

# Physical activity for adults

Evidence briefing

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# Introduction

According to census data gathered in 2011, it is estimated that over 46.8 million adults aged 20 years and over currently reside in Great Britain<sup>1</sup>. As presented later in this briefing, a considerable proportion of these individuals do not meet the recommended levels of physical activity shown to benefit health. These low levels of physical activity are of major concern as evidence of the importance of physical activity for general health and for the prevention of chronic disease continues to grow.

Physical *in*activity is the fourth leading cause of global mortality and ill health in society today. The incidence of diseases such as heart disease, cancer and type 2 diabetes could be decreased if more inactive people were to become active<sup>2,3</sup>. Further, inactivity related illness costs the UK economy more than £5 billion a year.

This evidence briefing focuses on the physical activity evidence for adults aged 16 to 65 years old. It summarises the benefits of taking part in physical activity, the current guidelines and physical activity levels of adults in the UK. This briefing also highlights factors that influence physical activity participation as well as the current evidence on what can be done to increase participation levels. A separate evidence briefing for older adults is also available.

## Key term – Physical activity

Physical activity is described as ‘any body movement produced by the skeletal muscles that results in a substantial increase over resting energy expenditure’<sup>4</sup>. Examples of physical activity include lifestyle activities such as walking and cycling (active transport), sport and recreational activities, household chores and gardening.



# Adults evidence briefing

## Summary

The evidence reviewed in this document indicates:

- Physical activity can improve the physiological and psychological health of adults.
- Self-report measures show that many adults in England, Scotland, Wales and Northern Ireland do not achieve recommended physical activity levels.
- Participation in physical activity decreases with age, but remains higher in males than females.
- A complex range of individual, social and environmental factors influence participation in physical activity by adults.
- Adults face a number of barriers to becoming and remaining active.
- Public health guidelines recommend adults should be active daily and undertake 150 minutes or more of at least moderate intensity activity each week. Recommendations also advocate activities to improve muscle strength on at least two days per week. Time spent sitting for extended periods should be minimised.
- Evidence-based action is required to increase physical activity amongst adults.
- The strongest evidence available for effective interventions are those delivered in workplaces, the physical environment, communities and internet-delivered strategies.

# Physiological and psychological outcomes of physical activity

Regular physical activity is associated with a reduction in the incidence of:

- cardiovascular disease, including stroke and coronary heart disease<sup>5</sup>
- hypertension<sup>6</sup>
- type 2 diabetes<sup>2</sup>
- obesity<sup>7,8</sup>
- cancer, including colon, endometrial and breast cancers<sup>5,9,10</sup>
- liver disease<sup>11,12</sup>
- osteoporosis<sup>5</sup>.

Regular physical activity is associated with the following psychological benefits:

- lower risk of depression, distress and dementia<sup>7</sup>
- improved sleep<sup>7</sup>.



# UK public health guidelines on physical activity for adults

In July 2011, the Chief Medical Officers (CMOs) of the four home countries (England, Northern Ireland, Scotland and Wales) published a joint report outlining the amount of physical activity individuals should do in order to benefit their health<sup>13</sup>.

## Recommendations for adults

- Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more – one way to approach this is to do 30 minutes on at least five days a week.
- Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous intensity activity.
- Adults should also undertake physical activity to improve muscle strength on at least two days a week.
- All adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

These guidelines are designed to help professionals and practitioners understand the type and amount of physical activity adults should do to benefit their health. There is scope, however, to adapt these guidelines to meet the needs and abilities of the individual.

It is important to remember that the recommended 150 minutes of activity can be accumulated in bouts of 10 minutes or more and can be spread across all seven days of the week. Furthermore, inactive individuals will benefit from making small increases to their physical activity levels, which may serve as a 'stepping stone' to higher levels of activity.

### Key term – Moderate intensity activity

Moderate intensity activity stimulates the body's cardiorespiratory, musculoskeletal and metabolic systems and, over time, causes them to adapt and become more efficient. People can tell when their activity is moderate intensity because they will breathe faster, experience an increase in heart rate and feel warmer. The amount of activity needed to reach this varies from one person to another.

