



# Health Survey for England 2015

## Physical activity in children

Published 14<sup>th</sup> December 2016

This report examines physical activity levels in children in England in 2015. It compares different population groups, by age, sex, income and region.

### Key findings

- Excluding school-based activities, 22% of children aged between 5 and 15 met the physical activity guidelines of being at least moderately active for at least 60 minutes every day (23% of boys, 20% of girls). These proportions have increased since 2012, when 21% of boys and 16% of girls met the guidelines.
- The proportion of both boys and girls aged 5 to 15 meeting current recommendations was lower in the higher quintiles than in the lower quintiles of equivalised household income.
- Girls aged between 5 and 10 who were obese were less likely to meet the current guidelines than those who were neither overweight nor obese; 14% compared with 28% respectively.
- Four in five children (79%) participated in activities such as walking and sports in the last week while in a lesson at school.
- Time spent being sedentary (excluding time at school) during the week and at weekends increased with age.

# Contents

<b>Key findings</b>	<b>1</b>
<b>This is a National Statistics publication</b>	<b>4</b>
<b>Introduction</b>	<b>5</b>
Contents	5
Background	5
<b>Methods and definitions</b>	<b>6</b>
Methods	6
Definitions	7
<b>Summary activity levels</b>	<b>9</b>
Summary activity levels in children aged 2 to 4	9
Summary activity levels in children aged 5 to 15 (excluding school lessons)	9
Summary activity levels in children aged 5 to 15, including school lessons	11
Summary activity levels in children aged 5 to 15, comparing the inclusion and exclusion of school lessons	11
Summary activity levels in children aged 5 to 15 (excluding school lessons), by region	13
Summary activity levels in children aged 5 to 15 (excluding school lessons), by equivalised household income	14
Summary activity levels in children aged 5 to 15 (excluding school lessons), by BMI category	15
Trends in summary activity levels in children aged 5 to 15 (excluding school lessons) in 2008, 2012, and 2015	15
<b>Participation in different activities in the last week</b>	<b>16</b>
Participation in walking and cycling to or from school	16
Trends over time in active travel	18
Participation in different activities, by age and sex	19
Number of days' participation in different activities, by age and sex	20
Time spent in the last week in different activities, by age and sex	21
Time spent in the last week in different activities, by income and sex	22
Participation in school-based activity	23
<b>Sedentary behaviour</b>	<b>24</b>
Sedentary time, by age and sex	24
Sedentary time by BMI category	24

Sedentary time in 2008, 2012 and 2015	25
---------------------------------------	----

---

<b>Notes and references</b>	<b>27</b>
-----------------------------	-----------

---

## This is a National Statistics publication

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.



All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is NHS Digital's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

Find out more about the Code of Practice for Official Statistics at [www.statisticsauthority.gov.uk/assessment/code-of-practice](http://www.statisticsauthority.gov.uk/assessment/code-of-practice)

**ISBN 978-1-78386-896-4**

This report may be of interest to members of the public, policy officials and other stakeholders to see the prevalence of meeting current physical activity guidelines among children in England and to monitor patterns of participation in physical activity over time.

## Introduction

### Contents

This report presents physical activity data from children who participated in the Health Survey for England in 2015. The data were collected from a representative sample of the population of children aged 2 to 15, and are used to present the frequency and duration of participation in different types of activity. The chapter compares reported activity levels with age-specific guidelines. It also compares levels of both physical activity and sedentary behaviour in 2008, 2012, and 2015.

Detailed tables accompanying this report can be accessed via <http://digital.nhs.uk/pubs/hse2015>.

### Background

#### Physical activity

Engaging in physical activity is important for children in the short-, mid- and long-term. Obesity is a major adverse health consequence of physical inactivity, although not the only one. Habits track from childhood to adulthood,<sup>1</sup> so active children are less likely to suffer the adverse health consequences of physical inactivity in adulthood. Physical activity for children is critical for motor development, cognitive improvement, psychosocial health, and cardio-metabolic health; reduces body fat and can increase academic achievement.<sup>2</sup>

The weekly amount of physical activity recommended for health is unchanged since 2011.<sup>3</sup> The guidance is tailored to specific age groups. Children under 5 who are able to walk unaided are recommended to be active for at least 180 minutes (three hours) per day, spread throughout the day.<sup>4</sup> Examples of suitable activities include: walking or skipping to local destinations (school, a friend's home, park or shops); energetic play, such as using a climbing frame or riding a bicycle; bouts of more energetic activity, such as running and chasing games; and activities that involve all the muscle groups. The recommendations for children aged 5 to 18 are twofold.<sup>5</sup> It is recommended that children should be at least moderately active for at least 60 minutes every day, though it is stated specifically that this is a minimum and that children and young people should engage in moderate to vigorous physical activity (MVPA) for up to several hours each day. It is also recommended that vigorous intensity activity, including muscle- and bone-strengthening activities, should be undertaken at least three days each week. Moderate intensity activities are described as those that make the participant warmer, breathe harder, or their heart beat faster, while still being able to converse, such as cycling or playground activities. Vigorous activities would have similar but greater effects, while making conversation much harder, such as running fast, swimming, or football. Muscle- and bone-strengthening activities include hopping, skipping, gymnastics, racquet sports, and swinging on playground equipment, i.e. activities that involve using body weight or working against resistance.

#### Sedentary behaviour

Sedentary behaviour is defined as activity with very low energy expenditure, undertaken primarily sitting or lying down. Sedentary behaviours are undertaken in a range of settings, including school, home, travel, and in leisure time. They include screen time (watching television, computer use, video games), motorised transport,

and sitting to read, talk, do homework, or listen to music. Excessive amounts of sedentary behaviour, independent of physical activity levels, have been shown to be unhealthy.<sup>6,7</sup> Children who are more sedentary are more likely to be obese, and to be obese as adults.<sup>8</sup>

Apart from when sleeping, the 2011 guidelines recommend that extended periods of sedentary time should be minimised for children of any age, whether sitting or (for infants and very young children) being restrained.<sup>4,5</sup> In the USA, recommendations to reduce obesity risk include a limit of less than 1-2 hours screen-based entertainment daily for children and discouraging television viewing for children below two years of age.<sup>9</sup>

## Methods and definitions

### Methods

Full details of the questions used to assess physical activity are contained in the questionnaires in the Methods report.<sup>10</sup> They are summarised briefly here.

### Questions about children's physical activity

Children aged between 13 and 15 were asked questions directly about their physical activity, while the parents of children aged 2 to 12 were asked the questions on the child's behalf. Children (or their parents on their behalf) were asked to recall the days in the last week they did any physical activity apart from during school hours (curriculum time). In addition, for the first time in HSE, they were also asked in HSE 2015 about any activities such as walking, sports, exercise or other active things done in the last week while in a lesson at school, using the same format of questions as for all other activity types.

The questionnaire covers the seven day period before the day of interview; this meant that all children (or parents of younger children) were asked to recall physical activity for five weekdays and two weekend days, which typically differ in types and levels of physical activity. As the survey follows an annual cycle, seasonal differences in physical activity are accounted for in the results.

It is recognised that it is easier to remember formal, often planned, activity than informal or routine 'lifestyle' activity. When asked for details about the types of physical activity they did, participants were presented with two lists of activities. It was explained to them that one list included examples of informal activities and the other included examples of formal sports. For each activity that a parent or child identified, they were asked to recall on which days the child did it; and on each of the days recalled, how long they spent engaged in it (hours and minutes). Participants were able to report more than one type of activity for each day.

Participants were also asked if they had been to school (including playgroup or nursery) in the last seven days, and if so on how many days. The questions about physical activity in school lessons were restricted to children who had been to school on at least one day in the last seven days. Those children were also asked if they had walked or cycled to or from school on any of those days; if so they were asked the number of days they walked or cycled and the duration of this journey.

The section on sedentary time estimated how much time on average children spent each day watching television, and in other sedentary time (e.g. reading, doing homework, using a computer or playing video games), excluding time at school. This

was recorded for a typical weekday and a typical weekend day. Total sedentary time has also been estimated.

### Assumptions underlying the intensity level classification of physical activities

The information collected covers primarily the type of activity, frequency and duration. For some activities (any that were not presented on the lists of formal and informal activities), an additional question “When you did X, was it hard enough to make you out of breath or sweaty?” was asked to provide an indication of the intensity level of the activity being reported. However, this has not been used in the analysis of results presented in this report, since there is no evidence to define how this information relates to intensity of physical activity in children. As in previous HSE years, it has therefore been assumed that all children’s reported activities were of at least moderate intensity. This is likely to lead to an overestimate of the amount of time spent in at least moderate intensity activity, and thus an overestimate of the proportions of children meeting UK guidelines.

## Definitions

### Summary activity levels

This report presents results for children aged from 2 to 15. The classification of summary activity levels used in this report for children aged under 5 are shown in Table A, and for children aged 5 to 15 are shown in Table B.

**Table A: Classification of summary activity levels in pre-school children (aged under 5)**

Meets recommendations	At least 180 minutes (3 hours) of physical activity on all seven days in the last week
Some activity	60 to 179 minutes of physical activity on all seven days in the last week
Low activity	Fewer than 60 minutes of activity on each day, or activity of 180 minutes or more on fewer than seven days in the last week

When analysing the data for the younger children (aged 2 to 4), it has been assumed that they can all walk unaided and therefore the guideline for children to be active for at least 180 minutes on all seven days in the last week applies to all participants of that age.<sup>4</sup>

The first two categories shown in Table A capture those younger children (aged 2 to 4) with a regular amount of daily participation (of at least one hour every day). The low activity category includes children with a regular but lower amount of daily participation (fewer than 60 minutes), and also includes children who did sufficient activity on some but not all seven days in the last week. For example, a pre-school child who performed physical activities for at least three hours on six days in the last week, but for less than one hour on the other day, would be classified in the low activity group.

