UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND


<table>
<thead>
<tr>
<th>%</th>
<th>ADULTS (16-64 YEARS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>60</td>
</tr>
<tr>
<td>Scotland</td>
<td>64</td>
</tr>
<tr>
<td>Wales</td>
<td>31</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>61</td>
</tr>
</tbody>
</table>

Total population: 64,308,261
Median age: 39.9 years
Life expectancy at birth males: 79.2 years
Life expectancy at birth females: 82.9 years
GDP per capita: €29,600
GDP spent on health: 8.5%
Physical activity in adults

The United Kingdom has a health monitoring and surveillance system that includes population-based measures of physical activity in the 4 home countries (England, Wales, Scotland and Northern Ireland). The country as a whole uses the international cut-off point for adults reaching the recommended physical activity levels, as endorsed by WHO's Global recommendations on physical activity for health (2010) (3). Data for adults (aged 16–64 years) and older adults (aged 65–74 years) are reported separately (4).

England

England established its national health monitoring and surveillance system in 2005 (5). The data are collected annually through the Health Survey for England (HSE) (6), commissioned by the Health and Social Care Information Centre (HSCIC).

The latest available data with information on physical activity are from the 2012 HSE (7). Aspects measured include frequency, duration and intensity of physical activity across different domains (leisure, transport, work, household), as well as cycling and walking habits, and sedentary behaviour across different age and socioeconomic groups.

England’s national data from the latest HSE (2012), as presented in Table 1, show that males are more active than females, both among all adults (aged 16+ years)1 as well as specifically among older adults (aged 65–74 years). The proportions of adults meeting the recommended physical activity levels are 67% for males and 55% for females. Among older adults (aged 65–74 years), the proportions are 58% for males and 52% for females.

Scotland

Scotland’s national health monitoring and surveillance system has been in place since 1995. Data are collected annually through the Scottish Health Survey (SHeS) under the leadership of the Scottish Government National Statistics (8).

The latest available national data are from the 2013 SHeS (9) and items measured include frequency, duration and intensity of physical activity across different domains (leisure, transport, work, household), as well as cycling/walking habits and sedentary behaviour across different age and socioeconomic groups.

In the 2013 SHeS, as Table 1 presents, 64% of adults (aged 16+ years) and 50% of older adults (65–74 years) reach the recommended physical activity levels. As with England, Scottish males (71%) are more active than females (58%) across both adults and older adults (54% for males and 46% for females, respectively).

Wales

Wales established its national health monitoring and surveillance system in 2003 (10). Data are collected annually through the Welsh Health Survey (WHS) under the leadership of Knowledge and Analytical Services in the Welsh Government. The latest national data for Wales are from the 2014 WHS and aspects measured include frequency, duration and intensity of physical activity across different age groups.

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1 Here, adults includes all individuals aged 16+ years, so this prevalence figure also includes the older adult age group (65–74 years).
United Kingdom of Great Britain and Northern Ireland

Wales has not adopted the cut-off points for adults reaching the recommended physical activity levels defined by *Global recommendations on physical activity for health* (2010). Instead, the cut-off point used in Wales is the number of days of at least 30 minutes of moderate exercise or activity during the past week.

The 2014 WHS reports that 31% of adults (aged 16+ years) met the physical activity guidelines (5 x 30 minutes per week), comprising 38% of males and 23% of females. Among older adults (aged 65–74 years), the prevalence was 23% (28% of males and 18% of females) meeting the recommended physical activity levels (see Table 1).

**Northern Ireland**

National health monitoring information has been collected through the Health Survey Northern Ireland (HSNI) since 2010/2011. Prior to this, the Northern Ireland Continuous Household Survey and Northern Ireland Health and Social Wellbeing Survey were used to collect monitoring information. The latest available information on physical activity originates from the 2013/2014 HSNI (12). The Northern Ireland data follow the trends observed in England, Scotland and Wales, whereby males are more active than females, across all age groups. As Table 1 illustrates, the percentage of men (aged 16–64 years) reaching the WHO recommended physical activity levels is 68% (56% for females of the same age), whereas for older adults (aged 65–74 years), the proportions are 34% and 24% for males and females, respectively.

