clear association between meeting the guidelines for aerobic activity and body mass index (BMI) category. 75% of men who were not overweight or obese met the guidelines, compared with 71% of overweight men and 59% of obese men. The equivalent figures for women were 64%, 58% and 48%, respectively.
- The previous recommendation was that adults aged 16 and over should achieve at least 30 minutes activity per day of at least moderate intensity, on at least five days per week. The proportion of adults meeting the recommendation has increased steadily since 1997 for men and 1998 for women. In 1997, 32% of men met the recommendation, increasing to 43% in 2012. Among women, 21% met the recommendation in 1997 and 1998, increasing to 32% in 2012. In both sexes, the proportion meeting the recommendation was similar in 2008 and 2012. Results for the trend data did not take account of the detailed information on occupational activity introduced in 2008, nor use the new additional questions on occupational activity and walking introduced in 2012, so that the analyses were comparable with previous years.
- Men participated in all non-occupational physical activities except heavy housework on more days than women. On average, men participated in some non-occupational activity on 14.7 days in the past four weeks, compared with 12.9 days for women.
- On days that they participated, men spent more time than women in heavy manual/gardening/DIY activities and sports/exercise. Women spent more time in heavy housework; both sexes spent similar amounts of time walking. Overall men averaged 388 minutes (6.5 hours) and women 324 minutes (5.4 hours) in any non-occupational physical activity per week.
- Among adults aged 16-74 who did any paid or unpaid work in the last four weeks, men

spent more time than women sitting down or standing up while at work (median 6.0 and 5.0 hours per day worked, respectively). Both sexes spent similar amounts of time walking around at work (men 0.8 hours and women 0.5 hours per work day). 61% of men and 57% of women considered themselves to be very or fairly physically active at work.

- In addition to aerobic activity, current UK guidelines also recommend that adults aged 19 and over should undertake muscle-strengthening activities on at least two days per week to increase bone strength and muscular fitness. Using the HSE's definition of adults, 34% of men and 24% of women aged 16 or over met this guideline. Overall 49% of men and 56% of women did no muscle-strengthening activity in the last four weeks, with a sharp decline in this type of activity as age increased.
- Among adults aged 16 and over, more men (33%) than women (23%) met both the aerobic and muscle-strengthening guidelines for physical activity. Very few participants (1% of men, 2% of women) met only the recommendations for muscle-strengthening; a third of men and women (34% and 33%, respectively) met only the guidelines for aerobic activity.
- Current UK guidelines recommend that older adults at risk of falls should spend at least two days a week in exercise that improves balance and co-ordination. However, the HSE is not able to identify those specifically at risk of falls. The proportion of older participants who met the guideline increased as levels of aerobic activity increased. 31% of men who met the guidelines for aerobic activity spent at least two days a week in exercises that improve balance/co-ordination, compared with 9% of men with low/some levels of aerobic activity and 3% of men classed as inactive. The equivalent figures for women were 22%, 10% and 2% respectively.
- Current UK guidelines recommend that adults should minimise the amount of time spent being sedentary for extended periods. Men were more likely than women to average six or more hours of total sedentary time on both weekdays (31% and 29% respectively) and weekend days (40% and 35% respectively).
- Over half of men and women spent four or more hours in sedentary time per weekday and weekend day, regardless of their BMI category. Among women, the proportion averaging more than four hours of sedentary time on both weekdays and weekend days increased as BMI category increased. Among men, sedentary time per weekday was significantly higher in participants who were obese.
- The average sedentary time per weekday decreased from 5.0 hours in 2008 to 4.9 hours in 2012 in men and from 5.0 to 4.7 hours in women. On weekend days, the average sedentary time decreased from 5.6 hours in 2008 to 5.4 hours in 2012 in men and from 5.3 to 5.1 hours in women.

2.1 Introduction

2.1.1 Background

This chapter presents adults' self-reported leisure and occupational physical activity, comparing this with the current UK guidelines for aerobic activity, muscle-strengthening activity, and in older people, exercise to improve balance and co-ordination. It also compares results for 2012 with earlier years, using the previous guidelines, and looks at self-reported sedentary behaviour.

In 2011, the Chief Medical Officers of the four UK countries introduced revised guidelines for physical activity² that reflect current evidence on what is needed to benefit health and the incremental benefits from undertaking physical activity. These include guidelines on aerobic activity; muscle-strengthening activities; and activities to improve balance and co-ordination.

Physical activity was selected as a major focus of the HSE 2012 because it coincided with the London 2012 Olympic and Paralympic Games. One of the planned legacies from the London 2012 Games was an increase in sports and exercise participation, including active travel (walking and cycling), by the general public across the country.³

2.1.2 Public health importance of physical activity

Lack of physical activity is the fourth most important risk factor worldwide for chronic, non-communicable diseases, after tobacco use, raised blood pressure, and hyperglycaemia (raised blood sugar).⁴ Worldwide, it accounts for 6% of the burden of disease from ischaemic heart disease,⁵ 7% of Type 2 diabetes, and 10% of breast and colon cancers. It is estimated to have caused more than 5.3 million premature deaths worldwide in 2008 (9% of all premature deaths).⁶ In the UK, inactivity has been estimated to cause 3% of disability-adjusted years of life lost in 2002 and a direct cost to the NHS of £1.1 billion,⁷ with indirect costs to society bringing this cost to a total of £8.2 billion.⁸ Inactivity is particularly important in some groups. For example, inactivity was estimated in 2011 to account for at least 20% of the excess heart disease deaths seen in the South Asian community in Britain.⁹

Physical inactivity contributes to cardiovascular disease (CVD), particularly ischaemic heart disease^{6,10,11} and stroke;^{11,12} cancer of the colon⁶ and breast;⁶ psychological distress¹³ and depression;¹⁴ and dementia;¹⁵ as well as being a major cause of obesity¹⁶ and diabetes.^{6,17}

Regular physical activity:

- Reduces all-cause and cardiovascular mortality,¹⁸ even among those with an otherwise high cardiovascular risk profile¹⁹ or with established cardiovascular disease²⁰
- Reduces the incidence of ischaemic heart disease²¹ and stroke²²
- Reduces long-term blood pressure in both those with raised²³ and with normal blood pressure²⁴
- Improves cognitive function in older people with and without existing impairment²⁵
- Reduces anxiety²⁶
- Improves mental wellbeing.^{27,28}

2.1.3 Guidelines for physical activity

As evidence accrues about the amount, type, and pattern of physical activity that is beneficial for health, the guidelines from expert groups and governments have been modified to take account of new knowledge.²⁹ The original physical activity guideline for adults in the UK was to undertake vigorous activity for at least 20 minutes at least three times per week. Vigorous activity includes for example football, hockey or wheelchair basketball; or activities such as cycling, aerobics or swimming if they make the individual breathless or sweaty.³⁰ In 1994, it was acknowledged that although some studies found vigorous activity was necessary for health benefits,³¹ other studies found a graded effect, without a threshold. This was important because many adults were unable or unwilling to exercise at that intensity, and the greatest population health benefit is found by moving from minimal to some activity, rather than from moderate to vigorous. The recommendation for

adults thus became at least 30 minutes of activity that was of at least moderate intensity (for example brisk walking, athletics, cricket, or netball; or activities such as cycling, aerobics or swimming, regardless of whether they make the individual breathless or sweaty³⁰) on at least five days each week.³² This was modified subsequently to allow the 30 minutes within a day to be accrued in bouts of at least 10 minutes' duration, which was also the guideline of a major English government report on the health benefits of physical activity in 2004.³³

A 2007 review of the evidence by the British Association of Sport and Exercise Sciences (BASES) was the basis for work by expert working groups, which recommended that the guidance be amended. Guidelines were revised to encourage adults to meet the recommendation through undertaking specified amounts of vigorous or moderate activity each week: at least 150 minutes of moderate activity, in bouts of 10 minutes or longer, or 75 minutes of vigorous activity, or a combination of the two. This should preferably be spread over the week, for example by being moderately active for 30 minutes on at least five days a week.³⁴ This became the official Department of Health guideline for England for adults aged 19-64 in 2011, recognising that the overall volume of physical activity is more important than the specific type of activity or frequency of sessions.² It is also the guideline for older adults, but those who are relatively inactive should increase their activity levels gradually towards this target.² The report also made it clear that there is no sharp threshold for health benefit: increasing the volume of activity is beneficial for individuals who are sedentary, relatively inactive, or more active.³⁴

Sarcopenia (loss of muscle mass) is associated with ageing³⁵ but it also occurs in response to immobility at any age, such as in relation to illness.³⁶ Loss of muscle can often then lead to a downward spiral in which reduced exercise capacity results in less activity being undertaken, and a worsening of the loss of capacity. Reflecting this, two additional guidelines were included in the 2011 set of government recommendations for physical activity.²

The first of these, for all adults aged 19 and over, is to undertake muscle-strengthening activity at least twice a week. This needs to involve all the major muscle groups of the body (the chest, abdomen, hips, shoulders, legs and arms).³⁷ Although no specific minimum duration of activity is stated for muscle-strengthening, exercises should be performed to the point at which it would be difficult to do another repetition without help, for example performing 8–12 repetitions of muscle-strengthening activities (such as push ups) involving all major muscle groups.

The second additional guideline was directed to adults aged 65 and over who are at risk of falls. They are advised to spend at least 10 minutes twice a week undertaking exercise to improve their balance and co-ordination. This new guideline was introduced because every year, almost one third of older adults fall (30% of those aged over 65; 50% of those aged 80 and over),² resulting in significant morbidity and mortality. Increasing physical activity, particularly any that focuses on balance, co-ordination and muscle strength, can reduce the risk of falls,² and also reduce the risk of fractures.³⁸ For instance, Tai Chi, recommended for older people for improving balance,³⁹ has also been shown to delay cognitive decline, even among those with significant cognitive impairment.⁴⁰

2.1.4 Sedentary behaviour

Whereas physical inactivity is defined as an absence of health-enhancing physical activity, or not meeting physical activity guidelines, sedentary behaviour is defined as any activity spent primarily sitting or lying down, which involves expenditure of less than 1.5 metabolic equivalents (METs).⁴¹ In recent years, sedentary behaviour (characterised by activities involving prolonged sitting) is emerging as a potentially important risk factor for chronic disease in its own right, over and above lack of physical activity of moderate to vigorous intensity.^{42,43} Even among adults who meet public health physical activity guidelines, those who spend more time being sedentary are more likely to be obese¹⁶ and to have worse physical and mental health outcomes^{44,45} than their peers who spend less time sitting down.

There is also some suggestion that not all sedentary behaviours have the same impact on

health. For example, self-reported screen-based entertainment, such as watching television, appears to have greater adverse health impacts than do other forms of sedentary behaviour.⁴⁶

2.1.5 Policies to increase physical activity

One of the planned legacies from hosting the London 2012 Olympic and Paralympic Games was an increase in sports and exercise participation, including active travel (walking and cycling), by the general public across the country.⁴⁷ A Department of Health draft Physical Activity Care Pathway, *Let's Get Moving*, with the aim of increasing activity levels in primary care patients, was piloted in general practice in 2007 and found to be feasible.⁴⁸ It was launched in 2009, with a range of resources to aid implementation.⁴⁹ A number of further initiatives were launched in 2013. These would not have influenced activity levels in 2012, so are discussed in section 2.6.2 below.

2.1.6 Value of Health Survey data

The periodic measurement of adult physical activity through the Health Survey for England provides valuable evidence for the prevalence of physical activity in the context of wider public health. In particular, the survey includes occupational activity, as well as housework and DIY in the overall measure of physical activity – aspects of 'everyday' activity unlikely to be promoted through any community-based intervention but necessary for an understanding of overall volumes of activity. The survey also provides data on each of the elements of the current UK physical activity guidelines,² including sedentary behaviour, muscle-strengthening activity for adults and older adults, and balance and co-ordination for older adults. Therefore, this dataset complements the local measurement of aerobic physical activity and sport through Sport England's Active People Survey. It should be noted that the response rate to the most recent wave of the Active People Survey was 27.6%.⁵⁰

2.2 Methods and definitions

2.2.1 The physical activity questionnaire

This section describes the evolution of the various different questionnaires that have been used in the Health Survey for England (HSE) to assess adult physical activity, and then describes the specific differences in more detail. Information was collected throughout 2012 using the enhanced long version of the HSE physical activity questionnaire developed and validated in 2007 for use in the HSE 2008. The 2012 questionnaire was similar to that used in 2008 but with a number of additional questions (see below).

The questions for the HSE were derived from a major national study of activity carried out in 1990, the Allied Dunbar National Fitness Survey.⁵¹ The physical activity module was first used in the HSE 1991, repeated in 1992 to 1994 with minor changes, and received more substantial revisions in 1997 and 1998 (producing what is generally referred to as the 'long' version of the questionnaire). A 'shorter' version of the questionnaire was introduced in 1999, when the focus was minority ethnic groups; the shorter questionnaire was repeated in 2002, 2003 and 2004. In 2006, a slightly modified version of the long (1998) form of the questionnaire was used. Questions concerned participation during the last four weeks in housework, manual/gardening/DIY activities, walking and sports and exercise; the differences between questionnaires relate to the minimum time spent in an activity for it to be recorded, as detailed below. The other main difference from the 1998 questionnaire was that from 1999 to 2006, only a single question relating to occupational activity levels was included.

In 2008, the enhanced version of the physical activity questionnaire was used in the main HSE for the first time. It contained additional question sets relating to occupational activity, sedentary activity, and follow-up questions for those people who swim, work out at a gym or do exercise classes. In 2008, the reference period for bouts of activities to report was

lowered from 15 minutes to 10 minutes to reflect changes in policy recommendations for physical activity.

The occupational activity questions introduced in 2008 captured more accurate information about physical activity while at work. From 1999 to 2006, the single question relating to occupational activity simply asked whether the participant was very physically active, fairly physically active, not very physically active, or not at all physically active at work. For those who said they were very or fairly active, arbitrary estimates of 12 or 20 working days were used, depending on whether the participant worked full or part time, to assess levels of activity while at work. The occupational activity questions introduced in 2008 focus on what people actually do at work, and ask how many hours they typically work, to capture these data more accurately. Changes in 2012 from 2008 are detailed below.

There had been concern about overestimating the level of intensity of swimming, so questions introduced in 2008 captured information on what type of swimming people were normally doing (i.e. splashing around or swimming lengths or both). Likewise, questions were asked relating to what activities people do at the gym or when they work out, as different activities have different intensity levels.

The enhanced 2008 questionnaire also asks about sedentary time. Because of emerging evidence of the importance of sedentary time as a risk factor for obesity and disease,¹⁶ a short set of questions were developed asking about television watching and about other time spent sitting down in leisure time activities, such as reading, studying, using a computer, playing video games. The questions gathered information separately about sedentary time on weekdays and at weekends.

As in 2008, adults' physical activity in the four weeks prior to interview was measured in HSE 2012 by examining overall participation; frequency of participation in activities that lasted at least 10 minutes; type of activities; and duration of activities. A question about intensity of the activity was asked for sports and exercise and for walking. Responses to the questions on occupational activity were taken into account in the estimation of summary activity levels (see below).

2.2.2 Activity types, frequency, duration, and intensity

Details about four main types of physical activity were included in the questionnaire. For most activities undertaken, participants were asked on how many days in the last four weeks they had done the activity in bouts of 10 minutes or more, and the average length of time spent on those days.

Home activity consisted of housework and gardening/DIY/building work. The lead-in question was '*Have you done any housework in the last four weeks?*' Participants were shown a card with a list of examples of light housework and were asked if they had done any of the listed activities. (The show cards are included in Volume 2 of this report, Methods and documentation). They were then shown another card with examples of heavy housework, and frequency was assessed for these higher intensity activities. A similar sequence of questions was asked for gardening/DIY/building work. Frequency of light home activity (i.e. those activities listed in the first set of show cards) was not assessed.⁵²

Walks: The key question was '*During the past four weeks, on how many days did you do a walk of at least 10 minutes?*' Walking intensity was assessed by asking participants to rate their usual walking pace (slow/average/fairly brisk/fast). An additional question introduced in 2012 asked participants aged 65 years and over whether the effort of walking for 10 minutes or more was usually enough to make them '*breathe faster, feel warmer or sweat*'.

Sports and exercise: participants were asked '*Can you tell me on how many separate days you did [name of specific sport and exercise activity] for at least 10 minutes at a time during the past four weeks?*', followed by a question about the activity's usual duration on these days. The intensity of these activities was assessed by asking participants whether or not the activity had made them '*out of breath or sweaty*'.

Occupational activities: After establishing whether participants did any paid or unpaid

work in the last four weeks, the key question was *'Which of these did you do whilst working?'* Answer categories were sitting down or standing up; walking at work; climbing stairs or ladders; lifting, carrying or moving heavy loads. This was followed by a question about the average time spent on that type of activity on a typical work day.

New questions introduced in 2012 asked those participants reporting that they did some climbing of stairs or ladders, or lifting, carrying or moving heavy loads, whether they engaged in that activity every working day, or only on some days. Those replying that they engaged in that activity on only some days were then asked on how many work days in the last four weeks they did that activity.

As in previous years, participants were also asked *'Thinking about your job in general would you say that you are...very physically active; fairly physically active; not very physically active; not at all physically active?'*

It should be noted that questions ask about activities over the last four weeks, to ensure that occasional activities (such as a monthly activity) are adequately covered. The questions do not establish in which of the last four weeks each activity was undertaken, and the weekly averages presented in the report are calculated over the four week period. So for instance someone who has done an activity twice a week on average may have done this twice each week, or eight times in one week and not in any other week, or some other pattern.

2.2.3 Definitions

Descriptions of physical activity levels

The following abbreviations are used throughout this chapter:

MPA Moderate physical activity

VPA Vigorous physical activity

MVPA Moderate or vigorous physical activity.