### Key term – Vigorous intensity activity

Vigorous intensity activity can bring health benefits over and above moderate intensity. A person who is doing vigorous intensity activity will usually be breathing very hard, be short of breath, have a rapid heartbeat and not be able to carry on a conversation comfortably.







# Current levels of physical activity

This section outlines the current data on physical activity available for adults in each of the four home countries. Because of the varying ways in which countries measure their physical activity levels, it is not possible to draw a comparison across the four countries.

## England

Using self-report data the Health Survey for England found that in 2012, 67% of men and 55% of women aged 16 and over met the 2011 UK CMO guidelines for physical activity<sup>14</sup>. Physical activity levels are lower in females than males and the proportion of those meeting the guidelines decreases with age in both men and women (Figure 1).

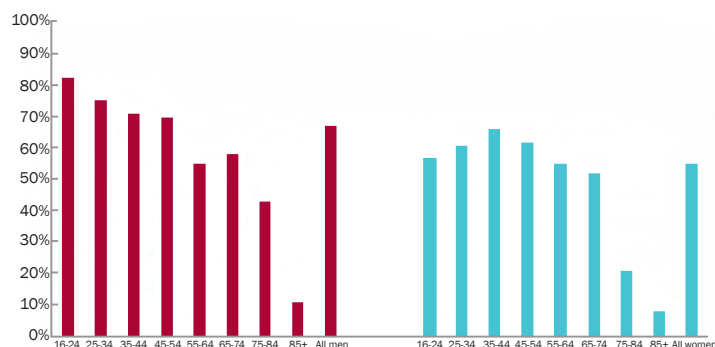


Figure 1. Proportion of individuals aged 16+ in England meeting current physical activity recommendations<sup>14</sup>.

## Northern Ireland

The Health Survey Northern Ireland 2013/2014 assessed physical activity levels of the population against the UK CMO 2011 guidelines using self report methods<sup>15</sup>. Sixty percent (60%) of males and 47% of females met these recommendations (53% overall). The survey also looked at the amount of physical activity those not achieving the guidelines accumulated. Fourteen percent (14%) were classed as doing some activity (60-149 minutes a week of moderate intensity physical activity), 5% were classed as low activity (between 30-59 minutes per week) while 28% were inactive (Figure 2).

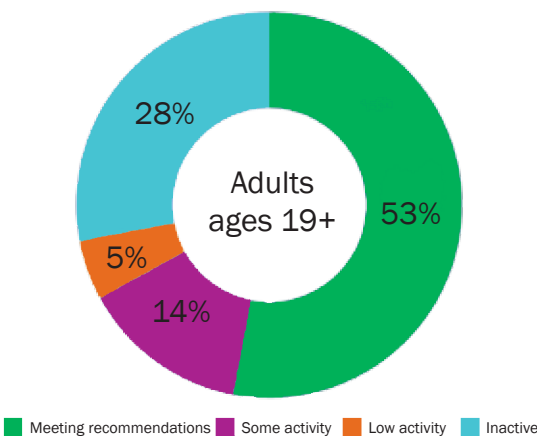


Figure 2. Proportion of adults aged 19+ in Northern Ireland in each physical activity category<sup>15</sup>.

## Scotland

According to the Scottish Health Survey 2013, 64% of adults (71% of men and 58% of women) met the UK CMO 2011 physical activity guidelines, using self report measures<sup>16</sup>. Again, physical activity levels are lower in females than males and the proportion of those meeting the guidelines decreases with age in both men and women (Figure 3).

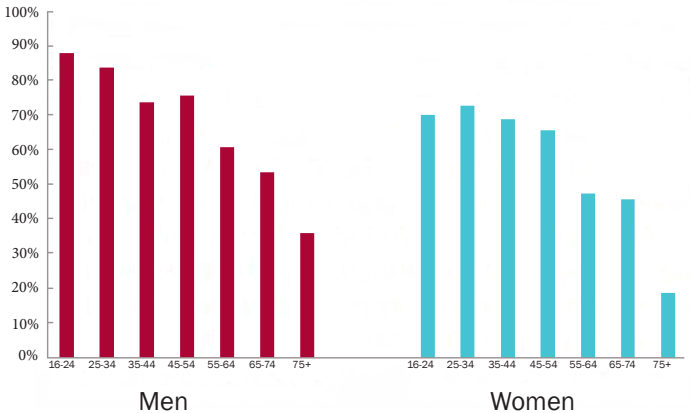


Figure 3. Proportion of men and women in Scotland aged 16+ meeting current physical activity guidelines<sup>16</sup>.

