



South East England
Public Health Observatory



Choosing Health in the South East: **Physical Activity**



Choosing Health in the South East: Physical Activity

Foreword

Physical activity is one of the cornerstones of good health. The human body evolved to be physically active, in a world where the ability to move quickly and walk long distances was essential for survival. In our technologically-driven modern age, much activity has been removed from everyday life: most occupations require little routine physical activity, and our travel patterns are largely dominated by the car. This has serious repercussions for public health.

Strategies to increase physical activity are a key public health priority. The Chief Medical Officer pointed out in 2004 that increasing physical activity levels will contribute to the prevention and management of over 20 conditions and diseases including coronary heart disease, diabetes, cancer, positive mental health and weight management. Physical inactivity, along with unhealthy diets, has contributed to the rapid increases in obesity in both adults and children in the last 20 years.

There has been recent action at a national level on physical activity, with the publication of *Choosing Activity: a physical activity action plan*¹, which sets out a wide range of actions as part of the Government's *Choosing Health* white paper². In the South East region we have built on these plans and have published *Move It! A Framework for Action on physical activity in the South East*³ and *Mission Possible*⁴, the region's plan for sport. These set out comprehensive actions across the region to create better conditions for physical activity.

This report aims to complement these two strategic plans for the Region. It provides context, background data and evidence upon which successful actions can be based. I commend it to all those interested in working to improve health across the region and beyond.

Dr Mike Gill

South East Regional Director of Public Health

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KEY POINTS

- Only 4 out of 10 men and 3 out of 10 women in the South East are active at the recommended level (5 or more sessions a week of 30 minutes of at least moderate intensity activity).
- Men are more active than women in almost all age groups.
- Physical activity declines with age: among 16–24 year olds, 57% of males and 34% of females are classed as active, but this declines to only 5% of people aged over 75.
- The prevalence of obesity in the South East is lower than the national average. However, adults in the South East who are less active are more likely to be classed as obese.
- In the South East, young people aged 16–24 spend around 2½ hours each day on sedentary activities such as watching TV and videos, listening to the radio and music, and reading. This increases to around 4 hours each day for people aged over 65.
- Lower socio-economic groups have lower levels of participation in sport, but higher levels of overall physical activity (probably due to the contribution of activity at work to overall physical activity levels).
- People in the South East travel further on average than people from any other region, at over 8,000 miles per person per year. Most of this difference is accounted for by travel by car. Three-quarters of people in the South East travel to work by car.
- More adults cycle (and cycle further) in the South East than in England as a whole.
- Among children and young people in the South East, 72% of boys and 56% of girls are active at the recommended level of at least an hour a day. Boys are more active than girls.
- Girls and boys in the South East spend an average of over 2 hours a day watching TV & video, or listening to music & radio, or reading. However this is less than the average for England
- Children across the South East travel the longest distance to school of all regions, (1.9 miles for 5–10 year olds and 4 miles for 11–16 year olds). They are less likely to walk to school than children in England as a whole and more likely to travel by car.

1. Introduction

This report provides an overview of physical activity in the South East Region. It brings together relevant regional and national data with evidence on the effectiveness of interventions, and relevant national policies.

The South East region is well advanced in developing policy and action on physical activity. The regional physical activity strategy *Move It! A Framework for Action on physical activity in the South East*⁴ was developed in 2004 to 'ensure a co-ordinated approach to increasing physical activity across the South East Region'. The Regional Plan for Sport, *Mission Possible*⁵ also has a strong focus on physical activity and sets out a wide range of actions towards 'making the South East an active and successful sporting region'.

This report aims to complement these two strategic plans for the Region. It provides context, background data and evidence on which successful actions can be based.

Physical activity is also increasing in national prominence. Of particular note is the recent publication of *Choosing Activity: a physical activity action plan*,² which sets out a wide range of actions as part of the Government's *Choosing Health* white paper³. This plan describes the mechanisms through which the Government's commitments on physical activity will be delivered. These are outlined in detail in appendix I.

Action is also underway at an international level. In 2004 the World Health Organization published its *Global Strategy for Diet, Nutrition and Physical Activity*⁶ setting out a range of actions that member states can take to tackle the burden of non-communicable diseases. Across the European Union, action is underway on a range of projects including the *Transport Health and Environment Pan-European Project*⁷ and the *European Network for Health Enhancing Physical Activity (HEPA Europe)*.⁸

This report is targeted at commissioners of physical activity interventions in PCTs such as Directors of Public Health; people responsible for designing and running physical activity programmes including public health staff in PCTs and leisure/health/transport staff in local authorities; and professionals with responsibility for the physical environment including town and transport planners.

This report is concerned with physical activity in its broadest sense – including walking or cycling for transport, gardening and housework as well as sport or deliberate 'exercise'. The following definitions are used in the report:

Physical activity: "Any force exerted by skeletal muscles that results in energy expenditure above resting level."

Exercise: "A subset of physical activity, which is volitional, planned, structured, repetitive and aimed at improvement or maintenance of any aspect of fitness or health."⁹

Sport: "All forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels."¹⁰

2. The importance of physical activity for public health

“Unhealthy diets and physical inactivity are among the leading causes of the major non-communicable diseases, including cardiovascular disease, type 2 diabetes and certain types of cancer, and contribute substantially to the global burden of disease, death and disability.”⁶

World Health Organization. Global Strategy on Diet, Physical Activity and Health, 2004

Physical activity is a critical public health issue due to two inter-related factors:

- Lack of physical activity is associated with significant risks to many aspects of health
- There is a high prevalence of physical inactivity

The Chief Medical Officer (CMO) underlined the importance of action on physical activity in his recent report *At least five a week*¹¹:

“Physical inactivity is of similar importance to smoking as a risk factor for coronary heart disease. However, 60–70% (approximately two thirds) of the adult population fails to achieve the recommended physical activity levels, so lack of action may have a greater population impact than smoking, which directly affects just over a quarter of the adult population.”

The report provided the most authoritative and up-to-date summary of the evidence on the impact of physical activity and its relationship to health:

- Increasing activity levels will contribute to the prevention and management of over 20 conditions and diseases including coronary heart disease, diabetes, cancer, positive mental health and weight management.
- Cardiovascular disease, including heart disease, stroke and cancer are the major causes of death in England, together accounting for almost 60% of premature deaths.
- Inactive and unfit people have almost double the risk of dying from coronary heart disease. Physical activity is also an independent protective factor against coronary heart disease.
- Increasing activity levels has beneficial effects on musculoskeletal health, reducing the risk of osteoporosis, back pain and osteoarthritis.
- Physical inactivity, along with unhealthy diets, has contributed to the rapid increase in obesity in both adults and children with 22% of men and 23% of women in England now obese. The prevalence of obesity has continued to increase in both sexes since 1994, but more rapidly among men, so that in recent years there has been little difference between the sexes in obesity prevalence.
- Regular physical activity reduces the risk of depression and has positive benefits for mental health including reduced anxiety, and enhanced mood and self-esteem.

The cost of inactivity

Besides the human costs of inactivity in terms of mortality, morbidity and quality of life, the cost of inactivity in England has been estimated to £8.2 billion annually¹². This excludes the contribution of physical inactivity to obesity which in itself has been estimated to cost £2.5 billion annually¹³.

Recommended amounts and types of physical activity

The Chief Medical Officer's report¹¹ sets out detailed recommendations for the level and type of physical activity for health benefits:

Recommendations for active living throughout life

- Children and young people should achieve a total of at least 60 minutes of at least moderate intensity physical activity each day. At least twice a week this should include activities to improve bone health (activities that produce high physical stresses on the bones), muscle strength and flexibility.
- Adults should achieve a total of at least 30 minutes a day of at least moderate intensity physical activity on 5 or more days of the week.
- The recommended levels of activity can be achieved either by doing all the daily activity in one session, or through several shorter bouts of activity of 10 minutes or more. The activity can be lifestyle activity (activities that are performed as part of everyday life, such as climbing stairs or brisk walking) or structured exercise or sport, or a combination of these.
- More specific activity recommendations for adults are made for beneficial effects for individual diseases and conditions. All movement contributes to energy expenditure and is important for weight management. It is likely that for many people, 45–60 minutes of moderate intensity physical activity a day is necessary to prevent obesity. For bone health, activities that produce high physical stresses on the bones are necessary.
- The recommendations for adults are also appropriate for *older adults*. Older people should take particular care to keep moving and retain their mobility through daily activity. Additionally, specific activities that promote improved strength, co-ordination and balance are particularly beneficial for older people.



Source: Chief Medical Officer's report: *At least five a week. Evidence on the impact of physical activity and its relationship to health, 2004.*¹¹

It is important to note that these recommendations are by their nature very general. People with specific health needs should discuss appropriate levels of activity with qualified health or fitness professionals.

The Chief Medical Officer's report also described how individuals of different age groups can achieve the recommended levels:

Person	Activities
Young child	Daily walk to and from school. Daily school activity sessions (breaks and clubs). 3–4 afternoon or evening play opportunities. Weekend: longer walks, visits to park or swimming pool, bike rides.
Teenager	Daily walk (or cycle) to and from school. 3–4 organised or informal midweek sports or activities. Weekend: walks, biking, swimming, sports activities.
Student	Daily walks (or cycle) to and from college. Taking all small opportunities to be active: using stairs, doing manual tasks. 2–3 midweek student sports or exercise classes, visits to the gym or swimming pool. Weekend: longer walks, biking, swimming, sports activities.
Adult – employed	Daily walk or cycle to work. Taking all small opportunities to be active: using stairs, doing manual tasks. 2–3 midweek sport, gym, or swimming sessions. Weekend: longer walks, biking, swimming, sports activities, DIY, gardening.
Adult – houseworker	Daily walks, gardening, or DIY. Taking all small opportunities to be active: using stairs, doing manual tasks. Occasional midweek sport, gym, or swimming sessions. Weekend: longer walks, biking, sports activities.
Adult – unemployed	Daily walks, gardening, DIY. Taking all small opportunities to be active: using stairs, doing manual tasks. Weekend: longer walks, biking, swimming, or sports activities. Occasional sport, gym, or swimming sessions.
Retired person	Daily walking, cycling, DIY or gardening. Taking all small opportunities to be active: using stairs, doing manual tasks. Weekend: longer walks, biking, or swimming.

Source: Chief Medical Officer's report¹¹ using data from the UK Time Use Survey, 2003¹⁴



3. How active are people in the South East?

This section of the report describes participation levels in physical activity among people living in the South East region. The data come from large surveys, principally the Health Survey for England¹⁵. Details of the surveys are found in appendix 3. Further analysis of the data indicating the likelihood of different population groups being active at recommended levels is included in appendix 6.

Levels and types of physical activity are described as follows:

Moderate physical activity:

Activities with an energy cost of at least 5 kcal/min but less than 7.5 kcal/min. For most people this is activity equivalent to a brisk walk.

Vigorous physical activity:

Activities with an energy cost of at least 7.5 kcal/min. For most people these are activities like running or fast cycling, if they are fast enough to become sweaty and out of breath¹⁵.

Active:

Taking part in physical activity at the recommended level: at least 30 minutes of at least moderate intensity physical activity on 5 or more days a week (a total of 150 minutes).

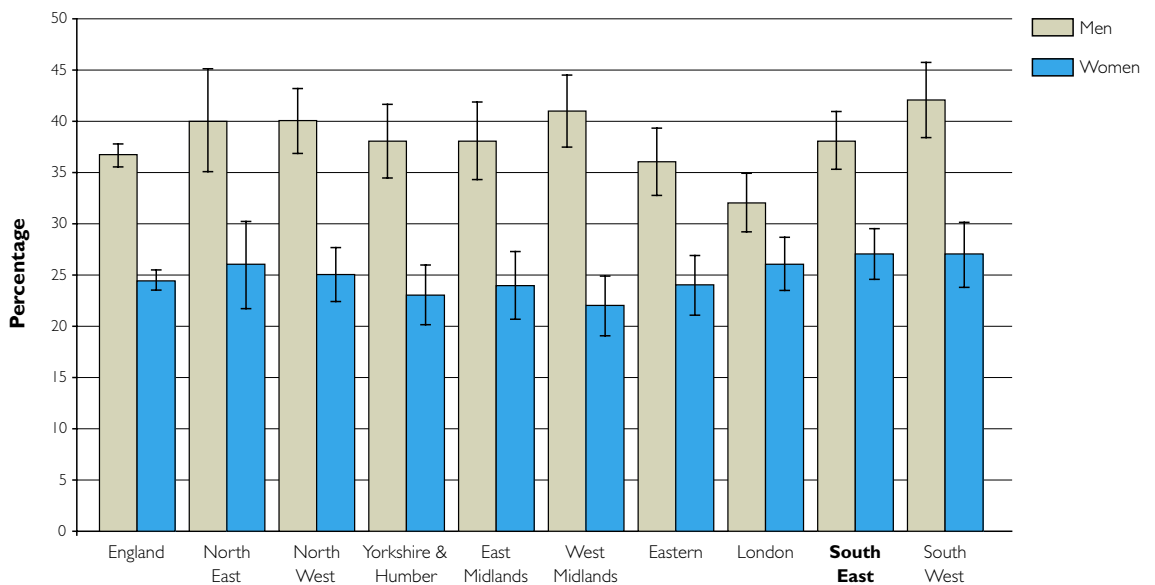
Sedentary:

Taking part in less than 30 minutes of at least moderate intensity physical activity per week.

3.1. PHYSICAL ACTIVITY IN ADULTS

Across the South East 38% of men and 27% of women are active at the recommended level (5 or more sessions a week of 30 minutes of at least moderate intensity activity) (Fig 1). There is no significant difference between physical activity levels for adults in the South East compared to England, with 37% of men and 24% of women classed as active.