Summary activity levels

The new UK guidelines for physical activity recommend that adults aged 19 years and over should undertake a minimum of 150 minutes (2 ½ hours) of moderate intensity activity per week in bouts of 10 minutes or more. Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week, or combinations of moderate and vigorous intensity activity.^{2,53} One way to approach this is to achieve 30 minutes of moderate intensity activity on at least five days a week (the previous guideline). This recommendation is referred to throughout this chapter as the aerobic or MVPA guideline.

Responses to the new 2012 questions on occupational activity (which asked on how many work days had climbing of stairs or ladders/lifting, carrying or moving heavy loads been undertaken) and walking (for adults aged 65 years and older) were taken into account in the estimation of summary activity levels. As in previous years, participants' activity at work was classified by whether it was at least moderate according to their occupation, which was categorised using the Standard Occupational Classification 2000.^{54,55}

To assess activity against the new UK guidelines, participants were classified according to the weekly time spent in activities of at least moderate intensity. The summary activity level classification (used in Tables 2.1 to 2.4 and Figures 2A to 2C) is shown in Table 2A.

Assumptions underlying the intensity level classification of physical activities

All analyses presented in this chapter refer to physical activity of at least moderate intensity.

- For home activity (housework, manual/gardening/DIY) participants were given examples of types of housework/gardening/DIY that counted as 'heavy' and 'light'. Only examples of heavy housework and heavy gardening/DIY were classified as 'moderate'.
- Walking was included as a moderately intense activity if participants of any age reported walking at a 'fairly brisk' or 'fast' usual pace, and in 2012 for those aged 65 years and

Table 2A

Summary activity level classification ^{a,b}	
Meets aerobic/MVPA guidelines	Reported 150 minutes/week of MPA, 75 minutes/week of VPA, or an equivalent combination of the two.
Some activity	Reported 60-149 minutes/week of MPA, 30-74 minutes/week of VPA, or an equivalent combination of these.
Low activity	Reported 30-59 minutes/week of MPA, 15-29 minutes/week of VPA, or an equivalent combination of these.
Inactive	Reported less than 30 minutes/week of MPA, less than 15 minutes/week of VPA, or an equivalent combination of these.

^a Only bouts of 10 minutes or more were included towards the 150 minutes/week target.

^b Minutes of vigorous intensity activity were given twice the credit of minutes of moderate intensity activity when combining moderate and vigorous intensity to calculate the equivalent combination.

over for whom the effort of walking for 10 minutes or more was usually enough to make them *'breathe faster, feel warmer or sweat'*.

- For sports and exercise, activities were classified according to the nature of the activity using metabolic equivalent intensity (MET) level^{30,56,57,58} and the participants' own assessment of the amount of effort involved in doing that activity. For example, cycling was counted as *'vigorous'* if the effort was usually enough to make the participant *'out of breath or sweaty'*, otherwise as *'moderate'*.⁵⁹
- Work-based occupational activities (i.e. climbing stairs or ladders, and lifting, carrying or moving heavy loads) were assumed to be of moderate intensity, i.e. there was no sustained vigorous activity.

Amount of physical activity at work

Table 2.8 shows the average time spent participating in occupational activities per day worked in the last four weeks. Walking around, climbing stairs or ladders, and lifting, carrying, or moving heavy loads were counted as moderate activity for certain occupations, listed in an endnote to this chapter.⁵⁵ Because those who were involved in climbing stairs or ladders, or lifting, carrying, or moving heavy loads often did not do these on every working day, the average time spent per work day doing these activities was calculated by multiplying the time spent doing that activity on an average work day by the number of work days they did that activity, then dividing by the total number of days worked.

Muscle-strengthening

In addition to aerobic (MPVA) activity, current UK guidelines recommend that adults should also undertake physical activity to improve muscle strength on at least two days a week to increase bone strength and muscular fitness. Physical activities that strengthen muscles involve using body weight or working against a resistance, and should involve using all the major muscle groups. Participants were shown a card listing examples of activities and asked which they engaged in, and whether there were any other similar activities they engaged in. A further question was asked in some cases to establish whether the effort of each specific sport or exercise activity was usually enough to make their muscles *'feel some tension, shake or feel warm'*. Muscle-strengthening activities were identified in this chapter as follows:

- Sports/exercise pursuits such as canoeing or climbing not listed on the card but reported as additional activities were always included as muscle-strengthening activities (i.e. regardless of responses to the follow-up question);
- Working out at a gym, aerobics or exercises such as press-ups/sit-ups reported from the show card, or additional non-listed activities such as golf and volleyball were included as muscle-strengthening activities if participants reported that the effort of that activity was usually enough to make their muscles feel some tension, shake or feel warm;
- Some pursuits such as cycling, swimming, squash and football were listed among the

examples on the card, but were not routed to the follow-up question; if these pursuits were reported they were always included as muscle-strengthening, possibly leading to some overestimate of the number of participants meeting the muscle-strengthening guideline.

The full list of activities always included or included in certain circumstances is included in an endnote to this chapter.⁶⁰

Time spent engaging in muscle-strengthening activities, if they were of at least moderate intensity, was included in estimating the total amount of activity performed per week to classify participants into summary activity levels.

Activities to improve balance and co-ordination

The new UK physical activity guidelines recommend that older adults at risk of falls should incorporate physical activity to improve balance and co-ordination on at least two days a week. Activities to improve balance and co-ordination may include Tai chi and yoga; the full list of activities is listed in an endnote to this chapter.⁶¹ Engaging in activities to improve balance and co-ordination were taken into account in the estimation of summary activity levels, if they were activities of at least moderate intensity.

Sedentary time

The new UK physical activity guidelines recommend that all adults should minimise the amount of time spent being sedentary (sitting) for extended periods. As in 2008, the section on sedentary time estimates how much time people spent watching television on average, how much other time people spent being sedentary on average, doing such things as reading, studying, drawing, using a computer or playing video games, as well as the total for both types. This is recorded both by weekday and weekend day, as well as the total for a week.

2.2.4 Reporting trends in physical activity

This chapter includes two separate analyses of physical activity over time. Table 2B compares physical activity levels in 2008 and 2012 using the additional questions on occupational activity introduced in 2008. Both years are compared using the new UK guidelines for physical activity which recommend that adults should undertake a minimum of 150 minutes of MPA or 75 minutes of VPA, or a combination of the two per week, in bouts of 10 minutes or more. For this comparison, HSE 2012 data have been analysed in a comparable manner to the data collected in 2008. First, walks at a 'fairly brisk' or 'fast pace' were classified as MPA, regardless of age. Secondly, the HSE 2008 questionnaire asked about the number of days the participant had worked in the previous four weeks and the average time spent engaging in occupational activities on a typical workday. Using this information, the summary measure assumed that each activity mentioned occurred *on every day worked*, overestimating the amount of time spent physically active whilst at work.

Table 2.5 shows the proportion of participants who met the previous physical activity recommendation of at least 30 minutes per day of at least moderate intensity activities on at least five days per week, using Health Survey data from 1997, 1998, 2003, 2004, 2006, 2008 and 2012. It was not possible to include 1994 or earlier data due to important differences in the questions, which would limit the meaningfulness of these comparisons. In 2003 and 2004, the short version of the questionnaire was administered; 1997, 1998, and 2006 results were recalculated in order to allow comparison. To enable continuation of these trend data, the same methods for analysis were used in 2008 and 2012. For this comparison, HSE 2012 (and HSE 2008) data have been analysed with the minimum duration for activities set to 30 minutes. Walks at a 'fairly brisk' or 'fast pace' were classified as MPA, regardless of age. Occupational activity was also included in the same way as in earlier years (i.e. using the single question). Full-time workers in manual occupations who reported being at least moderately active in their work were counted as having done 20 days' activity in the last four weeks. Part time workers were counted as having done 12 days' activity. Manual occupations in 1997, 1998, 2003, 2004, 2006, and 2008 for this time

series were defined using the Standard Occupational Classification 1990. However, only the 2000 and 2010 Standard Occupational Classifications were available in HSE 2012. Manual occupations in HSE 2012 were defined using a SOC90 to SOC2000 conversion table.⁶²

For this longer time series, it should be noted that since 2003, HSE data have been weighted to adjust for non-response; up until 2002 HSE data did not have any non-response weighting.⁶³

2.3 Summary activity levels

2.3.1 Introduction

The Health Survey for England defines adults as those aged 16 and over, which is the age group used for the main tables and text in this chapter, as it was for the HSE 2008 report. However, the adult guidelines for aerobic and muscle-strengthening activities are aimed at those aged 19 and over. Thus Section 2.3.3 and Tables 2B and 2C show the headline results for men and women aged 19 and over.

2.3.2 Summary activity levels by age and sex

In 2012, 67% of men and 55% of women aged 16 and over met the new guidelines for aerobic activity of at least 150 minutes/week of MPA or 75 minutes/week of VPA, or an equivalent combination of the two, in bouts of 10 minutes or more. 26% of women and 19% of men were classed as inactive, defined as less than 30 minutes/week of MPA or 15 minutes/week of VPA, or an equivalent combination of these.

The proportion meeting the aerobic activity guidelines generally decreased as age increased in men, from 83% aged 16-24 to 11% aged 85 years and over. However, among women the proportions meeting the guidelines rose to a peak among those aged 35-44 (66%) before decreasing as age increased; the proportion of those aged 16-24 was similar to those aged 55-64 (57% and 55% respectively). As Figure 2A shows, there was a substantial decline in the proportion meeting the guidelines from the age of 74 among both men and women, and levels were similar in both sexes in the oldest age group.

As would be expected, the proportion of participants classed as inactive generally increased with age in both sexes; from 8% of men and 22% of women aged 16-24 to 74% and 76% respectively in those aged 85 and over. Among men, the increase in the proportion classed as inactive was largest between the two oldest age groups (38% of men aged 75-84, 74% of men aged 85 and over). Among women, the largest increase in the proportion classed as inactive occurred at an earlier age (27% of women aged 65-74, 61% of women aged 75-84).

Table 2.1, Figure 2A

2.3.3 Summary activity levels among adults aged 19 and over

Table 2B shows the proportion of adults aged 19 and over (the target age for the new guidelines for adults) who met the new guidelines in 2008 and 2012. Additional questions on occupational activity were introduced in HSE 2012 that were not asked in HSE 2008, so the 2012 data have been analysed in two ways. The first uses the additional information, to provide a 'best estimate', and the second uses only information that was also collected in HSE 2008, to enable a comparison across the two survey years. The inclusion criteria for walking among older people also differs between the two estimates (see footnotes b and d to Table 2B).

In 2012, the best estimate is that 61% of adults aged 19 and over (66% of men and 56% of women) met the new guidelines for MVPA (first row of Table 2B). The second row of Table 2B shows the HSE 2012 data for this age group re-analysed to enable a direct comparison with data from HSE 2008. The results using the older set of questions produces a slightly lower estimate, which was similar across the two years: according to these, 65% of men met the new guidelines in each year, while the proportion of women meeting the new guidelines was 53% in 2008 and 54% in 2012.

Tables 2.1, 2B

Figure 2A

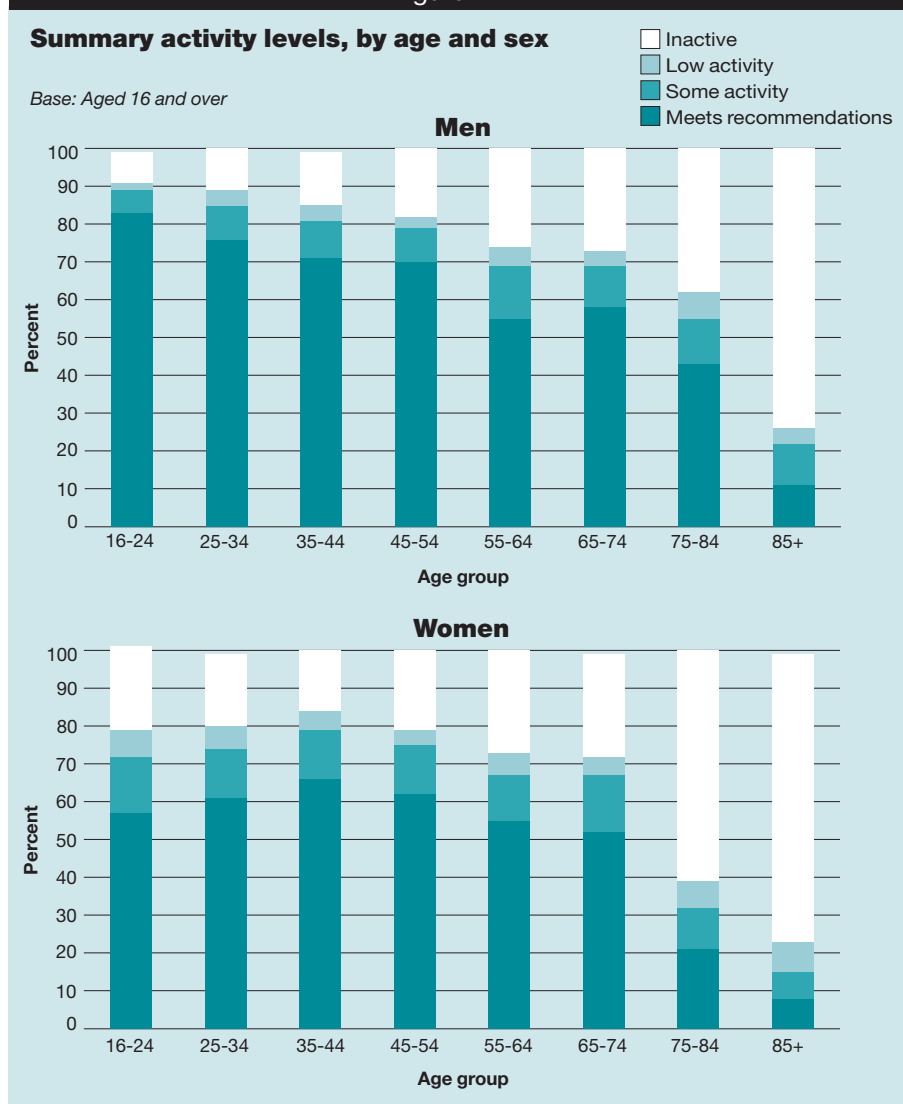


Table 2B

Proportion of the population aged 19 and over who met the physical activity guidelines for participation in at least moderate intensity activity, by sex

Meets MVPA guidelines	Men	Women	Total
	%	%	%
2012 best estimate ^{a,b}	66	56	61
2012 comparable with 2008 ^{c,d}	65	54	59
2008 ^{c,d}	65	53	59

^a Some particularly vigorous occupational activities may only be done on a few days, rather than every working day. The HSE 2012 questionnaire asked, for some of the specific types of occupational activities (climbing stairs, lifting), on how many of the days worked in the previous month they had been undertaken. This analysis uses this information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity.

^b Walking was included for participants aged 19 and over who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^c The HSE 2008 questionnaire asked about occupational activity on a typical workday and on the number of days the participant had worked in the previous four weeks but assumed that each activity mentioned occurred on every day worked. These two rows have been included to enable comparison between 2008 and 2012. They are likely to overestimate the contribution of occupational activity.

^d Walking was included only for adults who reported walking at a fairly brisk or fast pace, regardless of age.

2.3.4 Summary activity levels by region

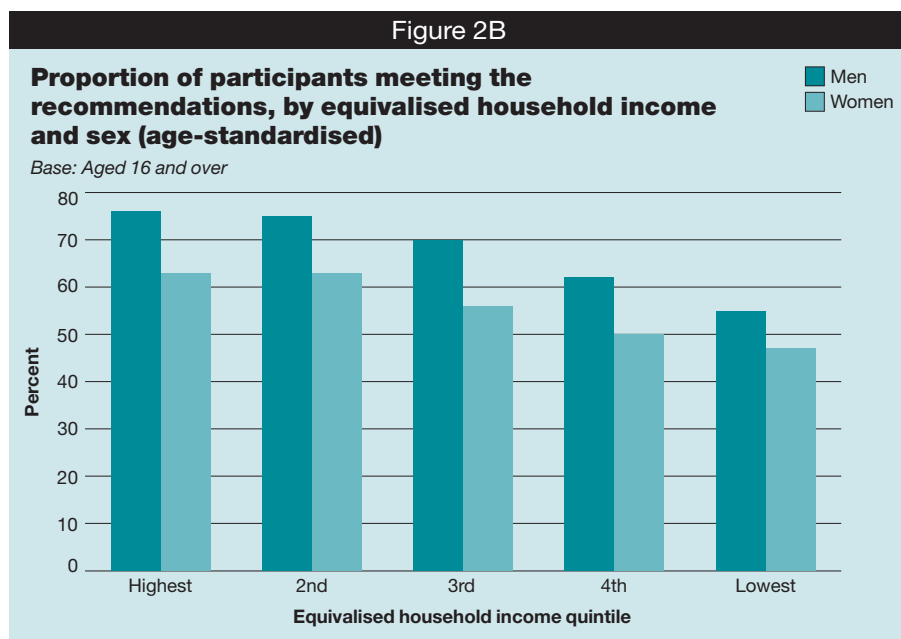
Among men, the (age-standardised) proportions meeting the current aerobic guidelines were highest in the South West and South East (72% in both), and lowest in the North West (59%). There was a similar pattern among women, with highest levels in the South East, East of England and the South West (61%, 60% and 58%), and lowest levels in the North East and North West (48% in both).

Table 2.2

2.3.5 Summary activity levels by income

The proportion of participants meeting the aerobic activity guidelines increased as household income increased. As shown in Figure 2B this pattern was the same for both sexes. 76% of men and 63% of women in the highest quintile of equivalised household income met the new guidelines, falling to 55% of men and 47% of women in the lowest income quintile. Both men and women from lower income households were more likely to be classed as inactive: 29% of men and 34% of women in the lowest income quintile were inactive compared with 11% and 18% respectively in the highest income quintile.