<table>
<thead>
<tr>
<th>Country</th>
<th>% Adults (16–64 years)</th>
<th>Older Adults (65–74 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENGLAND</strong> (7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MALES</td>
<td>67</td>
<td>58</td>
</tr>
<tr>
<td>FEMALES</td>
<td>55</td>
<td>52</td>
</tr>
<tr>
<td>BOTH SEXES</td>
<td>60</td>
<td>47</td>
</tr>
<tr>
<td><strong>SCOTLAND</strong> (9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MALES</td>
<td>71</td>
<td>54</td>
</tr>
<tr>
<td>FEMALES</td>
<td>58</td>
<td>46</td>
</tr>
<tr>
<td>BOTH SEXES</td>
<td>64</td>
<td>50</td>
</tr>
<tr>
<td><strong>WALES</strong> (10)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MALES</td>
<td>38</td>
<td>28</td>
</tr>
<tr>
<td>FEMALES</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>BOTH SEXES</td>
<td>31</td>
<td>23</td>
</tr>
<tr>
<td><strong>NORTHERN IRELAND</strong> (12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MALES</td>
<td>68</td>
<td>34</td>
</tr>
<tr>
<td>FEMALES</td>
<td>56</td>
<td>24</td>
</tr>
<tr>
<td>Both sexes</td>
<td>61</td>
<td>28</td>
</tr>
</tbody>
</table>

*Table 1. Prevalence (%) of adults reaching the recommended physical activity levels, 2012, 2013 and 2014*

Notes: Correspondence with the national focal point indicates that some of the variation between the home countries within the United Kingdom (in terms of the percentage of the population reaching recommended levels of physical activity) may in part be explained by differences in methodology.

*Number of days of at least 30 minutes of moderate exercise/activity in the past week.

Sources: HSE 2012 (7); Rutherford, Hinchcliffe & Sharp, 2013 (9); WHS 2014 (10); Walker, Scarlett & Williams, 2014 (12).
The intercountry comparable physical activity estimates from the WHO Global Health Observatory (GHO) 2010 for the United Kingdom (13) show that 60% of adults (aged 18+ years) reach the WHO recommended physical activity levels (64.4% for males and 55.7% for females).

Physical activity in children and adolescents

Similarly to the data for adults, the United Kingdom as a whole uses the cut-off point for children and adolescents reaching the recommended physical activity levels for health, as endorsed in the WHO Global recommendations on physical activity for health (2010) (3). Data are reported together for children and adolescents (aged 2–15 years) and for England and Scotland, disaggregated data also exist for children aged under 5 years (2–4 years) reaching recommended levels of physical activity.

England

The cut-off points used for children and adolescents aged 5–15 years are based on the recommendation to be physically active for 60 minutes or more per day, 7 days per week. In the 2012 HSE, boys are more physically active than girls, with 21% and 16% reaching the recommended physical activity levels, respectively (see Table 2). For children aged under 5 years, the cut-off point used is 180 minutes or more per day: 9% reach the recommended physical activity levels, with girls (10%) being slightly more physically active than boys (9%).

Scotland

The cut-off points used in Scotland for children and adolescents are based on the recommendation to be physically active for at least 60 minutes on all 7 days in the previous week, which is measured retrospectively. According to the 2013 SHeS, as shown in Table 2, 75% of children and adolescents and 77% of children aged under 5 years reach the recommended physical activity levels for health. Boys are more active (78%) than girls (72%). For children under the age of 5 years, 80% of boys and 73% of girls reach the recommended physical activity levels.

Wales

Wales has not adopted the cut-off points for children and adolescents reaching physical activity recommendations according to WHO’s Global recommendations on physical activity for health (2010) (3). Instead, the measure used in Wales is exercising for at least 1 hour per day on 5 or more days during the past week.