**Table B: Classification of summary activity levels in children aged 5 to 15**

Meets recommendations	At least 60 minutes (1 hour) of moderate to vigorous intensity physical activity (MVPA) on all seven days in the last week
Some activity	30 to 59 minutes of moderate to vigorous intensity physical activity on all seven days in the last week or at least 60 minutes of moderate to vigorous intensity physical activity on three to six days in the last week
Low activity	Lower levels of physical activity

The “meets recommendations” and “some activity” categories shown in Table B capture those children aged 5 to 15 with a regular amount of daily participation (of at least 60 and 30 minutes every day respectively). In addition, “the some activity” category includes children aged between 5 and 15 who performed moderate to vigorous intensity physical activities for at least 60 minutes on three to six days in the last week.

It should be noted that the emphasis of the guidelines for children on the amount of activity that is performed daily is in contrast to the guidelines for adults which relate to a weekly total which may not be equally spread throughout the week.

#### *Exclusion of active travel from summary active levels*

The classification in Table B (for children aged 5 to 15) assumes that all reported activities are of at least moderate intensity but excludes active travel to/from school. The structure of the questions about active travel to school differs from the structure for all other types of physical activity, since journeys were not related to specific weekdays. Thus it is not possible to combine walking and cycling to/from school with other occasions of walking and cycling in assessing the total amount of activity undertaken each day for the summary activity levels. The results presented in this report will therefore underestimate the proportion of children meeting the guidelines.

#### *Exclusion of time spent in activity during school lessons from summary active levels*

For children aged 5 to 15, summary activity levels have been calculated in two ways: by including and excluding the information from the new questions that asked about time spent in activity during school lessons. Tables 2 and 5 to 8 exclude activity while at school, whether formal lessons or other activity, and therefore underestimate the total time spent being physically active but probably overestimate the amount of time spent in MVPA due to all activity being classed as of at least moderate intensity. This measure of activity is also used in the HSE trend tables.<sup>11</sup>

#### *Inclusion of time spent in activity during school lessons in summary active levels*

Table 3 includes the amount of time spent in activities such as walking, sports, exercise or other active things done in the last week while in a lesson at school. It excludes activities such as walking, sports or exercise done during school breaks. Summary levels of physical activity that include time spent in activity during school lessons could be dependent on the proportion of children aged 5 to 15 who attended

school in the week prior to interview. Table 3 therefore includes only those children who attended school on at least one day in the previous week.

Based on the children who had attended school in the last seven days, Table 4 shows the proportion who met the guidelines for physical activity according to the summary variables that exclude and include activities done while in a lesson at school.

### **Types of physical activity: walking, informal activities and formal sports**

To assist participants with the recall of all activities they did over a seven day period, and to focus them on the types of activity of interest, sports and activities (outside school time) were classified as formal and informal. The groups of activities used for analysis are walking, informal activities, and formal sports.<sup>12</sup> 'Total physical activity (excluding activities during school lessons)' shown in the tables is an aggregate of these three activities.

Walking or cycling to/from school is reported separately from other walking and cycling in these analyses, because active travel to and from school is an important opportunity for physical activity by children.

### **Trends in activity levels**

Adherence to the physical activity guidelines for children, both including and excluding activities during school lessons, are presented and the trend in the summary variable excluding school-based activities is presented using HSE data from 2008, 2012, and 2015. Trends in walking and cycling to and from school, and in sedentary time are also presented, using data from the same three years.

## **Summary activity levels**

### **Summary activity levels in children aged 2 to 4**

Fewer than one in ten (9%) of children aged 2 to 4 were classified as meeting the current guidelines for children under five of at least three hours of physical activity per day (as described in Table A, above). 83% of children of this age were classified in the 'low activity' group, meaning that they did less than an hour of activity every day, or did sufficient activity (three hours) on some but not all seven days in the last week.

Table 1

### **Summary activity levels in children aged 5 to 15 (excluding school lessons)**

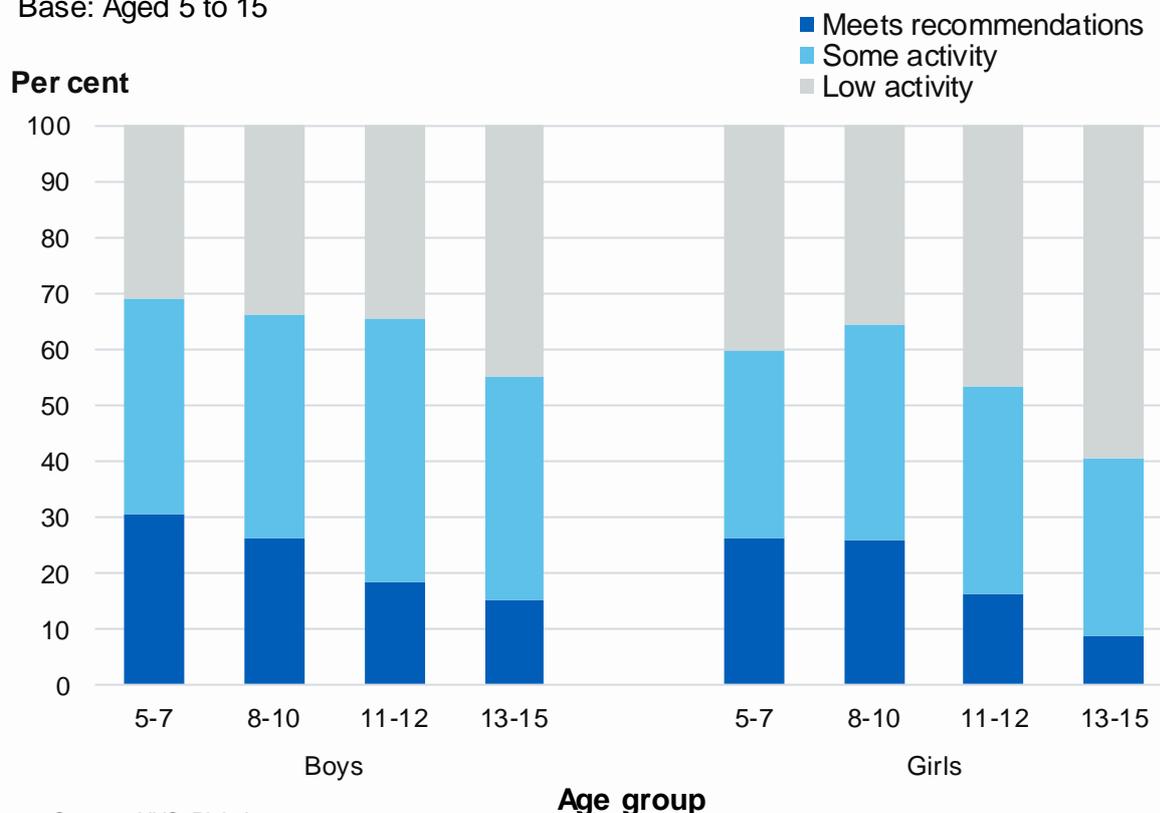
The UK guidelines for children and young adults include at least 60 minutes of activity each day of the week. Excluding activities during school lessons, 22% of children aged 5 to 15 met these guidelines in 2015. As Figure 1 shows, the proportion of children meeting the guidelines was higher for boys than for girls (23% and 20% respectively), and decreased with age for both sexes.

40% of children were classified in the 'low activity' group, meaning that they did fewer than 30 minutes of moderate to vigorous intensity physical activity (MVPA) on each day, or MVPA of 60 minutes or more on fewer than three days in the last week. This increased with age for both sexes, but the increase with age was steeper for girls.

Figure 1, Table 2

**Figure 1 Proportion of children aged 5 to 15 meeting physical activity recommendations (excluding activities in school lessons), by age and sex**

Base: Aged 5 to 15



Source: NHS Digital

In 2015, only 10% of boys and 9% of girls aged 2 to 4 achieved the guidelines for children under 5 of at least three hours physical activity every day. Overall, excluding activities in school lessons, 23% of boys and 20% of girls aged 5 to 15 achieved the guidelines of at least one hour of moderately intensive physical activity every day. The large increase in the proportion of children meeting the recommendations from those aged 2 to 4 to those aged 5 to 7 is probably mostly due to the recommendations being three hours daily for the youngest children, falling to one hour daily for children aged 5 and over and thus being easier to meet. Additionally, the younger the child, the greater the proportion of activity is ‘informal play’, which is very difficult to assess by questionnaire, as it usually comprises very frequent but brief, or very brief, activity bouts.<sup>13</sup>

Among children aged 5 to 15, the proportion meeting guidelines decreased with age, as is well recognised in many populations.<sup>14,15,16</sup> In general, as is also found in many countries,<sup>17,18</sup> boys were more active than girls, with the difference most apparent in the oldest age group.

Although these summary variables may overestimate the amount of active time that is actually time spent in moderate to vigorous intensity physical activity, they are an underestimate of overall activity as they exclude active travel to/from school, lessons at school, and time being active during breaks at school.

Overall, 15% of boys and 9% of girls aged 13 to 15 achieved the guidelines of at least one hour of moderately intensive physical activity every day. A review of data obtained from standardised self-report instruments from 122 countries found that 20% of children of similar age achieved this recommended level of physical activity.<sup>19</sup>

### Summary activity levels in children aged 5 to 15, including school lessons

Data on activity within school lessons could not be obtained from the one in five children who had not attended school in the last week, for example because that week was a school holiday or the child was absent because of illness.<sup>20</sup> These are excluded from the following analysis.

Including activities during school lessons, 21% of all children aged 5 to 15 who had attended school in the last week met the physical activity guidelines of at least 60 minutes of activity each day of the week. This proportion was higher for boys than for girls (24% of boys, 18% of girls). The proportion of children meeting the guidelines decreased with age for both sexes, but this decline was most marked for girls aged between 11 and 15.

Girls were more likely than boys to be classified in the 'low activity' group (32% of girls, 24% of boys), meaning that they did fewer than 30 minutes of MVPA on each day, or MVPA of 60 minutes or more on fewer than three days in the last week, even when activities during school lessons were taken into account. This proportion increased with age for both sexes, but the increase with age was more marked for girls.