Table 2.3, Figure 2B



2.3.6 Summary activity levels by BMI category

Both men and women who were overweight (BMI 25 to less than 30kg/m²) or obese (BMI 30kg/m² or more) were less likely to have met the guidelines for MVPA than men and women who were not overweight or obese (BMI less than 25kg/m²). 75% of men who were not overweight or obese met the new guidelines, compared with 71% of overweight men and 59% of obese men. Similarly, 64% of women who were not overweight or obese met the guidelines, compared with 58% of overweight and 48% of obese women.

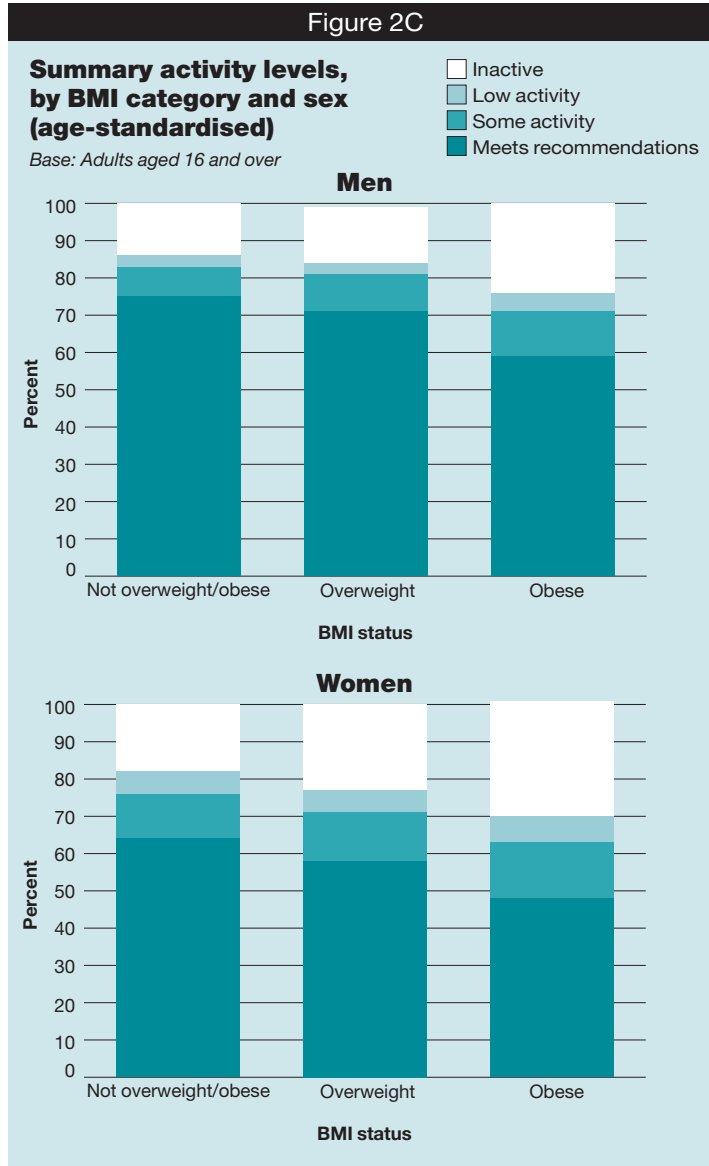
Table 2.4, Figure 2C

2.3.7 Trends in physical activity

To allow comparison over a longer time series, Table 2.5 shows trends in the proportion of adults aged 16 and over meeting the previous physical activity recommendation (30 minutes or more per day of at least moderate intensity activity on at least five days per week). It should be noted that these results, based on bouts of activity of at least 30 minutes rather than 10 minutes, did not take account of the detailed information on occupational activity introduced in HSE 2008, nor did they use the new occupational activity and walking questions introduced in 2012. This means that they under-represent activity done in shorter bouts, and have less accurate assumptions about occupational activity than the enhanced questionnaire allows.

The proportion of adults aged 16 and over meeting the previous physical activity recommendation has increased steadily since 1997 for men and 1998 for women. This

Figure 2C



increase has occurred across all age groups, and was of similar magnitude in both sexes. In 1997, 32% of men met the recommendations for moderate/vigorous activity, increasing to 43% in 2012. Among women, 21% met the recommendation in 1997, increasing to 32% in 2012. Among both men and women, the proportion meeting the recommendation was similar in 2008 (42% and 31% respectively) and 2012 (43% and 32% respectively). **Table 2.5**

2.4 Participation in different activities

2.4.1 Number of days of participation

Table 2.6 shows the number of days' participation in the past four weeks in four groups of non-occupational physical activities of at least moderate intensity: heavy housework; heavy manual work/gardening/DIY; walking; and sports and exercise (all for bouts of ten minutes or more). Results also show the average number of days participating in each activity and participation in any of the four activities. Walking of at least moderate intensity was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for ten minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

The proportion of participants who had spent at least one day in the last four weeks in heavy manual work, walking, and sports/exercise was higher in men than women. Women

were more likely than men to have spent at least one day in heavy housework. Similarly, the average number of days spent in each activity was higher in men except for heavy housework.

As reported in previous years, variation in participation across non-occupational physical activities by age showed a different pattern in men and women.

Heavy housework

59% of women and 48% of men had participated in heavy housework in the past four weeks. The mean number of days undertaking heavy housework was also higher in women than in men (3.5 and 2.3 days respectively).

For both sexes, participation peaked between the ages of 25-54 and declined with age thereafter. However, the age-related decline was sharper for women than men between the age groups 65-74 and 75 and over, reflecting their higher levels of participation up to the oldest age group when the gender gap reversed.

Heavy manual work, gardening and DIY

Participation in heavy manual/gardening/DIY was the least common activity for both sexes: 26% of men and 11% of women participated in this activity in the past four weeks. The mean number of days on which participants took part was 1.1 days and 0.5 days in men and women, respectively.

For both sexes, participation in heavy manual/gardening/DIY increased with age up to those aged 55-74. Participation levels in men aged 75 and over remained higher than those in men aged 16-24 (20% and 15%, respectively); among women, the youngest and oldest age groups reported similar levels (4% in both groups).

Walking

46% of men and 37% of women reported walking of at least moderate intensity for 10 minutes or more on at least one day in the last four weeks. The mean number of days walked in that period was 7.9 days in men and 6.9 days in women.

Among men, the proportion walking on at least one day in the last four weeks was highest in the youngest age group (59%) and then declined as age increased up to those aged 55-64 (35%). Walking levels then increased among those aged 65-74 (47%) but then fell sharply in the oldest age group (31%). Among women, the peak in participation levels at younger ages was among those aged 35-44; the highest levels were observed in those aged 65-74.

Sports and exercise

52% of men and 45% of women had taken part in sports/exercise at least once during the past four weeks. The mean number of days spent in sports/exercise in that period was 7.4 days in men and 5.2 days in women.

As would be expected, participation levels in both sexes were highest in the youngest age group (76% for men, 62% for women). Among men, participation in sports generally decreased as age increased (down to 20% of those aged 75 and over), with the exception of men aged 55-64 and 65-74 who had similar levels. The decline in participation as age increased was similar in women (down to 13% of those aged 75 and over); those aged 25-44 had similar levels of participation.

Any activity

83% of men and 80% of women participated in at least one type of non-occupational physical activity. On average, men participated in activity on 14.7 days in the last four weeks, compared with 12.9 days in women.

In both men and women, levels of participation were highest among those aged 16-54, then declined to similar levels in the 55-74 age groups, and then fell sharply among those aged 75 years and over.

Table 2.6

2.4.2 Minutes per week of participation

Table 2.7 shows the average minutes per week (pw) participants had spent in the four non-occupational physical activities. Minutes of both moderate and vigorous intensity sports/exercise participation were assumed equivalent in this table (all other activities were moderate intensity).

The patterns were generally similar to those for number of days of participation in the different activities. Men averaged more time than women in heavy manual/gardening/DIY activities (59 minutes pw and 19 minutes pw, respectively) and in sports/exercise (126 minutes pw and 73 minutes pw, respectively) but spent less time in heavy housework (56 minutes/week and 100 minutes pw). Time spent walking was similar in men and women (163 minutes pw and 149 minutes pw, respectively). Overall men averaged 388 minutes (6.5 hours) and women averaged 324 minutes (5.4 hours) in any non-occupational physical activity per week.

Table 2.7

2.4.3 Occupational activity

Table 2.8 shows the amount of time, per day worked, that participants spent in four types of occupational physical activity: sitting down or standing up; walking around; climbing stairs or ladders; and lifting, moving or carrying heavy loads. The median number of hours per day worked doing each activity, and the proportion of participants who reported being very or fairly physically active in their job, are also shown. The results are based on adults aged 16-74 who reported working in the last four weeks, including unpaid work.

Men averaged significantly more time than women sitting down or standing up (median 6.0 and 5.0 hours per day worked, respectively) but spent similar amounts of time walking around whilst at work (0.8 and 0.5 median hours per day worked, respectively). The majority of men and women did not spend any time climbing stairs or ladders (57% of men, 65% of women), or lifting, carrying or moving heavy loads (53% and 69% respectively). A slightly greater proportion of men than women considered themselves to be very or fairly physically active at work (61% and 57% respectively); the difference between the sexes was more marked in those aged 16-34 than in older groups.

Table 2.8

2.4.4 Participation in muscle-strengthening activities

An additional guideline in the 2011 government recommendations for physical activity was that adults aged 19 and over should undertake muscle-strengthening activities on at least two days a week; examples include weight training, working with resistance bands, carrying heavy loads, heavy gardening, push ups and sit ups (the full list of activities always included or included in certain circumstances are listed in an endnote to this chapter).⁶⁰

Table 2.9 shows the number of days in the last four weeks participants aged 16 or over had spent in muscle-strengthening activities (in bouts of ten minutes or more). More men than women met this guideline (34% and 24% respectively).⁶⁴ Overall 49% of men and 56% of women did no muscle-strengthening activity in the last four weeks, and as Figure 2D shows, there was a steep decrease in participation in any muscle-strengthening activity, or in meeting the guidelines, as age increased.

Table 2.10 shows the proportions of adults aged 16 and over who met the aerobic activity guideline, the muscle-strengthening guideline, or both. It should be noted that participation in muscle-strengthening activities was included in the estimation of aerobic activity levels where the muscle-strengthening activities were of moderate or vigorous aerobic intensity. More men than women met both guidelines (33% and 23% respectively). The difference between the sexes in meeting both guidelines was generally more marked in those aged 16-54. Very few participants (1% of men, 2% of women) met only the muscle-strengthening guideline; a third of men and women (34% and 33%, respectively) met only the recommendations for moderate/vigorous activity. Among participants who met the aerobic activity guideline, 51% of men and 59% of women did not meet the muscle-strengthening guideline.

Tables 2.9, 2.10, Figure 2D

Figure 2D



2.4.5 Meeting MVPA and muscle-strengthening guidelines among adults aged 19 and over

Table 2C shows the proportion of men and women aged 19 and over (the target age for the new guidelines for adults) that met one or both of the MVPA and muscle-strengthening guidelines. 32% of men and 24% of women aged 19 or over met the muscle-strengthening guidelines. Just over a quarter of adults (31% of men and 22% of women) met both guidelines.

Table 2C

2.4.6 Participation in activities to promote balance and co-ordination

The new UK physical activity guidelines recommend that those adults aged 65 and over at risk of falls should incorporate activities to improve balance and co-ordination on at least two days a week. However, it is not possible to identify which older adults in the HSE are at risk of falls; analysis is therefore based on all adults aged 65 and over.

Table 2.11 presents levels of participation in exercises that improve balance/co-ordination by summary aerobic activity levels. The full list of activities identified as potentially improving balance and co-ordination is shown in an endnote to this chapter.⁶¹ Due to small base sizes participants with low or some levels of aerobic activity have been combined to form one group.

In both sexes, the proportion who had undertaken exercise that improved balance and co-ordination on at least two days per week increased with levels of MVPA. 31% of older men who met the aerobic activity guideline also met the balance and co-ordination guideline,

Table 2C			
Proportion of adults aged 19 and over meeting physical activity guidelines, by age and sex			
	19-64	65+	Total
	%	%	%
Men			
Met MVPA guidelines ^{a,b}	70	49	66
Met muscle-strengthening guidelines ^{c,d}	36	15	32
Met both guidelines	36	13	31
Women			
Met MVPA guidelines ^{a,b}	61	36	56
Met muscle-strengthening guidelines ^{c,d}	28	9	24
Met both guidelines	27	7	22

^a MVPA guidelines: At least 150 minutes moderately intensive physical activity (MPA) or 75 minutes vigorous activity (VPA) per week or an equivalent combination of these, in bouts of at least 10 minutes.

^b Includes both leisure activity and occupational activity derived from the enhanced questionnaire, introduced in 2008.

^c Undertakes muscle-strengthening activities on at least two days per week, on average.

^d See endnote 60 for the definition of muscle-strengthening activities.

compared with 9% of men with lower levels of aerobic activity and 3% of men classed as inactive. The equivalent figures in older women were 22%, 10% and 2%, respectively.

Table 2.11

2.5 Sedentary behaviour

2.5.1 Total sedentary time

Men were more likely than women to average six or more hours of total sedentary time (time spent watching TV and other sedentary time such as reading and computer use) per weekday (31% and 29%, respectively) and weekend day (40% and 35%, respectively). The pattern was similar for the average number of hours spent being sedentary (4.9 hours and 4.7 hours per weekday for men and women respectively; 5.4 hours and 5.1 hours per weekend day).

As in HSE 2008, the relationship between total sedentary time and age on both weekdays and weekend days followed a U-shaped pattern in both men and women, with higher levels in those aged 16-24 or aged 65 and over.

2.5.2 Time spent watching TV

The proportion averaging four or more hours watching TV per weekday was similar for men and women (25% and 26%, respectively); however, men were more likely than women to spend four or more hours watching TV on weekend days (35% and 32%, respectively).

Time spent watching TV varied by age in similar ways for men and women. On weekdays, the proportion who spent four or more hours watching TV decreased after age 16-24 into middle age and rose into older age. At weekends, there were generally similar proportions watching four or more hours of TV among those aged up to 54; proportions rose with age thereafter.

2.5.3 Other (non-TV) sedentary time

Both men and women averaged around 2 hours of other sedentary time, both on weekdays and weekend days. Between 15% and 19% reported more than 4 hours of other sedentary time per day.

In both sexes, the relationship between other sedentary time and age generally followed the same U-shaped pattern as for total sedentary time, with more participants aged 16-24 or 65 and over averaging four or more hours in other sedentary time. However, the pattern differed slightly in that the increase with age was sharper in women than men. This pattern was the same for weekdays and weekend days.

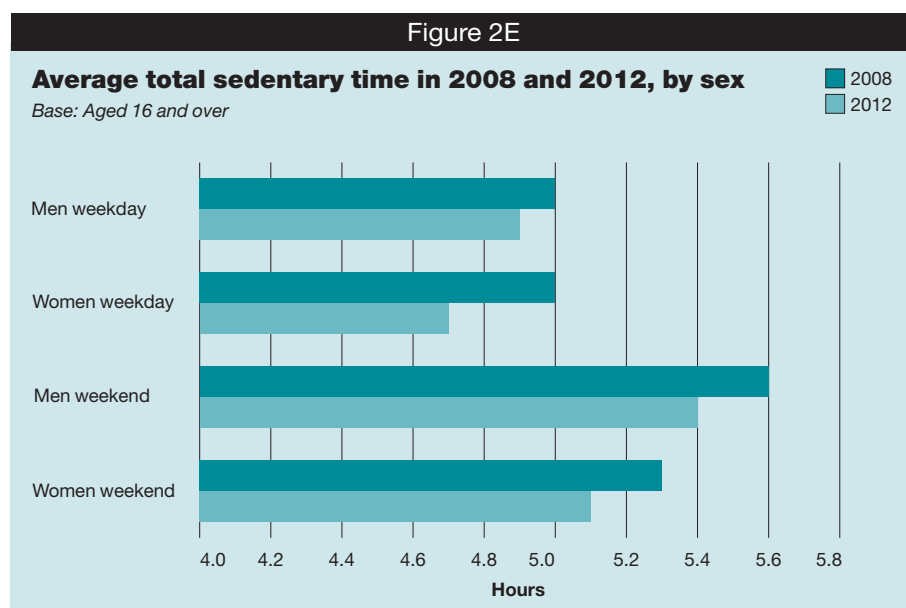
2.5.4 Sedentary time by BMI category

Over half of men and women spent four or more hours in sedentary time per weekday and weekend day, regardless of their BMI category. However, the proportion of participants above this threshold varied by BMI category for women on weekdays and weekend days, and for men on weekdays. 69% of women who were obese, 61% who were overweight, and 56% who were not overweight or obese were sedentary for four or more hours per weekday. The equivalent figures for women on weekend days were 74%, 70% and 68%. 68% of obese men, 57% of overweight and 59% of men who were not overweight or obese were sedentary for four or more hours per weekday.

2.5.5 Trends in total sedentary time

The average number of hours spent in total sedentary time in 2008 and 2012 in both sexes is shown in Figure 2E, with estimates presented separately for weekday and weekend days. The average numbers of sedentary hours spent per weekday and weekend day were lower in 2012 for both men and women.