The Welsh national data from the 2013 WHS show that 52% of children (aged 4–15 years) meet the Welsh physical activity guidelines (14). Welsh boys are more physically active (58%) than girls (45%).

Northern Ireland

According to Northern Ireland’s Young Persons Behaviour and Attitudes Survey 2013 (in which young people are defined as aged 11–17 years), as seen in the other home countries, boys are significantly more physically active than girls, reflected in the proportion of boys (20%) meeting the recommended physical activity levels for health being more than twice as high as that of girls (8%) (15).
Table 2. Prevalence (%) of children and adolescents reaching the recommended physical activity levels, 2012, 2013 and 2014

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>CHILDREN AND ADOLESCENTS (5–15 YEARS&lt;sup&gt;a&lt;/sup&gt;)</th>
<th>CHILDREN (UNDER 5 YEARS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MALES</td>
<td>FEMALES</td>
</tr>
<tr>
<td>ENGLAND (7)&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td>21</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MALES</td>
<td>FEMALES</td>
</tr>
<tr>
<td>SCOTLAND (9)&lt;sup&gt;c&lt;/sup&gt;</td>
<td></td>
<td>78</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MALES</td>
<td>FEMALES</td>
</tr>
<tr>
<td>WALES (10)&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td>58</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MALES</td>
<td>FEMALES</td>
</tr>
<tr>
<td>NORTHERN IRELAND (15)&lt;sup&gt;e&lt;/sup&gt;</td>
<td></td>
<td>20</td>
<td>8</td>
</tr>
</tbody>
</table>

Notes: Correspondence with the national focal point indicates that some of the variation between the home countries within the United Kingdom (in terms of the percentage of the population reaching recommended levels of physical activity) may in part be explained by differences in methodology. <sup>a</sup> Children and adolescents aged 4–15 years in terms of the Welsh data. <sup>b</sup> England’s cut-off points for children aged under 5 years are: active for at least 180 minutes on all 7 days in the previous week. <sup>c</sup> Scotland’s cut-off points for children aged under 5 are: active for at least 60 minutes on all 7 days in the previous week, including activity at school. <sup>d</sup> Data presented for Wales comprise children that are physically active for 1 hour or more, 5 days or more per week. <sup>e</sup> In the Young Persons Behaviour and Attitudes Survey, young people are defined as being aged 11–17 years.

Sources: HSE 2012 (7); Rutherford, Hinchcliffe & Sharp, 2013 (9); WHS 2014 (10); Mallon, 2014 (15).

The WHO GHO 2010 estimates for adolescents (defined as aged 11–17 years in relation to WHO data) from the United Kingdom show that 21% meet the recommended physical activity levels for health. The GHO 2010 confirms the trend observed in the national survey data, with adolescent males being significantly more physically active at the recommended level (27.3%) than females (15.1%).
Types of physical activity and modes of transport

Table 3 gives details of the modes of transport used in each of the home countries.

Table 3. Modes of transport used in the home countries

<table>
<thead>
<tr>
<th>ENGLAND (16)</th>
<th>SCOTLAND (17)</th>
<th>WALES (18)</th>
<th>NORTHERN IRELAND (19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>86% of adults walk at least once per month for any purpose.</td>
<td>23% of journeys use walking as the main mode of transport. The average walking journey is 1 km in length. When asked what discourages people from walking more, the main reason given, other than stating that nothing discourages them (60%), was health (16%) and the weather (11%). 1% of journeys use cycling as the main mode of transport (a similar proportion to 2012). The average cycling journey is 4.4 km in length.</td>
<td>In the past week, 5% had cycled and 65% had walked for more than 5 minutes to get to a particular destination (rather than for exercise or recreation). The most common reason stated for walking was to reach local shops for small errands, with 43% of people who walked for more than 5 minutes having done so for that reason. The most common reason stated for cycling was to get to work (30% of those who cycled). 74% of children at primary schools and 87% of children at secondary schools usually walked to school, if their school was less than a mile away.</td>
<td>152 walking journeys per person per year were carried out in 2011–2013. This represents 17% of all journeys made (the same as in 2008–2010). In 2011–2013, the most commonly used main method of travel to or from school for children aged 4–11 years was being driven in a car (60%), followed by walking or cycling (27%), followed by taking the bus (13%).</td>
</tr>
</tbody>
</table>