Figure 1:
Adults active at recommended levels: at least 30 minutes of at least moderate intensity physical activity on 5 or more days per week. Age standardised. England 2003
Health Survey for England 2003

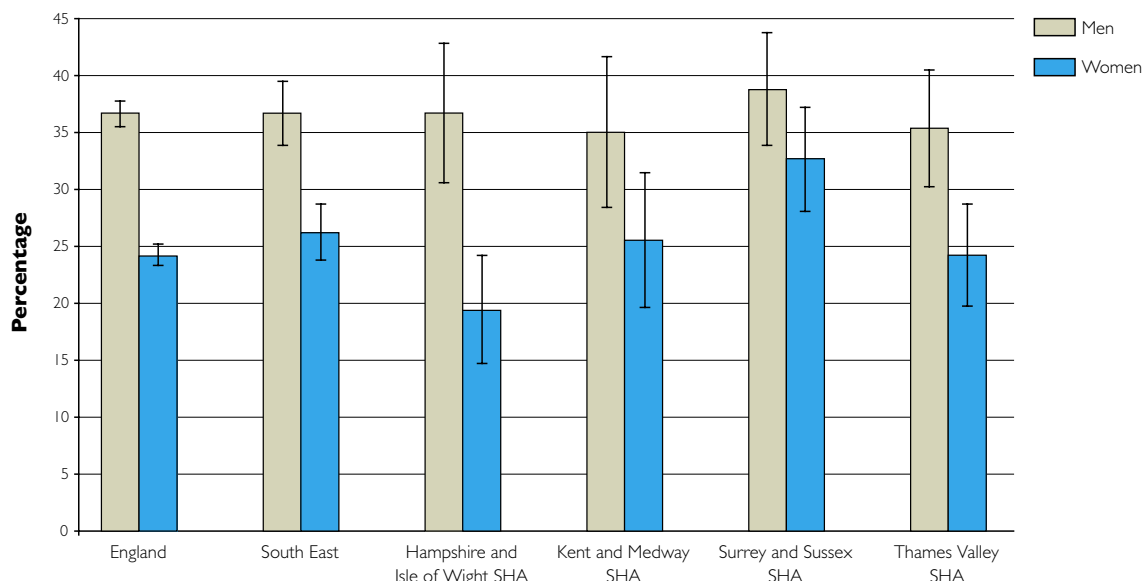


Confidence intervals (CIs) are a way of expressing how certain we are about a figure, such as an estimated prevalence based on results for a small sample of the population. CIs define a range of values which we are 95% (or 99.5%) certain contains the value. They are often shown on charts as a shape like a capital I. When the confidence intervals for two values do not overlap, we can say that the difference between the two values is statistically significant.

For all Strategic Health Authorities across the South East a higher percentage of men are active at recommended levels than women. There are no significant differences for percentages of male physical activity between the Strategic Health Authorities. However, among women, the proportion classed as active is higher in Surrey and Sussex (33%) compared to the England average (Fig 2).

Figure 2:

Adults active at recommended levels: at least 30 minutes of at least moderate intensity physical activity on 5 or more days per week. Age standardised. England 2003
Health Survey for England 2003



Levels of physical activity by sex and age

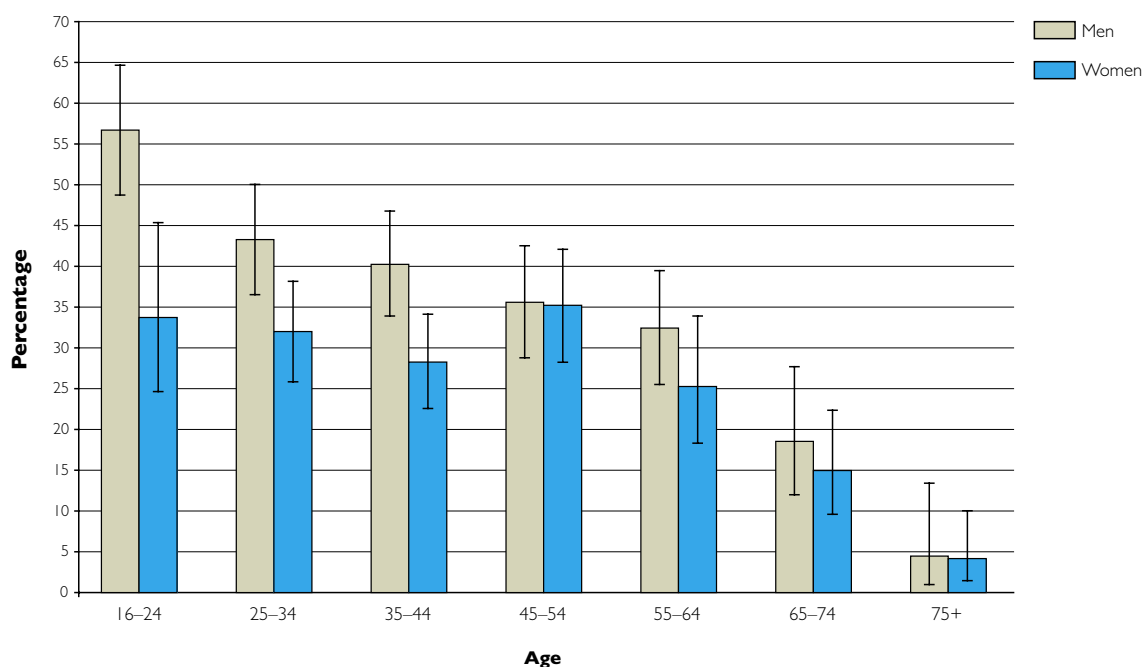
Across the South East significantly more males are active at recommended levels than females up to age 44 years (Fig 3). The largest difference is in the 16–24 year group where 57% of males are classed as active but only 34% of females. Activity levels among males are highest in the 16–24 year age group and decline steadily with age until 75+ years where only around 5% achieve the guidelines.

For females the proportion classed as active is fairly constant up to age 64 years, at around 30%. At older ages, similar to males, the proportion achieving the guidelines decreases to only 4% of the 75+ group.

There are no significant differences between the proportions achieving the guidelines in the South East compared to England for either males or females in any age group.

Figure 3:

Adults active at recommended levels: at least 30 minutes of at least moderate intensity physical activity on 5 or more days per week. South East 2003
Health Survey for England 2003



Figures 4 and 5 highlight the types of activity undertaken by men and women in the South East.

For most types of activity, males report more frequent participation than females. The exception is heavy housework, with females reporting 2.8 days during a 4 week period compared to an average of 1.7 days for men.

Among men aged 16–24, sport and exercise is the dominant form of physical activity. From age 45 years this is overtaken by walking.

Female activity levels are fairly constant only falling from age group 55–64 onwards. For most age groups as well as walking and sports & exercise, heavy housework makes a large contribution; averaging 4 days in the 4 week period for the 35–44 age group. Unlike males there is no peak in sports & exercise for young adult females.

Figure 4:

Adult males' number of days participation in different activities by age. South East 2003

Health Survey for England 2003

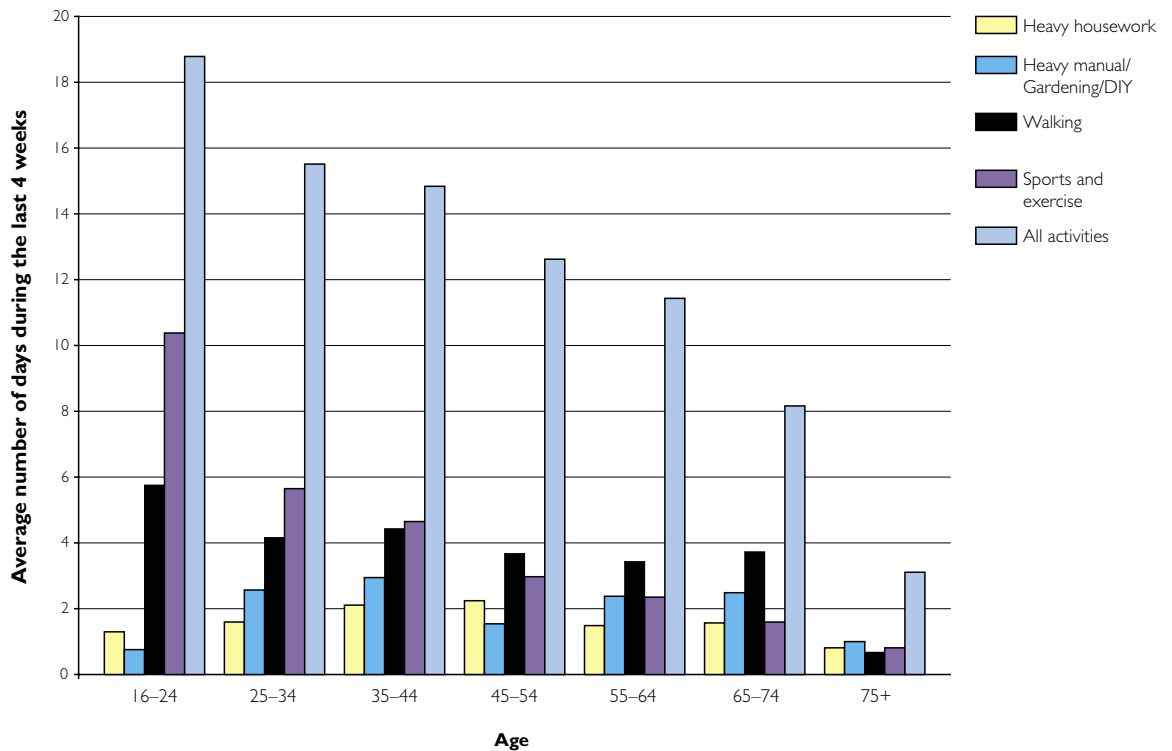
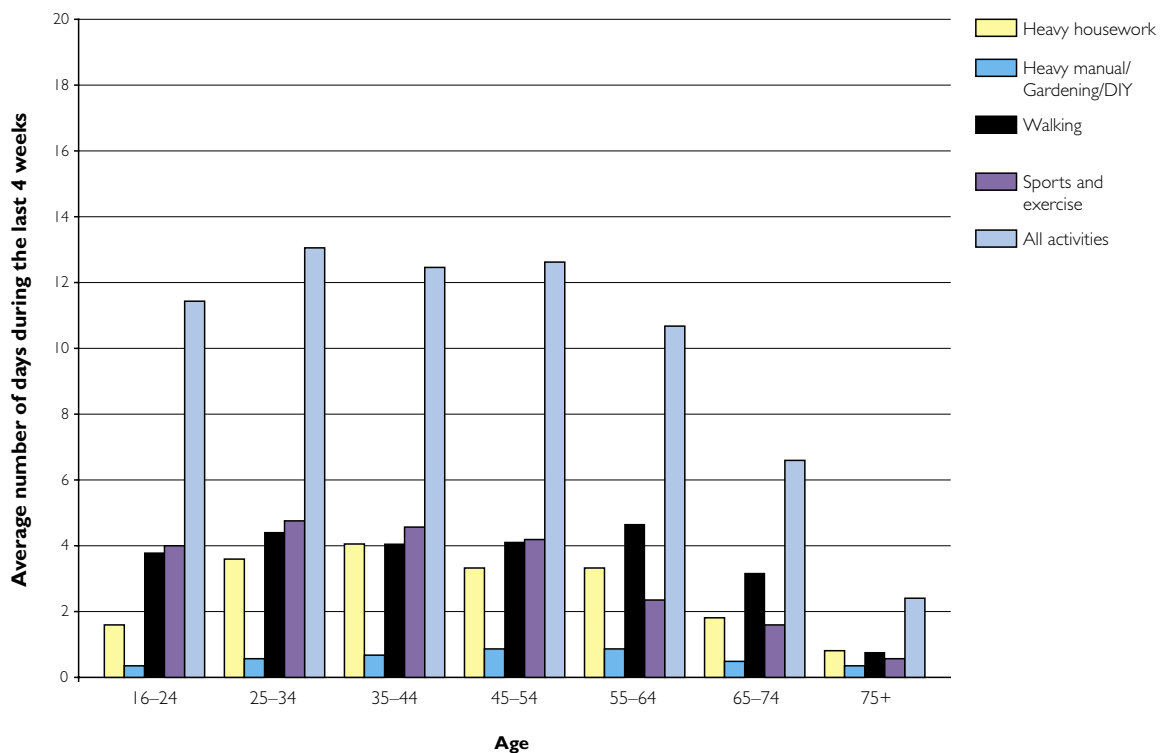


Figure 5:

Adult females' number of days participation in different activities by age. South East 2003

Health Survey for England 2003



Obesity and physical activity

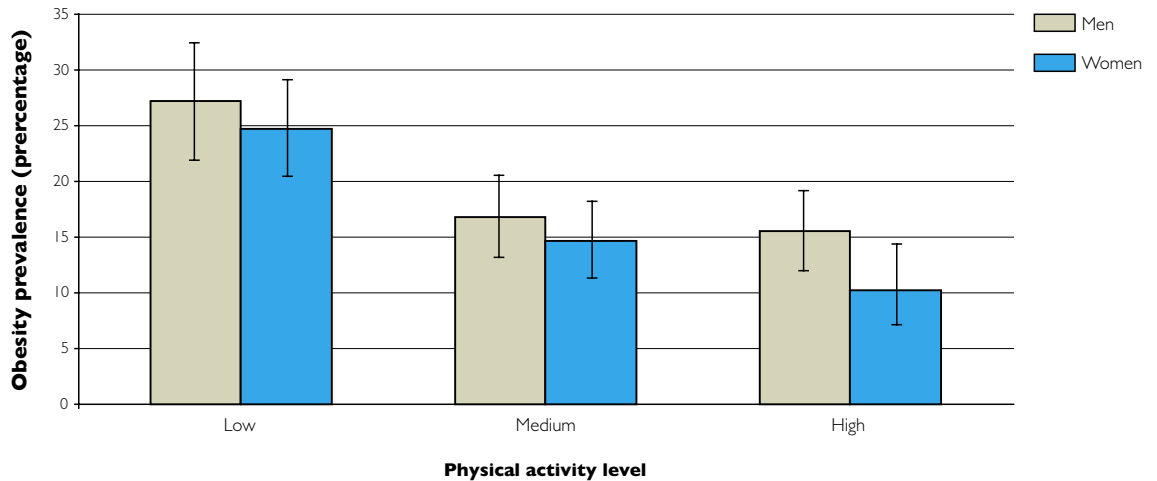
Obesity and physical activity are clearly related: although many factors contribute to the development of overweight and obesity, the final common pathway is an imbalance between intake and output of energy (calories) – i.e. between diet and physical activity¹⁶.

Levels of obesity have nearly trebled in England in the last quarter century, and currently stand at 22% in men and 23% in women¹⁵. The national trend is mirrored in the South East, although the regional prevalence of obesity is significantly lower than the national level at 19.9% (men) and 19.3% (women)¹⁵.

Overall adults in the South East who are less active are more likely to be classed as obese (Fig 6). In the Health Survey for England, both male and female respondents who report low physical activity levels have significantly higher obesity prevalence.