## Wales

The Welsh Health Survey 2013 assessed physical activity levels in their adult population using the previous (2008) recommendations of 30 minutes of moderate intensity on at least 5 days a week<sup>17</sup>. Using self-report data, it found that 29% of Welsh adults met these guidelines. Conversely, 13% of adults reported they did not do any exercise or physical activity in the past week. Figure 4 presents the proportion of individuals in Wales meeting the 2008 physical activity guidelines presented by age and sex.

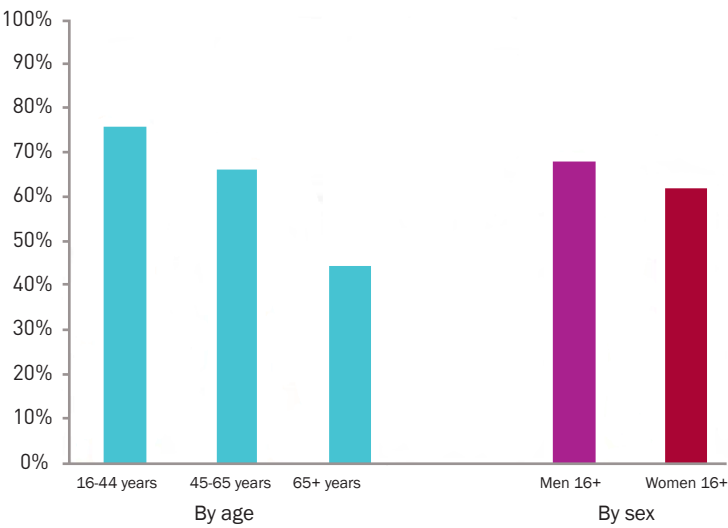


Figure 4. Proportion of individuals (depicted by age and sex) in Wales who meet 2008 physical activity guidelines<sup>17</sup>.





# Factors influencing physical activity

Engagement in physical activity is affected by a number of diverse factors operating at individual, social, environmental and policy levels. An understanding of these factors offers the most comprehensive explanation of why some adults engage in physical activity and others do not. Attempts to increase physical activity within adults will be most successful if they consider the following factors.

## Biological factors

**Sex:** Females are less likely to be physically active than males<sup>18</sup>.

**Age:** As adults get older, they are less likely to engage in physical activity<sup>18</sup>.

## Demographic factors

**Socioeconomic status:** Adults with lower socioeconomic status are less physically active<sup>19</sup>.

**Ethnicity:** Non-white adults are less likely to be physically active<sup>19</sup>.

**Education:** Lower levels of educational attainment are associated with lower levels of physical activity in adults<sup>18</sup>.

## Psychological factors

Perceived good health and belief in one's ability to overcome personal barriers and be physically active are two of the strongest predictors of physical activity<sup>18,20,21</sup>. Providing adults with information on their previous performance or on the performance of others can show people that they are capable of being more active<sup>20</sup>. Adults who make plans to be physically active are also more likely to engage than those who do not<sup>18</sup>. Those who experience greater stress levels engage in less physical activity<sup>18</sup>.

Physical activities that are seen as fun and requiring lower levels of effort are more appealing to most adults. Educating people about the health benefits of physical activity is also likely to enhance their motivation<sup>19</sup>.

## Social/cultural factors

Adults who receive support from friends or family members are much more likely to engage in moderate and vigorous activities. Such people also walk, cycle, play sports and actively commute more often. Support from friends may be particularly important for women to engage with physical activity<sup>22</sup>. Contexts which favour self-improvement over ability will favour initiation of physical activity and more continued engagement<sup>23</sup>.