Table 3

### Summary activity levels in children aged 5 to 15, comparing the inclusion and exclusion of school lessons

Table 4 shows the proportion of children aged 5 to 15 who met the guidelines for physical activity according to the summary variables that exclude and include activities done while in a lesson at school. For this comparison, analysis of physical activity excluding activity within school has been restricted to the children who had attended school on at least one day in the last seven days. The proportion meeting the recommendations or classified in the low activity group may therefore differ slightly from other figures presented in this report that included all children of the relevant ages.

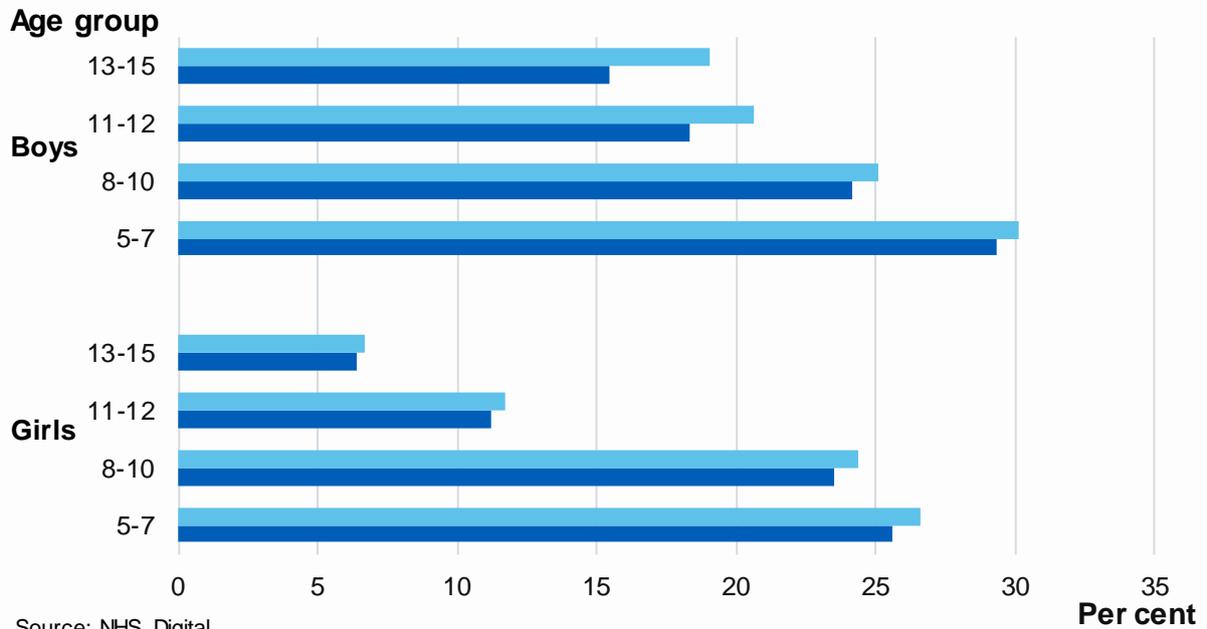
Based on children who had attended school in the last seven days, Figure 2 compares the proportion who met the guidelines for physical activity according to the summary variables that exclude and include activities done while in a lesson at school. The proportion of children meeting the UK guidelines was similar whether including or excluding activities in school lessons. The effect on the proportion of children meeting the guidelines through the inclusion of activities done while in a lesson at school was most marked for boys aged 11 to 15, suggesting that the amount of time spent in physical activities in school lessons (rather than participation per se in activities in school lessons) is higher for this group.

Figure 2, Table 4

**Figure 2 Proportion of children aged 5 to 15 meeting guidelines for physical activity (excluding and including activities in school lessons), by age and sex**

Base: Aged 5 to 15 who attended school on at least one day in the last week

■ Including ■ Excluding



Source: NHS Digital

The physical activity recommendations for children aged 5 to 15 specify that they should do at least an hour of activity *each* day, rather than a total of seven hours of activity over a week, which might involve doing more than an hour on some days and less than an hour on others.<sup>21</sup> Including the time spent in activities in school lessons in the summary variable increases the proportion of children who achieve at least an hour of activity on weekdays, but has minimal impact over the entire week, due to the low amount of participation in physical activities in school lessons on weekend days.

Including time spent in activities in school lessons reduced the proportion of children classified in the 'low activity' group (fewer than 30 minutes of MVPA on each day, or MVPA of 60 minutes or more on fewer than three days in the last week). Including school-based activities, 24% of boys aged 5 to 15 and 32% of girls aged 5 to 15 were classified in the low activity group.<sup>21</sup> Excluding school-based activities, analyses of these same children found that 35% of boys aged 5 to 15 and 47% of girls aged 5 to 15 were classified in the 'low activity' group.<sup>21</sup>

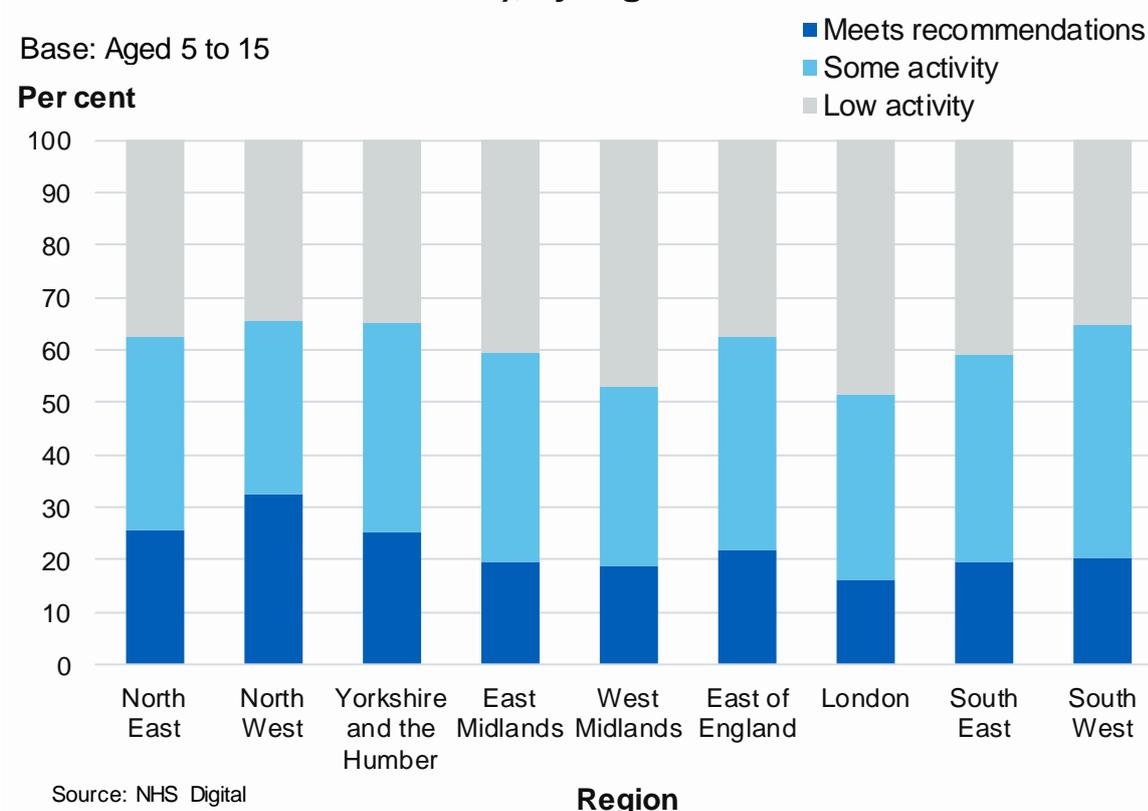
## Summary activity levels in children aged 5 to 15 (excluding school lessons), by region

The following sections compare summary activity levels using the measure that excludes activity within school lessons.

The proportion of children aged 5 to 15 meeting current guidelines, and the proportion classified in the low activity group varied across regions, with different patterns for boys and girls.

Figure 3, Table 5

**Figure 3 Proportion of children aged 5 to 15 meeting physical activity recommendations (excluding activities in school lessons), by region**



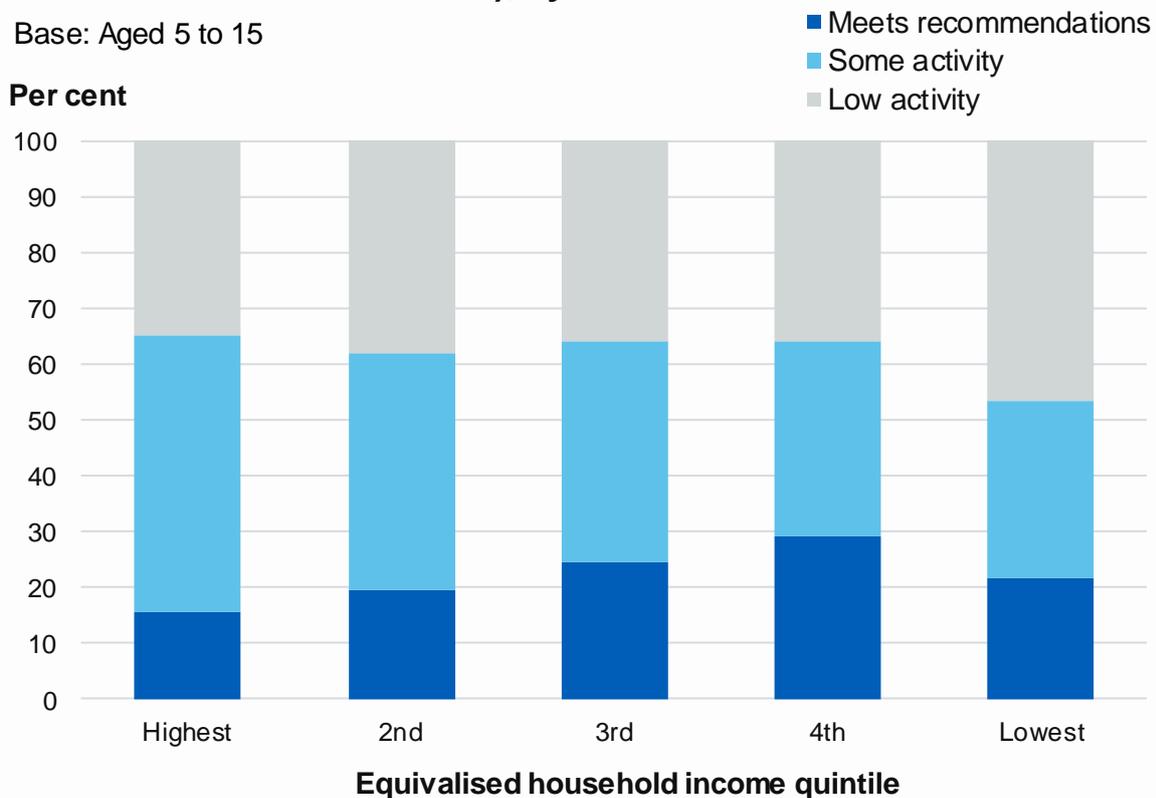
## Summary activity levels in children aged 5 to 15 (excluding school lessons), by equivalised household income

The proportion of children aged 5 to 15 achieving current recommendations varied by household income. The proportion of both boys and girls meeting current recommendations was lower in the higher quintiles than in the lower quintiles of equivalised household income. Conversely, the proportion of both boys and girls classified in the low activity group was larger in lower quintiles than in higher quintiles of equivalised household income.