Figure 6:

Adult obesity prevalence by physical activity level and sex. South East 2003
Health Survey for England 2003



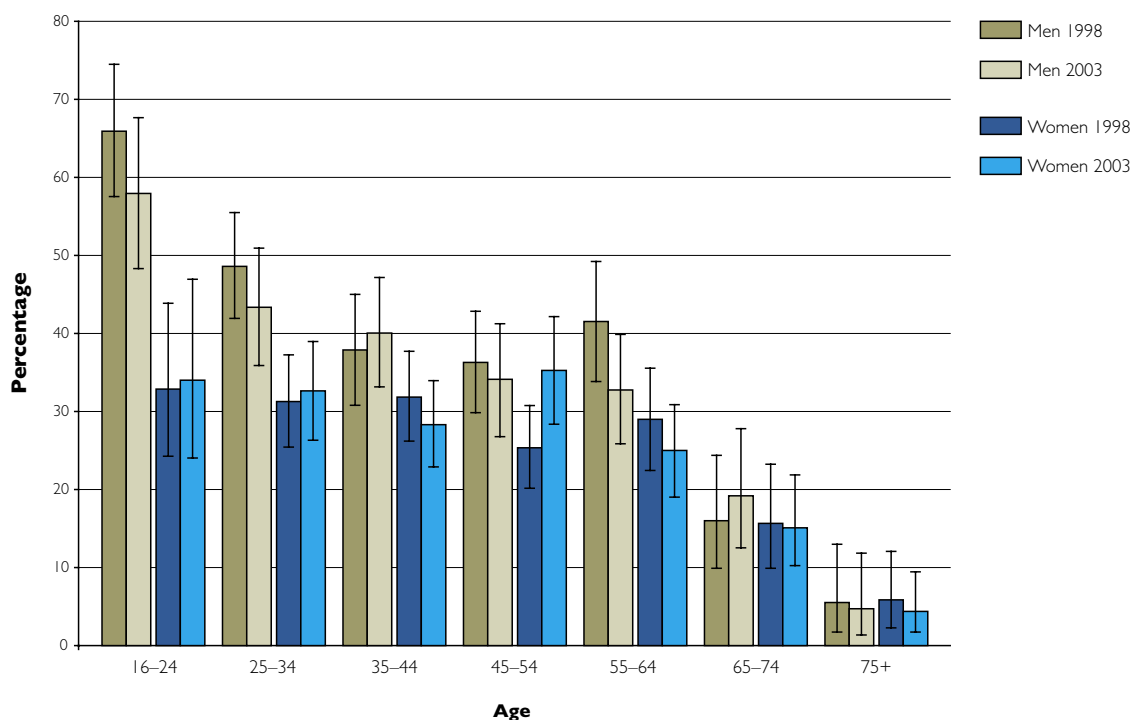
Trends in physical activity

Figures 7 and 8 show results from the 1998 and 2003 Health Survey for England where physical activity questions were asked on the full sample size.

Activity levels have remained stable with no significant differences between 1998 and 2003 for both sexes.

Figure 7:

Adults active at recommended levels: at least 30 minutes of at least moderate intensity physical activity on 5 or more days per week by age and sex. South East 1998 & 2003
Health Survey for England 1998 & 2003

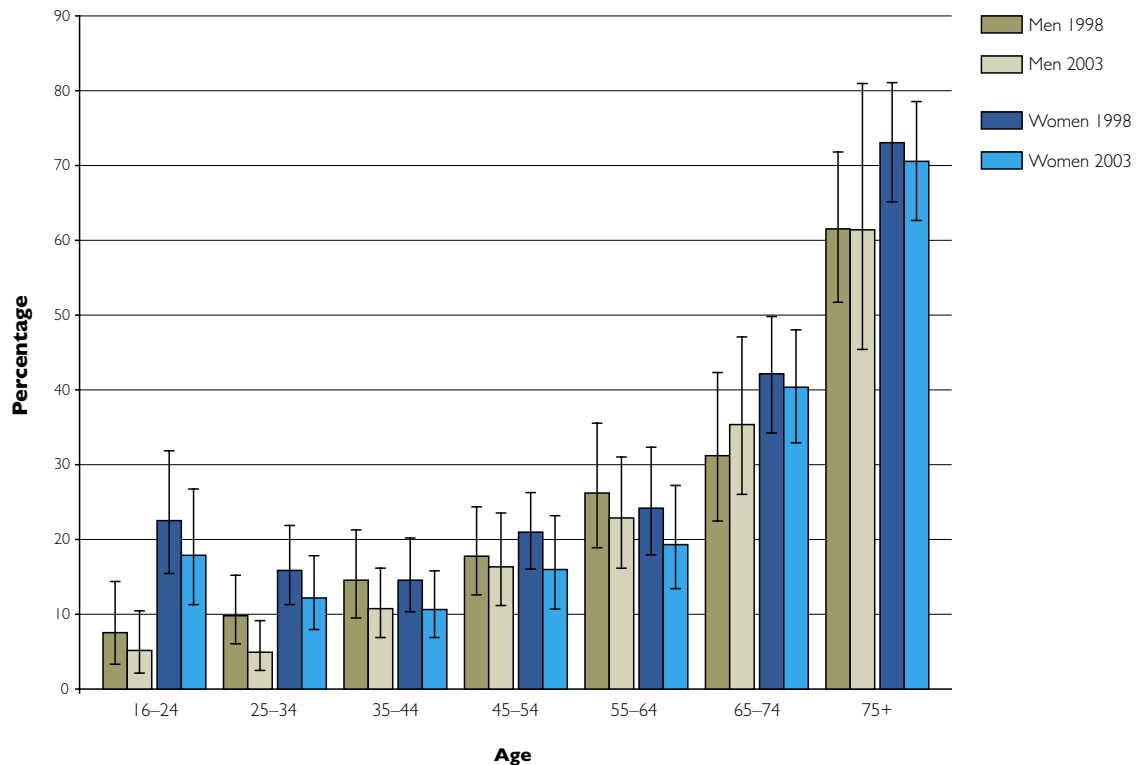


Trends in sedentary behaviour

Levels of sedentary behaviour generally fell between 1998 and 2003 for men and women in every age group. However, none of these changes are statistically significant.

Figure 8:

Adults reporting no physical activity by age and sex. South East 1998 & 2003
Health Survey for England 1998 & 2003



Mass media use

Figures 9 and 10 show the average number of minutes per day spent on mass media activities; defined as watching TV and videos, listening to the radio, music and reading. Such activities are likely to be sedentary. In the South East (and across England as a whole) as people get older more time is spent on mass media activities.

There are no significant differences between average time spent on mass media activities in the South East compared to England as a whole, except for 45-64 year old men, who report less than the average for England.

Even among the group with the lightest media use – females aged 25-44 years – this amounts to over 14 hours per week on average spent on mass media activities, most of which are likely to be sedentary.

Section 3.2 contains data on time spent by children on mass media activities.

Figure 9:

Adult males time spent on mass media activities per day by age. England & South East 2000
UK 2000 Time Use Survey¹⁴

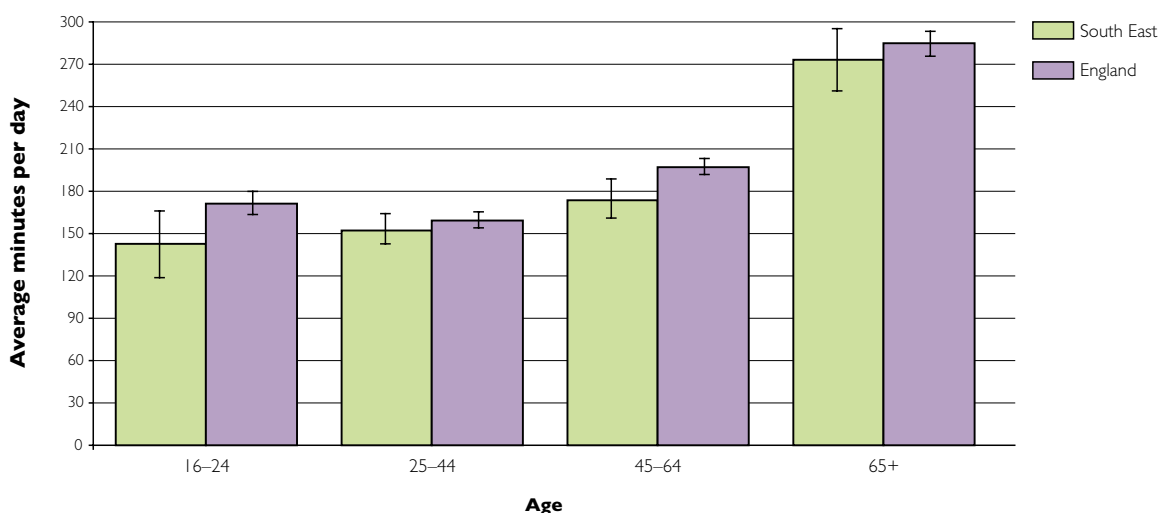
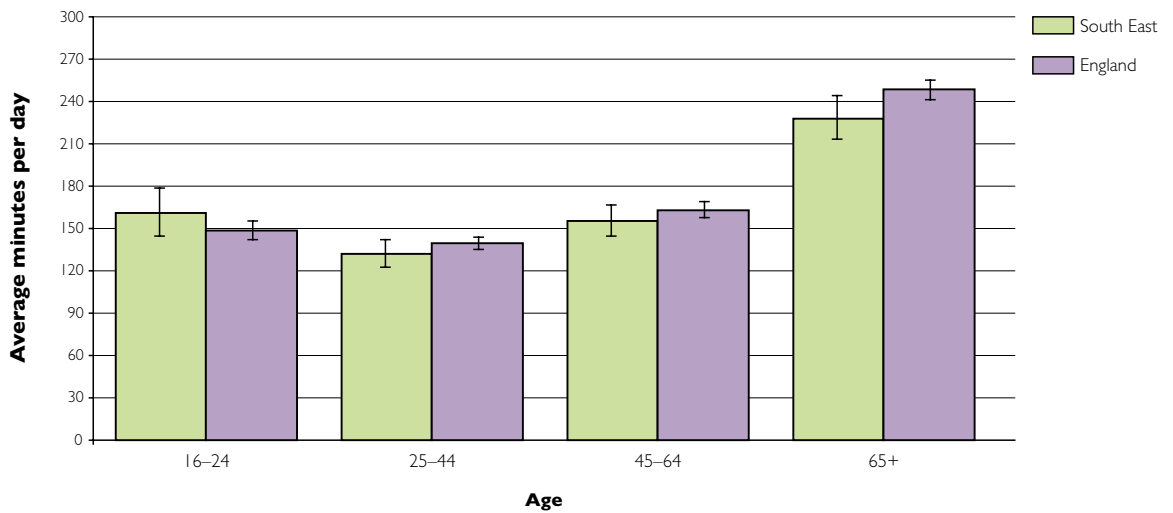


Figure 10:

Adult females time spent on mass media activities per day by age. England & South East 2000

UK 2000 Time Use Survey¹⁴



Black and minority ethnic groups

Fig 11 shows that both Black and Asian groups have lower percentages of males and females classed as active than White respondents. Among all ethnic groups females have a lower percentage classed as active than males. Due to the small sample size none of the differences is statistically significant. The small sample sizes also explain the wide confidence intervals on the chart below.

Figure 11:

Adults active at recommended levels: at least 30 minutes of at least moderate intensity physical activity on 5 or more days per week by ethnic group. South East 1999

Health Survey for England 1999

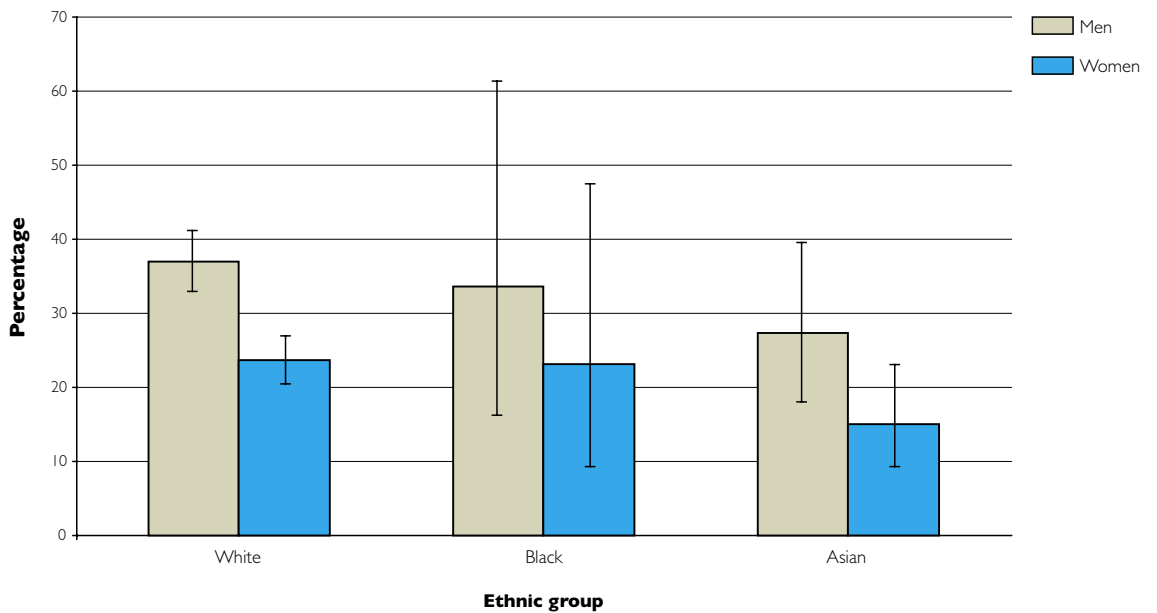


Photo by Phil Bennion

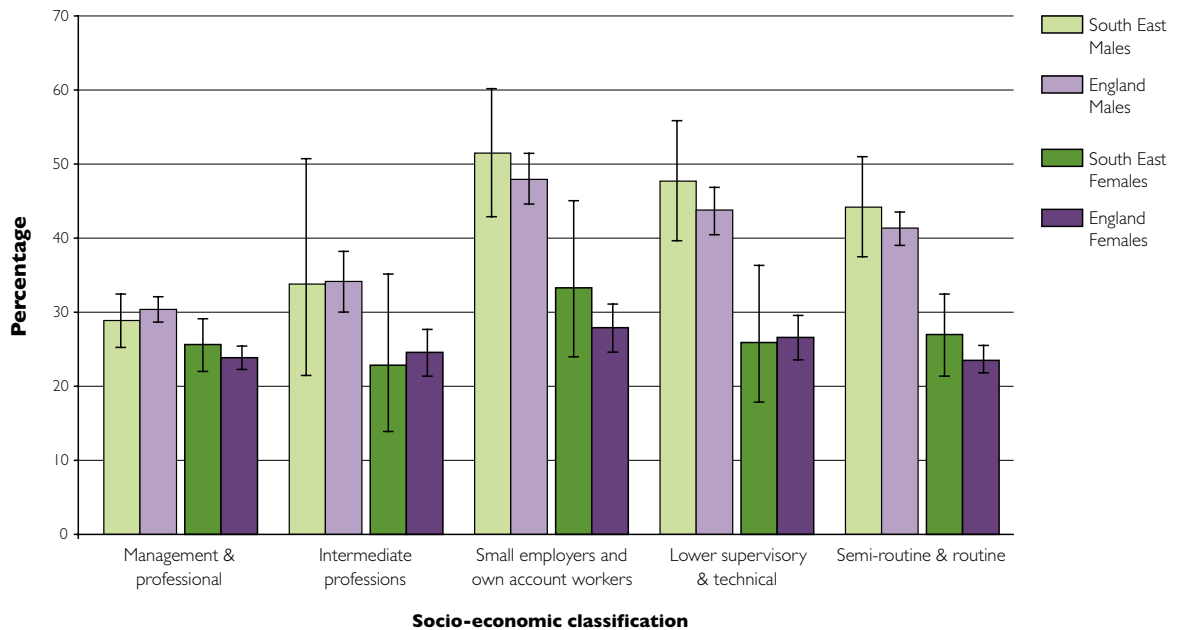
Socio-economic classification

Figures 12 and 13 show physical activity by different socio-economic groups, using the National Statistics Socio-Economic Classifications. Appendix 4 describes how these classifications are derived.