## Environmental factors

Adults who live in less densely populated areas and have shorter distances to travel to non-residential destinations are more likely to engage in physical activity<sup>22,24</sup>. While adults who live in areas with well-connected trails leading to their place of work are significantly more likely to actively commute<sup>22</sup>, however, it is unclear whether physical activity for transport substitutes for other types of physical activity<sup>24</sup>.

The availability of equipment increases people's engagement with sport, whilst convenient recreation facilities, pavement and safe crossings and the presence of attractive sights in the area are associated with more total physical activity in adults<sup>18,22</sup>.

Evidence regarding the influence of changing other aspects of the environment on physical activity engagement for transport or leisure is less clear. For instance, characteristics of the built environment appear to be related with walking for transport but not with leisure walking<sup>24</sup>.

## Work factors

Adults who report greater job demands, having to work longer hours, work overtime and lack flexibility over when they work are less likely to engage in leisure time physical activity<sup>18,25,26</sup>.





# Interventions to increase physical activity

There is emerging evidence on interventions to increase physical activity and improve health in adults. The current evidence available for interventions delivered in workplaces, the physical environment, communities and the use of internet-based strategies, is outlined below.

## Workplace interventions

Adults spend up to 60% of their waking hours in the workplace<sup>27</sup> and a high proportion of the adult population is in employment, making the workplace a useful setting for health promotion. Workplace interventions may be most successful when they alter aspects of the workplace environment and workplace policies at the same time. Common features found in successful workplace interventions include:

- Involving employers and securing long-term commitment to the program<sup>28</sup>.
- Encouraging adults who work in largely inactive job roles such as office-based work to incorporate as much physical activity into their working day as possible<sup>26</sup>.
- One-to-one sessions with a trained professional to discuss physical activity at the workplace<sup>29</sup>.
- Providing prompts to encourage employees to take the stairs, eg, by placing signs at the stairs or lift/escalator, decorating stairwells, displaying artwork or playing music<sup>30</sup>.
- Tailoring messages delivered via the internet/intranet<sup>28</sup>.
- Facilitating short breaks during the working day for employees to engage in physical activity<sup>30,31</sup>.
- Providing opportunities for employees to identify barriers and make plans to prevent a return to previous behaviours<sup>32</sup>, for example one-to-one sessions with employees have been identified as one effective strategy to achieve this<sup>33</sup>.
- Using cognitive behavioural strategies such as self-monitoring, graded tasks and goal setting<sup>32,34</sup>.
- Implementing strategies focused on increasing walking such as step-counting with pedometers<sup>28,29,34</sup>.
- Promoting the use of active forms of travel (walking or cycling) to get to and from work<sup>35</sup>.
- Providing on-site exercise equipment and facilities that support active commuting such as showers, lockers and bicycle storage<sup>36</sup>.
- Ensuring that new workplaces are linked to walking and cycling networks<sup>37</sup>.



## Environmental interventions

The environment in which we live can positively or negatively impact physical activity. It is difficult to evaluate the specific elements of environmental interventions, but the following features appear to facilitate physical activity:

- Creating and improving access to places for physical activity and combining this with a form of information outreach<sup>38</sup>. For instance, walking and biking trails can be created or aesthetically improved, and outdoor gyms can be developed fairly cheaply by putting exercise equipment in parks<sup>39</sup>.
- Increasing safety of the environment, eg, through traffic calming measures, street lighting and pedestrianisation<sup>39</sup>.
- Improving accessibility of spaces for physical activity by ensuring that public open spaces and public paths can be reached on foot, by bicycle and using other modes of active transport<sup>37</sup>.
- Re-allocating road space to support active travel, eg, introducing cycle lanes<sup>37</sup>.
- Introducing policies to promote active travel, such as, subsidised bus passes and incentivised car share schemes<sup>39,40</sup>.
- Placing messages prompting stair use in locations where both escalators and stairs are available, such as train stations and shopping centres<sup>41</sup> and ensuring staircases are attractive to use<sup>37</sup>.