Figure 4, Table 6

**Figure 4 Proportion of children aged 5 to 15 meeting physical activity recommendations (excluding activities in school lessons), by income**

Base: Aged 5 to 15

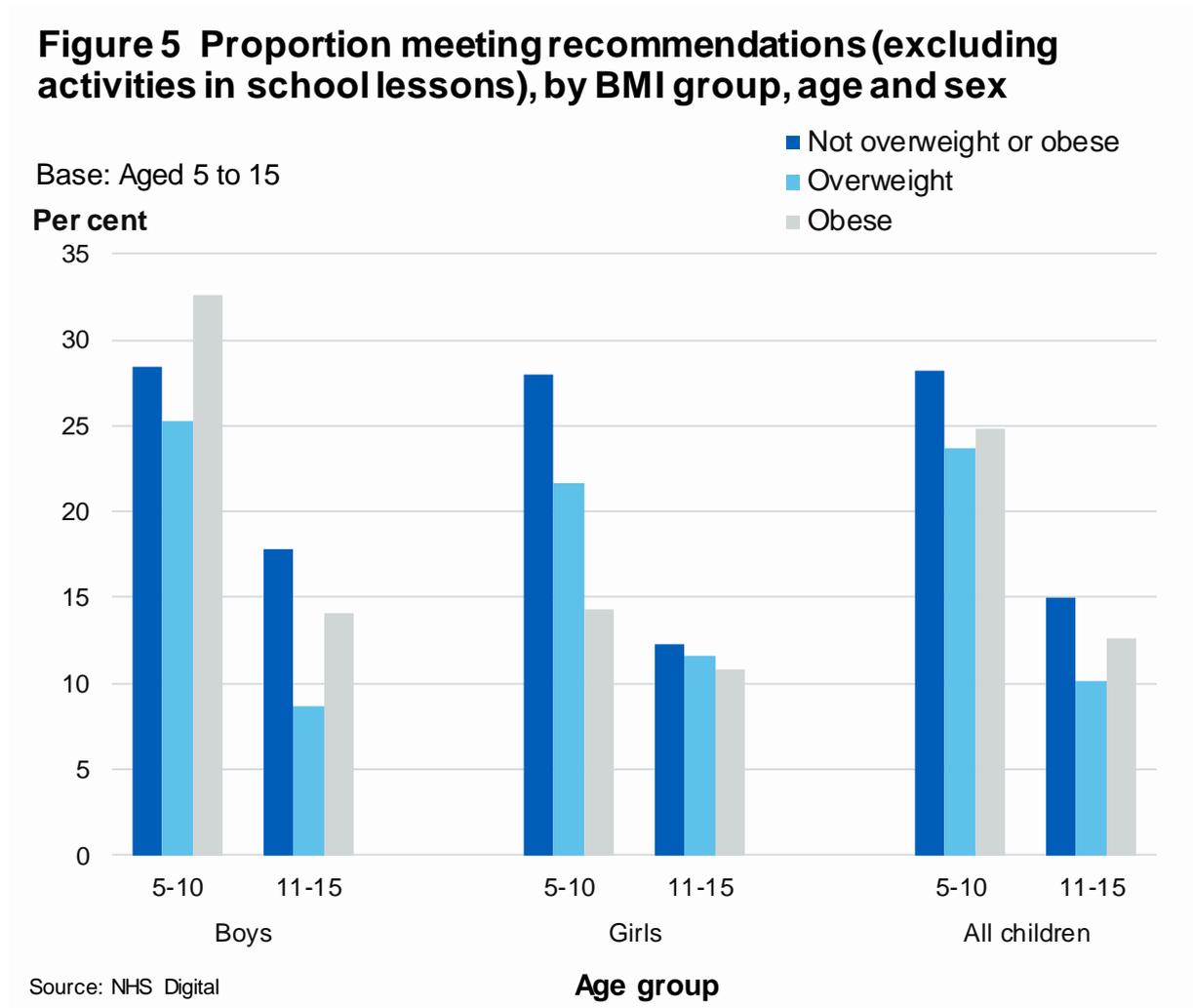


Source: NHS Digital

## Summary activity levels in children aged 5 to 15 (excluding school lessons), by BMI category

Girls aged between 5 and 10 who were obese were less likely to meet the current guidelines than those who were neither overweight nor obese: 14% compared with 28% respectively. Among boys and older girls (aged 11 to 15), any variation in the proportions meeting current recommendations by BMI category was not statistically significant.

Figure 5, Table 7



The slight variation in the proportion of children aged 5 to 15 classified in the low activity group by BMI category was within sampling error.

Table 7

## Trends in summary activity levels in children aged 5 to 15 (excluding school lessons) in 2008, 2012, and 2015

Trend data on children’s physical activity and other key variables are given in trend tables.<sup>11</sup> Activity levels in 2015 were lower than in 2008 for boys, with 23% and 28% of boys meeting the guidelines respectively. Across the same period, activity levels among girls were at a similar level in 2015 as in 2008 (20% and 19% respectively).

Since 2012, the proportion of children aged 5 to 15 who met the physical activity guidelines has increased: 18% in 2012 compared with 22% in 2015. In 2012, 21% of boys aged 5 to 15 met the recommendations, compared with 23% in 2015. Among girls, 16% met the recommendations in 2012, compared with 20% in 2015.

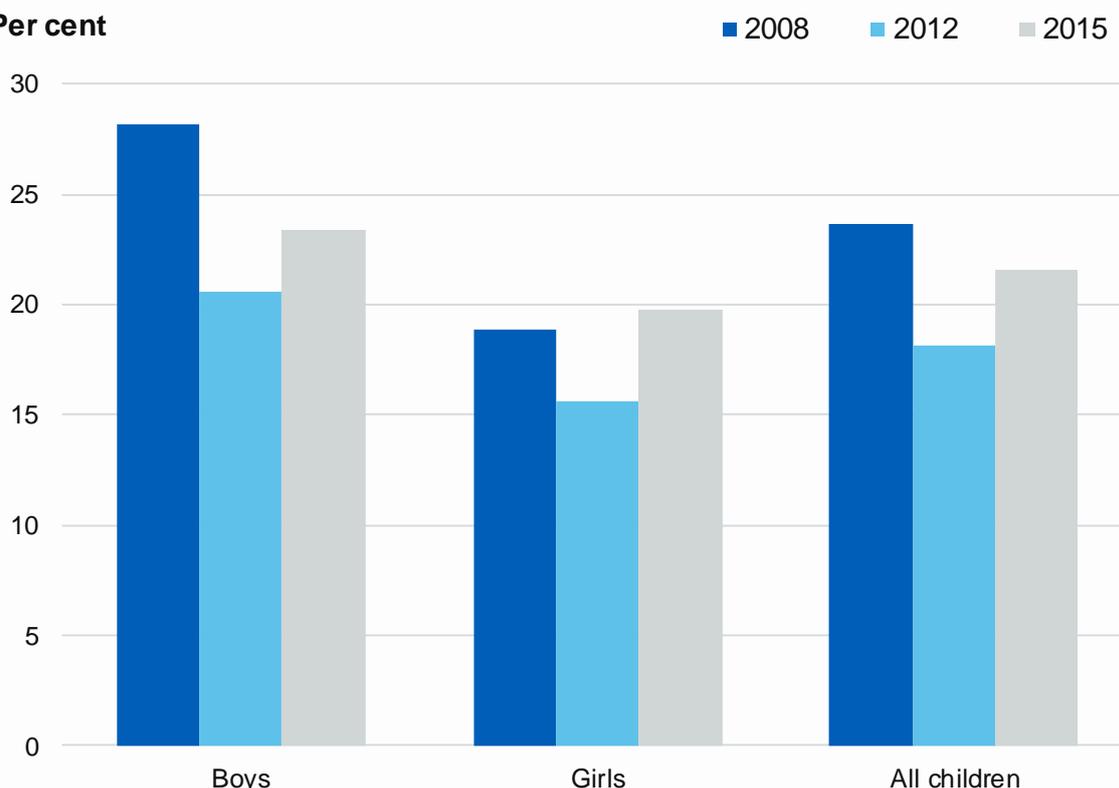
Figure 6, Table 8

Comparisons between 2012 and 2015 showed that there was not a significant change in the proportion of children aged 2 to 4 who achieved the guidelines for children under 5 of at least three hours physical activity per day. Compared with 2012, the proportion of children aged 5 to 15 who met the physical activity guidelines for children and young adults of at least one hour of moderately intensive physical activity per day increased in 2015, with the largest increase being among girls aged 8 to 10 (16% in 2012; 26% in 2015). Activity levels in 2015 were lower than in 2008 for boys, but at a similar level for girls.