Figure 12 shows that for total physical activity among men, the higher socio-economic groups have lower levels of physical activity: males in the managerial and professional group and 'intermediate professions' groups have lower proportions achieving the guidance than other groups, in both the South East and England. This is likely to be due to the contribution of physical activity as part of work, among these groups, which is part of the overall physical activity measure.

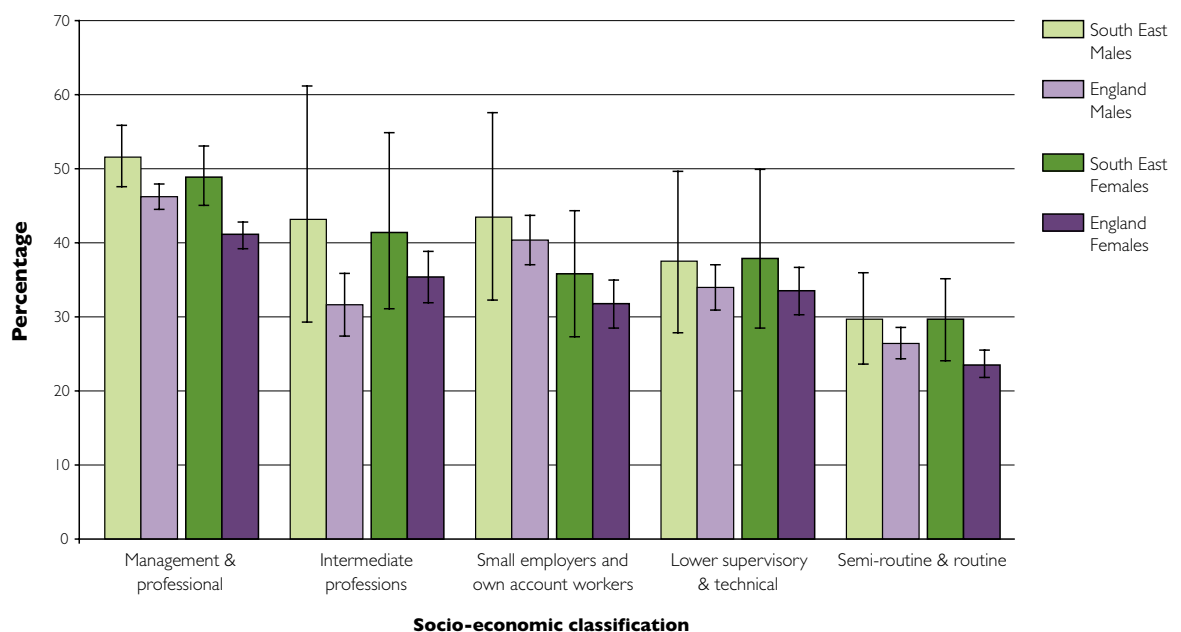
Women display fewer differences between the socio-economic groupings; even for England as a whole there are no significant differences between groups.

Figure 12:
Adults active at recommended levels: at least 30 minutes of at least moderate intensity physical activity on 5 or more days per week by socio-economic classification and sex. England & South East 2003
Health Survey for England 2003



A focus on sporting activities alone shows a very different social class distribution. Figure 13 shows that the higher socio-economic groups have higher levels of participation in sport. In the South East males and females in the managerial and professional group have significantly higher proportions participating in sporting activities than those semi-routine and routine groups.

Figure 13:
Adults reporting participation in sports activities during the last 4 weeks by socio-economic classification and sex. England & South East 2003
Health Survey for England 2003



Travel patterns

Travel is one of the main ways that people can be physically active (through cycling and walking) and changes to travel patterns in recent years are likely to have contributed to changes in levels of physical activity.

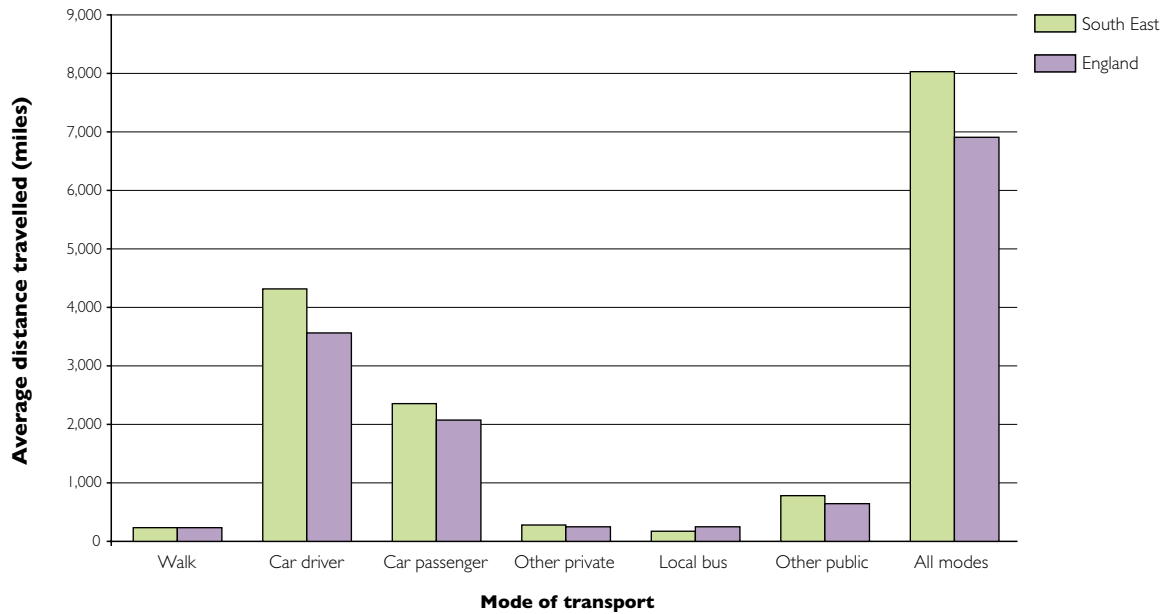
Figure 14 shows that people in the South East travelled further on average than people from any other region, at over 8,000 miles per person per year, compared to 6,800 miles per person per year for England as a whole. Most of this difference is accounted for by travel by car, the South East averaging 1,000 more miles per person than for England.

Since 1992–94 there has been no real change in the number of trips people are taking across the South East or the mode by which they take them.

Figure 14:

Adults average distance travelled by mode of transport. England & South East 2002/03

National Travel Survey, Regional Transport Statistics 2004



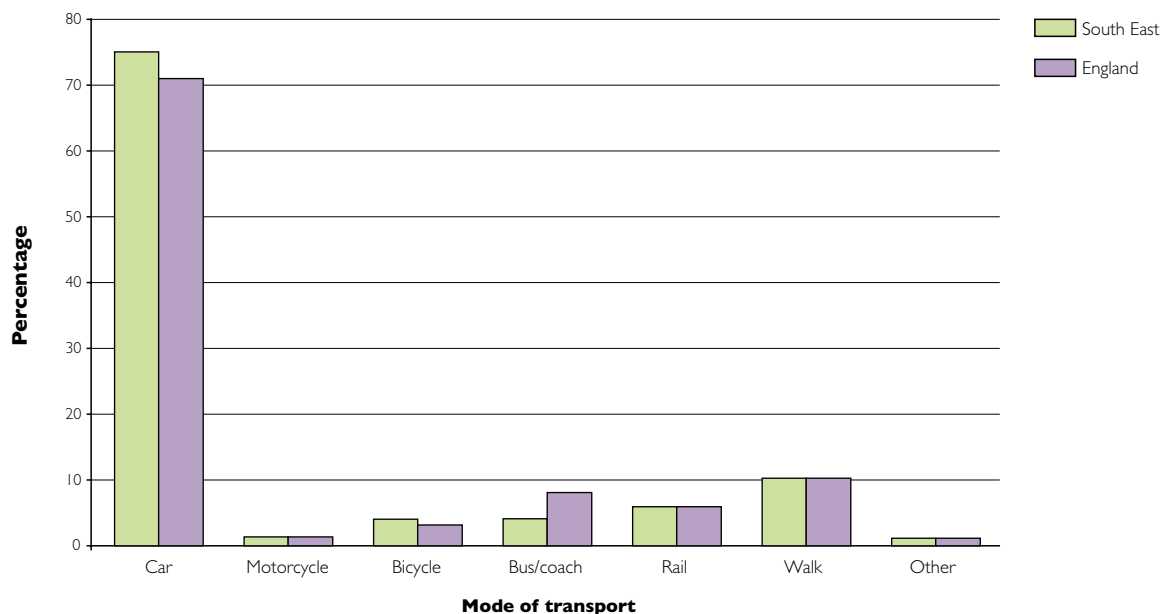
Travelling to work

Figure 15 shows that three-quarters of South East workers use a car as their usual method to travel to work; this is slightly higher than the England average at 71%. A slightly higher percentage of workers in the South East than elsewhere use a bicycle to travel to work, however this is only 4% compared to 3% for England.

Figure 15:

Adults usual method of travelling to work. England & South East autumn 2003

Labour Force Survey, Regional Transport Statistics 2004



Trips using a bicycle

More people cycle (and cycle further) in the South East than in England as a whole.

Figures 16 and 17 show that in the South East the average number of trips and the distance travelled by cycle is greater than for England as a whole. However, between 1992–94 and 1999–2001 there were declines in cycle use and the difference is narrowing.



Figure 16:

Average number of trips per year: England & South East 1992–94 & 1999–2001

National Travel Survey, Regional Trends, Department for Transport

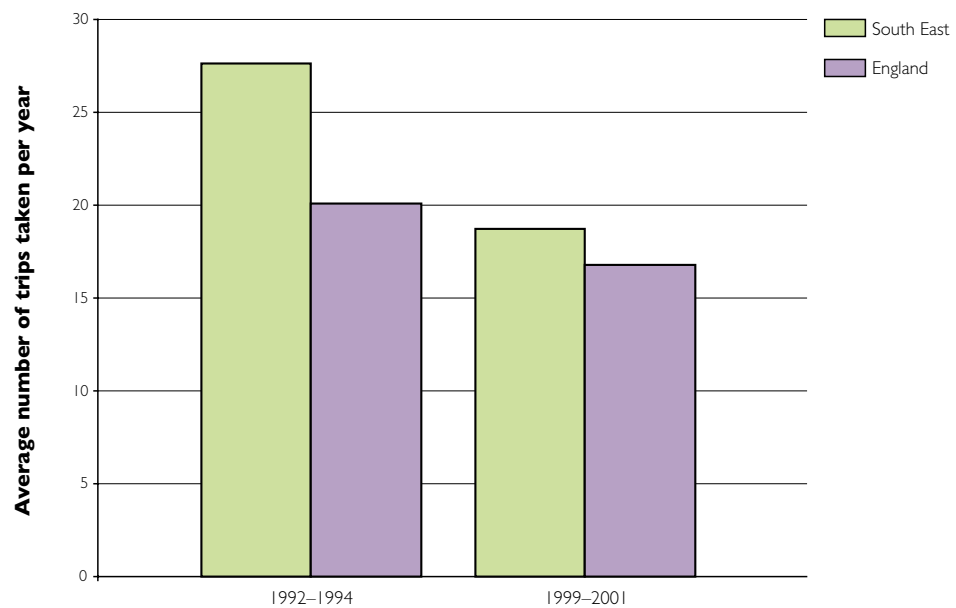
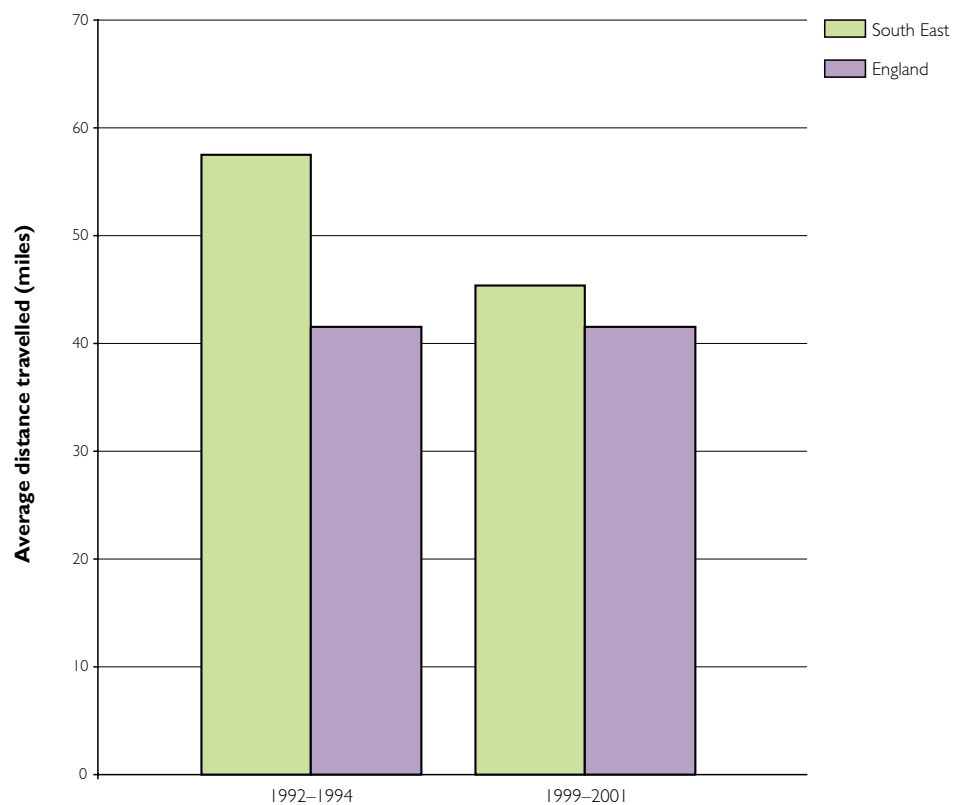


Figure 17:

Average distance travelled per year: England & South East 1992–94 & 1999–2001

National Travel Survey, Regional Trends, Department for Transport



3.2 Physical activity in children and young people

The Chief Medical Officer recommends that children and young people are physically active for at least an hour a day. Figure 18 shows that in the South East, 72% of boys achieve this level compared to 56% of girls. This difference between boys and girls is wider in the South East than any other region of England.

There is no difference between children's overall activity levels in the South East and the average for England as a whole.