## Community interventions

A number of strategies within the community setting have been shown to have at least short-term positive effects on physical activity:

- Building partnerships with local governments or non-governmental organisations (NGOs)<sup>42</sup>.
- Introducing social support structures, such as through group activity sessions or face-to-face counselling<sup>43,39</sup>. Group activities could occur in parks, squares, community centres and even shopping centres if there is a lack of recreational parks. Other successful strategies include buddy systems, behavioural contracts between the participant and instructor and community walking groups<sup>39</sup>.

- Providing telephone support has been shown to have positive effects<sup>44</sup>.

Promotional materials can be used to reinforce positive behaviour change and social aspects of physical activity. They can also help connect adults to their community. Mass media campaigns may be used to increase physical activity levels of adults, especially when they are linked with community programmes. They should include the use of:

- Segmentation techniques to target messages to where they can be most effective<sup>39</sup>.
- Multiple forms of communication, eg, television, radio, newspapers and other media to reach as many people as possible<sup>39</sup>.
- Short messages targeting key community sites<sup>39</sup>.
- Tailored recruitment materials and intervention content, especially for women and specific ethnic groups<sup>43</sup>.

## Internet-delivered interventions

A number of interventions to increase physical activity within various populations have been delivered via the internet. This has the benefit of reaching a large number of individuals at a low cost relative to other types of intervention, such as making physical environmental changes or having regular direct contacts with individuals. Internet-delivered interventions have produced positive results but there is still insufficient evidence regarding their ability to produce long-term change<sup>45</sup>. Little is also known about the specific features of internet-based interventions which should be included with adults. The following features have some support in the literature:

- including elements for education, self-monitoring, feedback/tailored information, self-management training and personal exercise programs.
- Enabling communication (eg, chat, email) with either health care providers or patients in patient care settings<sup>46</sup>.
- Blending interpersonal online systems with mass media outreach<sup>47</sup>.



# Implications for practice

The evidence summarised in this document has important implications for commissioners, policy makers and practitioners. Potential action areas for each of these groups are outlined below.

## Actions for commissioners

- Build robust monitoring and evaluation into physical activity programmes for adults to ensure the effectiveness of any interventions that are undertaken.
- Ensure data is collected to allow analysis of the cost effectiveness of the intervention, and where practical to establish if any cost savings have resulted.
- Identify, understand, and if possible remove, barriers to participating in physical activity.
- Work in partnership with individuals, communities and organisations to plan initiatives and elicit behaviour change.
- Ensure intervention programmes include elements such as:
  - identification of the behaviours that will be targeted
  - a needs assessment of the target audience and information on the cultural and socio-economic context of their lives
  - a clear explanation of how the target audience will contribute to the development, evaluation and implementation of the intervention
  - a clear description of what will happen, how, when, for how long and any other mechanism(s) of delivery
  - identification of what process and outcome measures will be used to evaluate effectiveness.

## Actions for policy makers

- Take action to promote physical activity to all adults through inclusive policy measures.
- Assess in advance the intended and unintended impact policy proposals are likely to have on adults' physical activity participation.
- Training and support should be made available to practitioners to enable

successful delivery of policy or programmes.

- Provide activity friendly environments in local communities to promote walking and cycling for leisure and transport in adults.
- Ensure that opportunities are available to all adults regardless of gender, age, ethnicity, education and socioeconomic status.
- Ensure that appropriate process and outcome measures are used to evaluate the effectiveness, acceptability, feasibility, equity and safety of any policy or programme interventions.

## Actions for practitioners

- Ensure programmes are underpinned by the 2011 CMO physical activity guidelines for adults.
- Involve the adults in the target group to help determine appropriate provision and activities.
- Ensure those providing opportunities for adults are appropriately trained and understand the ways in which behaviour change can be initiated and maintained.
- Ensure physical activity programmes and opportunities maximise the potential for involvement for all adults by ensuring that activities are differentiated to cater for a range of abilities.
- Facilitate and support adults' understanding of the importance of physical activity to their physical and psychological health.
- Ensure physical activity programmes use a multicomponent approach, such as changing the workplace environment (for example, providing cycle storage) in addition to providing opportunities for participation (such as organised lunchtime walks).
- Provide enabling environments in communities to encourage engagement in physical activity.
- Implement robust monitoring and evaluation of local programmes.

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