### Figure 6 Proportion meeting recommendations (excluding activities in school lessons) in 2008, 2012 and 2015

Base: Aged 5 to 15

Per cent



Source: NHS Digital

## Participation in different activities in the last week

### Participation in walking and cycling to or from school

These findings are based on children aged between 2 and 15 who had attended school, playgroup or nursery (hereafter called 'school') on at least one day in the last seven days. 61% of children had walked to or from school on at least one day in the

last week. Children of this age walked to school on an average (median) of three days in the last week; just under two-fifths (37%) walked to/from school every day.

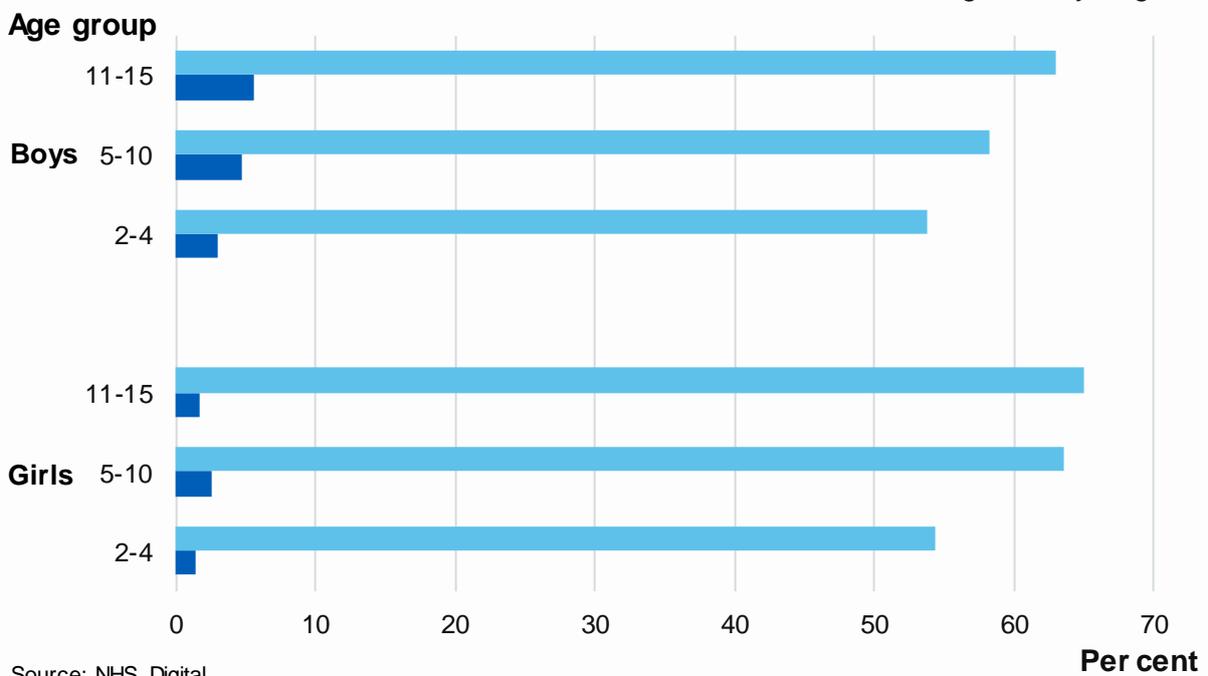
The proportion of children who walked to or from school on at least one occasion in the last week increased with age, from 54% of those aged 2 to 4 who had attended school in the last week to 64% of those aged 11 to 15. The median number of days in the last week spent walking to or from school also increased with age.

More boys than girls cycled to or from school on at least one day in the last week (5% and 2% respectively).

Figure 7, Tables 9 and 10

### Figure 7 Participation in active travel on at least one day in the last week, by age and sex

Base: Aged 2 to 15 who attended school on at least one day in the last week



Source: NHS Digital

In the previous seven days, 65% of children either did not walk to school or spent less than an hour doing so, 19% spent between one and two hours and 16% spent two hours or more. 40% of children spent no time walking to or from school. Children aged 11 to 15 spent more time walking to or from school than did younger children; for example, 27% of 11 to 15 year olds walked for two hours or more during the week, compared with 10% of children aged 2 to 4 and 11% of children aged 5 to 10. This was similar for boys and girls.

3% of boys and 1% of girls spent at least one hour cycling to or from school. The number of hours per week spent cycling to or from school also increased with age, and was higher for boys than for girls.

Table 11

## Trends over time in active travel

Figure 8 shows children’s participation in walking to or from school in 2008, 2012, and 2015. The proportion of both boys and girls who had walked and/or cycled to or from school on at least one occasion in the last week had been very similar in 2008 and 2012.

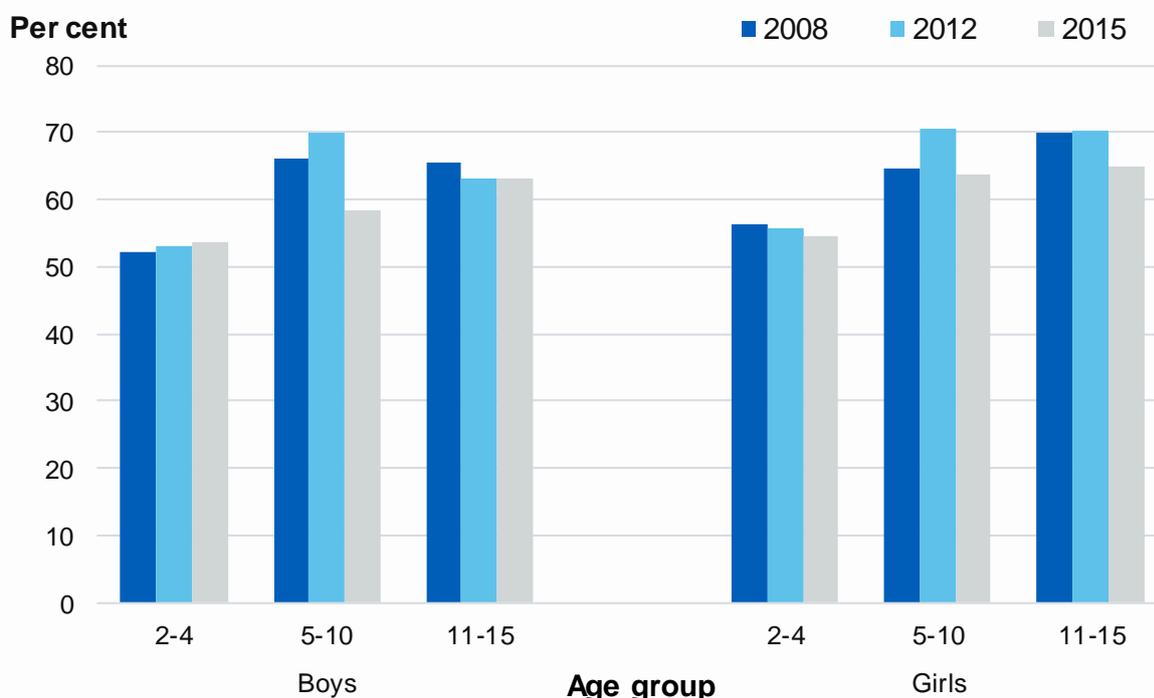
The proportion of children aged between 5 and 10 who had walked to or from school on at least one occasion in the last week in 2015 had decreased since 2012, as had the proportion of boys aged 5 to 10 who had cycled to/from school on at least one occasion in the last week. In 2012, 70% of boys aged between 5 and 10 walked to or from school on at least one occasion in the last week, decreasing to 58% in 2015. Among girls of the same age, 70% walked to or from school on at least one occasion in the last week in 2012, decreasing to 64% in 2015.

An updated review of physical activity trends over time among children and adolescents reported that active travel to and/or from school is declining within the countries studied, reflecting increased distance between home and school and increased reliance on motorised transport.<sup>22</sup>

Figure 8, Table 12

### Figure 8 Prevalence of walking to/from school on at least one day in the last week in 2008, 2012 and 2015, by age and sex

Base: Aged 2 to 15 who attended school on at least one day in the last week



Source: NHS Digital

The proportions of children who had cycled to or from school on at least one occasion in the last week were similar in 2008, 2012 and 2015.

Table 12

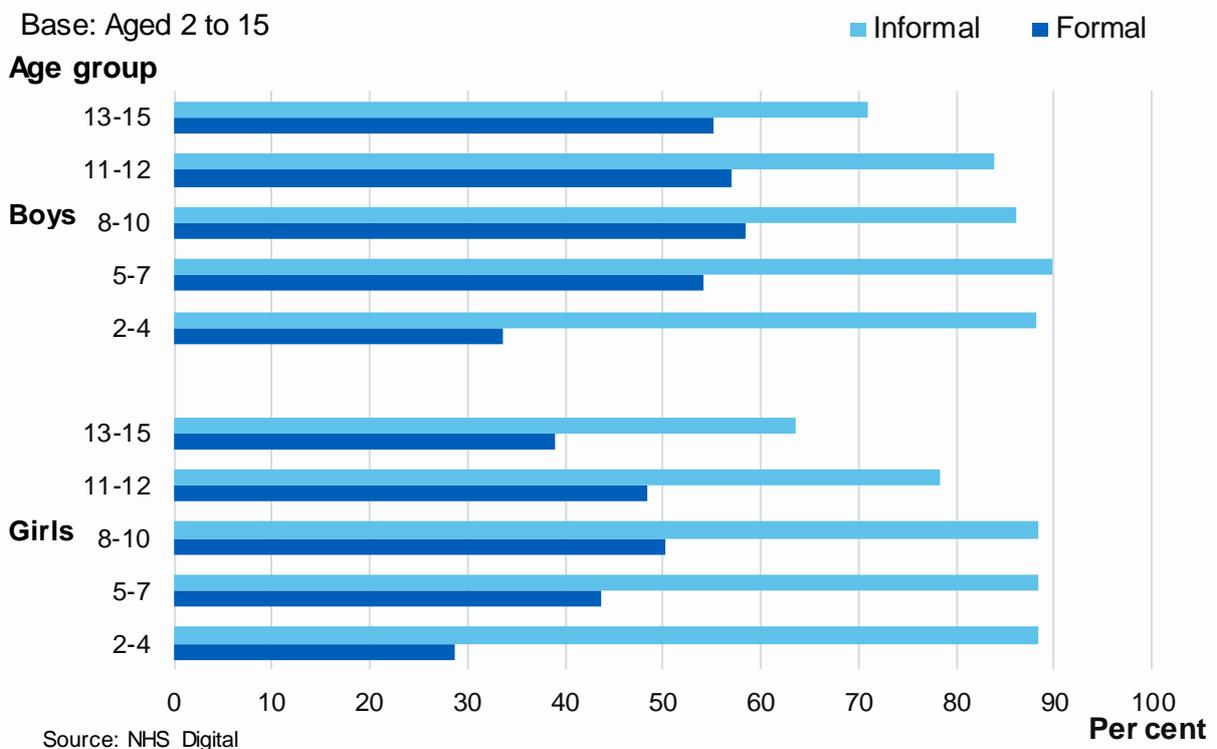
### Participation in different activities, by age and sex

In total, 91% of children aged between 2 and 15 participated in at least one type of physical activity on at least one occasion in the last week. 61% had walked (other than walking to or from school), 83% had taken part in informal activities and 46% had taken part in formal sports and exercise.