Figure 18:

Children aged 2–15 years. Proportion of boys and girls who were active for at least 60 minutes a day on 7 days in the last week. England 2002

Health Survey for England 2002

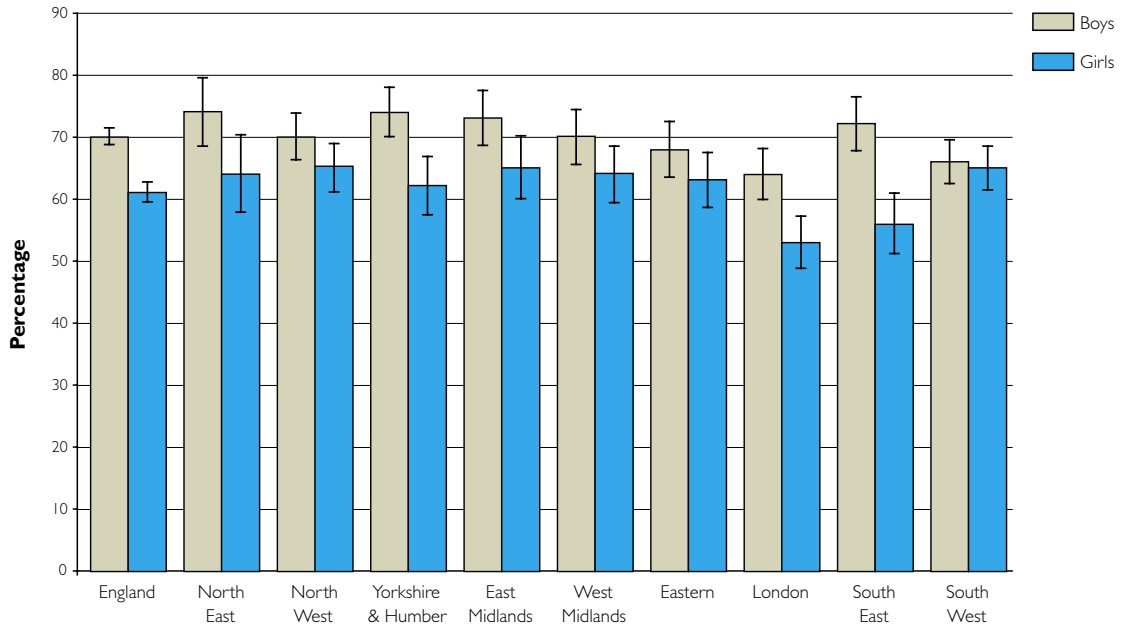


Figure 19 shows Health Survey for England data for physical activity among children aged 2–10 years and 11–15 years. In both age groups boys are more active than girls, and report more sport and exercise activities than girls.

At ages 2–10 years 14% of boys participate in sports activities on 5 days or more per week; double that of girls. For those aged 11–15 more boys are still participating in sports for 5 days or more than girls (16% compared to 12%).

Figure 19:
Children number of days per week participation in sport and exercise by sex and age. South East 2002
Heath Survey for England 2002

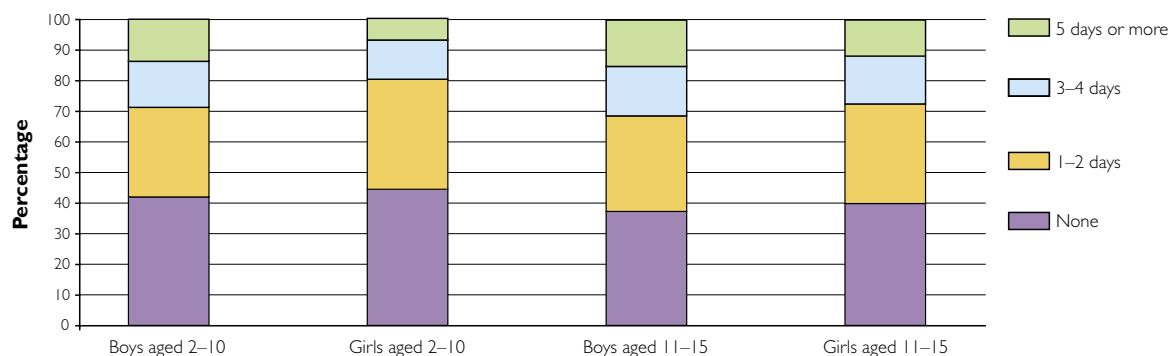


Figure 20 shows participation in active play. In all age groups, boys participate in more active play than girls. For children aged 2–11 years, 4% of boys reported doing no active play compared to 6% of girls (Fig 21). In the older age groups the situation has worsened with only 9% of boys reporting no active play compared to 27%, over a quarter of girls. For those reporting 5 days or more active play, both boys and girls experience a decrease at the older age group. However, at ages 11–15 over half of boys (58%) are still reporting 5 days or more active play but for girls this has decreased to only 37%.

Figure 20:
Children number of days per week participation in active play by sex and age. South East 2002
Heath Survey for England 2002

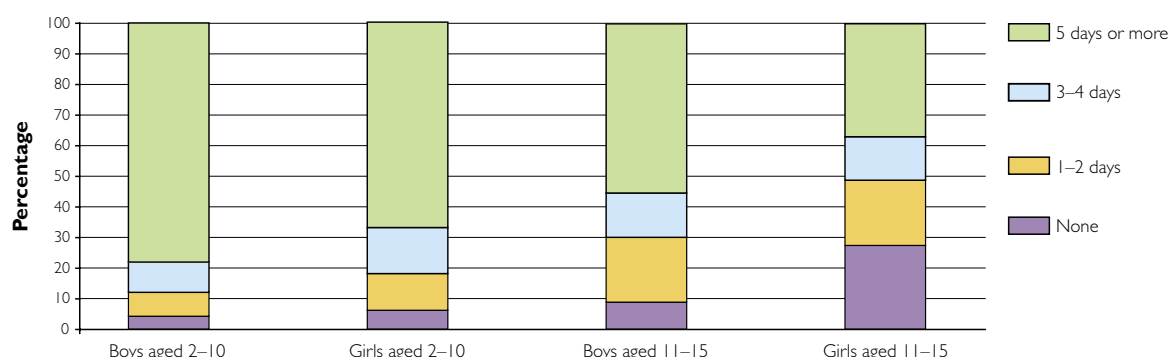
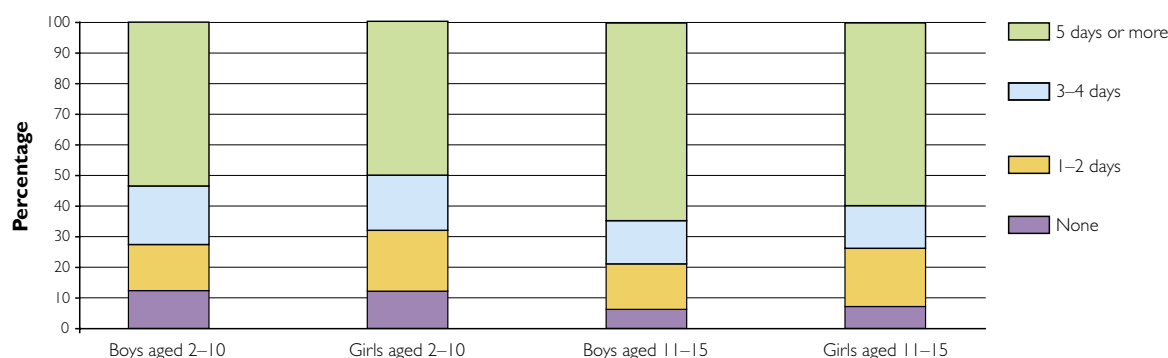


Figure 21 shows that among boys and girls in both age groups, more than half report participating in walking activities on 5 or more days. Walking activities appear to increase for both boys and girls in the older age group; in which only 6% of boys and 7% of girls reported doing no walking.

Figure 21:
Children number of days per week participation in walking by sex and age. South East 2002
Heath Survey for England 2002



Children and Mass media

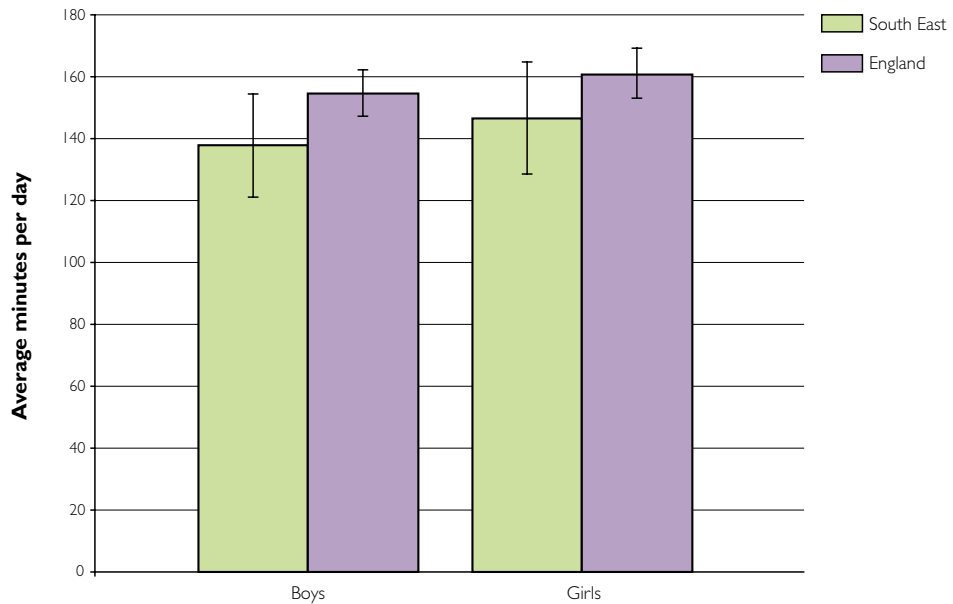
Although there is not a direct relationship between the use of TV and other mass media¹⁷ and obesity, it is likely to be a marker for other sedentary behaviours. Figure 22 shows that children across the South East spend less time on mass media activities (TV & video, music & radio, and reading) than all children across England. Nevertheless, for both girls and boys in the South East an average of over 2 hours a day is spent on these activities.

Section 3 contains data on adult mass media activities.

Figure 22:

Children aged 8–15 years time spent on mass media activities per day by sex. England & South East 2000

UK 2000 Time Use Survey



Travel to school

Figure 23 shows that children across the South East travel the greatest distance to school of all regions, at 1.9 miles for 5–10 year olds, and 4 miles for 11–16 year olds. This compares to 1.5 miles and 3.3 miles in England respectively. Of these journeys children in the South East are less likely to walk to school than those in England as a whole (41% compared to 45%) and more likely to travel by car (35% compared to 33% – Figs 24–26).

Figure 23:

Children average length of trips to and from school by age. England & South East 2002/03

National Travel Survey, Regional Transport Statistics 2004

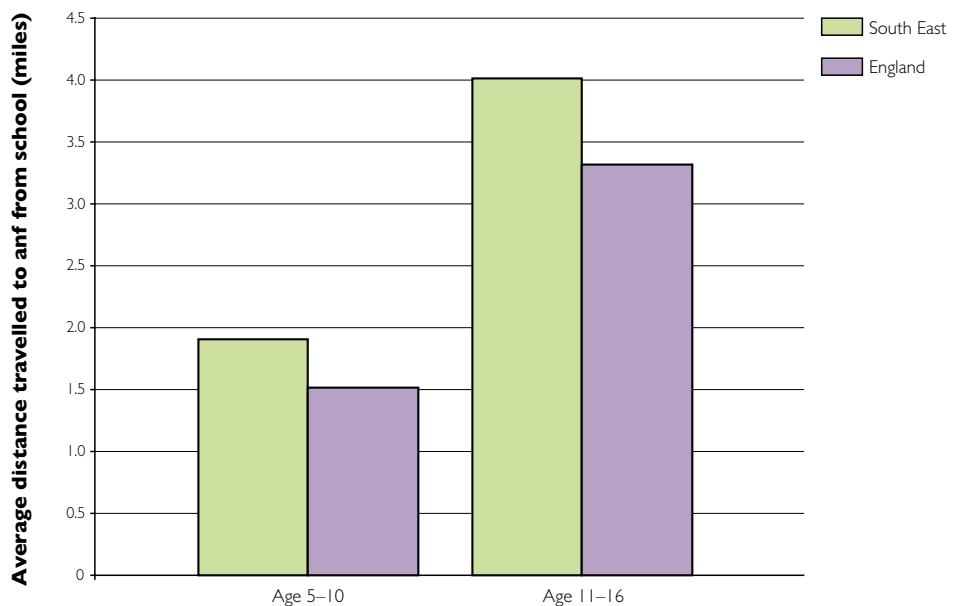


Figure 24:

Children aged 5–16 years trips to school by mode of transport. England & South East 2002/03

National Travel Survey, Regional Transport Statistics 2004

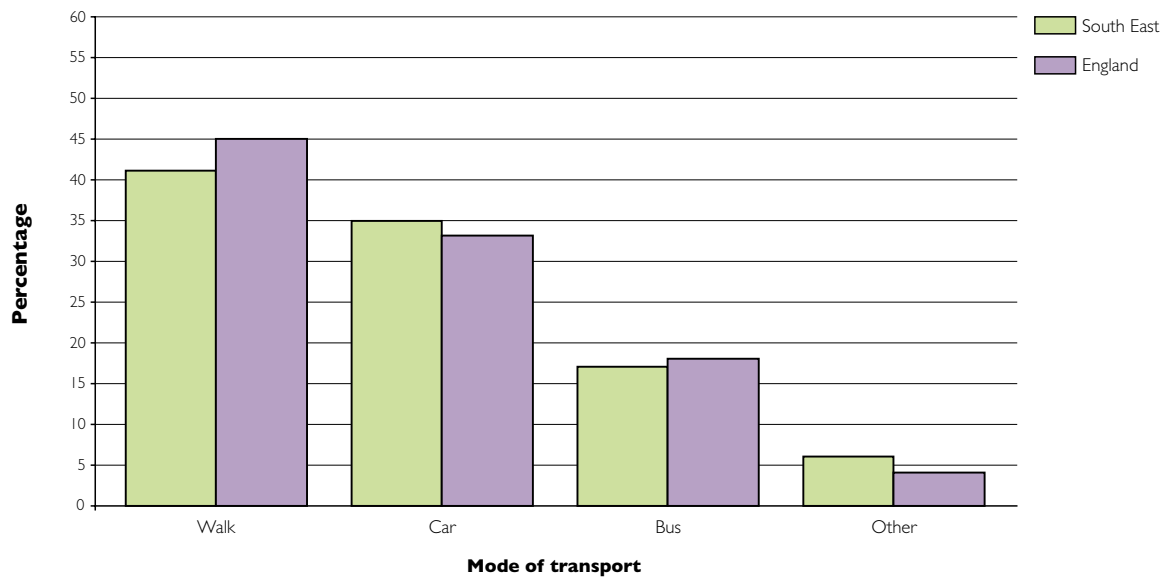


Figure 25:

Children aged 5–10 years trips to school by mode of transport. England & South East 1999–2001

National Travel Survey, Travel to School in GB – personal travel factsheet Jan 2003