Policy response

Major policy documents adopted by government bodies

England

*Moving More, Living More: the physical activity Olympic and Paralympic legacy for the nation*, a document issued by the Department of Health for England, aims to contribute to meeting the United Kingdom Government’s ambition to achieve a year-on-year increase in the proportion of adults meeting physical activity recommendations (20). It proposes a tailored approach, responding to different socioeconomic, age and geographic profiles of the target population, incorporating a setting-specific and community-based approach.
Public Health England, an executive agency of the Department of Health for England, published *Everybody Active, Every Day* in 2014, outlining a set of evidence-based actions to promote physical activity (21). The recommendations focus on creating active environments, scaling up effective interventions, building a social movement, and engaging professionals with expertise across the fields of education, sports and leisure, and health and social care.

Sport England, the body responsible for investing in organizations and projects to promote sport, has published a strategy for 2012–2017 entitled *A sporting habit for life* (22). The strategy aims to increase the rate of participation in sport; create opportunities for participation; nurture and develop sporting talent; provide facilities in the right places; support local authorities; and unlock local funding. This strategy complements the Government’s participation in sports policy, which aims to get more people playing sports safely from a young age, and to help them keep playing sports throughout their life, no matter what their economic or social background is (23).

**Scotland**

The Scottish Government has adopted a national Physical Activity Implementation Plan (24), building on the success of the 2014 Commonwealth Games (25). The new 10-year plan adapts key elements of the Toronto Charter for Physical Activity (which makes the case for increased action in tackling physical inactivity) to the Scottish setting, and links it directly to the Scottish Government’s legacy ambitions for the Commonwealth Games. Underpinning delivery of the overall commitments of the plan are a number of key themes: natural and built environments; workplace settings; health, social care and education sectors; and sports and recreation.

The Active Scotland Outcomes Framework (26) describes Scotland’s ambitions for sports and physical activity. Active Scotland Outcomes contribute to the Scottish Government’s overarching purpose of creating a more successful country, with opportunities for all to flourish. The framework has been developed collectively with partners through the National Strategic Group for Sport and Physical Activity (NSG), chaired by the Cabinet Secretary for Health, Wellbeing and Sport. It describes the key outcomes desired for sports and physical activity in Scotland by 2025, and its success will rely on the collective efforts of communities, individuals and a wide range of partners.

**Wales**

Physical activity is specially addressed through the Physical Activity Executive Group (PAEG) established in 2013, which seeks to improve levels of activity in Wales through a coordinated, cross-government approach, working with partner organizations such as Public Health Wales and Sports Wales.

The PAEG is currently developing a pan-Welsh physical activity plan, building on the work of *Creating an Active Wales*, which gained full Cabinet support in December 2014 (27). The plan’s core aims will be to:

- achieve a reduction in the number of people who are physically inactive;
- increase the percentage of the population who meet the Chief Medical Officers’ guidelines on recommended physical activity (4); and
- focus on achieving improvements in physical activity levels in the most deprived areas and communities, and on enabling opportunities for physical activity in both urban and rural areas.
Northern Ireland
The Department for Culture, Arts and Leisure of Northern Ireland has adopted a Strategy for Sport and Physical Recreation 2009–2019 (“Sports Matters”) (28). The strategy was developed in partnership with Sport Northern Ireland, and approved by the Northern Ireland Executive in December 2009.

The Department for Health, Social Services and Public Safety oversees the implementation of an obesity prevention framework for Northern Ireland entitled A fitter future for all (2012–2022) (29). The framework aims to empower the population of Northern Ireland to make healthy choices, reduce the risk of overweight and obesity related diseases and improve health and wellbeing, by creating an environment that supports and promotes a physically active lifestyle and a healthy diet. The framework identifies delivery partners in a number of different sectors beyond health, and complements the overarching public health framework for 2013–2023 (“Making Life Better”) (30).