The proportions who had walked in the last week did not vary significantly with age. Participation in any informal activity decreased above the age of 10. Boys were more likely than girls to have participated in any formal sports in the last week (51% and 41% respectively); participation in formal sports also varied by age.

Figure 9, Table 13

**Figure 9 Participation in any informal and formal activities on at least one day in the last week, by age and sex**



### Number of days' participation in different activities, by age and sex

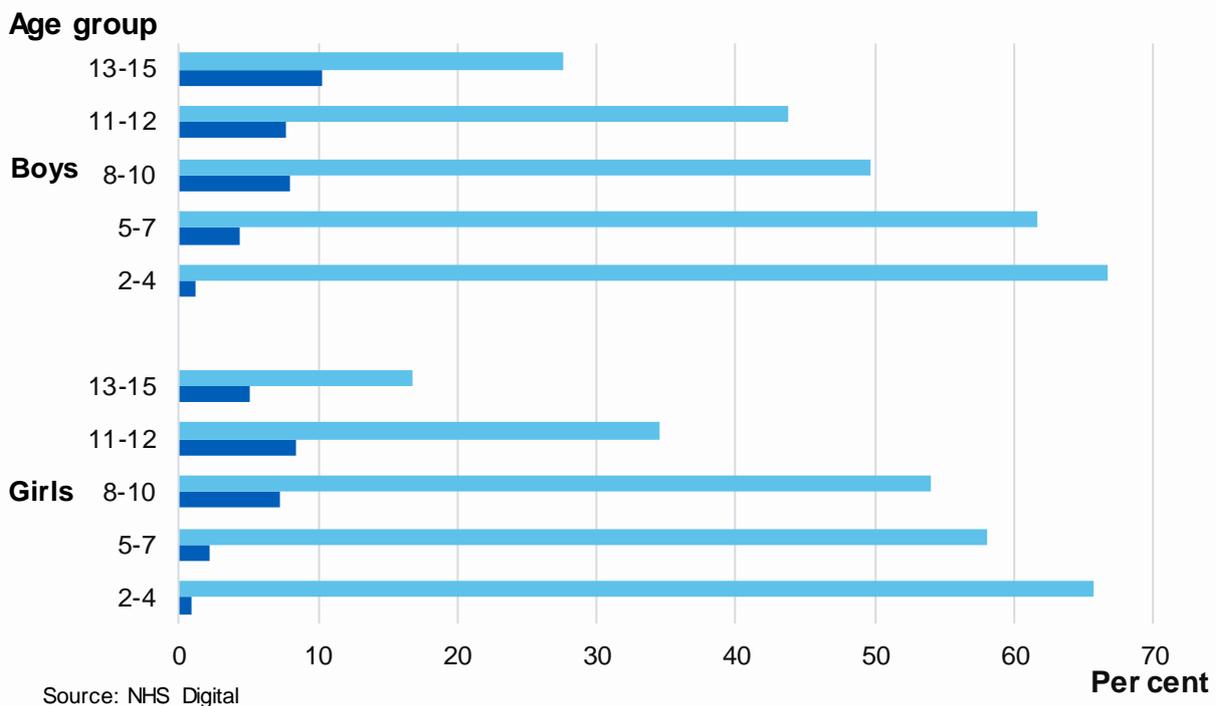
Younger children took part in informal activity on more days than older children, and participation fell more sharply with increasing age for girls. The proportion of children who participated in formal activities for five or more days in the last week increased with age.

Figure 10, Table 14

**Figure 10 Proportion who participated in informal and formal activities for 5 or more days in the last week, by age and sex**

Base: Aged 2 to 15

■ Informal ■ Formal



### Time spent in the last week in different activities, by age and sex

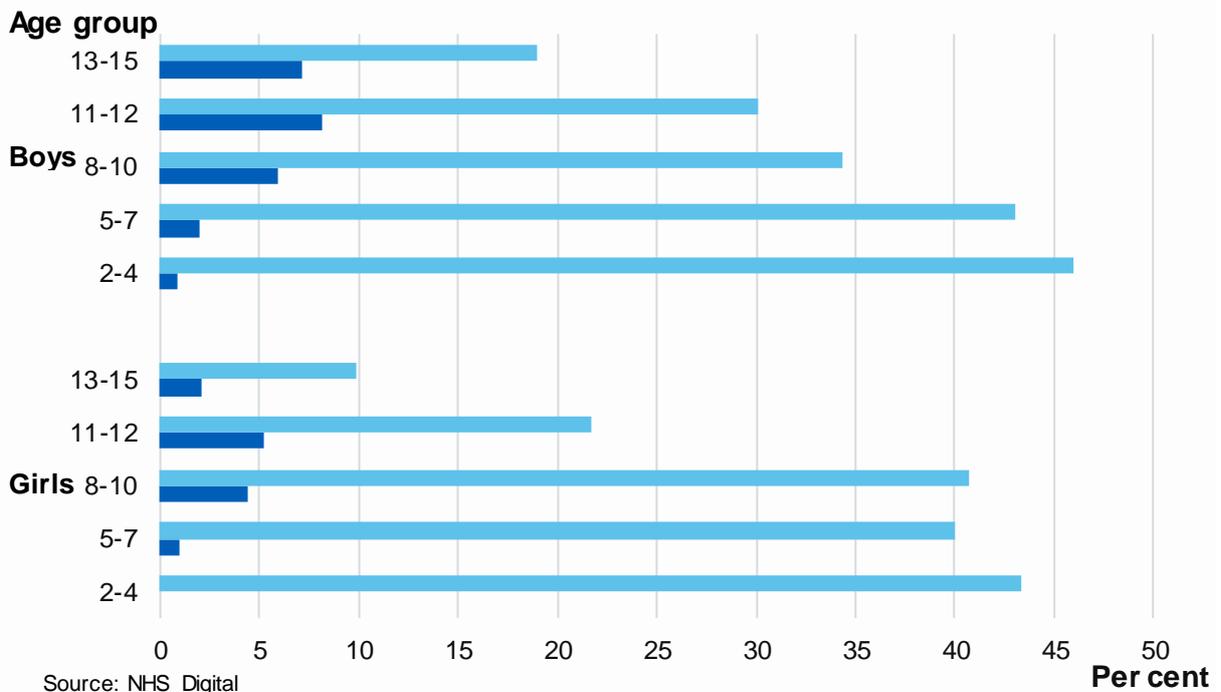
The amount of time children spent each day on each type of activity was aggregated to give a weekly total, within type of activity (walking, informal and formal) and overall. The proportion of children who spent seven hours or more in informal activities in the last week decreased with age; this decrease was more marked for girls, as shown in Figure 11. The proportion of children who spent seven hours or more in formal activities in the last week was higher for boys than for girls (4% and 2% respectively). Time spent in formal activities increased steadily with age up to the age of 12 and then levelled off (Figure 11).

Figure 11, Table 15

**Figure 11 Proportion who participated in informal and formal activities for 7 or more hours in the last week, by age and sex**

Base: Aged 2 to 15

■ Informal ■ Formal



### Time spent in the last week in different activities, by income and sex

For both boys and girls, there was a gradual increase in the average number of hours spent in formal sports in the last week as equivalised household income quintile increased, as shown in Figure 12. This increase was from 1.0 hours for boys and 0.8 hours for girls in the lowest income quintile to 2.0 hours and 1.3 hours respectively in the highest income quintile. However, participation in informal activities showed the opposite pattern: both boys and girls in the lower quintiles of equivalised household income spent more hours on average in informal activities than their counterparts in the higher income quintiles.