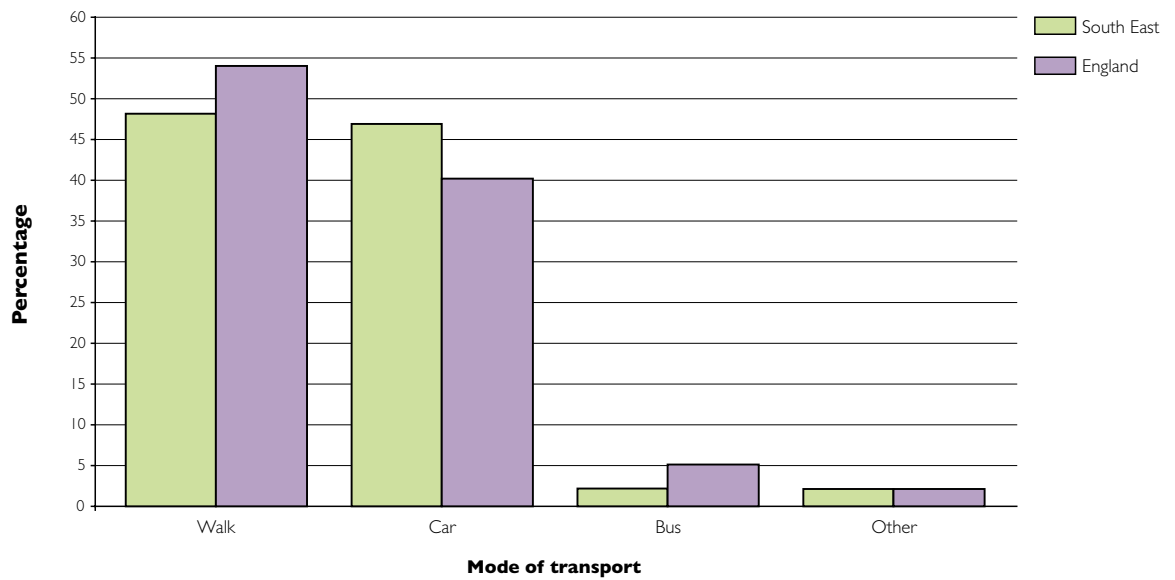
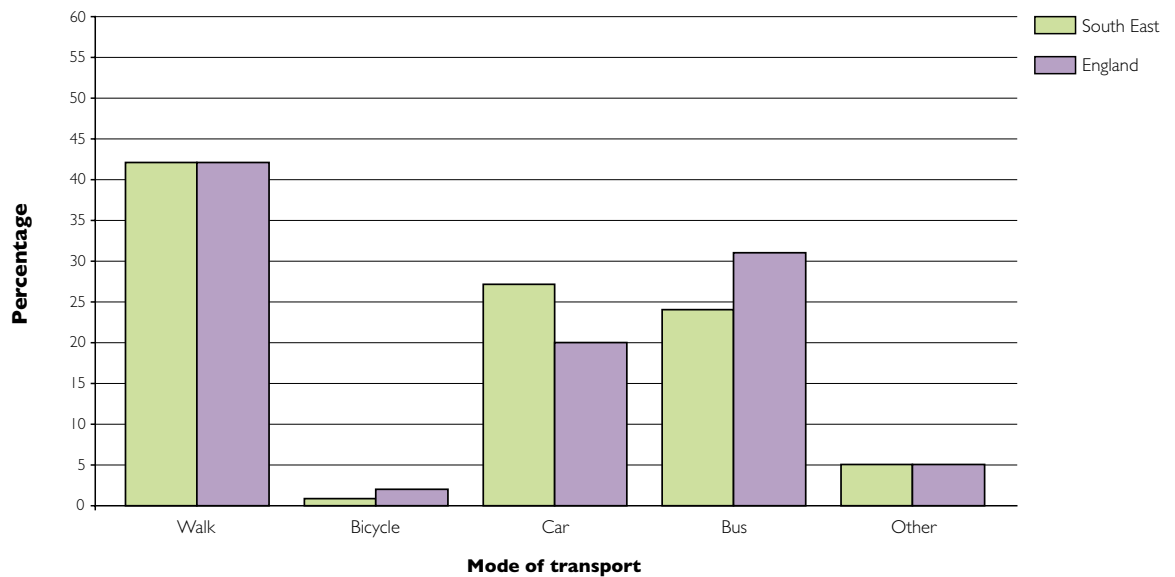


Figure 26:

Children aged 11–16 years trips to school by mode of transport. England & South East 1999–2001

National Travel Survey, Travel to School in GB – personal travel factsheet Jan 2003



4. Why aren't more people more active?

There are many ways to answer the question 'why aren't more people more active?' These include using data on societal trends, and looking at attitudinal data – what people say stops them from being active.

4.1. Societal trends.

Much of the decline in overall physical activity can be attributed to a reduction in opportunities for people to be physically active as part of daily life:

Increased car travel, and a corresponding decline in walking and cycling

During the period 1975/1976 to 1998/2000 the average distance walked per person per year fell from 255 miles to 189 miles. Over the same period, the average annual distance travelled by bicycle fell from 51 miles to 39 miles.

The proportion of primary school children walking to school has fallen from 62% in 1989/1991 to 54% in 1999/2001. Over the same period, the proportion of children travelling to school by car increased from 27% to 39%. A similar pattern was evident for secondary school children¹⁸.

Between 1985 and 1999, the proportion of shopping trips made by car increased by approximately 10%, and the number of shopping trips on foot decreased by 12%¹⁸.

Increased car ownership

On average, people living in a household without a car walked 273 miles in a year while people living in a household with a car walked 169 miles. Low income households were least likely to have access to a car and people within these households tended to walk the furthest but travelled the fewest miles by bicycle¹⁸.

Fewer manual jobs

The proportion of the workforce involved in sedentary occupations has increased, while the proportion involved in physically active occupations has fallen.

Increased ownership of labour-saving devices

There has been an increase in ownership of washing machines, tumble driers and dishwashers over the past 30 years. These devices reduce the physical activity involved in housework¹⁹.

Other labour-saving devices, including escalators and lifts, also discourage activity. Although there are few data available, there appears to be a trend away from visible stairs in buildings and towards provision of lifts.

Greater participation in sedentary leisure activities

Sport England research found that children spent most of their time outside school lessons watching television and videos²⁰. As reported in Chapter 3, the Time Use Survey showed that girls and boys aged 8–15 in the South East spent an average of over two hours a day is spent watching TV & video, listening to music & radio, or reading.

4.2. Attitudinal variables – barriers to physical activity.

A recent review for Sport England²¹ systematically examined UK published and unpublished studies which have examined children and adults' reasons for participation and non-participation in sport and physical activity. Key findings from national survey data on barriers to physical activity are summarised below.

- Lack of time. This was cited as the most common barrier in all national physical activity surveys. For example 43% of respondents in the National Fitness Survey²² said they did not exercise due to lack of time.
The only exception to this was among disabled people: in the Sport England survey²³ 60% of the sample said that they were limited by 'health' and only 6% said that 'time' was an issue.
- 'Not being the sporty type'. This is particularly important for women – for example in the National Fitness Survey²² 38% of women said that being 'not the sporty type' put them off physical activity.
A low proportion of people from Black and minority ethnic groups identified not being the 'sporty type' as a barrier, only 10–17% identified this as a factor.
- Concerns about safety. An important barrier for women from Black and minority ethnic groups is a concern about going out alone – identified by 16–18% of each ethnic group. Also, some and some cultural barriers more important for some groups, such as Muslim women²⁴.
- Too tired/prefer to rest and relax. High proportions of people from surveys identify being 'too tired' to do physical activity as a barrier, or preferring to 'rest and relax' rather than be active.
- Perceptions and self-assessment. Surveys also show that there are significant gaps between people's level of physical activity and their assessment of their level of physical activity or fitness. For example, the National Fitness Survey showed that there were high proportions of people who were classed as sedentary (from the detailed physical activity questionnaire) but who agreed with the statement that they did 'enough exercise to keep fit'.



5. Public health interventions: evidence of effectiveness

The Wanless report²⁵ pointed out that there was a general lack of a solid evidence base for the effectiveness of public health interventions, but that this should not be seen as an ‘excuse for inaction’. The issue is especially pertinent to physical activity, a relatively young field in the public health arena.

The following sections of this report summarise evidence and experiences from a range of sources and styles of research. This includes reviews of reviews, single systematic reviews, qualitative research with practitioners and case studies. This information is brought together in a table of recommendations in section 7. While this is not an exhaustive review of the physical activity intervention literature, it does provide a useful guide to practitioners based on the best available evidence.

5.1. Evidence from ‘reviews of reviews’

This section sets out recommendations for effective public health action. These are based on review-level evidence from the former Health Development Agency’s Evidence Briefing (HDA),²⁶ which summarised relevant review-level literature. Draft recommendations were combined with practitioner expertise and experience gathered from fieldwork meetings held across England in 2004 by the former HDA’s Collaborating Centre.

Healthcare settings – recommended effective action for primary care staff and allied health professionals.

GPs and other health professionals should provide brief advice about physical activity to all inactive patients, supported by written materials

Systems should be developed in primary care to promote access to community based exercise specialists or behaviour change specialists who can offer ongoing support and advice to inactive people

Healthcare professionals should target inactive patients with single factor interventions where possible, which focus on moderate intensity physical activity, particularly walking

Characteristics of effective programmes

- Referral to well-trained staff who can draw on a range of experience and training including behaviour change theory; physical activity expertise; experience in working with people with specific conditions
- Programmes offering a choice of activity and/or a choice of venue
- Programmes offering on-going support in the community, ideally linked to a supportive environment for physical activity
- Programmes run in conjunction with partners – often from the local authority or voluntary sector.

Community settings – recommended effective action for commissioners and service providers.

Community-based interventions should be developed using theories of behaviour change, offering tailored and targeted programme to inactive individuals, backed up with ongoing support

Programmes should promote home-based walking and other moderate intensity physical activities, and offer participants the choice of using a range of local opportunities to be active

Characteristics of effective programmes

- Local partnerships for implementation are essential and have the added benefit of offering adults choice of where and how to be active
- Local opportunities to be active matching the expressed needs of that community
- Encouragement of the social aspects of community based programmes which provide social support for behaviour change
- Developing strong links with the local community and using lay volunteers to encourage programme participants.

Older adults – recommended effective action for commissioners and service providers

Although the following recommendations are made for interventions aimed at the broad group of older adults defined as aged 50+, in practice care should be taken to further segment this target group wherever possible. The needs and motivations of the over 50s are diverse and effective interventions need to adopt greater specificity.

Evidence-based recommendation

A range of physical activity programmes should be developed which specifically target adults aged over 50. These should include a combination of individual or group based approaches using either group based or home based exercise sessions with support and follow-up.

Characteristics of effective programmes

- Offering choice of activities to older people
- Joining-up services between health and other partners, particularly the voluntary sector
- Using existing networks and facilities that older people use
- Offering on-going support to participants.

5.2. Evidence from reviews and other sources

Workplace

The HDA Evidence Briefing reported that there were two systematic reviews of the effectiveness of interventions in the workplace, but that the findings were inconsistent^{27,28}. It is therefore not possible to make evidence-based recommendations for practice from these reviews.

However, practitioners at the HDA workshops who had experience in promoting physical activity in the workplace were able to identify a number of themes:

- The workplace is seen to offer great potential for the promotion of physical activity, although there is little firm evidence for the effectiveness of physical activity promotion in the workplace
- The collection of evidence is problematic for most people engaged with workplace physical activity promotion
- Case study examples of workplace health promotion interventions were both positive and negative
- More successful programmes were seen to have some common components: a project 'champion'; consultation; choice of activities
- Barriers to workplace health promotion were mainly seen to be lack of time and lack of investment in the subject.

Transport

A recent systematic review of walking and cycling as an alternative to using cars²⁹ noted that 'we have tended to promote physical activity as leisure and through individual behaviour change. Could we also achieve this through changes in the transport environment?' The authors reviewed targeted behaviour change programmes; publicity campaigns; engineering measures; financial incentives; and provision of alternative services. They found evidence from a few relatively well conducted studies, that targeted programmes can change the behaviour of motivated sub-groups. For example in the TravelSmart study in Perth (Australia) there was a positive shift of 5.5% of all trips in the intervention area after six months compared with a 2% shift towards the car in a neighbouring control area.³⁰

Two of the most significant transport interventions in recent years have not (yet) been included in systematic reviews, but offer some interesting learning. The monitoring report of the congestion charge in central London has shown that levels of cycling have increased following the introduction of the charge³¹. There is evidence that the UK National Cycle Network has increased users' claimed levels of physical activity, and usage of the network has been increasing year on year³².

Additionally, there is evidence that transport policy can be influenced to increase potential benefits to public health³³.

Environment

There is a growing evidence base for the relationship between the environment and physical activity. This includes investigations of the influence of the built environment (such as street connectivity and town layout), natural environment (such as access to green open space) and the 'social environment' (including issues such as social support for physical activity).

There is, however, a less substantial literature on the effectiveness of interventions which have made modifications to the environment to improve conditions for physical activity. A recent review of interventions³⁴ found 19 studies, of which 16 looked at the effectiveness of health education posters at the 'point of choice' between escalator and stair use, and three looked at a variety of other types of modification to the environment. These included policy changes, improvements to cycle paths and exercise facilities, and provision for cycling and walking to work, alongside educational events. These resulted in some small but positive changes to physical activity. The stairs studies generally showed a short-term effect on physical activity for up to 3 months, with one study seeing an effect at 6 months after baseline.

It is also of interest to note that attitudinal surveys frequently report that environmental barriers are among the reasons that people say stops them from being physically active. The Parliamentary Office of Science and Technology³⁵ reported that among the 'factors behind a decline in physical activity' were a decline in walking due to personal safety (especially of children, women and older people); an increase in energy saving devices in public places (like escalators, lifts and automatic doors) and reduction of children's play due to adults' fears of safety. The report recommended a range of strategies to combat this including traffic-calming measures, enhancing footpaths and cyclepaths, installation of cycle racks and encouraging local authorities to produce local transport plans to encourage walking and cycling.

5.3. Other evidence for consideration

Physical activity interventions to reduce inequalities in health

As shown in section 3.1, there are significant inequalities in participation in physical activity, with people from lower socio-economic groups tending to take part in less discretionary leisure-time physical activity, particularly sport. An important principle of a public health approach is to plan interventions which reduce inequalities, as far as possible. There are few published intervention studies which measure the differential effect of the intervention according to factors such as social class, education or ethnic origin. However, there are some basic principles which may be followed to attempt to reduce inequalities in health, which are set out in a briefing paper produced by the former Health Development Agency³⁶.

Black and minority ethnic groups

Very few physical activity intervention studies have been conducted with people from Black and minority ethnic groups, and there are no published reviews. It is therefore not possible to provide review-level evidence-based recommendations for interventions focusing on these groups.

However, practitioners who have experience in promoting physical activity among Black and minority ethnic groups were able to identify a number of themes:

- Programmes targeting Black and minority ethnic groups are seen to be an important aspect of a comprehensive approach to physical activity promotion. Successful programmes shared some common characteristics: strong consultation; culturally appropriate activities; building projects on existing community structures; and paying attention to language and cultural issues.
- Key barriers to effective promotion of physical activity among people from Black and minority ethnic groups included a lack of understanding of cultural issues; problems of accessing mainstream services; and debates about integration.