Guidelines and goals
The United Kingdom has adopted national guidelines on the volume, duration, frequency and type of physical activity required across the life-course to achieve general health benefits (4). Start active, stay active is intended for professionals, practitioners and policy-makers concerned with formulating and implementing policies and programmes that utilize the promotion of physical activity, sports, exercise and active travel in order to achieve health gains.

Table 4 presents a summary of the key measures in place to monitor and address physical activity in the United Kingdom.

Table 4. Summary of key physical activity initiatives in the United Kingdom

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>SPORTS</th>
<th>EDUCATION</th>
<th>TRANSPORT</th>
<th>MONITORING</th>
<th>GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Policies have been developed by the relevant authorities, according to devolved powers of administration.</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Counselling on physical activity as part of primary health care services</th>
<th>Existence of a national Sports for All policy(ies)</th>
<th>Mandatory physical activity in primary and secondary schools</th>
<th>National or subnational schemes promoting active travel to school and/or workplace</th>
<th>Physical activity included in the national health monitoring system or separate routine survey</th>
<th>Existence of a national recommendation on physical activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES*</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Additional information on action in key areas
Health sector
The Department of Health has produced a set of resources for health professionals (“Let’s Get Moving”) as a tool to promote physical activity in primary health care (31). "Let’s Get Moving" is an evidence-based behaviour change intervention intended to promote physical activity, presenting a systematic approach to identifying and supporting adults who are not meeting the recommended exercise levels. It is also intended to equip health planning personnel with the knowledge they need to commission the intervention.
The National Exercise Referral Scheme (NERS) was established by the Welsh Government and is now funded through Public Health Wales. NERS was developed to standardize exercise referral, targeting individuals who are at risk of developing a chronic disease (32). In Scotland, the National Health Service (NHS) Scotland and NHS Education for Scotland have developed an approach to health promotion called the Health Promoting Health Service, intended to provide a one-stop-shop service for those looking for information relating to health improvement within the hospital setting (33).

Schools

Table 5 provides details of the physical education (PE) curricula in primary and secondary schools in the 4 home countries of the United Kingdom.

Table 5. PE in primary and secondary schools in the United Kingdom

<table>
<thead>
<tr>
<th></th>
<th>PE IN PRIMARY SCHOOLS</th>
<th>PE IN SECONDARY SCHOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ENGLAND</td>
<td>SCOTLAND</td>
</tr>
<tr>
<td>No minimum requirement exists in terms of the number of hours per week, but schools must deliver “a full programme of PE for all their pupils”</td>
<td>Mandatory 2 hours per week</td>
<td>PE is a statutory requirement. No requirement exists in terms of the number of hours, but the Welsh Government advisory target has been established at 2 hours per week</td>
</tr>
<tr>
<td></td>
<td>ENGLAND</td>
<td>SCOTLAND</td>
</tr>
<tr>
<td>No minimum requirement exists in terms of hours per week, but schools must deliver “a full programme of PE for all their pupils”</td>
<td>Mandatory 2 sessions per week</td>
<td>PE is a statutory requirement. No requirement exists in terms of the number of hours, but the Welsh Government advisory target has been established at 2 hours per week</td>
</tr>
</tbody>
</table>

Box 1 details an initiative to support PE in Northern Irish schools.

Box 1. Supporting the delivery of PE in schools in Northern Ireland

To support the delivery of PE in primary schools, the Department of Education in Northern Ireland funds the Gaelic Athletic Association (GAA) and the Irish Football Association (IFA) to deliver the Curriculum Sports Programme. The programme is delivered to pupils in years 1–4 and aims to develop the physical literacy skills of pupils, as well as teacher confidence in delivering the PE curriculum. In 2013/2014, 61 coaches from the GAA and IFA delivered the programme in 577 primary schools, reaching over 39,000 pupils (34).
All the home country governments within the United Kingdom have initiated programmes to support active travel to school, primarily focusing on promoting safe routes for walking, cycling or scooting, and sometimes involving nongovernmental organizations (35, 36).