Tables 2.12, 2.13, Figure 2E



2.6 Discussion

2.6.1 Physical activity levels

New physical activity guidelines were introduced in 2011, and the HSE 2012 provides the first opportunity to measure the extent to which adults meet them, as well as to continue longer term trends using assessment against the previous guidelines. In the HSE 2008, 39% of men and 29% of women aged 16 and over met the previous physical activity recommendation of 30 minutes or more per day of at least moderate intensity activities on at least five days per week. The proportion of HSE 2008 participants aged 19 and over who would have met the new guidelines - 65% of men and 53% of women - is substantially higher. There are two reasons for this, one related to limitations of the survey and one to the guidelines themselves.

HSE results have underestimated adherence to the previous guidelines, because it is not

possible to know from the HSE data whether bouts of at least 10 minutes have been undertaken on the same day to accrue the 30 minute daily minimum that the previous guidelines required. Thus only activity that was undertaken for at least 30 minutes in a single episode could be included in the analyses to estimate adherence to the previous guidance. Secondly, undertaking at least 30 minutes per day of moderate activity on at least five days a week is now recognised as only one way of achieving 150 minutes spread throughout the week; other combinations of duration and frequency – and an allowance for shorter amounts of vigorous intensity activity – are likely to be easier to accomplish over a seven day period.⁶⁴

The results from HSE 2012 show that 67% of men and 55% of women aged 16 years and over met the new guidelines. This is similar to both the results from the American NHANES 2005-2008 data, in which 66% of men and 58% of women met the same guidelines,⁶⁵ and to analysis of the Active People Survey, which found that 56% of adults met the new guidelines.⁶⁶

In the Active People Survey, the lowest proportion of adults who were inactive (physically active for less than 30 minutes per week) was in the South East, in Berkshire. Similarly the South East had the highest proportion who were active for at least 150 minutes per week. In contrast, adults in the West Midlands had the smallest proportion of adults meeting the 150 minutes weekly target. The HSE data similarly showed high levels of compliance with the aerobic activity guidelines in the South East among both men and women.

2.6.2 Recent policies and tools to promote physical activity

There has long been an awareness of the need to increase population activity levels, through implementing policies that are effective overall and in particular among low income and other groups at highest risk of inactivity, obesity and other consequences of insufficient physical activity. In 2011, the World Health Organisation (WHO) published its Health Economic Appraisal Tool (HEAT), an online resource that can be used to provide economic assessment of the mortality reductions from increasing cycling or walking.⁶⁷ In March 2013, the first release of the *Health Impact of Physical Inactivity (HIPI)* tool was published, to enable local authorities to estimate the number of cases of specific diseases that could be prevented if residents aged 40-79 fulfilled the physical activity guidelines.⁶⁸ In May 2013, the Department for Transport and Department of Health published three slide sets, aimed at directors of public health and of transport and elected members in local government, to promote active travel (walking and cycling).⁶⁹

Since April 2013, there have been two Quality and Outcomes Frameworks (QOF) targets for GPs related to physical activity.^{70,71} One is to assess physical activity levels in patients aged 16-74 with hypertension; the second is to provide a brief intervention for those with a score of 'less than active' to increase their activity level.⁷² In addition, NICE (the National Institute for Health and Care Excellence) published guidance in 2013 to support routine provision of brief advice on physical activity in primary care practice.⁷³ The recommendations are aimed at a wide range of primary care professionals, including exercise professionals, GPs, health trainers, health visitors, mental health professionals, midwives, pharmacists, practice nurses, and physiotherapists but are also relevant for others with a role in encouraging physical activity and for the general public.

2.6.3 Participation in physical activity

Overall, physical activity levels did not change significantly between 2008 and 2012, although the proportion of adults aged 16 and over meeting the previous physical activity recommendation has increased steadily since 1997 for men and 1998 for women.

Frequency of participation in fairly brisk or fast walking for at least 10 minutes increased from HSE 2008 to HSE 2012, even if only those under 65 are considered, for whom the definition of moderate intensity walking did not change. There were small increases at every age in the proportion of men reporting participation in heavy housework, while the proportion of men reporting participation in sports and exercise fell in those aged 16-24 but

increased in men aged 65 and over. The increases were largest in time spent walking, but the overall figures include walking in older adults that demonstrated effort even if it was at a slower pace than the definition used in HSE 2008.

The Active People Surveys (APS) have shown an increase between 2005/06 and 2012/13 of 1.4 million adults in the number of people playing sport for at least 30 minutes at least once a week. Although the majority of adults (52%) played no sport in APS 2012/13, HSE 2012 shows that only 29% of men and 34% of women were inactive (i.e. were moderately active for less than 30 minutes per week), as HSE includes a wider range of physical activity whereas APS is limited to formal sports. Like HSE 2012, the APS shows that sports participation decreases as age increases, and is markedly higher in younger men than younger women.⁶⁶

Increases in participation recorded by APS have also occurred among people with disability and among people from minority ethnic groups. However, in terms of socio-economic position, only those from managerial and professional and intermediate groups have increased their participation in sports, the groups that already had the highest participation rates. This pattern shows increasing socio-economic inequalities, which are also demonstrated in this chapter.⁶⁶

2.6.4 Muscle-strengthening activities

Of those who met the guideline for aerobic activity, only half met the guideline for participation in muscle-strengthening activities. Further work needs to be done to ascertain whether this is lack of knowledge of the recommendation, as the latter guideline is a recent introduction (compared with aerobic activity, for which there has been a guideline for several decades, even if the precise recommendations have changed); lack of perceived opportunity (including perceived lack of time); or lack of interest. Very few participants met the muscle-strengthening but not the aerobic activity guidelines.

2.6.5 Activities to improve balance and co-ordination

The recommendation for participation in activities to improve balance and co-ordination applies to adults aged 65 and over who are deemed to be at risk of falls. However, data collected in HSE 2012 did not allow participants' fall risk to be assessed. The data on activities to improve balance and co-ordination have therefore been presented in this report stratified by aerobic physical activity level among those aged 65 and over. It was assumed that although those who are more active have greater opportunity to fall, they probably also have greater muscle power and balance, and that the aerobic activity would in many cases contribute to balance and co-ordination.

This guideline was met least often: even among those meeting the aerobic activity recommendation only three in ten men and two in ten women participated sufficiently often. For those likely to be at higher risk of falls – those with some but insufficient aerobic activity – this fell to one in ten adults, while only three in a hundred men and two in a hundred women deemed 'inactive' (less than 30 minutes' moderate intensity activity per week) met this guideline. While those who are capable of aerobic activity should be encouraged to increase their participation (in line with the Chief Medical Officers' recommendations²), it is important that those who remain unable or unwilling to undertake moderate intensity activity are encouraged to participate regularly in activities such as Tai Chi that are proven to improve balance and co-ordination.

2.6.6 Sedentary behaviour

A recent review has confirmed that sedentary activity should not be considered merely as an absence of physical activity but as a separate risk factor in its own right. Additionally, the specific types of behaviour, e.g. TV viewing, computer use, and sitting socialising, are associated with different accompanying behaviours.⁷⁴ Thus, while it is probably beneficial that the total sedentary time on both weekdays and weekend days has fallen since HSE 2008, it is of concern that time spent watching television has not changed.

2.6.7 Conclusions

Approximately three in five adults aged 19 and over met the new guideline for MVPA in 2012. The data suggest this figure has remained stable since 2008, with no Olympic legacy yet visible. It should be noted that the figures presented in this report were collected throughout 2012 - before, during, and after the Games.

Compliance is higher for the new MVPA guideline, reflecting its more flexible definition compared with the former guidelines: the extent to which it was the requirement that activity should take place on at least five days a week or the minimum duration of 30 minutes is not clear. The new guidelines introduce greater flexibility in the ways that an individual can accumulate physical activity across the week, recognise activity that would have been discounted under the previous guidelines, and reflect the extra value of vigorous intensity activity. However, compliance is lower with the new guidelines for muscle-strengthening activities, and activities that help with balance and co-ordination among older adults. Future initiatives may need to emphasise these specific elements of the guidance.

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- 33 Department of Health. *A Report of the Chief Medical Officer: At least five a week: evidence on the impact of physical activity and its relationship to health*. HM Government, London, 2004.
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www.gov.uk/government/uploads/system/uploads/attachment_data/file/213743/dh_128255.pdf
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- 36 Skelton DA, Beyer N. *Exercise and injury prevention in older people*. *Scand J Med Sci Sports* 2003;**13**:77-85.
- 37 Activities listed as examples of muscle-strengthening activity in the report Start active, Stay active (see note 2 above) were: weight training, working with resistance bands, carrying heavy loads, heavy gardening, push ups and sit ups.
- 38 De Kam D, Smulders E, Weerdesteyn V et al. *Exercise interventions to reduce fall-related fractures and their risk factors in individuals with low bone density: a systematic review of randomized controlled trials*. *Osteoporos Int*. 2009;**20**:2111-25.
- 39 Wong AM, Lan C. *Tai Chi and balance control*. *Med Sports Sci*. 2008;**52**:115-23.
- 40 Cheng ST, Chow PK, Song YQ et al. *Mental and Physical Activities Delay Cognitive Decline in Older Persons With Dementia*. *Am J Geriatr Psychiatry*. 2013; doi: 10.1016/j.jagp.2013.01.060. (E-pub ahead of publication).
- 41 The standard *metabolic equivalent* (MET) is a unit used to estimate the intensity of physical activity. It is based on the amount of oxygen consumed during physical activity. The baseline energy used by the body at rest in one minute is defined as 1 MET. Thus an activity with a MET value of 1.5 uses 50% more energy than baseline energy expenditure.
- 42 Ford ES, Casperson CJ. *Sedentary behaviour and cardiovascular disease: a review of prospective studies*. *Int J Epidemiol*. 2012;**41**:1338-53.
- 43 Biddle S, Cavill N, Ekelund U et al. *Sedentary Behaviour and Obesity: Review of the Current Scientific Evidence*. Department of Health, London, 2010.
www.gov.uk/government/uploads/system/uploads/attachment_data/file/135121/dh_128225.pdf
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cardiovascular events: population-based study with ongoing mortality and hospital events follow-up. J Am Coll Cardiol. 2011;**57**:292-9.

- 45 Hamer M, Stamatakis E, Mishra GD. *Television- and screen-based activity and mental well-being in adults.* Am J Prev Med. 2010;**38**:375-80.
- 46 Stamatakis E, Davis M, Stathi A, Hamer M. *Associations between multiple indicators of objectively-measured and self-reported sedentary behaviour and cardiometabolic risk in older adults.* Prev Med. 2012;**54**:82-7.
- 47 Department of Culture, Media and Sports. *Plans for the legacy from the 2012 Olympic and Paralympic games.* DCMS, London, 2010.
- 48 Bull F, Milton K, Boehler C. *Evaluation of the Physical Activity Care Pathway London Feasibility Pilot – Executive Summary.* DH, London, 2013. www.gov.uk/government/publications/lets-get-moving-care-pathway-feasibility-study-results
- 49 Department of Health. *Resources for commissioning Let's get moving interventions.* www.gov.uk/government/publications/let-s-get-moving-revised-commissioning-guidance
- 50 TNS. *Active People Survey 6 - Technical Report.* Sport England, London, 2013. <http://discover.ukdataservice.ac.uk/catalogue?sn=7369>
- 51 Health Education Authority. *Allied Dunbar National Fitness Survey.* Health Education Authority and Sports Council, London, 1992.

52 Home activities

Examples of 'heavy' housework classified as moderate intensity: Walking with heavy shopping for more than 5 minutes, moving heavy furniture, spring cleaning, scrubbing floors with a scrubbing brush, cleaning windows, or other similar heavy housework.

Examples of 'heavy' gardening or DIY work classified as moderate intensity: Digging, clearing rough ground, building in stone/bricklaying, mowing large areas with a hand mower, felling trees, chopping wood, mixing/laying concrete, moving heavy loads, refitting a kitchen or bathroom or any similar heavy manual work.

- 53 The previous physical activity recommendations were that adults should take part in activity of at least moderate intensity, for 30 minutes or more on five or more days per week. Daily activity was allowed to be accumulated in bouts of at least 10 minutes' duration (the enhanced HSE questionnaire was amended in 2008 to catch these shorter bouts of activity). However, the summary variable presented in HSE 2008 included data only from activity spells of at least 30 minutes' duration because of the difficulty in establishing the aggregated time on each individual day spent in different bouts of activity.

In 1998, 2003 and 2004, full time workers in manual occupations who reported being at least moderately active in their work were counted as having done 20 days' activity in the last four weeks. Part time workers were counted as having done 12 days' activity. Only one question relating to occupational activity was asked in 2006, whereas in 2008 and 2012 participants were asked about four different types of activity while at work (See Section 2.1.1). In 2008, participants' activity at work was then classified using the Standard Occupational Classification 2000, and the summary variable reported in Tables 2.1 to 2.5 in HSE 2008 used this extended occupational information (see endnote 40 in Roth M. *Self-reported physical activity in adults.* Chapter 2 in Craig R, Mindell J, Hirani V. *Health Survey for England 2008: Physical Activity and fitness.* Health and Social Care Information Centre, Leeds, 2009. www.hscic.gov.uk/pubs/hse08physicalactivity). However, for comparison with earlier years, the summary variable used in Table 2.6 in HSE 2008 was derived using only information available in previous years, i.e. only the original occupational question.

- 54 Office for National Statistics. *Standard Occupational Classification 2000: User guide.* Office for National Statistics, London, 2000.

55 Occupations requiring moderate level activity

Walking: farm managers; natural environment and conservation managers; managers in animal husbandry, forestry and fishing; nurses, including auxiliaries and assistants; sports players; sports coaches, instructors and officials; fitness instructors; sports and fitness occupations; conservation and environmental protection officers; countryside and park rangers; farmers; gardeners and groundsman/groundswomen; agricultural and fishing trades; pest control officers; road construction operatives; rail construction operatives; construction operatives; farm workers; forestry workers; fishing and agriculture related occupations; labourers in building and woodworking trades; labourers in other construction trades; stevedores, dockers and slingers; other goods handling and storage occupations; postal workers, mail sorters, messengers, couriers; road sweepers; cleaners, domestics; refuse and salvage occupations; elementary cleaning occupations.

Climbing stairs or ladders: production, works and maintenance managers; managers in construction; managers in mining and energy; chartered surveyors; building inspectors; fire service officers; inspectors of factories, utilities and trading standards; farmers; horticultural trades; gardeners and groundsman/groundswomen; agricultural and fishing trades; electricians, electrical fitters; lines repairers and cable jointers; roofers, roof tilers and slaters; plasterers; floorers and wall tilers; painters and decorators; scaffolders, staggers, riggers; farm workers; forestry workers; fishing and agriculture related occupations; labourers in building and woodworking trades; labourers in other construction trades; window cleaners; cleaners, domestics.

Lifting, carrying, or moving heavy loads: paramedics; fitness instructors; sports and fitness occupations;

farmers; horticultural trades; gardeners and groundsmen/groundswomen; agricultural and fishing trades; smiths and forge workers; moulders, core makers, die casters; sheet metal workers; metal plate workers, shipwrights, riveters; welding trades; pipe fitters; metal machining setters and setter-operators; tool makers, tool fitters and markers-out; metal working production and maintenance fitters; precision instrument makers and repairers; motor mechanics, auto engineers; vehicle body builders and repairers; steel erectors; bricklayers, masons; roofers, roof tilers and slaters; plumbers, heating and ventilating engineers; carpenters and joiners; glaziers, window fabricators and fitters; construction trades; plasterers; floorers and wall tilers; butchers, meat cutters; bakers, flour confectioners; fishmongers, poultry dressers; furniture makers, other craft woodworkers; nursery nurses; childminders and related occupations; weighers, graders, sorters; tyre, exhaust and windscreen fitters; scaffolders, staggers, riggers; road construction operatives; rail construction and maintenance operatives; construction operatives; farm workers; forestry workers; fishing and agriculture related occupations; labourers in building and woodworking trades; labourers in other construction trades; labourers in foundries; labourers in process and plant operations; postal workers, mail sorters, messengers, couriers; kitchen and catering assistants; bar staff; refuse and salvage occupations; shelf fillers.

- 56 Sports and exercises were grouped into light, moderate or vigorous intensity categories based on the MET (metabolic equivalent) intensity, see note 41. MET levels can be linked to specific activities in various settings. Moderate physical activity (MPA) includes 3-6 METs; vigorous physical activities (VPA) more than 6 METs.
- 57 Activities which were also included in HSE 2008 were grouped according to the 2000 Compendium, see note 30. Activities reported for the first time in HSE 2012 (e.g. Wii fit) were categorised according to the 2011 Compendium, see note 58.
- 58 Ainsworth BE, Haskell WL, Herrmann SD et al. 2011 *Compendium of Physical Activities: a second update of codes and MET values*. *Med Sci Sports Exerc*. 2011;**43**:1575-81. Also available from: <https://sites.google.com/site/compendiumofphysicalactivities/>

59 Sports and exercise activities – intensity classification

Vigorous:

- a) All occurrences of a number of activities (classified as being 7.5-12 METs in the Compendium of physical activities) including: climbing, hockey, martial arts, running/jogging, squash.
- b) The following activities (5.5-7 METs) were coded as vigorous intensity if they had made the participant 'out of breath or sweaty', but were otherwise coded as moderate intensity: aerobics, badminton, boxing, cycling, football, hillwalking, rugby, skiing, swimming, tennis, workout at a gym (e.g. exercise bike, weight training).

Moderate:

- a) See 'vigorous' category (b).
- b) All occurrences of a large number of activities (3.5-5 METs) including: canoeing, cricket, fell walking, golf, horse riding, Tai-chi, table tennis.
- c) The following sports were coded as moderate intensity if they had made the participant 'out of breath or sweaty', but were otherwise coded as light intensity: dancing, exercise (press-ups, sit-ups etc).