People with a disability

To date there is only one review of interventions on physical activity among people with physical limitations and this did not provide any evidence of effectiveness³⁷.

However, practitioners who have experience in promoting physical activity among people with a disability were able to identify a number of themes:

- Key issues were seen to be offering a choice of 'mainstream' or special provision; increasing the amount of disability awareness training; studying the implications of the Disability Discrimination Act.
- Key barriers were identified as: political opposition to spending money on people with a disability; logistical issues especially staff and staff training; lack of capacity to provide a comprehensive service; physical barriers in the built and natural environment; societal barriers to disability; and the attitudes of providers and funders.
- There was an identified need for assistance with evaluation.

Children and Young People

Perhaps surprisingly, there is more limited evidence on the effectiveness of interventions to promote physical activity among young people than among adults. The available evidence has been reviewed systematically³⁸ and a number of suggestions emerged as potential interventions:

Regional and local spatial planning

- Better cycle paths
- Improved parks and play areas
- Improved provision of youth clubs
- Strong links between leisure services and schools so that children have access to information about availability of facilities.

Local NHS

- Primary care interventions to promote physical activity, including advice about reducing television viewing.

Schools

- School-based physical education and physical activity (e.g. active transport) should be maintained and enhanced
- Education about physical activity, reducing sedentary activity (television viewing, playing video games) and the potential impact of inactivity
- Making school facilities accessible outside lessons
- Improved extra-curricular activities.

6. What is being done in the South East? Examples of promising approaches

The local picture

There are two strong co-ordinated regional plans for physical activity and sport in the region:

- **Move It!**³ is a 'Framework for Action on physical activity in the South East'. It provides a rationale to be used by agencies to work together to ensure a co-ordinated approach to increasing physical activity across the South East Region with clear targets and timescales. It also sets out action for key stakeholders across the region.
- **Mission: Possible**⁴, is the South East Plan for Sport for 2004–2008, setting out the priorities for the regional sports board. The plan takes a broad definition of sport (to include active recreation and physical activity) and links closely to *Move It*.

These documents set out the strategic framework for the region and provide a number of clear recommendations for action. It is clear that there is also a great deal of local-level activity and innovation across the region, as people from many different agencies work together to find new ways to promote activity. This section presents some examples of interesting approaches that are being taken across the region.

Towards a county wide cycling and walking strategy for West Sussex

Adur, Arun and Worthing Primary Care Trust and West Sussex County Council have worked together to examine the possibilities of a co-ordinated cycling and walking promotion programme, including active transport and recreation. This has led to the development of a proposal under the Public Service Agreement programme to promote active transport in schools, workplaces and communities via: a marketing campaign; an advice/support programme; through public policy intervention, including infrastructure modification.

The collaboration very quickly identified that a cycling and walking programme can meet the targets of transport, health, education, environment and leisure partners by:

- Increasing the proportion of walking and cycling journeys
- Increasing recreational walking and cycling
- Increasing the number of schools with established Travel Plans
- Increasing sustainable transport to schools
- Decreasing personal injuries, especially those involving children and professional drivers
- Increasing the number of employers with Green Travel Plans
- Increasing the number of workplace-based Bicycle Users Groups
- Increasing the use of rights of way
- Increasing the accessibility to green spaces

There has also been a growing realisation that there is considerable synergy from joining up infrastructural interventions with promotional activities across multiple settings such as schools, workplaces and communities.

Brighton & Hove Active Living Taskforce

This is a group of volunteers and paid workers all involved in promoting active living in Brighton & Hove. Current membership is 59 people, representing local charities and community groups, the local authority and the health authorities.

The aim of the Taskforce is to pool knowledge about physical activity; share news about local events; work as a partnership to set up new, funded initiatives that meet local demand and encourage more people to get more active.

Following extensive mapping and consultation, the Taskforce has drafted a local Active Living Strategy and Action Plan that builds on the best of what is already happening. They aim to use the document to secure long-term funding, and to ensure active living becomes a priority for planners, policy-makers, employers, schools, community workers and families.

Active Travel in Southampton

Southampton City Council has developed close working relationships with Southampton City Primary Care Trust, with a strong focus on active travel planning and the promotion of cycling. The local authority is a founder member of the Southampton Physical Activity Alliance, and has worked with the PCT to ensure that Sustainable Transport is properly covered in the draft Physical Activity Strategy. A pilot GP cycling scheme has been launched with 8 GP surgeries having high-quality stainless steel Sheffield stands installed, with patients encouraged to cycle to see their Doctor. This is actively promoted via flyers and posters and a high profile launch.

Cycling is promoted heavily through the City Bike Guide (22,000 distributed in 20 months) and a full programme of events with health as a key component. An Active Transport Roadshow had 5,500+ participants and was featured as an example of good joint working in a national public health magazine.

One of the secrets of the success of the joint working has been the high level political support for active travel, including full participation by the local MP, Leader of the Council and Mayor together with other local Councillors.

Simply Walk – health walks with mental health clients

Simply Walk is a partnership between Chiltern, South Bucks and Wycombe local district councils and Chiltern and South Bucks and Wycombe PCTs. Initially the walks started with mainly retired people attending and leading the walks. Over time this has expanded to include other groups, most notably a successful link with a local mental health day centre, now running regular walks with and for clients.

An initial trial walk was undertaken with a local day care unit for mental health clients. The walk proved so popular and well attended that both staff from the unit and some clients have trained as walk leaders so that they are able to sustain the project themselves. The centre now runs a regular weekly walk with attendance from people with a variety of mental health issues. Other day service centres for mental health clients are now following suit and running walks.

Staff at the centre have been very supportive of the beneficial effects of the walks and the improved social inclusion. Further funding has now been agreed for the project.

SHAPE - the Slough Healthy Living Centre

SHAPE (Slough Health Activities Programme) is the name for Slough Healthy Living Centre. Funded by the *Big Lottery Fund*, it is a programme of 14 projects aimed at promoting health within the community. The projects are delivered by the local authority, Slough PCT and the voluntary sector.

Out of the 14 projects, at least 5 are aimed at improving physical activity levels. Two of these are aimed at the 50+ community. An 'Age Concern Slough' project provides seated exercises for house-bound individuals in their homes and group sessions at a local community centre primarily used by the older Asian population of Slough. This project has made contact with the Falls Unit at the local hospital who have referred patients to the project.

The project delivered 850 individual sessions between October 2004 and June 2005.

A second project is delivered by the Community Sports Department at Slough Borough Council. They provide a 50+ physical activity club together with regular sessions at local libraries and supported housing accommodation. 181 people attended in the first two months of the project. Future plans include: a physical activity club; and a health monitoring programme measuring weight and blood pressure.

Hampshire's 2nd Generation Local Public Service Agreement (LPSA2) - Adult Physical Activity Target

Hampshire County Council, its local authorities, Primary Care Trust clusters, Sport Hampshire & Isle of Wight and the voluntary sector, have worked together to agree an Adult Physical Activity Target for inclusion within Hampshire's 2nd Generation Local Public Service Agreement for October 2005–March 2009.

The agreed indicator is the number of Hampshire's adults undertaking 5 x 30 mins of moderate intensity sport and/or physical activity per week. Hampshire undertook a MORI survey in August 2005 to establish a baseline measure – this identified that currently only 20% of its adult population are currently undertaking this level of activity.

The Sport England and Department of Health target is to increase participation at this level by 1% per year. Hampshire is aiming to increase participation by 1.5% each year – this equates to engaging an additional 50,680 adults to doing 5 x 30 mins sport and/or physical activity per week by March 2009. If achieved, Hampshire's LPSA2 reward grant for this particular target should be in excess of £1.6 million.

This indicator is also a key inclusion in Hampshire's Local Area Agreement for 2006–2009.

The Step Counter Challenge '10,000 steps a day'

Epsom and Ewell Borough Council were selected to pilot a new Workplace Health Initiative which forms part of the *Choosing Health* Delivery Plan.

Let's Get Active aims to drive forward initiatives to increase participation by reducing the barriers to exercising, making activity more accessible and encouraging participation amongst all sections of the community. There will be particular emphasis on groups typically under-represented: disengaged young people; Black and minority ethnic groups; and those currently with health issues associated with sedentary lifestyles. The project will provide and support opportunities for individuals to learn more about activity and take part whatever their interest, needs and level of ability.

The first scheme launched in the workplace was the 'Step Challenge', which aimed to raise the profile of health and well-being and encourage people to be more physically active by walking the recommended 10,000 steps per day. Participants are given a resource pack containing everything needed to get started along with first hand advice from the scheme's co-ordinator. Staff are encouraged to keep to their normal walking routine for the first week to set a baseline, and are then encouraged to walk an extra 500 additional steps each day.

The average baseline at the start of the programme was 5,600 steps per day, which increased to 11,400 in week 6, with the majority of participants exceeding their target of 10,000 steps per day. A number of staff reported changing their mode of transport from car or bus to walking throughout the trial.

Health Activists Walking the Way to Health

The Slough Health Activist Project originated from the need to combat the problem of Coronary Heart Disease in Slough. The aim of the project is to train local people to deliver healthy living messages to people in Slough, particularly hard to reach groups and ethnic minorities.

Funded by Slough PCT in conjunction with Thames Valley University and the SHAPE Healthy Living Centre, the Health Activist course was upgraded to Level 2 of the Open College Network. The training is free to local residents and offers employment opportunities to all those who successfully graduate as Health Activists.

Encouraging people to become more physically active is an important part of the Health Activist course and Health Activists are keen to promote local health initiatives in Slough. They are now encouraged to become walk leaders for Slough Healthy Walks, the local 'Walking the Way to Health' (Countryside Agency) initiative aimed at increasing physical activity in the sedentary population. In the summer of 2005, 7 Health Activists trained to become walk leaders and will lead walks for their local community as part of 'Slough Healthy Walks'.

The course was awarded "3 Hearts Accreditation" in 2003 by the Countryside Agency, in recognition of its efforts to promote walking across the borough.

7. Public health interventions: what needs to be done?

This section attempts to draw together the findings from the diverse evidence base referred to in section 5, with the case studies from section 6, to present evidence-based recommendations for action. The table shows the recommendations by theme, together with an assessment of the potential public impact of each recommendation.



Recommendations for evidence-based public health action in the region

Theme	Recommendation	Responsibility and key partners	Nature of Supporting evidence	Estimate of potential public health impact (High, moderate, low)
Advocacy	Use public health networks and other mechanisms to create a strong unified voice to advocate for policy changes to support physical activity, especially through local strategic partnerships and local area agreements	PCTs, Public health networks, local authorities;	Case studies	High
	Support proposals to enhance the environment for physical activity such as improving access to parks and green spaces, and opposing out-of-town developments focused on car travel	Local authorities (planning); PCTs	Observational studies	High
Strategy development	Influence the development of local transport plans in support of walking, cycling and speed reduction	Local Authorities (transport); PCTs; County PA Alliances	Intervention studies; Case studies	High
	Lead by example through development of strong active travel plans for all PCT and local authority premises	PCTs, local authorities (transport) County PA Alliances	Case studies	Moderate
Delivery: Primary Care	Ensure all GP surgeries plan and implement an effective programme of physical activity counselling and brief opportunistic advice for patients	PCTs	Systematic reviews	Moderate
Delivery: community	Develop and deliver community programmes using theories of behaviour change, offering tailored and targeted programme to inactive individuals, backed up with ongoing support	Local Strategic Partnerships; PCTs; local authorities	Systematic reviews	Moderate
Delivery: Older people	Develop and deliver physical activity programmes targeting adults aged over 50. These should combine individual and group approaches and emphasise support and follow-up	Local authorities; social services; PCTs	Systematic reviews	Moderate
Delivery: younger people	Implement policies to support a whole-school approach to physical activity including travel to school	Local authorities (education)	Case studies	Moderate/ High
Monitoring and Evaluation	Put systems in place across the region to collect high quality data to inform future action on physical activity, including attitudinal and participation data	SEPHO, Sport England		Moderate/ high
	Ensure that all physical activity projects have a strong and realistic evaluation component	All project managers		Moderate/ High

8. Conclusions

- This report has highlighted the extent of the problem of inactivity in the South East region, where only 4 out of 10 men and 3 out of 10 women are active at the recommended level. While in many ways we are in a similar position to many other regions in the country, there are some issues that are particularly pertinent to the South East.
- Transport is a specific concern: people in the South East are more car-reliant than other regions, and are travelling further each year. Three-quarters of people in the South East travel to work by car. Children in the region are less likely to walk to school than children in England as a whole and more likely to travel by car.
- There is some 'good news' in the transport data outlined in this report: more adults cycle (and cycle further) in the South East than in England as a whole. This positive finding needs to be developed through comprehensive approaches to improve conditions for active travel.
- Action is needed to tackle physical activity at a number of levels. We need a strong voice in the region to advocate for greater attention to be paid to physical activity in local policies, and to take the strategic overview. We need to ensure that delivery of programmes on the ground is evidence-based and focused on strengthening the environment and opportunities for physical activity.
- We have two strong regional policies on physical activity in the region: *Move it!* and *Mission Possible*, and a co-ordinating body, the South East Physical Activity Co-ordinating Team (SEPACT). This report will help to strengthen their actions and help to put in place policies and programmes that will make it easier for people to see physical activity as an easy and natural part of their everyday life.



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Appendix 1. Summary of proposals in Choosing Activity

Chapter Heading	Delivery plan goals	Examples of specific objectives
Choosing activity in a consumer society	Ensuring that people throughout society have the information necessary to understand the links between physical activity and health	DH will commission evidence-based guidance on how to achieve the Chief Medical Officer's (CMO's) physical activity recommendations
	Ensuring that people throughout society have the information on opportunities to be active in everyday life	The Department for Transport will establish a national website giving information on walking
Children and young people: starting on an active path	Encouraging activity in young people	DCMS is taking forward work on children's play
	Encouraging activity in schools	All schools should have travel plans by 2010
	Extending further the use of educational facilities as a community resource for sport and physical activity including out of hours use	Eventually, all primary and secondary schools are expected to develop extended roles ie become 'extended schools'
Active communities	Creating and maintaining a wide range of opportunities for activity through sport	DH will build on the Local Exercise Action Pilots to invest in initiatives promoting physical activity
	Ensuring high-quality well-targeted and attractive facilities for walking and cycling	The Office of the Deputy Prime Minister will advise town centre planners to give priority to pedestrians and cyclists
	Continuing to make our public spaces and the countryside more accessible and attractive	The Department for Environment Food and Rural Affairs is planning to consult on improving access to coastal land
An active healthcare system	Health professionals increasing the provision of advice to patients on lifestyle, particularly on physical activity, both routinely and opportunistically	DH has commissioned National Institute of Clinical Excellence to produce guidance on preventing and managing obesity
	Services developed within the community healthcare system to provide ongoing support to achieve sustainable behaviour change	DH will launch the health trainers project in which accredited trainers in areas with high need will give advice to people who want it
	NHS providers and Primary Care Trusts (PCTs) working more closely with local government and private and voluntary sectors to create access to opportunities for physical activity	DH will pilot local area agreements in 21 areas
Choosing activity in the workplace	Encourage employers (in the public, private and voluntary sector) to engage and motivate staff to be more active	The Department for Transport and the cycle industry will produce guidance to increase use of the cycle-to-work schemes ⁴ and promote cycling
	Providing employers with support, such as practical advice, on enabling and promoting activity in the workplace and disseminating best practice for an active physical and cultural environment.	Sport England will offer a free consultancy service advising government departments on how they can encourage staff to be more active at work

Appendix 2. Measuring physical activity

The measurement of physical activity presents some significant challenges. Physical activity itself is a complex behaviour with four main dimensions. These can be abbreviated to FITT:

- Frequency of the activity – usually measured in occasions per week
- Intensity at which the activity is carried out
- Time – the duration of the bout of activity
- Type of activity

All these dimensions need to be measured in order to arrive at an accurate assessment of an individual's overall activity level. In general this can either be via surveys or through some objective measurement method.