**Workplace**

The Cycle to Work Scheme (37) is available to employees in England, legislated within the 1999 Finance Act, which introduced an annual tax exemption allowing employers to loan cycles and cyclists’ safety equipment to employees as a tax-free benefit.

**Transport and the built environment**

*Building An Active Travel Future for Northern Ireland* proposes a cross-sectoral approach to active travel. It builds upon initiatives that have already been successful, such as the Department’s Travelwise programmes, which include: Safer Routes to Schools, Personalised Travel Planning, Car Sharing and Workplace Travel Planning (38). The strategy aims to address barriers to active travel, develop infrastructure, and work with the education sector and young people to promote active forms of transport.

The Department for Transport in England is working on its Cycling and Walking Investment Strategy, as part of the newly established Infrastructure Bill, which became law in February 2015 (39). Most relevant authorities in the United Kingdom report using the WHO Health Economic Assessment Tool (HEAT) to estimate the potential health and economic benefits of a cycling and/or walking infrastructure policy (40).

Box 2 details physical activity coordination initiatives in the United Kingdom.

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**Box 2. Coordination initiatives for physical activity in the United Kingdom**

*Moving More, Living More: the physical activity Olympic and Paralympic legacy for the nation is a cross-ministry initiative to coordinate action on physical activity in England, led by the Department of Health and involving the Mayor of London, the Cabinet Office, the Department for Culture, Media and Sport, the Department for Education, the Department for Transport and other government departments (20). It aims to promote physical activity in order to have a more physically active nation as part of the legacy of the London 2012 Olympic and Paralympic Games. It builds on work already under way and sets out key areas for governmental and cross-sectoral action.*

In Scotland, the Cabinet Secretary for Health chairs the NSG. Alongside various ministers, this group comprises the Chief Executives of Scotland’s public bodies in the fields of health, sports, education, transport and environment, along with official representatives from local government and academic institutions (24, 25). Collectively, this group has signed up to the Active Scotland Outcomes Framework (26), which sets out the long-term outcomes sought in Scotland for sports and physical activity, and the cross-sectoral nature of actions required to achieve these outcomes.

In Northern Ireland, a number of steering and implementation groups exist, working towards the delivery of physical activity-related policy commitments. For example, as part of the implementation of the Sport Matters strategy (28), a monitoring group was established, chaired by relevant ministries. The cities of Belfast and Derry/Londonderry in Northern Ireland are also members of the WHO European Healthy Cities Network (41).
Addressing target groups

The principal aim of the “Moving More, Living More” initiative (20) is to provide the right environment for people so that embracing physical activity becomes a natural part of their daily life. The document acknowledges, however, that some groups in society — including people living with disabilities, older people and some ethnic minority groups — are less likely to be active than others. Here a tailored, inclusive approach is required.

Sports England has an explicit commitment to increase the number of “door-step” sports clubs located in disadvantaged areas. The Northern Irish Sports Matters strategy has a participation target to deliver at least a 6% increase in participation rates in sports and physical recreation among socioeconomically disadvantaged groups.

Sports Wales supports the development of grassroots sports in disadvantaged areas by supporting the purchase of new equipment; training new coaches and/or volunteers; establishing new teams; and supporting, funding and delivering services to the 10 priority Welsh elite sports (42). Impacting on deprivation is an explicit funding criterion and applications targeting those in deprived areas are encouraged.

Successful approaches

The United Kingdom is one of few countries in the world with national physical activity guidelines for people of all age groups; from early years to older adults. Recommendations also exist on how people can reduce their sedentary behaviour. For the first time, the four home countries of the United Kingdom are able to work towards consistent and robust monitoring and surveillance of the nation’s physical activity levels.
References