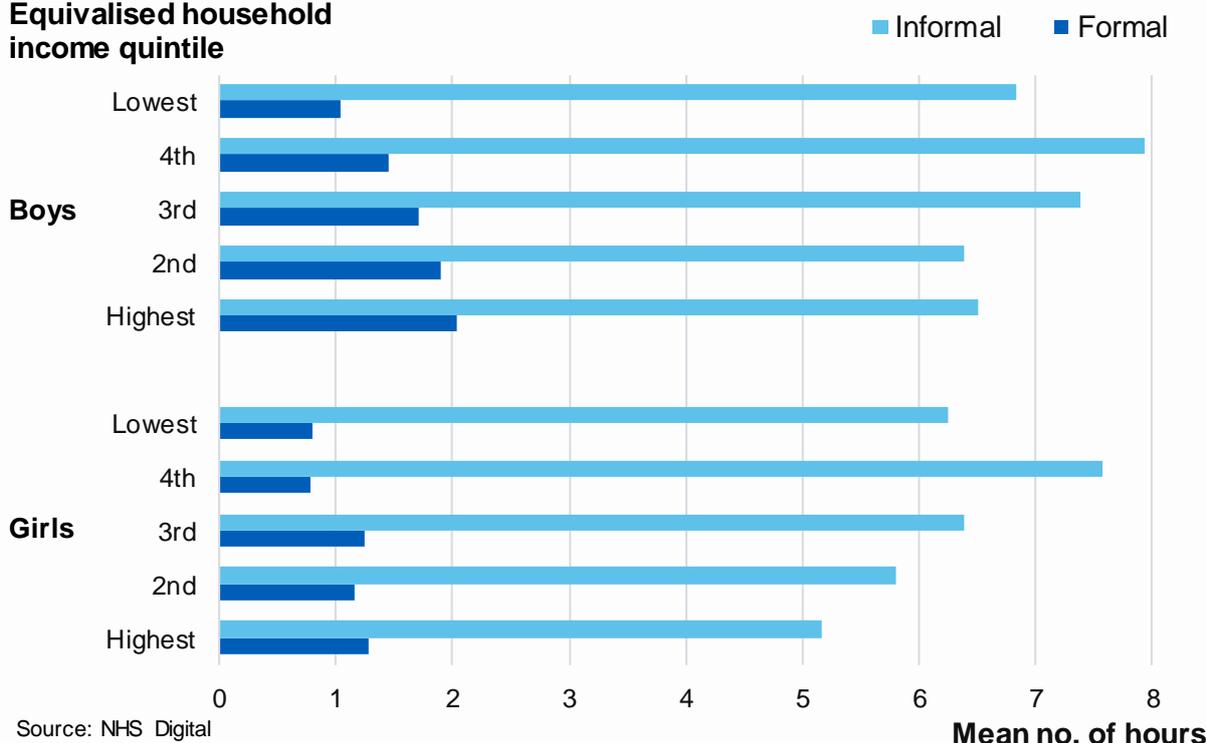
The proportion of children meeting recommendations (excluding activities while in a lesson at school) was greater in lower quintiles than in higher quintiles of equivalised household income. This difference by income was largely due to the differences in the amount of time spent in informal activities.

Figure 12, Table 16

**Figure 12 Mean number of hours of informal activities and formal sports in the last week, by equivalised household income quintile and sex**

Base: Aged 2 to 15

**Equivalised household income quintile**



## Participation in school-based activity

For the first time in HSE, participants were asked in HSE 2015 whether they had done any activities such as walking, sports, exercise or other active things in the last week while in a lesson at school. Among children aged 5 to 15 who had attended school in the last seven days, around four in five children (79%) participated in some school-based activity in the last week. This did not vary significantly by sex or age group.

The Public Health England report '*Everybody active, every day*' emphasises that the school setting is extremely important when it comes to children's opportunities to be active.<sup>23,24</sup> Specific evidence-based interventions in school that are effective in achieving everyday activity include: capacity building and staff training; increasing the number or quality of physical education classes; adjustment of interventions to target specific populations; increased activity at break times; and changes in curriculum, equipment and materials provision.<sup>23</sup> However, one in five children aged 5 to 15 who had attended school on at least one day in the last seven days had not participated in any activities such as walking, sports, exercise or other activities in the last week while in a lesson at school.

Table 17

## Sedentary behaviour

Sedentary behaviour has been classified into either television viewing time or other sedentary time on a typical weekday and weekend day. These categories have also been combined to provide a total measure of sedentary time. Participants were asked about sedentary time after school, and therefore sedentary time during the school day is not included.

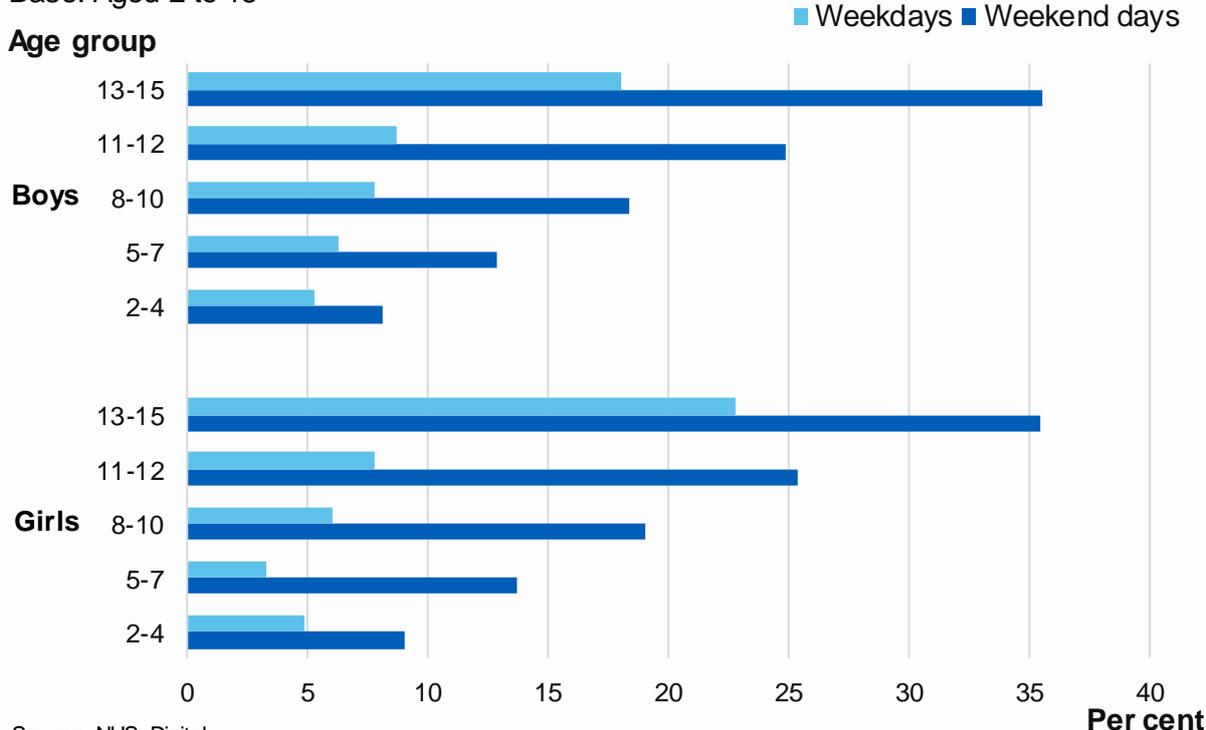
### Sedentary time, by age and sex

9% of children were sedentary (whether for TV viewing or other sedentary time) for six hours or more per day on weekdays, 19% on weekend days. These proportions increased with age. On weekdays, there was a steeper increase with age among girls (from 5% for those aged 2 to 4 to 23% for those aged 13 to 15, compared with 5% to 18% for boys). The proportion of children who were sedentary for six hours or more per day on weekend days increased with age in similar ways for boys and girls. The pattern of increasing levels of sedentary time with age in 2015 was generally similar to that reported in 2012.

Figure 13, Table 18

### Figure 13 Proportion who were sedentary for 6 or more hours per day on weekdays and weekend days, by age and sex

Base: Aged 2 to 15



### Sedentary time by BMI category

The average number of hours of total sedentary time (either television viewing time or other sedentary time) on a typical weekday and weekend day were similar across the BMI categories, either among boys and girls or across the age groups.

Table 19

## Sedentary time in 2008, 2012 and 2015

Figures 14 and 15 show the average number of hours of sedentary time (either television viewing time or other sedentary time) on weekdays and weekend days respectively in 2008, 2012 and 2015.

### Weekdays

Among children aged 2 to 4 and 5 to 10, the average number of hours of sedentary time on a typical weekday decreased from 2012 to 2015 for both sexes, as shown in Figure 14. Among children aged between 11 and 15, the average number of hours of sedentary time on a typical weekday were similar over this time period.