Physical activity assessment methods³⁹

Surveying	Task specific diary
	Recall questionnaire
	Quantitative history
	Global self-report
Monitoring	Behavioural observation
	Job classification
	Heart rate monitor
	Motion sensors
	Calorimetry
	Global positioning systems
	Doubly-labeled water

Objective measurement

Objective measurement of activity can be carried out using devices such as motion sensors (which measure body movement in two or three planes) or pedometers (which measure number of steps taken). These can be used to calculate total energy expenditure over a day or week. These have the advantage of being well validated and generally accurate measures, which can overcome some of the problems of recall bias found in surveys.

However, objective measures can be very costly to use at a population level, and do not always provide data of the appropriate level of detail. For example motion sensors cannot provide data on the mode of activity.

Questionnaire-based surveys

In general, questionnaire-based surveys present the best option for assessment of physical activity levels among large numbers of people. The most reliable surveys use validated questionnaires among random probability samples, allowing the findings to be generalised to the population. If the same methods are used in repeat surveys, trend analysis can be carried out.

There are significant weaknesses to using questionnaire-based surveys however. The main issue is that survey techniques rely on self-report using a questionnaire (or diary), rather than observed level of physical activity, which introduces the potential for recall bias. This is found to be more significant for particular types of activity: for example recall of short bouts of walking is likely to be less accurate than recall of occasions of sport.

The strengths and weaknesses of using survey data are set out in appendix 3.

Taking these strengths and weaknesses into account, the most reliable data on physical activity participation in the region come from regional analyses of national physical activity surveys. These include the Health Survey for England as well as other surveys such as the Time Use Survey and National Travel Survey.

Details of each survey are set out in Appendix 3.

Local Use of surveys

Practitioners in the NHS, local government and other sectors may wish to measure the level of participation of individuals or populations in physical activity, for example to obtain a baseline level of activity before introducing a new intervention. To increase the likelihood of accurately measuring participation levels, it is very important that validated survey tools or instruments are used⁴⁰.

No single questionnaire can be recommended, and each should be assessed according to the needs of the research. Questionnaires to consider include:

- The short questionnaire used in the European Prospective Investigation of Cancer (EPIC) study⁴¹
- The questionnaire designed by Godin and Shephard in Canada⁴²
- The short International Physical Activity Questionnaire⁴³ designed for international comparisons
- A short questionnaire developed in the Netherlands by Baecke et al⁴⁴
- The forthcoming questionnaire being piloted by the Department of Health for use within Primary Care⁴⁵.

Appendix 3. Sources of data on physical activity

Most national data on physical activity are derived from routine national population surveys. These surveys are described below, drawing extensively on assessments made by the Eastern Region Public Health Observatory in their recent physical activity report⁴⁶.

The strengths and weaknesses of such surveys should be considered when interpreting the results:

Strengths

- Explicit methods, so trend analysis may be possible (provided that the same questionnaire is used each year).
- National random sample selection, so likely to be generalisable.

Weaknesses

- Regional and sub-regional analyses are sometimes not possible for methodological reasons.
- Survey techniques rely on self-report via questionnaire or diary, rather than observed level of physical activity. There is thus potential for recall bias.
- Reported physical activity is not validated against an objective measure of physical activity.

National sources of physical activity data are described below, with details of data sources when used in this report:

Health Survey for England (HSE)

This is the best source of national routine data on physical activity⁴⁷. Each year, the HSE focuses on a particular health issue, with core topics which are repeated each year. Physical activity is considered a special topic so is not included every year. To date physical activity has been included in the questionnaire in 1994, 1998 and 2003. Unfortunately, changes to the questionnaire used in the HSE have meant that trends are difficult to assess.

A random sample of private households is selected each year and all people within each household (children under two years have been included since 2001) are eligible for the Survey. A maximum of 10 adults and 2 children per household are included. Young people aged over 13 are interviewed in person; for children younger than 13, information is obtained from a parent or guardian with the child present. Each year, the survey includes about 16,000 adults and 4,000 children. In some years, the sample is boosted in a particular population group, for example in 1999 the sample was boosted in minority ethnic groups (Black Caribbean, Indian, Pakistani, Bangladeshi, Irish and Chinese). In 2002, the sample was boosted in the 0–24 age range, and also included mothers of infants aged under 1 year⁴⁷.

National Diet and Nutrition Survey (NDNS)

The NDNS is a joint initiative between the Food Standards Agency and the Department of Health. The NDNS programme is divided into 4 separate surveys according to age group. The survey records information on nutritional status and dietary habits of children, young people and adults living in private households in Great Britain, and includes questions on participation in physical activity. Participants in the 2000/2001 Survey of adults aged 19 to 64 years were asked to complete a seven-day diary detailing duration and intensity of physical activity⁴⁸.

Comparing the HSE and the NDNS^{49,50,51}

The HSE and the NDNS use different criteria for the assessment and measurement of physical activity. In the HSE 2003, participants were asked to report on frequency of physical activity sessions lasting more than 30 minutes over the past 4 weeks (15 minutes for sport and exercise). In the NDNS, participants were asked to keep a diary of physical activity sessions lasting more than 10 minutes over a week. There were significant differences in the levels of physical activity recorded in the HSEs 1998 and 2003, and the 2001 NDNS. In general higher physical activity levels were reported in the HSE; it is important to consider survey methods when interpreting the results.

General Household Survey (GHS)

The GHS surveys people living in private households in Great Britain and includes some data on physical activity, e.g. participation in sport, leisure, employment and ownership of vehicles and other consumer goods⁵².

Surveys conducted by Sport England/Department of Culture Media and Sport (DCMS).

'Taking Part' is a new National Survey of Culture, Leisure and Sport which began in July 2005. The survey is a joint initiative between Sport England, the Department for Culture Media and Sport, Arts Council England, English Heritage and The Museums, Libraries and Archives Council. It aims to gather robust information on participation and non-participation in culture, leisure and sport activities. It comprises in-house interviews with adults (with a boost sample of Black and minority ethnic groups). In addition to information on levels of participation and attendance at sporting and cultural facilities, the survey will collect information on what helps or hinders people from taking part. The survey will be conducted on a rolling basis over the next three years.

Sport England's Active People Survey has also recently been commissioned by Sport England. The survey will collect data on sport and physical activity participation rates among priority groups. At least 1,000 people in every local authority area in England will be questioned with a total sample of some 350,000 over the course of a year. The Active People Survey will be repeated in 3 years' time so that progress can be measured.

Sport England has also commissioned surveys in the past relating to specific population groups and their participation in physical activity. The Young People and Sport National Survey is a survey commissioned by Sport England, first undertaken in 1994 and subsequently in 1999 and 2002. Questionnaires were administered to children, young people and physical education (PE) teachers from primary and secondary schools across England. The surveys were conducted late in the summer term, and covered participation in physical activity over the past school year⁵³.

Surveys have also been conducted among people from minority ethnic groups, young people and adults with disabilities^{54,55}.

National Travel Survey

The National Travel Survey⁵⁶ (NTS) investigates personal travel habits in Great Britain, including distance walked and cycled (excluding walking and cycling as leisure activities), access to a car and use of public transport. The survey includes an interview and a week-long travel diary. The survey is conducted annually on behalf of the Department for Transport, and the 2003 survey sample includes about 8,200 private households in Great Britain. As the survey has been running since 1988 and has used the same methodology and research tool, it provides the most reliable trend data on the 'active travel' component of physical activity – walking and cycling.

Specific sources of data used in this report include:

Regional Transport Statistics 2004, Department for Transport, November 2004.

http://www.dft.gov.uk/stellent/groups/dft_transstats/documents/page/dft_transstats_032980.hcsp

Regional Trends 37, Office for National Statistics, 2002, The Stationery Office.

<http://www.statistics.gov.uk/STATBASE/ssdataset.asp?vlnk=6075&More=Y>

Travel to School in GB, Personal Travel Factsheet 2 - January 2003, Department for Transport, 2003.

http://www.dft.gov.uk/stellent/groups/dft_transstats/documents/page/dft_transstats_508285.pdf

Time Use Survey

The 2000 Time Use Survey¹⁴ investigated how individuals in the UK spend their time. Around 11,700 people completed an individual questionnaire, describing educational activity, employment status, qualifications, participation in voluntary work, other leisure activities, housework and caring responsibilities. About 21,000 one-day diaries were returned (maximum of two diaries per individual) with detailed information about activities conducted, including type and duration of activity, location and details of other people present. People in work or full-time education were additionally asked to complete a one-week worksheet describing time spent on these activities⁵⁷.

Appendix 4. The National Statistics Socio-economic Classification

From 2001 the National Statistics Socio-economic Classification (NS-SEC) has been used for all official statistics and surveys. It replaced Social Class based on Occupation (SC, formerly Registrar General's Social Class) and Socio-economic Groups (SEG).⁵⁸

This change has been agreed by the National Statistician following a major review of government social classifications commissioned in 1994 by the Office of Population Censuses and Surveys (now the Office for National Statistics) and carried out by the Economic and Social Research Council.

The NS-SEC is an occupationally based classification but has rules to provide coverage of the whole adult population. The information required to create the NS-SEC is occupation coded to the unit groups of the Standard Occupational Classification 2000 and details of employment status (whether an employer, self-employed or employee; whether a supervisor; number of employees at the workplace). Similar information was previously required for SC and SEG.

The version of the classification, which will be used for most analyses (the analytic version), has 8 classes, the first of which can be subdivided.

The National Statistics Socio-economic Classification Analytic Classes

1	Higher managerial and professional occupations
	1.1 Large employers and higher managerial occupations
	1.2 Higher professional occupations
2	Lower managerial and professional occupations
3	Intermediate occupations
4	Small employers and own account workers
5	Lower supervisory and technical occupations
6	Semi-routine occupations
7	Routine occupations
8	Never worked and long-term unemployed

For complete coverage, the following categories: Students; Occupations not stated or inadequately described; and Not classifiable for other reasons; are added as 'Not classified'.

ONS has developed a self-coded version of the NS-SEC which is suitable for use in situations such as postal surveys where the collection and coding of detailed occupation information is not justified⁵⁹.

Appendix 5. Intensities and energy expenditure for common types of physical activity

Activity	Intensity	Intensity (METS)	Energy expenditure (Kcal equivalent, for a person of 60kg doing the activity for 30 minutes)
Ironing	Light	2.3	69
Cleaning and dusting	Light	2.5	75
Walking – strolling, 2mph	Light	2.5	75
Painting/decorating	Moderate	3.0	90
Walking – 3mph	Moderate	3.3	99
Hoovering	Moderate	3.5	105
Golf – walking, pulling clubs	Moderate	4.3	129
Badminton – social	Moderate	4.5	135
Tennis – doubles	Moderate	5.0	150
Walking – brisk, 4mph	Moderate	5.0	150
Mowing lawn – walking, using power-mower	Moderate	5.5	165
Cycling – 10–12mph Moderate	Moderate	6.0	180
Aerobic dancing	Vigorous	6.5	195
Cycling – 12–14mph	Vigorous	8.0	240
Swimming – slow crawl, 50 yards per minute	Vigorous	8.0	240
Tennis – singles	Vigorous	8.0	240
Running – 6mph (10 minutes/mile)	Vigorous	10.0	300
Running – 7mph (8.5 minutes/mile)	Vigorous	11.5	345
Running – 8mph (7.5 minutes/mile)	Vigorous	13.5	405

Source: CMO Report¹¹, using data from Ainsworth et al, 2000⁶⁰

MET = Metabolic equivalent

1 MET = A person's metabolic rate (rate of energy expenditure) when at rest

2 METS = A doubling of the resting metabolic rate

Appendix 6. Odds ratios and 95% confidence intervals for key physical activity indicators

The table on the following page shows the odds ratio of different groups of people being active at recommended levels. The first line of each group is the 'reference' and we can compare the other lines to them. An odds ratio of above 1 means higher odds of being active at the recommended levels of physical activity than the reference. Less than 1 means lower odds of being active at the recommended levels.

For example, the relative odds of a 25–34 year old male being active at the recommended levels of physical activity compared to males aged 16–24 years is 0.58. Therefore males at older ages have lower odds of being active at the recommended levels of physical activity. However, for women the odds of being active does not consistently get lower at older ages. For women aged 45–54 the relative odds of being active at the recommended levels of physical activity compared to women aged 16–24 years is 1.06.



All ratios use age standardised data.

		Odds ratio	95% C.I.	
Males	16–24	1.00		
	25–34	0.58	0.38	0.89
	35–44	0.52	0.34	0.78
	45–54	0.42	0.27	0.65
	55–64	0.37	0.23	0.65
	65–74	0.17	0.10	0.30
	75+	0.04	0.01	0.11
	Females	16–24	1.00	
25–34		0.92	0.58	1.45
35–44		0.77	0.49	1.21
45–54		1.06	0.66	1.70
55–64		0.66	0.40	1.70
65–74		0.34	0.20	0.60
75+		0.09	0.03	0.22
Males		Managerial & professional	1.00	
	Intermediate professions	1.26	1.20	1.31
	Small employers & own account workers	2.62	2.51	2.74
	Lower supervisory & technical	2.25	2.16	2.35
	Semi-routine & routine	1.95	1.87	2.35
	Females	Managerial & professional	1.00	
Intermediate professions		0.86	0.82	0.90
Small employers & own account workers		1.46	1.40	1.52
Lower supervisory & technical		1.02	0.98	1.07
Semi-routine & routine		1.07	1.02	1.07
All		Managerial & professional	1.00	
	Intermediate professions	1.05	1.02	1.08
	Small employers & own account workers	1.96	1.90	2.01
	Lower supervisory & technical	1.54	1.50	1.59
	Semi-routine & routine	1.46	1.42	1.59
	All	White	1.00	
Black		0.91	0.88	0.94
Asian		0.62	0.60	0.64
Males	Not obese	1.00		
	Obese	0.65	0.62	0.68
Females	Not obese	1.00		
	Obese	0.46	0.44	0.49

Source: Health Survey for England 1999 & 2003

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Reader information

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