Light:

- a) See 'moderate' category (c).
 - b) All occurrences of a large number of activities (1.5-3 METs) including: bowls, fishing, pilates, snooker, yoga.
- 60 The following activities (all in bouts of 10 minutes or more) were always included as muscle-strengthening activities: canoeing, climbing, field athletics, horse riding, kayaking, rowing, sailing, skiing/snowboarding, Tai-chi, water skiing, wind surfing.

The following activities (all in bouts of 10 minutes or more) were included as muscle-strengthening activities for participants who reported that the effort of that activity was usually enough to make their muscles feel some tension, shake or feel warm: aqua aerobics/aquafit, aerobics, basketball, body boarding, bowls, exercise (press-ups, sit-ups etc), cricket, curling, golf, hillwalking, hockey, ice skating, martial arts other than Tai-chi, netball, pilates, rambling, surfing, tenpin bowling, volleyball, workout at a gym (e.g. exercise bike, weight training), yoga.

For some activities the question about whether the effort of that activity was usually enough to make their muscles feel some tension, shake or feel warm was not asked. If these activities were for bouts of 10 minutes or more they were included as muscle-strengthening activities: badminton, cycling, dancing, football, rugby, running/jogging, squash, swimming, tennis.

- 61 The following activities were included as activities that improve balance and coordination: aerobics, aqua aerobics/aquafit, badminton, basketball, body boarding, bowls, canoeing, climbing, cricket, curling, cycling, dancing, field athletics, football, golf, hillwalking, hockey, horse riding, ice skating, kayaking, keep fit (workout at a gym), martial arts, netball, pilates, rambling, rugby, running/jogging, sailing, skiing/snowboarding, squash, surfing, table tennis, Tai-chi, tennis, tenpin bowling, volleyball, wind surfing, yoga, water-skiing.

Exercise (press-ups, sit-ups etc) was included as balance-improving for participants who reported that the exercises involved standing up and moving about.

- 62 Elias P, Purcell K. *Researching Graduate Careers Seven Years On, Research Paper No. 6. SOC (HE): a classification of occupations for studying the graduate labour market*. University of Warwick, Institute for Employment Research, Warwick, 2004. www.warwick.ac.uk/fac/soc/ier/research/completed/7yrs2/rp6.pdf

- 63 In cases when there were multiple dwelling units or multiple households at a primary sampling unit, selection was sometimes necessary (from 2009 interviewers would select a single household; before that they would include up to three households, and make a selection if there were four or more). Weighting has been applied in all years to adjust for the probability of selection in such cases. More detail about weighting is given in Volume 2, Chapter 7 of this report, Methods and documentation. www.hscic.gov.uk/pubs/hse2012
- 64 Note that questions ask about activities over the last four weeks, and weekly averages presented in the report are calculated over the four week period. So for instance someone who has done an activity twice a week on average may have done this twice each week, or eight times in one week and not in any other week, or some other pattern.
- 65 Tucker JM, Welk GJ, Beyler NK. *Physical activity in U.S. adults: compliance with the Physical Activity Guidelines for Americans*. *Am J Prev Med*. 2011;**40**:454-461.
- 66 Sports England. *Active People Survey*. www.sportengland.org/research/active_people_survey.aspx
- 67 World Health Organization. *Health Economic Appraisal Tool (HEAT)*. WHO, Geneva, 2011. www.heatwalkingcycling.org
- 68 Association of Public Health Observatories (now part of Public Health England). *Health Impacts of Physical Inactivity (HIPi) – A tool for Joint Strategic Needs Assessment*. 2013. www.apho.org.uk/resource/view.aspx?RID=123459
- 69 Public Health England. *Active travel briefings for Local Authorities*. www.noo.org.uk/slide_sets/activity
- 70 NHS Employers. *Changes to QOF 2013/14*. www.nhsemployers.org/PayAndContracts/GeneralMedicalServicesContract/QOF/Pages/ChangestoQOF201314.aspx
- 71 NHS Employers. *2013/14 general medical services (GMS) contract quality and outcomes framework (QOF) Guidance for GMS contract 2013/14*. NHS Employers, London, 2013. www.nhsemployers.org/Aboutus/Publications/Documents/qof-2013-14.pdf
- 72 The two QOF indicators are:
- HYP004: The percentage of patients with hypertension aged 16 to 74 years in whom there is an annual assessment of physical activity, using GPPAQ, in the preceding 15 months.
- HYP005: The percentage of patients with hypertension aged 16 to 74 years who score 'less than active' on GPPAQ in the preceding 15 months, who also have a record of a brief intervention in the preceding 15 months.
- GPPAQ is the General Practice Physical Activity questionnaire.
- 73 National Institute for Health and Care Excellence (NICE). *Physical activity: brief advice for adults in primary care: NICE public health guidance, PH44*. NICE, London, 2013. <http://publications.nice.org.uk/physical-activity-brief-advice-for-adults-in-primary-care-ph44>
- 74 Rhodes RE, Mark RS, Temmel CP. *Adult sedentary behavior: a systematic review*. *Am J Prev Med*. 2012;**42**:e3-28.

- 2.1 Summary activity levels (participation in at least moderate intensity activity), by age and sex
- 2.2 Summary activity levels (participation in at least moderate intensity activity, observed and age-standardised), by region and sex
- 2.3 Summary activity levels (participation in at least moderate intensity activity, age-standardised), by equivalised household income and sex
- 2.4 Summary activity levels (participation in at least moderate intensity activity), by BMI category, age and sex
- 2.5 Trends in the proportion meeting previous physical activity recommendations (at least moderate intensity activity) 1997 - 2012, by age and sex
- 2.6 Number of days' participation in different activities in the last four weeks, by age and sex
- 2.7 Average time spent participating in different activities per week, by age and sex
- 2.8 Average time spent participating in occupational activities per day worked in the last four weeks, by age and sex
- 2.9 Number of days' participation in muscle-strengthening activities in the last four weeks, by age and sex
- 2.10 Proportion meeting current physical activity recommendations, by age and sex
- 2.11 Number of days' participation in physical activity to improve balance and co-ordination in the last four weeks by adults aged 65 and over, by activity level, age and sex
- 2.12 Average sedentary time per day, by age and sex
- 2.13 Sedentary time per day, by BMI category, age and sex

Notes on the tables

- 1. The group on which the figures in the table are based is stated at the upper left corner of the table.
- 2. The data in most tables have been weighted. See Volume 2, Chapter 7 of this report for more detail. Both unweighted and weighted sample sizes are shown at the foot of each table.
- 3. Apart from tables showing age breakdowns, data have been age-standardised to allow comparisons between groups after adjusting for the effects of any differences in their age distributions. See Volume 2, Chapter 8.4 of this report for more detail.
- 4. The following conventions have been used in tables:
 - no observations (zero value)
 - 0 non-zero values of less than 0.5% and thus rounded to zero
 - [] used to warn of small sample bases, if the unweighted base is less than 50. If a group's unweighted base is less than 30, data are normally not shown for that group.
- 5. Because of rounding, row or column percentages may not add exactly to 100%.
- 6. 'Missing values' occur for several reasons, including refusal or inability to answer a particular question; refusal to co-operate in an entire section of the survey (such as the nurse visit or a self-completion questionnaire); and cases where the question is not applicable to the participant. In general, missing values have been omitted from all tables and analyses.

Table 2.1

Summary activity levels (participation in at least moderate intensity activity), by age and sex

Aged 16 and over										2012
Summary activity level ^{a,b,c,d,e,f}	Age group								Total	
	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+		
	%	%	%	%	%	%	%	%	%	
Men										
Meets aerobic guidelines	83	76	71	70	55	58	43	11	67	
Some activity	6	9	10	9	14	11	12	11	10	
Low activity	2	4	4	3	5	4	7	4	4	
Inactive	8	11	14	18	26	27	38	74	19	
Women										
Meets aerobic guidelines	57	61	66	62	55	52	21	8	55	
Some activity	15	13	13	13	12	15	11	7	13	
Low activity	7	6	5	4	6	5	7	8	6	
Inactive	22	19	16	21	27	27	61	76	26	
<i>Bases (unweighted)</i>										
Men	373	479	584	609	616	587	297	82	3627	
Women	461	684	760	806	677	631	390	137	4546	
<i>Bases (weighted)</i>										
Men	597	688	713	711	590	421	237	66	4024	
Women	593	695	724	713	605	458	312	109	4210	

^a For non-occupational activity, this is limited to bouts of at least 10 minutes.

^b Meets aerobic guidelines: At least 150 minutes moderately intensive physical activity (MPA) or 75 minutes vigorous activity (VPA) per week (pw) or an equivalent combination of these.

Some activity: 60-149 minutes MPA pw or 30-74 minutes VPA pw or an equivalent combination of these.

Low activity: 30-59 minutes MPA pw or 15-29 minutes VPA pw or an equivalent combination of these.

Inactive: Less than 30 minutes MPA pw or less than 15 minutes VPA pw or an equivalent combination of these.

^c This table includes moderate or vigorous occupational physical activity derived from the enhanced questionnaire, introduced in 2008. It includes relevant activities only if reported to have lasted for at least 10 minutes per day, and assumes that all occupational activity above light intensity was of moderate intensity, i.e. there was no sustained vigorous activity.

^d The HSE 2012 questionnaire asked, for specific types of occupational activities, on how many of the days worked in the last month they had been undertaken. This analysis uses that information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity.

^e Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^f Physical activity recommendations for those aged 16-18 are at least one hour of moderate or vigorous activity (MVPA) each day. As HSE participants of that age were given the adult questionnaire, which does not ask separately about each day, they have been included in this table assessed against the adult criteria.

Table 2.2

Summary activity levels (participation in at least moderate intensity activity, observed and age-standardised), by region^a and sex

Aged 16 and over

2012

Summary activity level ^{b,c,d,e,f,g}	Region								
	North East	North West	Yorkshire & the Humber	East Midlands	West Midlands	East of England	London	South East	South West
	%	%	%	%	%	%	%	%	%
Men									
Observed									
Meets aerobic guidelines	68	60	67	66	66	67	69	71	72
Some activity	8	11	10	10	11	9	8	10	11
Low activity	4	4	4	4	4	4	5	3	2
Inactive	20	25	19	19	20	20	18	15	15
Standardised									
Meets aerobic guidelines	68	59	68	66	65	67	68	72	72
Some activity	8	11	10	10	11	9	8	10	10
Low activity	3	4	4	4	4	4	5	3	2
Inactive	20	26	19	19	21	20	19	14	15
Women									
Observed									
Meets aerobic guidelines	48	48	52	57	55	61	56	61	56
Some activity	16	14	14	14	14	13	12	10	14
Low activity	6	7	7	5	6	5	6	6	5
Inactive	30	32	28	24	25	21	26	23	25
Standardised									
Meets aerobic guidelines	48	48	52	56	55	60	53	61	58
Some activity	17	14	14	14	14	14	12	10	15
Low activity	6	7	7	5	6	5	6	6	5
Inactive	30	31	27	26	25	22	28	23	23
<i>Bases (unweighted)</i>									
<i>Men</i>	278	534	362	332	372	417	411	555	366
<i>Women</i>	367	644	433	383	461	497	561	754	446
<i>Bases (weighted)</i>									
<i>Men</i>	201	555	407	347	421	443	593	631	427
<i>Women</i>	217	564	413	349	431	456	640	715	424

^a Regions defined as the former Government Office Regions.

^b For non-occupational activity, this is limited to bouts of at least 10 minutes.

^c Meets aerobic guidelines: At least 150 minutes moderately intensive physical activity (MPA) or 75 minutes vigorous activity (VPA) per week (pw) or an equivalent combination of these.

Some activity: 60-149 minutes MPA pw or 30-74 minutes VPA pw or an equivalent combination of these.

Low activity: 30-59 minutes MPA pw or 15-29 minutes VPA pw or an equivalent combination of these.

Inactive: Less than 30 minutes MPA pw or less than 15 minutes VPA pw or an equivalent combination of these.

^d This table includes moderate or vigorous occupational physical activity derived from the enhanced questionnaire, introduced in 2008. It includes relevant activities only if reported to have lasted for at least 10 minutes per day, and assumes that all occupational activity above light intensity was of moderate intensity, i.e. there was no sustained vigorous activity.

^e The HSE 2012 questionnaire asked, for specific types of occupational activities, on how many of the days worked in the last month they had been undertaken. This analysis uses that information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity.

^f Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^g Physical activity recommendations for those aged 16-18 are at least one hour of moderate or vigorous activity (MVPA) each day. As HSE participants of that age were given the adult questionnaire, which does not ask separately about each day, they have been included in this table assessed against the adult criteria.

Table 2.3

Summary activity levels (participation in at least moderate intensity activity, age-standardised), by equivalised household income and sex

Aged 16 and over

2012

Summary activity level ^{a,b,c,d,e,f}	Equivalised household income quintile				
	Highest	2nd	3rd	4th	Lowest
	%	%	%	%	%
Men					
Meets aerobic guidelines	76	75	70	62	55
Some activity	10	9	11	11	11
Low activity	3	4	5	3	4
Inactive	11	12	14	24	29
Women					
Meets aerobic guidelines	63	63	56	50	47
Some activity	14	11	13	15	13
Low activity	5	7	6	4	6
Inactive	18	19	24	31	34
<i>Bases (unweighted)</i>					
<i>Men</i>	607	710	589	488	520
<i>Women</i>	676	763	719	721	745
<i>Bases (weighted)</i>					
<i>Men</i>	673	782	638	508	591
<i>Women</i>	642	719	655	634	675

^a For non-occupational activity, this is limited to bouts of at least 10 minutes.

^b Meets aerobic guidelines: At least 150 minutes moderately intensive physical activity (MPA) or 75 minutes vigorous activity (VPA) per week (pw) or an equivalent combination of these.

Some activity: 60-149 minutes MPA pw or 30-74 minutes VPA pw or an equivalent combination of these.

Low activity: 30-59 minutes MPA pw or 15-29 minutes VPA pw or an equivalent combination of these.

Inactive: Less than 30 minutes MPA pw or less than 15 minutes VPA pw or an equivalent combination of these.

^c This table includes moderate or vigorous occupational physical activity derived from the enhanced questionnaire, introduced in 2008. It includes relevant activities only if reported to have lasted for at least 10 minutes per day, and assumes that all occupational activity above light intensity was of moderate intensity, i.e. there was no sustained vigorous activity.

^d The HSE 2012 questionnaire asked, for specific types of occupational activities, on how many of the days worked in the last month they had been undertaken. This analysis uses that information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity.

^e Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^f Physical activity recommendations for those aged 16-18 are at least one hour of moderate or vigorous activity (MVPA) each day. As HSE participants of that age were given the adult questionnaire, which does not ask separately about each day, they have been included in this table assessed against the adult criteria.

Table 2.4

Summary activity levels (participation in at least moderate intensity activity), by BMI category, age and sex*Aged 16 and over with valid height and weight measurements*

2012

Summary activity level ^{a,b,c,d,e,f} within BMI category	Age group							Total %
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	
Men								
BMI less than 25 kg/m² (not overweight or obese)								
Meets aerobic guidelines	87	76	79	72	60	77	34	75
Some activity	5	9	7	6	8	11	18	8
Low activity	3	3	1	1	4	2	6	3
Inactive	5	13	13	20	28	10	42	14
BMI 25 to less than 30 kg/m² (overweight)								
Meets aerobic guidelines	84	84	76	73	60	63	43	71
Some activity	9	6	10	11	14	12	11	10
Low activity	1	1	4	4	4	3	7	3
Inactive	7	9	10	12	22	23	39	15
BMI 30 kg/m² or more (obese)								
Meets aerobic guidelines	[83]	82	60	65	41	50	42	59
Some activity	[7]	6	16	10	19	13	6	12
Low activity	[1]	2	9	5	8	5	4	6
Inactive	[9]	10	16	21	32	32	48	23
Women								
BMI less than 25 kg/m² (not overweight or obese)								
Meets aerobic guidelines	60	67	71	68	71	62	31	64
Some activity	12	10	11	12	9	15	17	12
Low activity	7	7	4	4	5	7	5	6
Inactive	20	16	14	16	14	17	47	18
BMI 25 to less than 30 kg/m² (overweight)								
Meets aerobic guidelines	61	59	66	68	58	65	20	58
Some activity	16	19	11	11	13	12	12	13
Low activity	6	6	7	4	5	3	11	6
Inactive	17	17	16	16	24	19	58	23
BMI 30 kg/m² or more (obese)								
Meets aerobic guidelines	55	58	62	51	41	40	17	48
Some activity	13	17	17	15	12	22	5	15
Low activity	8	4	6	6	10	6	5	7
Inactive	24	21	15	28	37	32	73	31

Continued...

Table 2.4

Table 2.4 continued

Aged 16 and over with valid height and weight measurements *2012*

Summary activity level ^{a,b,c,d,e,f} within BMI category	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<i>Bases (unweighted)</i>								
<i>Men</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	201	177	144	100	118	110	79	929
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	83	172	247	255	247	226	134	1364
<i>BMI 30 kg/m² or more (obese)</i>	42	60	125	162	165	162	73	789
<i>Women</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	250	273	289	250	180	163	119	1524
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	88	149	197	232	222	184	154	1226
<i>BMI 30 kg/m² or more (obese)</i>	60	118	153	197	169	170	99	966
<i>Bases (weighted)</i>								
<i>Men</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	334	269	177	112	115	78	64	1150
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	130	228	294	295	234	164	107	1452
<i>BMI 30 kg/m² or more (obese)</i>	65	86	157	195	160	116	58	837
<i>Women</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	331	281	272	221	159	122	95	1482
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	114	148	190	205	195	132	122	1107
<i>BMI 30 kg/m² or more (obese)</i>	70	113	151	177	151	123	79	864

^a For non-occupational activity, this is limited to bouts of at least 10 minutes.

^b Meets aerobic guidelines: At least 150 minutes moderately intensive physical activity (MPA) or 75 minutes vigorous activity (VPA) per week (pw) or an equivalent combination of these.

Some activity: 60-149 minutes MPA pw or 30-74 minutes VPA pw or an equivalent combination of these.

Low activity: 30-59 minutes MPA pw or 15-29 minutes VPA pw or an equivalent combination of these.

Inactive: Less than 30 minutes MPA pw or less than 15 minutes VPA pw or an equivalent combination of these.

^c This table includes moderate or vigorous occupational physical activity derived from the enhanced questionnaire, introduced in 2008. It includes relevant activities only if reported to have lasted for at least 10 minutes per day, and assumes that all occupational activity above light intensity was of moderate intensity, i.e. there was no sustained vigorous activity.

^d The HSE 2012 questionnaire asked, for specific types of occupational activities, on how many of the days worked in the last month they had been undertaken. This analysis uses that information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity.

^e Walking was included for participants of any age who reported at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^f Physical activity recommendations for those aged 16-18 are at least one hour of moderate or vigorous activity (MVPA) each day. As HSE participants of that age were given the adult questionnaire, which does not ask separately about each day, they have been included in this table assessed against the adult criteria.

Table 2.5

Trends in the proportion meeting previous physical activity recommendations (at least moderate intensity activity), 1997-2012, by age and sex

Aged 16 and over

1997, 1998, 2003, 2004, 2006, 2008, 2012

Proportion meeting previous physical activity recommendations ^{a,b}	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
1997	49	41	37	32	23	12	7	32
1998	53	45	41	34	30	14	6	34
2003	52	44	41	38	32	17	8	36
2004	56	46	41	37	32	18	8	37
2006	53	52	46	38	35	21	9	40
2008	57	54	48	43	33	21	9	42
2012	59	55	47	44	33	26	11	43
Women								
1997	26	26	29	24	19	8	5	21
1998	28	28	28	25	18	9	3	21
2003	30	29	30	31	23	13	3	24
2004	32	30	32	30	20	14	4	25
2006	33	36	35	34	27	16	4	28
2008	38	39	37	34	28	18	6	31
2012	34	38	42	38	31	22	8	32
<i>Bases (unweighted)</i>								
<i>Men</i>								
1997	492	739	740	694	535	455	243	3898
1998	875	1338	1305	1289	987	837	562	7193
2003	744	1024	1260	1098	1097	807	551	6581
2004	291	446	535	439	508	378	276	2873
2006	649	860	1181	1049	1123	415	284	5561
2008	772	953	1218	1098	1184	874	648	6747
2012	375	483	589	613	617	591	381	3649
<i>Women</i>								
1997	560	916	833	806	585	545	439	4684
1998	1006	1630	1573	1484	1148	967	907	8715
2003	886	1279	1615	1278	1304	948	900	8210
2004	364	550	746	626	621	482	429	3818
2006	792	1146	1490	1279	1269	463	430	6869
2008	919	1220	1513	1371	1367	1000	947	8337
2012	462	687	765	810	680	634	528	4566
<i>Bases (weighted)^c</i>								
<i>Men</i>								
2003	1044	1272	1412	1180	1037	731	501	7177
2004	485	556	647	530	477	329	231	3256
2006	1040	1127	1354	1122	1012	694	496	6845
2008	1134	1211	1411	1207	1087	725	539	7314
2012	600	693	719	716	591	425	305	4049
<i>Women</i>								
2003	1029	1279	1437	1199	1071	813	782	7611
2004	472	563	653	541	491	364	353	3436
2006	1011	1157	1375	1141	1050	768	798	7300
2008	1090	1216	1432	1230	1124	800	785	7678
2012	594	698	729	717	608	460	422	4228

^a 30 minutes or more per day of at least moderate intensity on at least five days per week.

^b To allow comparison with results from previous years, episodes of activity of less than 30 minutes have been excluded, and occupational activity has been included in the same way as in earlier years, i.e. without using the additional data from the enhanced questionnaire introduced in 2008. Results therefore differ from those presented in Table 2.1, which uses minimum bout duration of 10 minutes, the current recommendations, and the additional occupational data obtained in HSE 2012.

^c Data before 2003 were not weighted for non-response.

Table 2.6

Number of days' participation in different activities in the last four weeks, by age and sex

Aged 16 and over

2012

Days of participation in the last 4 weeks (at least 10 minutes)	Age group							Total %
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	75+ %	
Men								
Heavy housework								
None	63	48	48	47	53	53	62	52
Any	37	52	52	53	47	47	38	48
1 to 3 days	19	26	26	29	22	21	17	24
4 to 11 days	15	23	22	20	22	20	17	20
12 to 19 days	3	1	3	1	2	3	1	2
20 days or more	1	2	2	3	1	3	3	2
Mean number of days ^a	1.7	2.5	2.4	2.4	2.2	2.7	2.1	2.3
Standard error of the mean	0.21	0.22	0.17	0.21	0.18	0.22	0.25	0.08
Median ^a	0.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0
Heavy manual/gardening/DIY^b								
None	85	80	74	70	67	64	80	74
Any	15	20	26	30	33	36	20	26
1 to 3 days	10	13	18	18	17	14	10	15
4 to 11 days	5	6	8	10	13	16	8	9
12 to 19 days	1	0	-	1	1	2	3	1
20 days or more	0	1	1	1	1	3	1	1
Mean number of days ^a	0.5	0.8	0.9	1.1	1.5	2.2	1.1	1.1
Standard error of the mean	0.10	0.14	0.12	0.11	0.15	0.20	0.21	0.06
Median ^a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walking^c								
None	41	46	54	56	65	53	69	54
Any	59	54	46	44	35	47	31	46
1 to 3 days	5	5	4	5	4	3	5	5
4 to 11 days	13	11	13	14	9	11	8	12
12 to 19 days	7	9	5	5	6	7	4	6
20 days or more	35	28	25	20	16	26	13	24
Mean number of days ^a	10.7	9.5	7.9	6.8	5.6	8.6	4.7	7.9
Standard error of the mean	0.62	0.64	0.49	0.41	0.43	0.45	0.49	0.22
Median ^a	5.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
Sports and exercise								
None	24	30	38	53	67	67	80	48
Any	76	70	62	47	33	33	20	52
1 to 3 days	7	13	10	7	8	7	2	8
4 to 11 days	19	20	22	15	11	12	7	16
12 to 19 days	14	11	11	8	5	6	4	9
20 days or more	36	25	18	17	9	8	7	19
Mean number of days ^a	13.0	9.8	8.1	6.7	4.0	3.9	2.8	7.4
Standard error of the mean	0.66	0.58	0.47	0.40	0.34	0.33	0.38	0.22
Median ^a	11.0	4.0	4.0	0.0	0.0	0.0	0.0	1.0
Any non-occupational physical activity^{b,d}								
None	7	11	10	17	26	23	37	17
Any	93	89	90	83	74	77	63	83
1 to 3 days	5	7	10	12	13	8	11	9
4 to 11 days	16	17	21	21	23	17	19	19
12 to 19 days	10	13	12	12	9	12	10	11
20 days or more	61	53	47	39	29	40	23	43
Mean number of days ^a	19.4	17.3	15.6	13.7	10.8	13.8	9.0	14.7
Standard error of the mean	0.58	0.62	0.49	0.48	0.49	0.49	0.56	0.25
Median ^a	27.0	21.0	17.0	12.0	6.0	12.0	4.0	14.0

^a Mean and median are based on all participants interviewed including those who reported no participation.

^b In 2008 new questions on occupational activity were introduced. In previous years, heavy manual/gardening/DIY included occupational activity but since 2008, this table has been limited to non-occupational activity.

^c Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^d Includes Heavy housework; Heavy manual/gardening/DIY; Walking; Sports and exercise. Occupational activity is shown separately in Table 2.8.

^e Bases shown here are for any non-occupational physical activity. Other bases are of a similar magnitude.

Continued...

Table 2.6 continued

Aged 16 and over

2012

Days of participation in the last 4 weeks (at least 10 minutes)	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Women								
Heavy housework								
None	52	34	28	35	38	44	72	41
Any	48	66	72	65	62	56	28	59
1 to 3 days	24	27	29	25	28	23	12	25
4 to 11 days	20	31	33	30	26	25	13	26
12 to 19 days	1	3	5	4	4	3	2	3
20 days or more	4	5	5	6	4	4	2	5
Mean number of days ^a	2.5	3.9	4.4	4.2	3.6	3.4	1.7	3.5
Standard error of the mean	0.24	0.21	0.23	0.24	0.21	0.25	0.20	0.09
Median ^a	0.0	2.0	3.0	2.0	2.0	1.0	0.0	2.0
Heavy manual/gardening/DIY^b								
None	96	94	87	86	83	84	96	89
Any	4	6	13	14	17	16	4	11
1 to 3 days	3	5	9	8	10	8	3	7
4 to 11 days	1	1	3	5	6	6	1	3
12 to 19 days	-	0	0	1	1	1	1	0
20 days or more	-	0	0	1	1	1	0	0
Mean number of days ^a	0.1	0.2	0.4	0.7	0.8	0.9	0.2	0.5
Standard error of the mean	0.03	0.06	0.06	0.09	0.11	0.12	0.07	0.03
Median ^a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walking^c								
None	62	63	57	63	68	51	77	63
Any	38	37	43	37	32	49	23	37
1 to 3 days	3	2	3	5	1	5	3	3
4 to 11 days	6	8	8	7	6	12	7	8
12 to 19 days	6	4	5	5	5	8	3	5
20 days or more	23	23	27	21	19	24	9	21
Mean number of days ^a	7.5	7.0	8.2	6.6	6.2	8.4	3.3	6.9
Standard error of the mean	0.60	0.47	0.45	0.42	0.40	0.46	0.34	0.19
Median ^a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sports and exercise								
None	38	48	45	56	61	65	87	55
Any	62	52	55	44	39	35	13	45
1 to 3 days	14	11	12	9	9	7	2	10
4 to 11 days	21	18	20	17	14	16	8	17
12 to 19 days	9	9	11	9	7	6	1	8
20 days or more	19	14	12	9	9	6	2	11
Mean number of days ^a	7.8	6.2	6.3	5.0	4.4	3.5	1.1	5.2
Standard error of the mean	0.62	0.38	0.35	0.28	0.31	0.28	0.18	0.17
Median ^a	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0
Any non-occupational physical activity^{b,d}								
None	15	14	12	16	22	21	54	20
Any	85	86	88	84	78	79	46	80
1 to 3 days	14	11	11	11	14	10	8	11
4 to 11 days	19	25	23	24	21	20	18	22
12 to 19 days	9	11	12	11	9	11	6	10
20 days or more	43	39	42	38	34	38	14	37
Mean number of days ^a	14.4	13.9	15.0	13.4	12.2	13.2	5.7	12.9
Standard error of the mean	0.64	0.49	0.42	0.41	0.46	0.50	0.41	0.22
Median ^a	12.0	12.0	13.0	10.0	8.0	10.0	0.0	9.0

^a Mean and median are based on all participants interviewed including those who reported no participation.

^b In 2008 new questions on occupational activity were introduced. In previous years, heavy manual/gardening/DIY included occupational activity but since 2008, this table has been limited to non-occupational activity.

^c Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^d Includes Heavy housework; Heavy manual/gardening/DIY; Walking; Sports and exercise. Occupational activity is shown separately in Table 2.8.

^e Bases shown here are for any non-occupational physical activity. Other bases are of a similar

Continued...

Table 2.6 continued

Aged 16 and over								2012
Days of participation in the last 4 weeks (at least 10 minutes)	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<i>Bases (unweighted)^e</i>								
Men	374	483	589	613	617	591	379	3646
Women	462	687	765	810	680	633	527	4564
<i>Bases (weighted)^e</i>								
Men	599	693	719	716	591	425	303	4046
Women	594	698	729	717	608	460	421	4226

- ^a Mean is based on all participants interviewed including those who reported no participation.
- ^b In 2008 new questions on occupational activity were introduced. In previous years, heavy manual/gardening/DIY included occupational activity but since 2008, this table has been limited to non-occupational activity.
- ^c Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.
- ^d Includes Heavy housework; Heavy manual/gardening/DIY; Walking; Sports and exercise. Occupational activity is shown separately in Table 2.8.
- ^e Bases shown here are for any non-occupational physical activity. Other bases are of a similar magnitude.

Table 2.7

Average time spent participating in different activities per week, by age and sex

Aged 16 and over

2012

Average time spent per week (at least 10 minutes a day)	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
Heavy housework^a								
No time	63	48	48	47	53	53	62	52
Less than 75 minutes	23	32	33	31	29	29	22	29
75 to 149 minutes	5	10	11	10	8	8	8	9
150 to 299 minutes	4	6	4	7	7	4	5	5
300 to 419 minutes	1	1	1	2	1	2	1	1
420 minutes or more	3	3	2	3	2	4	2	3
Mean number of minutes ^b	53.7	56.3	50.3	69.9	52.2	56.0	45.7	55.8
Standard error of the mean	15.24	6.61	4.84	10.16	6.60	5.45	7.06	3.48
Median	0.0	5.0	7.5	7.5	0.0	0.0	0.0	0.0
Heavy manual/gardening/DIY^{a,c}								
No time	85	80	74	70	67	64	80	74
Less than 75 minutes	6	9	11	11	9	10	8	9
75 to 149 minutes	4	4	6	7	10	7	4	6
150 to 299 minutes	2	3	4	8	7	8	3	5
300 to 419 minutes	2	2	1	2	2	2	2	2
420 minutes or more	2	3	3	3	4	8	4	4
Mean number of minutes ^b	26.7	56.4	48.7	60.3	72.7	112.0	44.1	58.6
Standard error of the mean	5.58	17.19	7.26	7.83	8.81	12.26	8.52	4.62
Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walking^{a,d}								
No time	41	46	54	56	65	53	69	54
Less than 75 minutes	12	12	12	12	8	10	13	11
75 to 149 minutes	11	13	9	9	6	5	4	9
150 to 299 minutes	16	15	12	10	8	10	5	11
300 to 419 minutes	6	4	2	2	3	4	2	3
420 minutes or more	15	10	11	10	10	18	6	11
Mean number of minutes ^b	199.6	166.7	131.3	163.9	162.3	199.1	101.8	162.7
Standard error of the mean	21.68	37.74	15.18	30.06	28.63	15.51	18.89	10.28
Median	37.5	20.0	0.0	0.0	0.0	0.0	0.0	0.0
Sports and exercise^e								
No time	24	30	38	53	67	67	80	48
Less than 75 minutes	11	21	18	12	15	14	9	15
75 to 149 minutes	13	14	16	11	6	7	6	11
150 to 299 minutes	15	16	14	12	7	5	2	11
300 to 419 minutes	13	7	5	3	3	3	1	6
420 minutes or more	23	12	8	9	3	4	1	9
Mean number of minutes ^b	282.1	153.8	120.6	114.2	52.7	60.5	29.2	125.9
Standard error of the mean	19.20	11.05	8.25	9.62	5.39	7.16	6.99	4.85
Median	150.0	67.5	45.0	0.0	0.0	0.0	0.0	11.3
Any non-occupational physical activity^{e,f}								
No time	7	11	10	17	26	23	37	17
Less than 75 minutes	9	10	15	14	16	13	19	13
75 to 149 minutes	9	10	14	12	11	8	9	11
150 to 299 minutes	15	25	20	20	15	14	15	18
300 to 419 minutes	13	11	10	8	9	7	5	9
420 minutes or more	46	32	30	30	23	36	15	31
150 minutes or more	75	69	60	58	47	56	35	59
Mean number of minutes ^b	562.5	401.6	345.5	379.0	320.6	425.3	216.1	388.2
Standard error of the mean	34.74	29.70	19.65	22.20	22.96	22.76	24.37	10.70
Median	362.5	240.0	210.0	195.0	120.0	195.0	35.0	210.0

^a These activities were considered to be of moderate intensity.

^b Mean and median are based on all participants interviewed including those who reported no participation.

^c In 2008 new questions on occupational activity were introduced. In previous years, heavy manual/gardening/DIY included occupational activity but since 2008, this table has been limited to non-occupational activity.

^d Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^e This category includes activities of both moderate and vigorous intensity. Minutes of moderate and vigorous intensity sports participation are assumed equivalent in this table. Therefore some individuals in the 75 to 149 minutes category will also have met the current physical activity guidelines, as shown in Table 2.1, even without considering occupational activity.

^f Includes Heavy housework; Heavy manual/gardening/DIY; Walking; Sports and exercise. Occupational activity is shown separately in Table 2.8.

^g Bases shown here are for any non-occupational physical activity. Other bases are of a similar magnitude.

Continued...

Table 2.7 continued

Aged 16 and over								2012
Average time spent per week (at least 10 minutes a day)	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Women								
Heavy housework^a								
No time	52	34	28	35	38	44	72	41
Less than 75 minutes	29	32	34	28	28	29	17	29
75 to 149 minutes	7	13	15	13	13	9	4	11
150 to 299 minutes	4	11	11	11	11	9	4	9
300 to 419 minutes	3	4	5	5	4	2	1	4
420 minutes or more	5	7	8	8	6	6	2	6
Mean number of minutes ^b	67.7	115.1	124.9	125.2	102.0	98.1	37.7	100.4
Standard error of the mean	8.39	9.11	9.50	9.11	8.20	10.62	5.41	3.53
Median	0.0	30.0	45.0	30.0	30.0	15.0	0.0	17.5
Heavy manual/gardening/DIY^{a,c}								
No time	96	94	87	86	83	84	96	89
Less than 75 minutes	1	3	7	6	8	6	3	5
75 to 149 minutes	1	1	2	3	3	4	1	2
150 to 299 minutes	1	1	3	3	3	2	1	2
300 to 419 minutes	0	1	1	1	1	1	0	1
420 minutes or more	0	0	1	2	2	3	0	1
Mean number of minutes ^b	6.0	7.5	20.5	29.6	30.2	35.4	5.9	19.4
Standard error of the mean	1.93	1.83	4.54	5.00	4.58	5.04	2.16	1.61
Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walking^{a,d}								
No time	62	63	57	63	68	51	77	63
Less than 75 minutes	8	7	7	8	4	12	10	8
75 to 149 minutes	8	6	7	6	4	6	4	6
150 to 299 minutes	12	12	11	9	8	11	4	10
300 to 419 minutes	4	3	5	4	4	4	1	4
420 minutes or more	7	9	12	10	12	15	4	10
Mean number of minutes ^b	111.2	110.3	202.0	193.3	151.5	184.5	52.5	148.6
Standard error of the mean	13.85	11.26	29.62	55.92	20.71	18.74	11.61	11.83
Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sports and exercise^e								
No time	38	48	45	56	61	65	87	55
Less than 75 minutes	24	21	23	18	18	17	9	19
75 to 149 minutes	13	11	13	10	9	9	2	10
150 to 299 minutes	15	10	11	9	8	6	2	9
300 to 419 minutes	4	4	3	3	3	2	1	3
420 minutes or more	6	6	5	3	3	1	-	4
Mean number of minutes ^b	114.1	92.8	92.8	70.2	55.4	46.0	10.0	73.2
Standard error of the mean	11.86	7.47	7.47	6.38	4.80	4.46	1.64	3.16
Median	30.0	7.5	18.8	0.0	0.0	0.0	0.0	0.0
Any non-occupational physical activity^{e,f}								
No time	15	14	12	16	22	21	54	20
Less than 75 minutes	20	19	16	15	17	16	21	18
75 to 149 minutes	12	12	12	13	10	11	8	12
150 to 299 minutes	18	19	20	18	15	16	7	17
300 to 419 minutes	9	9	10	9	8	7	3	8
420 minutes or more	26	27	30	28	27	29	7	26
150 minutes or more	53	55	60	55	51	52	17	51
Mean number of minutes ^b	301.0	326.0	407.7	363.8	326.3	356.5	104.5	324.3
Standard error of the mean	20.32	17.54	22.19	23.18	19.22	23.79	13.08	8.63
Median	167.5	180.0	224.0	183.8	150.0	157.5	0.0	150.0

^a These activities were considered to be of moderate intensity.

^b Mean and median are based on all participants interviewed including those who reported no participation.

^c In 2008 new questions on occupational activity were introduced. In previous years, heavy manual/gardening/DIY included occupational activity but since 2008, this table has been limited to non-occupational activity.

^d Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^e This category includes activities of both moderate and vigorous intensity. Minutes of moderate and vigorous intensity sports participation are assumed equivalent in this table. Therefore some individuals in the 75 to 149 minutes category will also have met the current physical activity guidelines, as shown in Table 2.1, even without considering occupational activity.

^f Includes Heavy housework; Heavy manual/gardening/DIY; Walking; Sports and exercise. Occupational activity is shown separately in Table 2.8.

^g Bases shown here are for any non-occupational physical activity. Other bases are of a similar magnitude.

Continued...

Table 2.7 continued

Aged 16 and over								2012
Average time spent per week (at least 10 minutes a day)	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<i>Bases (unweighted)^g</i>								
Men	374	483	589	613	617	591	379	3646
Women	462	687	765	810	680	633	527	4564
<i>Bases (weighted)^g</i>								
Men	599	693	719	716	591	425	303	4046
Women	594	698	729	717	608	460	421	4226

^a These activities were considered to be of moderate intensity.

^b Mean and median are based on all participants interviewed including those who reported no participation.

^c In 2008 new questions on occupational activity were introduced. In previous years, heavy manual/gardening/DIY included occupational activity but since 2008, this table has been limited to non-occupational activity.

^d Walking was included for participants of any age who reported walking at a fairly brisk or fast pace, and for those aged 65 and over for whom the pace of walking was slow or average but for whom the effort of walking for 10 minutes or more was usually enough to make them breathe faster, feel warmer or sweat.

^e This category includes activities of both moderate and vigorous intensity. Minutes of moderate and vigorous intensity sports participation are assumed equivalent in this table. Therefore some individuals in the 75 to 149 minutes category will also have met the current physical activity guidelines, as shown in Table 2.1, even without considering occupational activity.

^f Includes Heavy housework; Heavy manual/gardening/DIY; Walking; Sports and exercise. Occupational activity is shown separately in Table 2.8.

^g Bases shown here are for any non-occupational physical activity. Other bases are of a similar magnitude.

Table 2.8

Average time spent participating in occupational activities per day worked in the last four weeks, by age and sex

Aged 16-74 who reported working in the last four weeks, including unpaid work 2012

Average time spent per day (at least 10 minutes per day)	Age group						Total
	16-24	25-34	35-44	45-54	55-64	65-74	
	%	%	%	%	%	%	%
Men							
Sitting or standing^a							
No time	23	16	7	9	10	14	12
Any time	77	84	93	91	90	86	88
Less than 1 hour	5	3	2	2	1	4	2
1 to less than 3 hours	14	9	10	14	12	18	12
3 to less than 5 hours	13	11	16	16	19	16	15
5 to less than 7 hours	16	21	23	24	22	28	22
7 hours or more	30	40	42	36	36	20	37
Mean number of hours	4.0	5.1	5.5	5.2	5.1	4.3	5.1
Standard error of the mean	0.26	0.17	0.14	0.14	0.15	0.28	0.08
Median ^b	4.0	6.0	6.0	6.0	5.5	4.5	6.0
Walking around at work^a							
No time	39	46	44	40	46	54	43
Any time	61	54	56	60	54	46	57
Less than 1 hour	6	8	7	7	7	9	7
1 to less than 3 hours	26	19	23	25	24	20	23
3 to less than 5 hours	11	13	13	14	12	9	13
5 to less than 7 hours	9	8	7	8	8	4	8
7 hours or more	9	7	6	6	4	3	6
Mean number of hours	2.1	1.8	1.7	1.8	1.6	1.2	1.8
Standard error of the mean	0.19	0.14	0.11	0.11	0.11	0.19	0.06
Median ^b	1.0	0.5	0.8	1.0	0.5	0.0	0.8
Climbing stairs or ladders^{a,c}							
No time	60	60	54	53	59	66	57
Any time	40	40	46	47	41	34	43
Less than 1 hour	22	27	31	31	30	27	29
1 to less than 3 hours	16	11	13	13	8	6	12
3 to less than 5 hours	2	2	2	3	1	1	2
5 hours or more	-	1	1	1	1	-	1
Mean number of hours	0.4	0.3	0.4	0.4	0.3	0.2	0.3
Standard error of the mean	0.06	0.05	0.04	0.04	0.04	0.03	0.02
Median ^b	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lifting, carrying, or moving heavy loads^{a,c}							
No time	39	50	58	53	60	65	53
Any time	61	50	42	47	40	35	47
Less than 1 hour	20	18	19	18	15	18	18
1 to less than 3 hours	22	18	15	17	15	11	17
3 to less than 5 hours	10	5	6	6	6	5	6
5 hours or more	8	9	3	5	5	1	6
Mean number of hours	1.4	1.1	0.7	0.9	0.8	0.5	0.9
Standard error of the mean	0.17	0.13	0.06	0.09	0.09	0.10	0.05
Median ^b	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Moderate or vigorous occupational activity^{c,d}							
Mean number of hours per day worked	5.4	3.3	3.3	4.3	4.0	2.0	3.8
Standard error of the mean	0.93	0.47	0.39	0.49	0.51	0.60	0.24
Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Self-rated physical activity at work^e							
Very or fairly physically active	79	64	55	57	58	57	61
Not very, not at all physically active	21	36	45	43	42	43	39

^a All self-reported activity at work has been included in these categories, regardless of the person's occupation, and therefore the likely intensity of the activity.

^b Median is based on all participants aged 16-74 who reported working in the last four weeks, including those in unpaid work.

^c The HSE 2012 questionnaire asked, for specific types of occupational activities (climbing, and lifting), on how many of the days worked in the last month they had been undertaken. This analysis uses this information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity. The results are therefore not directly comparable with those presented in Table 2.9 in the HSE 2008 report.

^d Occupational activity has been classified as being of at least moderate intensity based on the participant's occupation (as detailed in endnote 55).

^e Based on all participants who reported working in the last four weeks, including those in unpaid work.

^f Bases shown here are for self-rated physical activity at work. Other bases are of a similar magnitude.

Continued...

Table 2.8 continued

Aged 16-74 who reported working in the last four weeks, including unpaid work 2012

Average time spent per day (at least 10 minutes per day)	Age group						Total %
	16-24 %	25-34 %	35-44 %	45-54 %	55-64 %	65-74 %	
Women							
Sitting or standing^a							
No time	11	9	9	9	10	13	9
Any time	89	91	91	91	90	87	91
Less than 1 hour	4	1	5	2	3	4	3
1 to less than 3 hours	17	9	12	13	15	17	13
3 to less than 5 hours	21	16	19	24	22	27	20
5 to less than 7 hours	23	24	25	26	27	30	25
7 hours or more	24	41	30	26	23	9	29
Mean number of hours	4.2	5.4	4.7	4.7	4.4	3.8	4.7
Standard error of the mean	0.20	0.15	0.14	0.11	0.14	0.26	0.07
Median ^b	4.5	6.0	5.0	5.0	4.5	4.0	5.0
Walking around at work^a							
No time	48	50	44	43	43	44	46
Any time	52	50	56	57	57	56	54
Less than 1 hour	9	10	9	7	7	13	8
1 to less than 3 hours	13	19	22	20	27	25	20
3 to less than 5 hours	13	8	11	18	10	10	12
5 to less than 7 hours	12	8	7	7	9	5	8
7 hours or more	6	5	7	5	4	4	5
Mean number of hours	1.9	1.5	1.7	1.8	1.6	1.5	1.7
Standard error of the mean	0.19	0.12	0.12	0.11	0.12	0.23	0.06
Median ^b	0.5	0.0	0.5	0.8	0.8	0.5	0.5
Climbing stairs or ladders^{a,c}							
No time	66	67	66	62	61	75	65
Any time	34	33	34	38	39	25	35
Less than 1 hour	25	25	27	28	30	18	27
1 to less than 3 hours	5	7	7	8	9	7	7
3 to less than 5 hours	1	0	1	1	-	-	1
5 hours or more	2	1	0	-	-	-	0
Mean number of hours	0.3	0.2	0.2	0.2	0.2	0.1	0.2
Standard error of the mean	0.08	0.04	0.02	0.02	0.02	0.03	0.02
Median ^b	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lifting, carrying, or moving heavy loads^{a,c}							
No time	65	77	68	65	69	75	69
Any time	35	23	32	35	31	25	31
Less than 1 hour	18	14	18	17	17	11	17
1 to less than 3 hours	8	7	10	14	10	11	10
3 to less than 5 hours	6	2	3	2	3	2	3
5 hours or more	3	1	1	2	0	1	1
Mean number of hours	0.6	0.3	0.3	0.4	0.3	0.3	0.4
Standard error of the mean	0.09	0.04	0.04	0.04	0.05	0.10	0.02
Median ^b	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moderate or vigorous occupational activity^{c,d}							
Mean number of hours per day worked	1.6	1.6	1.9	2.0	1.7	0.7	1.7
Standard error of the mean	0.43	0.30	0.28	0.26	0.33	0.32	0.14
Median	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Self-rated physical activity at work^e							
Very or fairly physically active	62	48	57	58	59	66	57
Not very, not at all physically active	38	52	43	42	41	34	43

^a All self-reported activity at work has been included in these categories, regardless of the person's occupation, and therefore the likely intensity of the activity.

^b Median is based on all participants aged 16-74 who reported working in the last four weeks, including those in unpaid work.

^c The HSE 2012 questionnaire asked, for specific types of occupational activities (climbing, and lifting), on how many of the days worked in the last month they had been undertaken. This analysis uses this information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity. The results are therefore not directly comparable with those presented in Table 2.9 in the HSE 2008 report.

^d Occupational activity has been classified as being of at least moderate intensity based on the participant's occupation (as detailed in endnote 55).

^e Based on all participants who reported working in the last four weeks, including those in unpaid work.

^f Bases shown here are for self-rated physical activity at work. Other bases are of a similar magnitude.

Continued...

Table 2.8 continued

Aged 16-74 who reported working in the last four weeks, including unpaid work 2012

Average time spent per day (at least 10 minutes per day)	Age group						Total
	16-24	25-34	35-44	45-54	55-64	65-74	
	%	%	%	%	%	%	
<i>Bases (unweighted)^f</i>							
Men	187	413	501	496	396	144	2137
Women	238	452	553	623	362	100	2328
<i>Bases (weighted)^f</i>							
Men	293	594	605	579	384	105	2560
Women	315	485	533	554	329	73	2289

^a All self-reported activity at work has been included in these categories, regardless of the person's occupation, and therefore the likely intensity of the activity.

^b Median is based on all participants aged 16-74 who reported working in the last four weeks, including those in unpaid work.

^c The HSE 2012 questionnaire asked, for specific types of occupational activities (climbing, and lifting), on how many of the days worked in the last month they had been undertaken. This analysis uses this information, to provide the most accurate estimate of total moderate and vigorous intensity physical activity. The results are therefore not directly comparable with those presented in Table 2.9 in the HSE 2008 report.

^d Occupational activity has been classified as being of at least moderate intensity based on the participant's occupation (as detailed in endnote 55).

^e Based on all participants who reported working in the last four weeks, including those in unpaid work.

^f Bases shown here are for self-rated physical activity at work. Other bases are of a similar magnitude.

Table 2.9

Number of days' participation in muscle-strengthening activities^a in the last four weeks, by age and sex

Aged 16 and over

2012

Days of participation in the last 4 weeks (at least 10 minutes)	Age group								Total
	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	
	%	%	%	%	%	%	%	%	%
Men									
None	25	32	39	54	66	68	81	92	49
Any	75	68	61	46	34	32	19	8	51
1 to 3 days	7	12	10	7	8	6	3	1	8
4 to 7 days	10	12	12	8	7	7	5	3	9
8 to 11 days	9	8	10	6	5	5	3	-	7
12 to 15 days	8	9	5	5	3	3	3	1	5
16 days or more	41	27	24	19	11	10	6	3	21
8 or more days	57	44	39	31	19	19	12	4	34
Mean number of days ^b	12.7	9.5	8.0	6.5	3.9	3.8	2.4	0.9	7.2
Standard error of the mean	0.67	0.57	0.47	0.40	0.33	0.34	0.36	0.37	0.22
Median ^b	10.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0	1.0
Women									
None	39	49	46	56	61	68	88	94	56
Any	61	51	54	44	39	32	12	6	44
1 to 3 days	14	11	12	9	8	5	2	2	9
4 to 7 days	10	11	13	10	9	11	6	4	10
8 to 11 days	10	8	7	7	5	5	2	-	7
12 to 15 days	5	5	6	6	5	4	0	-	5
16 days or more	21	16	16	13	10	6	1	-	13
8 or more days	36	29	29	25	21	15	4	-	24
Mean number of days ^b	7.4	5.8	6.1	5.0	4.3	3.1	0.9	0.2	4.9
Standard error of the mean	0.61	0.37	0.35	0.28	0.31	0.25	0.17	0.07	0.17
Median ^b	3.0	1.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Bases (unweighted)									
Men	378	483	592	614	624	593	304	83	3671
Women	464	692	766	816	684	635	396	138	4591
Bases (weighted)									
Men	604	693	723	717	598	427	243	67	4071
Women	597	702	730	723	612	462	317	110	4252

^a See endnote 60 for the definition of muscle-strengthening activities.

^b Mean and median are based on all participants interviewed, including those who reported no participation.

Table 2.10

Proportion meeting current physical activity recommendations, by age and sex

Aged 16 and over

2012

Meeting the recommendations for moderate or vigorous activity ^{a,b} /for muscle-strengthening activities ^{c,d}	Age group								Total
	16-24	25-34	35-44	45-54	55-64	65-74	75-85	85+	
	%	%	%	%	%	%	%	%	%
Men									
Meets both guidelines	57	43	38	30	18	17	10	2	33
Meets aerobic (MVPA) ^e but not muscle-strengthening guidelines	26	33	33	40	37	41	34	9	34
Meets muscle-strengthening but not MVPA ^e guidelines	0	0	1	1	1	2	2	2	1
Meets neither guideline	16	24	28	29	44	40	55	87	32
Women									
Meets both guidelines	34	28	29	24	19	13	2	-	23
Meets aerobic (MVPA) ^e but not muscle-strengthening guidelines	23	34	37	38	36	40	18	8	33
Meets muscle-strengthening but not MVPA ^e guidelines	3	1	1	2	2	2	1	-	2
Meets neither guideline	40	38	33	37	43	45	78	92	43
<i>Bases (unweighted)</i>									
<i>Men</i>	373	478	584	609	616	587	297	82	3626
<i>Women</i>	459	682	759	806	675	629	390	136	4536
<i>Bases (weighted)</i>									
<i>Men</i>	597	687	713	711	590	421	237	66	4022
<i>Women</i>	590	693	723	713	604	457	312	108	4201

^a At least 150 minutes moderately intensive physical activity (MPA) or 75 minutes vigorous activity (VPA) per week (pw) or an equivalent combination of these.

^b For moderate or vigorous activity, this table includes occupational activity derived from the enhanced questionnaire introduced in 2008.

^c Muscle-strengthening activities should be undertaken on at least two days per week, on average.

^d See endnote 60 for the definition of muscle-strengthening activities.

^e MVPA: moderate or vigorous physical activity.

Table 2.11

Number of days' participation in physical activity to improve balance and co-ordination^a in the last four weeks by adults aged 65 and over, by activity level, age and sex

Aged 65 and over *2012*

Days of participation in the last 4 weeks (at least 10 minutes) ^b within activity level ^c	Age group		Total %
	65-74 %	75+ %	
Men			
Inactive^d			
None	95	96	95
Any	5	4	5
1 to 3 days	1	0	0
4 to 7 days	1	1	1
8 to 11 days	2	-	1
12 to 15 days	1	-	0
16 days or more	1	2	2
<i>8 or more days</i>	4	2	3
Mean number of days ^e	0.5	0.7	0.6
Standard error of the mean	0.22	0.30	0.19
Median ^e	0.0	0.0	0.0
Low or some activity^d			
None	78	76	77
Any	22	24	23
1 to 3 days	8	4	6
4 to 7 days	10	5	8
8 to 11 days	1	-	0
12 to 15 days	2	3	3
16 days or more	1	12	6
<i>8 or more days</i>	4	15	9
Mean number of days ^e	1.4	3.4	2.3
Standard error of the mean	0.41	0.92	0.47
Median ^e	0.0	0.0	0.0
Meets MVPA guidelines^d			
None	51	57	53
Any	49	43	47
1 to 3 days	8	4	7
4 to 7 days	9	10	10
8 to 11 days	9	10	9
12 to 15 days	8	8	8
16 days or more	15	12	14
<i>8 or more days</i>	31	29	31
Mean number of days ^e	5.8	5.4	5.7
Standard error of the mean	0.47	0.79	0.41
Median ^e	0.0	0.0	0.0
Bases (unweighted)			
<i>Men</i>			
Inactive	160	175	335
Low or some activity	89	67	156
Meets MVPA guidelines	338	136	474
Bases (weighted)			
<i>Men</i>			
Inactive	114	140	254
Low or some activity	62	53	115
Meets MVPA guidelines	246	109	355

^a See endnote 61 for definition of activities that improve balance and co-ordination.

^b The recommendation to undertake physical activity at least twice a week to improve balance and co-ordination is aimed at adults aged 65 and over at risk of falls. It is likely that those who are inactive or have low activity levels are at higher risk of falling than are those older adults who take part in more, regular physical activity. This table has therefore provided results by activity category.

^c For categorisation of MVPA purposes, this table includes moderate or vigorous occupational physical activity derived from the enhanced questionnaire introduced in 2008. It is limited to individuals reporting relevant activities of at least 10 minutes per day, and assumes that all activity above light intensity was of moderate intensity, i.e. there was no sustained vigorous activity. Occupational activity has not been used to assess participation in activities to improve balance and co-ordination.

^d Inactive: Less than 30 minutes moderate intensity physical activity (MPA) per week (pw) or less than 15 minutes vigorous activity (VPA) pw or an equivalent combination of these.

Low activity: 30-59 minutes MPA pw or 15-29 minutes VPA pw or an equivalent combination of these.

Some activity: 60-149 minutes MPA pw or 30-74 minutes VPA pw or an equivalent combination of these.

Meets MVPA guidelines: At least 150 minutes MPA pw or 75 minutes VPA pw or an equivalent combination of these.

^e Mean and median are based on all participants interviewed including those who reported no participation.

Continued...

Table 2.11 continued

Aged 65 and over				2012
Days of participation in the last 4 weeks (at least 10 minutes) ^b within activity level ^c	Age group		Total	
	65-74	75+		
	%	%	%	
Women				
Inactive^d				
None	95	94	94	
Any	5	6	6	
1 to 3 days	3	1	1	
4 to 7 days	1	3	3	
8 to 11 days	1	1	1	
12 to 15 days	-	0	0	
16 days or more	-	1	1	
8 or more days	1	2	2	
Mean number of days ^e	0.2	0.5	0.4	
Standard error of the mean	0.08	0.15	0.10	
Median ^e	0.0	0.0	0.0	
Low or some activity^d				
None	73	82	77	
Any	27	18	23	
1 to 3 days	7	3	6	
4 to 7 days	8	8	8	
8 to 11 days	3	1	2	
12 to 15 days	2	1	2	
16 days or more	6	4	6	
8 or more days	12	7	10	
Mean number of days ^e	2.8	1.6	2.3	
Standard error of the mean	0.61	0.52	0.40	
Median ^e	0.0	0.0	0.0	
Meets MVPA guidelines^d				
None	54	66	57	
Any	46	34	43	
1 to 3 days	5	6	6	
4 to 7 days	16	15	16	
8 to 11 days	7	4	7	
12 to 15 days	7	1	6	
16 days or more	10	8	10	
8 or more days	25	13	22	
Mean number of days ^e	4.8	3.0	4.4	
Standard error of the mean	0.43	0.66	0.37	
Median ^e	0.0	0.0	0.0	
Bases (unweighted)				
Women				
Inactive	173	344	517	
Low or some activity	127	91	218	
Meets MVPA guidelines	329	92	421	
Bases (weighted)				
Women				
Inactive	124	275	400	
Low or some activity	94	72	167	
Meets MVPA guidelines	238	74	312	

^a See endnote 61 for definition of activities that improve balance and co-ordination.

^b The recommendation to undertake physical activity at least twice a week to improve balance and co-ordination is aimed at adults aged 65 and over at risk of falls. It is likely that those who are inactive or have low activity levels are at higher risk of falling than are those older adults who take part in more, regular physical activity. This table has therefore provided results by activity category.

^c For categorisation of MVPA purposes, this table includes moderate or vigorous occupational physical activity derived from the enhanced questionnaire introduced in 2008. It is limited to individuals reporting relevant activities of at least 10 minutes per day, and assumes that all activity above light intensity was of moderate intensity, i.e. there was no sustained vigorous activity. Occupational activity has not been used to assess participation in activities to improve balance and co-ordination.

^d Inactive: Less than 30 minutes moderate intensity physical activity (MPA) per week (pw) or less than 15 minutes vigorous activity (VPA) pw or an equivalent combination of these.

Low activity: 30-59 minutes MPA pw or 15-29 minutes VPA pw or an equivalent combination of these.

Some activity: 60-149 minutes MPA pw or 30-74 minutes VPA pw or an equivalent combination of these.

Meets MVPA guidelines: At least 150 minutes MPA pw or 75 minutes VPA pw or an equivalent combination of these.

^e Mean and median are based on all participants interviewed including those who reported no participation.

Continued...

Table 2.12

Average sedentary time per day, by age and sex

Aged 16 and over

2012

Average sedentary time per weekday, and weekend day	Age group								Total
	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	
	%	%	%	%	%	%	%	%	%
Men									
Watching TV									
Weekday									
Less than 2 hours	36	37	38	31	23	14	12	12	29
2 to less than 4 hours	42	49	48	49	46	40	37	35	45
4 hours or more	22	15	14	21	31	47	51	53	25
Mean number of hours ^a	2.5	2.3	2.3	2.6	3.1	3.8	3.9	4.0	2.8
Standard error of the mean	0.12	0.08	0.08	0.09	0.09	0.09	0.14	0.26	0.04
Median ^a	2.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0	2.0
Weekend day									
Less than 2 hours	31	26	25	22	19	13	13	13	22
2 to less than 4 hours	39	47	48	45	40	40	36	31	43
4 hours or more	30	27	27	33	41	47	51	56	35
Mean number of hours ^a	2.7	2.7	2.8	3.1	3.5	3.9	3.9	4.0	3.1
Standard error of the mean	0.12	0.10	0.09	0.09	0.09	0.10	0.13	0.26	0.04
Median ^a	2.0	2.0	2.0	3.0	3.0	3.0	4.0	4.0	3.0
Other sedentary time									
Weekday									
Less than 2 hours	30	48	61	62	53	43	41	37	50
2 to less than 4 hours	35	34	30	29	33	40	39	38	33
4 hours or more	35	19	9	8	14	16	21	25	17
Mean number of hours ^a	3.2	2.2	1.6	1.6	1.9	2.2	2.4	2.8	2.1
Standard error of the mean	0.16	0.11	0.07	0.07	0.08	0.08	0.12	0.27	0.05
Median ^a	2.5	2.0	1.0	1.0	1.5	2.0	2.0	2.0	2.0
Weekend day									
Less than 2 hours	31	40	50	51	50	39	40	31	44
2 to less than 4 hours	36	38	37	37	35	45	37	40	38
4 hours or more	33	22	13	13	15	16	24	29	19
Mean number of hours ^a	3.0	2.4	1.9	1.9	2.0	2.2	2.5	2.7	2.2
Standard error of the mean	0.15	0.11	0.08	0.08	0.08	0.08	0.12	0.26	0.04
Median ^a	2.0	2.0	2.0	1.5	1.5	2.0	2.0	2.0	2.0
Total sedentary time									
Weekday									
Less than 2 hours	5	7	13	8	5	2	1	5	7
2 to less than 4 hours	23	41	42	40	30	19	13	5	32
4 to less than 6 hours	28	29	29	32	34	32	30	30	30
6 hours or more	44	23	16	19	32	48	56	60	31
Mean number of hours ^a	5.7	4.5	3.9	4.2	5.0	6.0	6.4	6.7	4.9
Standard error of the mean	0.20	0.14	0.10	0.12	0.12	0.12	0.16	0.36	0.06
Median ^a	5.0	4.0	3.0	4.0	4.5	5.5	6.0	6.0	4.0
Weekend day									
Less than 2 hours	8	4	7	5	4	2	2	6	5
2 to less than 4 hours	20	26	29	26	21	18	13	5	23
4 to less than 6 hours	24	34	32	36	35	28	29	27	32
6 hours or more	49	36	31	32	40	52	56	62	40
Mean number of hours ^a	5.7	5.2	4.7	5.0	5.4	6.1	6.3	6.7	5.4
Standard error of the mean	0.19	0.15	0.11	0.12	0.12	0.13	0.17	0.34	0.06
Median ^a	5.5	4.5	4.0	4.5	5.0	6.0	6.0	6.5	5.0
Bases (unweighted)^b									
Men	377	485	593	613	623	596	305	84	3676
Bases (weighted)^b									
Men	603	696	724	716	596	429	244	68	4075

^a Mean and median are based on all participants interviewed including those who reported no participation.^b Bases shown here are watching TV, weekday. Other bases are of a similar magnitude.

Continued...

Table 2.12 continued

Aged 16 and over									2012
Average sedentary time per weekday, and weekend day	Age group								Total
	16-24	25-34	35-44	45-54	55-64	65-74	75-84	85+	
	%	%	%	%	%	%	%	%	%
Women									
Watching TV									
Weekday									
Less than 2 hours	31	39	42	31	22	13	9	10	29
2 to less than 4 hours	43	47	46	47	49	41	36	32	45
4 hours or more	26	14	12	21	29	46	55	59	26
Mean number of hours ^a	2.6	2.2	2.1	2.5	3.0	3.6	4.2	4.2	2.8
Standard error of the mean	0.10	0.06	0.06	0.07	0.08	0.08	0.14	0.21	0.03
Median ^a	2.0	2.0	2.0	2.0	3.0	3.0	4.0	4.0	2.0
Weekend day									
Less than 2 hours	26	26	27	22	18	14	12	12	21
2 to less than 4 hours	44	50	50	48	48	44	36	34	47
4 hours or more	30	24	23	30	34	43	52	54	32
Mean number of hours ^a	2.8	2.7	2.6	2.9	3.1	3.5	4.0	4.1	3.0
Standard error of the mean	0.11	0.07	0.07	0.07	0.08	0.08	0.14	0.21	0.03
Median ^a	2.0	2.0	2.0	2.5	3.0	3.0	4.0	4.0	3.0
Other sedentary time									
Weekday									
Less than 2 hours	31	56	64	60	54	43	41	34	51
2 to less than 4 hours	37	34	28	31	35	41	38	37	34
4 hours or more	32	10	8	10	11	16	21	28	15
Mean number of hours ^a	3.0	1.7	1.5	1.6	1.8	2.1	2.4	3.1	2.0
Standard error of the mean	0.15	0.06	0.06	0.06	0.07	0.07	0.11	0.26	0.04
Median ^a	2.0	1.0	1.0	1.0	1.5	2.0	2.0	2.0	1.5
Weekend day									
Less than 2 hours	30	45	56	52	49	44	42	33	46
2 to less than 4 hours	38	41	34	36	40	39	37	35	38
4 hours or more	32	13	10	12	11	17	21	32	16
Mean number of hours ^a	2.8	1.9	1.7	1.8	1.8	2.1	2.3	3.2	2.1
Standard error of the mean	0.13	0.06	0.06	0.07	0.06	0.07	0.11	0.27	0.03
Median ^a	2.0	2.0	1.0	1.5	2.0	2.0	2.0	2.0	2.0
Total sedentary time									
Weekday									
Less than 2 hours	4	10	14	10	6	2	2	2	8
2 to less than 4 hours	20	42	48	38	31	17	12	9	32
4 to less than 6 hours	34	31	23	32	35	38	31	26	31
6 hours or more	42	17	15	20	28	44	56	63	29
Mean number of hours ^a	5.6	4.0	3.6	4.2	4.7	5.7	6.6	7.2	4.7
Standard error of the mean	0.16	0.09	0.09	0.09	0.10	0.10	0.16	0.33	0.05
Median ^a	5.0	3.5	3.0	4.0	4.0	5.0	6.0	7.0	4.0
Weekend day									
Less than 2 hours	4	6	9	8	5	3	4	2	6
2 to less than 4 hours	20	28	34	30	22	19	11	10	24
4 to less than 6 hours	31	39	33	34	40	34	30	23	34
6 hours or more	45	27	24	29	33	45	56	65	35
Mean number of hours ^a	5.6	4.6	4.3	4.7	4.9	5.6	6.3	7.3	5.1
Standard error of the mean	0.15	0.09	0.09	0.11	0.10	0.11	0.17	0.33	0.05
Median ^a	5.0	4.0	4.0	4.0	5.0	5.0	6.0	7.0	5.0
Bases (unweighted)^b									
Women	466	694	767	817	685	638	396	137	4600
Bases (weighted)^b									
Women	599	704	731	724	613	464	317	109	4261

^a Mean and median are based on all participants interviewed including those who reported no participation.

^b Bases shown here are watching TV, weekday. Other bases are of a similar magnitude.

Table 2.13

Sedentary time per day, by BMI category, age and sex

Aged 16 and over with valid height and weight measurements

2012

Sedentary time per weekday, and weekend day	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
Men								
BMI less than 25 kg/m² (not overweight or obese)								
Weekday: Less than 4 hours	27	48	63	53	42	29	10	41
Weekday: 4 hours or more	73	52	37	47	58	71	90	59
Weekend day: Less than 4 hours	24	26	38	36	31	29	14	28
Weekend day: 4 hours or more	76	74	62	64	69	71	86	72
BMI 25 to less than 30 kg/m² (overweight)								
Weekday: Less than 4 hours	33	51	58	54	39	19	19	43
Weekday: 4 hours or more	67	49	42	46	61	81	81	57
Weekend day: Less than 4 hours	37	35	36	30	29	19	20	30
Weekend day: 4 hours or more	63	65	64	70	71	81	80	70
BMI 30 kg/m² or more (obese)								
Weekday: Less than 4 hours	[22]	46	43	40	27	15	13	32
Weekday: 4 hours or more	[78]	54	57	60	73	85	87	68
Weekend day: Less than 4 hours	[29]	38	29	28	20	18	10	25
Weekend day: 4 hours or more	[71]	62	71	72	80	82	90	75
Women								
BMI less than 25 kg/m² (not overweight or obese)								
Weekday: Less than 4 hours	25	55	68	54	43	21	20	44
Weekday: 4 hours or more	75	45	32	46	57	79	80	56
Weekend day: Less than 4 hours	23	34	45	37	30	26	20	32
Weekend day: 4 hours or more	77	66	55	63	70	74	80	68
BMI 25 to less than 30 kg/m² (overweight)								
Weekday: Less than 4 hours	19	50	64	49	37	21	12	39
Weekday: 4 hours or more	81	50	36	51	63	79	88	61
Weekend day: Less than 4 hours	21	32	44	39	24	21	14	30
Weekend day: 4 hours or more	79	68	56	61	76	79	86	70
BMI 30 kg/m² or more (obese)								
Weekday: Less than 4 hours	17	43	50	37	26	15	10	31
Weekday: 4 hours or more	83	57	50	63	74	85	90	69
Weekend day: Less than 4 hours	21	34	36	33	21	16	13	26
Weekend day: 4 hours or more	79	66	64	67	79	84	87	74
<i>Bases (unweighted)</i>								
<i>Men</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	204	177	146	101	120	111	79	938
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	83	175	249	256	250	228	138	1379
<i>BMI 30 kg/m² or more (obese)</i>	42	61	127	163	167	165	74	799
<i>Women</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	251	278	291	251	182	164	120	1537
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	89	150	199	236	221	186	157	1238
<i>BMI 30 kg/m² or more (obese)</i>	61	122	154	199	170	171	99	976

Continued...

Table 2.13 continued

Aged 16 and over with valid height and weight measurements

2012

Sedentary time per weekday, and weekend day	Age group							Total
	16-24	25-34	35-44	45-54	55-64	65-74	75+	
	%	%	%	%	%	%	%	%
<i>Bases (weighted)</i>								
<i>Men</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	339	269	179	114	116	78	64	1159
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	130	232	297	296	237	166	111	1468
<i>BMI 30 kg/m² or more (obese)</i>	65	86	159	196	162	119	59	846
<i>Women</i>								
<i>BMI less than 25 kg/m² (not overweight or obese)</i>	332	285	274	222	161	123	96	1494
<i>BMI 25 kg/m² to less than 30 kg/m² (overweight)</i>	115	148	192	208	195	134	125	1118
<i>BMI 30 kg/m² or more (obese)</i>	71	117	152	178	152	124	79	874