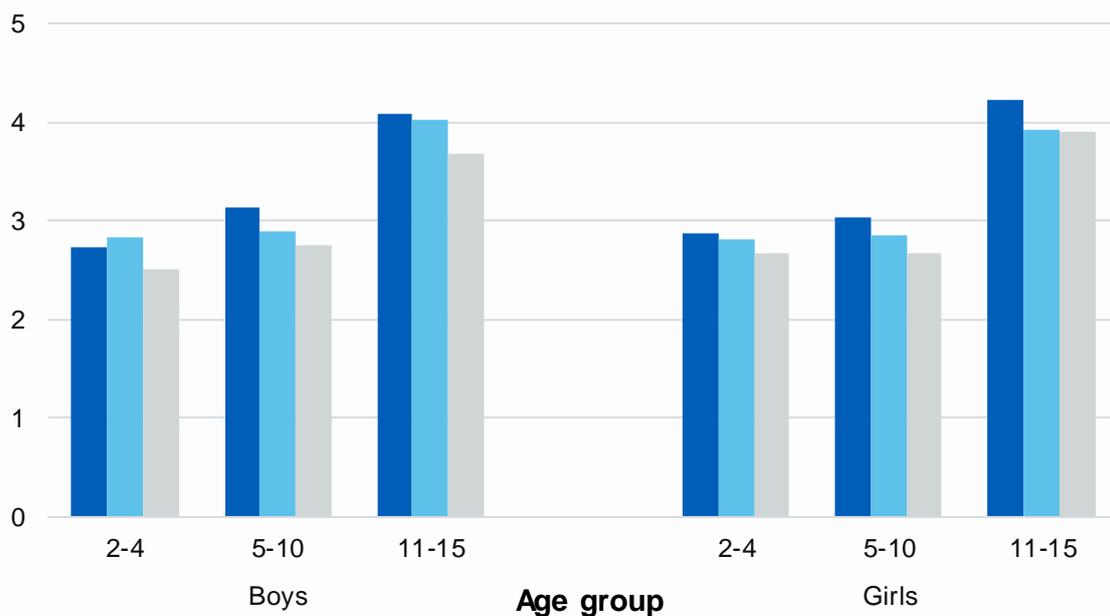
Figure 14, Table 20

**Figure 14 Mean hours spent sedentary on weekdays in 2008, 2012 and 2015, by age and sex**

Base: Aged 2 to 15

Mean no. of hours

■ 2008 ■ 2012 ■ 2015



Source: NHS Digital

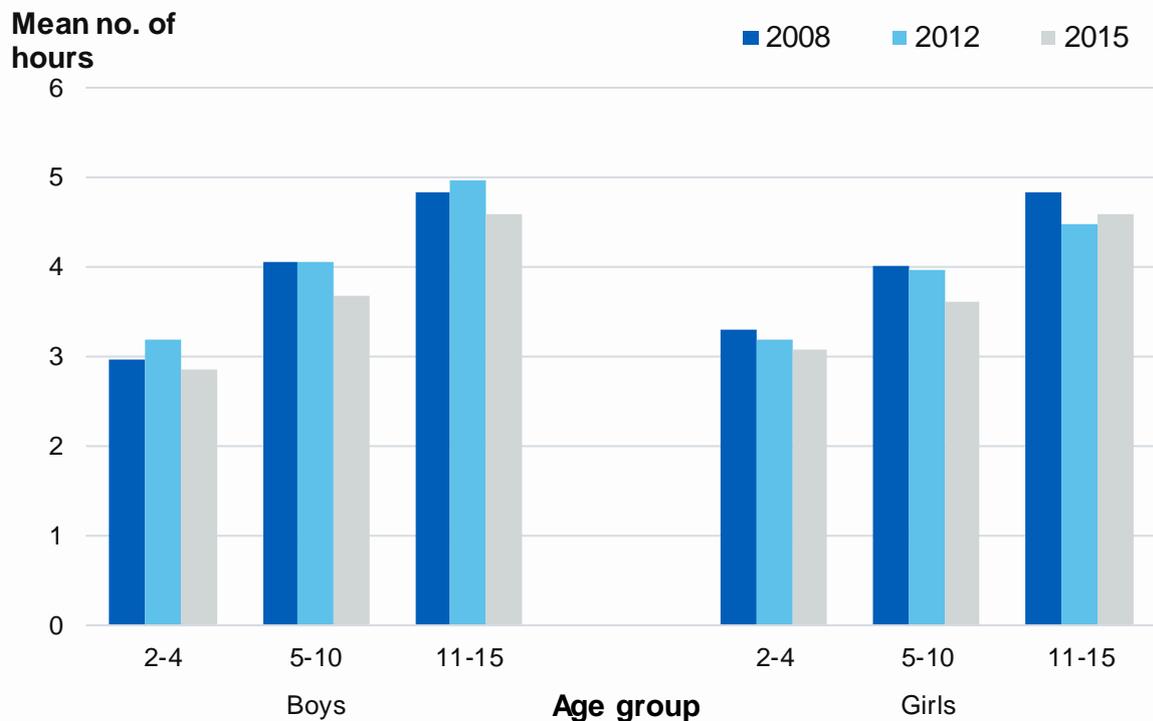
**Weekend days**

Among children aged 11 to 15, the average number of hours of sedentary time on a typical weekend day increased for boys from 2008 to 2012, but decreased for girls. The average number of hours of sedentary time on a typical weekend day decreased from 2012 to 2015 for children aged 2 to 4 and 5 to 10, as shown in Figure 15. Among boys aged 11 to 15, the average number of hours of sedentary time on a typical weekend day decreased from 2012 to 2015. Among girls aged 11 to 15, the average number of hours of sedentary time on a typical weekend day were similar over this time period.

Figure 15, Table 20

**Figure 15 Mean hours spent sedentary on weekend days in 2008, 2012 and 2015, by age and sex**

Base: Aged 2 to 15



Source: NHS Digital

## Notes and references

- <sup>1</sup> Telema R. Tracking of physical activity from childhood to adulthood: a review. *Obes Facts* 2009;**2**:187-195.
- <sup>2</sup> Donnelly JE, Hillman CH, Castelli D et al. Physical activity, fitness, cognitive function, and academic achievement in children: a systematic review. *Med Sci Sports Exerc.* 2016;**48**(6):1197-1222.
- <sup>3</sup> Department of Health. Start Active, Stay Active. A report on physical activity for health from the four home countries' Chief Medical Officers. DH, London, 2011.  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/216370/dh\\_128210.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216370/dh_128210.pdf)  
(Accessed Aug 27 2016)
- <sup>4</sup> Chief Medical Officers of the UK. Factsheet 2. Physical activity guidelines for early years (under 5s) – for children who are capable of walking. [www.nhs.uk/Livewell/fitness/Documents/children-under-5-walking.pdf](http://www.nhs.uk/Livewell/fitness/Documents/children-under-5-walking.pdf)  
(Accessed Aug 27 2016)
- <sup>5</sup> Chief Medical Officers of the UK. Factsheet 3. Physical activity guidelines for children and young people (5-18 years). [www.nhs.uk/Livewell/fitness/Documents/children-and-young-people-5-18-years.pdf](http://www.nhs.uk/Livewell/fitness/Documents/children-and-young-people-5-18-years.pdf) (Accessed Aug 27 2016).
- <sup>6</sup> Carson V, Hunter S, Kuzik N et al. Systematic review of sedentary behaviour and health indicators in school-aged children and youth: an update. *Appl Physiol Nutr Metab.* 2016;**41**(6):S240-S265.
- <sup>7</sup> Biddle S, Cavill N, Ekelund U et al. Sedentary Behaviour and Obesity: Review of the Current Scientific Evidence. Department of Health, London, 2010.  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/213745/dh\\_128225.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/213745/dh_128225.pdf)  
(Accessed Aug 30 2016)
- <sup>8</sup> van Ekris E, Altenburg TM, Singh AS et al. An evidence-update on the prospective relationship between childhood sedentary behaviour and biomedical health indicators: a systematic review and meta-analysis. *Obesity Reviews* 2016;**17**:833-849.
- <sup>9</sup> American Academy of Pediatrics, Committee on Public Education. American Academy of Pediatrics: Children, adolescents, and television. *Pediatrics* 2001;**107**:423-426.
- <sup>10</sup> Health Survey for England 2015 Methods and Documentation. NHS Digital, Leeds 2016  
<http://digital.nhs.uk/pubs/hse2015>
- <sup>11</sup> HSE 2015 Trend tables are available at <http://digital.nhs.uk/pubs/hse2015trend>
- <sup>12</sup> Walking (excluding walking to or from school) is presented to participants as part of the informal group of activities. As in previous HSE reports, it has been analysed separately as an activity of policy interest. The walks included in this group are of any duration. Informal activities include cycling (excluding to/from school), dancing, skating, trampolining, hopscotch, active play, skipping rope, and housework and gardening. Formal sports include any organised team sports such as football, rugby, cricket, and netball, running or athletics, all types of swimming, gymnastics, weight training, aerobics and tennis.
- <sup>13</sup> Mindell JS, Coombs N, Stamatakis E. Measuring physical activity in children and adolescents for dietary surveys: practicalities, problems and pitfalls. *Proc Nutr Soc.* 2014;**73**:218-225.
- <sup>14</sup> Nader PR, Bradley RH, Houts RM et al. Moderate-to-vigorous physical activity from ages 9 to 15 years. *JAMA.* 2008;**300**:295-305.
- <sup>15</sup> Riddoch CJ, Bo Andersen L, Wedderkopp N et al. Physical activity levels and patterns of 9- and 15-yr-old European children. *Med Sci Sports Exerc.* 2004;**36**:86-92.
- <sup>16</sup> Fakhouri THI, Hughes JP, Brody DJ et al. Physical activity and screen-time viewing among elementary school-aged children in the United States from 2009 to 2010. *JAMA Pediatr.* 2013;**167**:223-229.
- <sup>17</sup> Griffiths LJ, Cortina-Borja M, Sera F et al. How active are our children? Findings from the Millennium Cohort study. *BMJ Open.* 2013;**3**:e002893.
- <sup>18</sup> Ekelund U, Luan J, Sherar LB et al. Moderate to vigorous physical activity and sedentary time and cardiometabolic risk factors in children and adolescents. *JAMA.* 2012;**307**:704-712.
- <sup>19</sup> Hallal PC, Andersen LB, Bull FC, et al. Global physical activity levels: surveillance progress, pitfalls and prospects. *Lancet.* 2012;**380**:247-257.
- <sup>20</sup> As the HSE fieldwork takes place throughout the year, some households are interviewed during school holidays or other school breaks, apart from individual absences due to ill health, for example.
- <sup>21</sup> This is similar to the previous adult recommendations, which specified that activity should be on at least five days a week, whereas the current adult recommendations relate to a weekly total which may not be equally spread through the week.
- <sup>22</sup> Booth VM, Rowlands AV, Dollman J. Physical activity temporal trends among children and adolescents. *Journal of Science and Medicine in Sport.* 2015;**18**:418-425.
- <sup>23</sup> Public Health England. Everybody active, every day. What works, the evidence. 2014. Public Health England, London.

[www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/366113/Evidence\\_layout\\_23\\_Oct.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/366113/Evidence_layout_23_Oct.pdf)  
Accessed 8<sup>th</sup> September 2015.

- <sup>24</sup> Kriemler S, Meyer U, Martin E et al. Effect of school-based interventions on physical activity and fitness in children and adolescents: a review of reviews and systematic update. *British Journal of Sports Medicine* 2011;45:923-930.

# Information and technology for better health and care

[www.digital.nhs.uk](http://www.digital.nhs.uk)

0300 303 5678

[enquiries@nhsdigital.nhs.uk](mailto:enquiries@nhsdigital.nhs.uk)

 [@nhsdigital](https://twitter.com/nhsdigital)

ISBN 978-1-78386-896-4

This publication may be requested  
in large print or other formats.

**Published by NHS Digital, part of the  
Government Statistical Service**

NHS Digital is the trading name of the  
Health and Social Care Information Centre.

Copyright © 2016

**OGL**

You may re-use this document/publication (not including logos)  
free of charge in any format or medium, under the terms of the Open  
Government Licence v3.0.

To view this licence visit

[www.nationalarchives.gov.uk/doc/open-government-licence](http://www.nationalarchives.gov.uk/doc/open-government-licence)

or write to the Information Policy Team, The National Archives,  
Kew, Richmond, Surrey, TW9 4DU;

or email: [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk)